Cityscape

A Journal of Policy Development and Research

AGING IN PLACE

VOLUME 12, NUMBER 2 • 2010

U.S. Department of Housing and Urban Development
Office of Policy Development and Research

Cityscape

A Journal of Policy Development and Research

Aging in Place
Volume 12, Number 2 • 2010

U.S. Department of Housing and Urban Development
Office of Policy Development and Research

The goal of *Cityscape* is to bring high-quality original research on housing and community development issues to scholars, government officials, and practitioners. *Cityscape* is open to all relevant disciplines, including architecture, consumer research, demography, economics, engineering, ethnography, finance, geography, law, planning, political science, public policy, regional science, sociology, statistics, and urban studies.

Cityscape is published three times a year by the Office of Policy Development and Research (PD&R) of the U.S. Department of Housing and Urban Development. Subscriptions are available at no charge and single copies at a nominal fee. The journal is also available on line at http://www.huduser.org/periodicals/cityscape.html.

PD&R welcomes submissions to the Refereed Papers section of the journal. Our referee process is double blind and timely, and our referees are highly qualified. The managing editor will also respond to authors who submit outlines of proposed papers regarding the suitability of those proposals for inclusion in *Cityscape*. Send manuscripts or outlines to Cityscape@hud.gov.

Visit PD&R's website, www.huduser.org, to find this publication and others sponsored by PD&R. Other services of HUD USER, PD&R's research information service, include listservs, special interest and bimonthly publications (best practices and significant studies from other sources), access to public use databases, and a hotline (800–245–2691) for help with accessing the information you need.

Contents

Symposium
Aging in Place
Guest Editors: Cheryl A. Levine, Gavin Kennedy, and Emily Rosenoff

Refereed Papers

Departments

Graphic Detail

Data Shop

Guest Editors' Introduction

Cheryl A. Levine
U.S. Department of Housing and Urban Development

Gavin Kennedy
Emily Rosenoff
U.S. Department of Health and Human Services

The Symposium, Aging in Place, in this issue of *Cityscape* explores the topic of affordable housing plus supportive services. Through an ongoing collaboration of the U.S. Department of Housing and Urban Development (HUD), Office of Policy Development and Research (PD&R), and the U.S. Department of Health and Human Services, Office of the Assistant Secretary for Planning and Evaluation (ASPE), this issue represents the shared interest in aging in place. Previous collaboration resulted in a synthesis of affordable housing plus services models in which "the relationship between older age, chronic illness and disability, and higher use of long-term care services is well established. In response to the rising demand for long-term care, consumer advocates, policy makers, and service providers have encouraged the development of new models of organizing and delivering health-related and supportive services that are attractive and affordable to older adults, particularly those who are poor or of modest means."[1]

The focus on aging in place parallels the Obama Administration's emphasis on targeting resources to neighborhood needs. Considering that by 2030, we expect older adults (age 65 and older) to make up 20 percent of the population, doubling from 35 to 70 million people, preparing communities to meet the needs of the aging population is timely.

There is no one way of organizing affordable housing and services; successful models may build on existing resources in different ways. The purpose of this Symposium is not to catalog all models, but to highlight current thinking on linking affordable housing and supportive services to facilitate aging in place. Contributors to this issue are not selected as representative of the entire set of experts in this field; rather, our goal is simply to publish articles for this Symposium that would focus on models that effectively link older residents of assisted housing to supportive services.

In "Assessing the Quality of Care Found in Affordable Clustered Housing-Care Arrangements: Key To Informing Public Policy," Stephen M. Golant, Pamela Parsons, and Peter A. Boling describe the need for rigorous evaluation of aging in place models to provide an evidence base on which to build. This article illustrates some complexities of evaluating the range of housing and services models that

---

[1] See Harahan, Sanders, and Stone, (2006).

encompass the multitude of federally subsidized housing settings (for example, HUD Section 202 and Public Housing or the U.S. Department of Agriculture's Section 515 program). The authors also identify implementation challenges for programs that bring supportive services (for example, assisted living or PACE—Program of All-inclusive Care for the Elderly) to the residents of subsidized housing. This article emphasizes that residents are part of the "structure" of the organization and must be taken into consideration when designing changes to support their aging in place.

In "Integrating Community Services Within a NORC: The Park La Brea Experience," Susan Enguidanos, Jon Pynoos, Maria Siciliano, Laura Diepenbrock, and Susan Alexman explore expanding a model that developed in New York City's densely populated highrises, Naturally Occurring Retirement Community (NORC), to Los Angeles. The authors describe the growing pains associated with adapting a model to a new location and the implementation costs involved. Research conducted at Park La Brea highlights the critical importance of planning and implementing a supportive-services model to facilitate aging in place and demonstrates the opportunity to include resident volunteer opportunities.

In "Health-Related Needs Assessment of Older Residents in Subsidized Housing," Victoria Cotrell and Paula C. Carder also describe the lack of empirical research on the services needs of older adults in subsidized housing. They highlight opportunities for partnerships between academics and services providers. By conducting a needs assessment, social work students at Portland State University gained valuable insight about the perceptions of health, well-being, and supportive services needs among aging residents of a subsidized apartment building. The article highlights the diversity of the aging population, including varying languages, cultural competency needs, and use of alternative treatments.

In "Health Indicators: A Proactive and Systematic Approach to Healthy Aging," Fredda Vladeck, Mia Oberlink, Michal D. Gursen, Danylle Rudin, and Rebecca Segel remind us that, just by collecting baseline data (for example, diabetes indicators), we can positively influence practice. The authors also remind us of the fundamental importance of collecting assessment data to target services effectively and to measure their effects. In addition, the authors describe a shift in clinical practice from a reactive approach to a proactive approach that targets the right resources to the right people at the right time.

In "Aging in Place Partnerships: A Training Program for Family Caregivers of Residents Living in Affordable Senior Housing," Alisha Sanders, Robyn Stone, Rhoda Meador, and Victoria Parker explore aging in place in the community and find that informal care provided by family caregivers is the critical link. In their study, most family members did not self-identify as caregivers. Out of respect for residents' privacy in an independent living setting, property staff may know little about their residents' supportive-services needs. Through building a partnership between property staff and family members, residents' ability to age in place can be reinforced. An unexpected benefit of studying the role of family caregivers was the support they gave each other when they began meeting with other caregivers whose family member lived in the same HUD-assisted property.

Articles included in this symposium of *Cityscape* are not peer reviewed. Rather, contributors represent scholars in the field of aging studies who have worked with PD&R and ASPE in recent years.[2] Contributors responded to a call for articles, circulated as an e-mail requesting articles to "explore the topic of affordable housing plus services strategies that link older residents to supportive services so that they can 'age in place'."

Affordable housing and supportive-services providers interested in models facilitating aging in place, as well as researchers designing evaluations of new approaches to affordable housing and services, will benefit from reading these articles.

References

Harahan, Mary F., Alisha Sanders, and Robyn Stone. 2006. *A Synthesis of Findings from the Study of Affordable Housing Plus Services for Low- and Modest-Income Older Adults.* Washington, DC: U.S. Department of Housing and Urban Development, Office of Policy Development and Research; U.S Department of Health and Human Services, Assistant Secretary for Planning and Evaluation, Office of Disability Aging and Long-Term Care Policy.

---

[2] Contributors to this issue of *Cityscape* were solicited by e-mail sent to 12 researchers whom the co-editors knew to be engaged in the discussion of affordable housing and services models. The April 1, 2009, e-mail solicited contributions "featuring the integration of affordable housing and supportive services for older adults."

Assessing the Quality of Care Found in Affordable Clustered Housing-Care Arrangements: Key To Informing Public Policy

Stephen M. Golant
University of Florida

Pamela Parsons
Peter A. Boling
Virginia Commonwealth University

Abstract

Purposively planned or adapted affordable community-based housing arrangements are now available to accommodate low- and modest-income older people who have functional limitations and chronic health illnesses. These housing arrangements introduce various physical infrastructure and dwelling design changes and make available supportive and health-related services that enable their vulnerable older occupants to live independently and manage their health problems. They are known by various names, but are referred to in this article as "affordable clustered housing-care" or "housing-care." Many of these housing arrangements are federally subsidized, rent-assisted, multiunit apartment projects with low-income older occupants who have aged in place or who have recently entered these properties. Despite support for these options from many advocacy groups, research findings that demonstrate the benefits of offering assistance and services in these housing arrangements are far from conclusive. Such evaluations are essential to justify organizational and funding support from the public and nonprofit sectors and to encourage the participation of housing and service providers. Drawing on the work of Donabedian (1992, 1966), this article constructs a theory-driven conceptual framework by which to organize and assess our current knowledge regarding the quality of the assistance and care found in these housing-care settings. To illustrate the practical applications of the framework, the article then describes an ongoing research investigation that is assessing whether supportive services offered in several federally assisted housing projects in Richmond, Virginia, have reduced emergency room use of their elderly occupants.

Introduction

This article focuses on purposively planned or adapted community-based affordable housing that is now available to low- and modest-income older people. The owners, sponsors, or building managements of this housing have variously introduced physical infrastructure and design changes, and they have made available supportive and health-related services to help their predominantly older occupants cope with their physical or cognitive limitations and chronic illnesses. The goal is to help them live independently longer and more securely and to better manage their health problems. More supportive housing environments are also expected to enable these vulnerable older people to avoid or at least delay moves to institutions such as nursing homes, which critics argue offer a more expensive and less satisfactory care environment (Mor et al., 2004).

Most of these housing arrangements consist of affordable multiunit rental buildings, but they also can be single-family dwellings clustered in the same neighborhood. A considerable literature has examined these housing arrangements and they are known by various labels, including service-enriched housing, affordable supportive housing, affordable residential care (assisted living), affordable congregate housing with services, affordable housing plus services, assisted living in subsidized housing, residential supportive services program (SSP), and service-coordinated housing (Golant, 1999; Housing Assistance Council, 2006; Jenkens, Carder, and Maher, 2004; Milbank Memorial Fund and Council of Large Public Housing Authorities, 2006; Pynoos, Feldman, and Ahrens, 2004; Pynoos et al., 2004; Sheehan and Oakes, 2003; Stone, Harahan, and Sanders, 2008; Washko et al., 2007; Wilden and Redfoot, 2002). I have earlier labeled these various housing options as *affordable clustered housing-care* arrangements (sometimes abbreviated "housing-care") because they share several critically important core goals and features (Golant, 2008).

A substantial share of these housing arrangements are federally subsidized, rent-assisted apartment projects funded under the Department of Housing and Urban Development's (HUD's) Section 202, 221, 236, Project-Based Section 8, and Public and Indian Housing programs and under the Department of Agriculture's Rural Rental Housing program (Section 515), or they are financed by the Low-Income Housing Tax Credit (LIHTC) Program. This category also encompasses the unintentional enclaves of older people found in Naturally Occurring Retirement Communities (NORC), who receive SSPs. In addition, it includes those private-pay, licensed assisted-living facilities that are occupied by a significant share of low-income, usually Medicaid-eligible older people, who often have higher acuity care needs (Golant, 2008, 2004; Institute for the Future of Aging Services, 2009; Milbank Memorial Fund and Council of Large Public Housing Authorities, 2006; Pynoos et al., 2004; Wilden and Redfoot, 2002).

Some of these housing arrangements were originally designed to accommodate their more vulnerable older occupants, but most were originally expected to provide affordable housing. Only later did their sponsors or managements variously introduce dwelling design features, such as common area improvements to facilitate service delivery, home security technologies, medical monitoring, preventative health and therapeutic care, household upkeep, and personal assistance solutions (Golant, 2009). Some sponsors or owners of privately owned HUD projects or public housing projects have undertaken far more substantial physical retrofitting to convert their properties to state-licensed assisted-living facilities (HUD, 2005). Typically, the services offered by these housing providers are made affordable with the funding support of public programs and the contributions of nonprofit charitable organizations—usually different sources than those that made affordable rents possible for these same older occupants (Institute for the Future of Aging Services, 2009).

Most elderly occupants in these housing-care settings are more than 70 years old and are more likely to be women and living alone. They have typically aged in place, but larger numbers are also entering these properties at increasingly higher ages (Haley and Gray, 2008; Heumann, Winter-Nelson, and Anderson, 2001). Many report that they do not have family members able to assist if they become sick or disabled (Golant, 1999). Many properties have disproportionately high percentages of minorities who are also eligible for Medicaid assistance (Redfoot and Kochera, 2004).

Advocates of these housing-care arrangements argue that their distinctive demographics make it possible for housing providers and management companies, vendors, merchants, and care agencies to target and serve sizable clusters—critical masses—of residents with similar supportive service and health needs. These economies-of-scale advantages enable them to offer a coordinated and comprehensive array of health-related or independence-supporting services more effectively and less expensively (Golant, 2008, 1999). It becomes easier to justify expenses, such as physically retrofitting the dwellings and common areas of their buildings, hiring a service coordinator or case manager, offering onsite meals, or introducing a health clinic on the building's premises. This approach to providing support and assistance contrasts with that of service providers who must incur substantial travel times and fuel costs in their efforts to reach out to elderly clients who are geographically dispersed across a metropolitan or rural area (Evashwick and Holt, 2000; Medicare Payment Advisory Commission, 2001).

Rationale and Goals of This Article

The availability of these affordable housing-plus-service arrangements depends much on the initiatives and capabilities of the housing sponsors, owners, or management companies. They must be inclined toward serving less independent older people as part of their mission, willing and able to secure funding for their operation from government programs or nonprofit charitable organizations, and able to establish partnerships with appropriate social service and healthcare providers and organizations, such as academic medical centers. Moreover, they must be able to overcome a variety of formidable financing, regulatory, insurance, and management obstacles (Golant, 2003a).

In light of these development and implementation challenges, it becomes especially important to demonstrate the benefits and advantages of offering supportive services and health-related care in these housing arrangements. Housing providers must have convincing evidence of the benefits they stand to gain by offering this assistance. Policymakers at the federal, state, and local levels who are charged with implementing and funding service- or health-related public programs must have a clear understanding of the various pathways by which these housing-care arrangements can positively influence the health and well-being of their lower income older occupants and of how they can realize financial or political benefits. The public health community must have compelling evidence that by helping older people cope more effectively with their chronic illnesses and responding earlier to their needs, it can realize overall lower healthcare expenditures, such as by reducing the use of emergency assistance services.

Despite this need for information, the research findings to date are limited. There is no shortage of anecdotal information, case studies, and descriptive empirical studies pointing to the benefits of these affordable rental housing-care arrangements (Institute for the Future of Aging Services, 2009; Pynoos et al., 2004; Wilden and Redfoot, 2002). Many fewer studies, however, have relied on quasi-experimental research designs that would yield more rigorous and scientifically valid findings (Stone, 2009). Although many advocacy groups believe in the importance of these options, we still lack strong confirmatory research studies.

Drawing on the work of Donabedian (1966), this article constructs a theory-driven conceptual framework by which to organize and assess our current knowledge regarding the quality of the support and services now offered in these housing-care settings. Most experts agree that quality of care "is a remarkably difficult notion to define" (Donabedian, 1966: 167). Which indicators researchers decide to measure and the importance they assign to them will strongly influence their findings and, in turn, will determine whether major stakeholders judge these supportive housing arrangements as successful. Orderly and clear quality-of-care assessments are particularly important for findings to be generalized from one setting to another (Mark, Hughes, and Jones, 2004). To address these issues, this article identifies the extent that past studies have emphasized certain key constructs and policy-relevant indicators over others, points to possible biases and gaps in these assessments, highlights questions that deserve more investigative research, and suggests why past research has sometimes fallen short of providing compelling findings (Golant, 2008). To illustrate the practical applications of the conceptual framework, the article then describes an ongoing research investigation that is assessing whether the extent of support services offered in several federally assisted rental housing projects in Richmond, Virginia, reduces emergency room use by their elderly occupants.

Framework To Assess Quality of Care in Housing-Care Settings

Donabedian's (1966) conceptual framework proposes that quality-of-care assessments must encompass three components—*structure, process,* and *outcomes*. These three components dynamically interact, with the result that the *structure* of a housing-care setting can potentially influence how much and how well care is delivered (that is, *process*), and both these components (structure and process) can influence the optimality of care *outcomes*. Distinguishing the independent and combined influences of these components allows conclusions about whether the most needed services and best strategies for delivering care are selected and whether they are implemented in the most effective and skillful ways to achieve desired outcomes. Formulating these components to frame our review of quality-of-care studies results in the following three evaluative inquiries (see exhibit 1 for further detail):

1. **Evaluating structure.** What is the capacity of the housing-care setting and its community context to offer residents health-related and independence-supporting services?

2. **Evaluating process.** What is actually done and how well? How appropriately designed is the property and its dwellings? Are the health-related and independence-supporting services performed competently and effectively?

3. **Evaluating outcomes.** What resident behaviors or conditions are changed, maintained, and optimized and what housing provider, management, staffing, community, or public policy goals are achieved?

Exhibit 1

Structure, Process, and Outcome Indicators To Evaluate the Quality of Supports and Services in Housing-Care Arrangements (1 of 2)

Evaluating Structure

What is the capacity of the housing-care setting and its community context to offer residents health-related and independence-supporting services?

- Physical infrastructure of dwelling and building (size, condition, architectural design, common area space, accessibility and safety standards, monitoring and information transmission technologies).
- Philosophy of care of housing provider regarding acceptable vulnerability levels of residents, allowed health-related and independence-supporting services, and appropriate service delivery strategies.
- Number and mix of older tenants with physical and cognitive limitations, health problems, and demographic risk factors.
- In-house paid and volunteer building and service staffing; worker-resident ratios; duties, education, and training of staff.
- Outsourced/contracted paid and volunteer staffing; vendor and service provider partnerships (restaurants, home health agencies, public health clinics, visiting nurses, hospitals, pharmacies, academic health centers, adult daycare centers, nonprofit service organizations, Older Americans Act aging network).
- Affordability and accessibility of community-based, independence-supporting, and health-related services.
- Types and mix of health-related and independence-supporting services (housekeeping, homemaking, meals, preventative health services, paratransit services, personal assistance, and home health).
- Types of social and recreational amenities.
- Types of service and healthcare delivery strategies.
- Funding sources to make dwelling and services affordable (rules, regulations, and spending guidelines).
- Regulatory or licensing oversight by governments.

Evaluating Process

What is actually done and how well? How appropriately designed is the property and its dwellings? Are the health-related and independence-supporting services performed competently and effectively?

- Types, amount, regularity, and duration of performed services.
- Physical safety and accessibility records.
- Competence and effectiveness of performed duties, activities, and services.
- Service coordination and continuity patterns.
- Cooperation among housing management, service providers, and family members.
- Staff turnover rates.
- Extent of person-centered care approaches.

Structure, Process, and Outcome Indicators To Evaluate the Quality of Supports and Services in Housing-Care Arrangements (2 of 2)

Evaluating Outcomes

What resident behaviors or conditions are changed, maintained, and optimized and what housing provider, management, staffing, community, or public policy goals are achieved?

- Resident outcomes:
  - Objective indicators: morbidity/mortality rates, hospitalizations, emergency department visits, hospital-housing transitions, physical and mental health, healthy behaviors, disability levels, duration of independent living, departure rates, access to health and independence-supporting services, and social participation.
  - Subjective indicators: individual assessments of residential quarters, health-related and independence-supporting services, self-rated health, ability to live independently, information awareness and accuracy, loneliness and security assessments, and respect for individual rights.
- Provider/management/staffing outcomes:
  - Objective indicators: apartment turnover and vacancy rates, housekeeping and repair crises, building maintenance demands, and tenant-management relations.
  - Subjective indicators: service coordinator satisfaction, manager/staffing satisfaction, and family satisfaction.
- Community/public health outcomes:
  - Demand and costs for ambulance, emergency room visits, police visits, achievement of education and training goals for students in academic health centers; jobs creation and other economic impacts.
- Public policy outcomes:
  - Service delivery costs and savings—Medicaid or other government program expenditures.
  - Demand and public costs for healthcare and emergency services.
  - Rate of nursing home admissions.
  - Funding agency satisfaction.

Evaluating the Structure of Housing-Care Settings

Structure refers to the stable physical, service-related, social, and organizational aspects of the housing-care setting (Closs and Tierney, 1993; Donabedian, 1992; Lezzoni, 1994). Its contents include the physical plant, staffing personnel, work assignments, monitoring, assessment, and information procedures and technologies of a housing-care property and also the management structure and administrative mechanisms that allow the organization to conduct, coordinate, and control its work activities (Jackson, Morgan, and Paolillo, 1986). Structure also encompasses the ambience of a setting; that is, whether its architectural design or layout makes it look and feel more like a residential than a medical environment. A full portrayal of the structure will identify the service resources offered by a housing provider and the different ways these are delivered to their elderly tenants. It will inventory the funding sources that make its services affordable and the rules and regulations that the housing-care management must follow to meet eligibility requirements. A depiction of structure also extends outside the housing-care setting to include the resources of its surrounding community. Housing providers often depend heavily on outside businesses, charitable organizations, and service providers to secure their tenants' care and assistance.

Altogether, the components and attributes of the structural environment define the housing-care setting's capacity to offer different types, levels, and amounts of care and assistance to their older occupants. Delineating these elements is critical therefore to better understanding the extent to which housing providers can potentially achieve specified service- or assistance-related goals or outcomes. Housing providers that offer their residents a preventative health program to improve their health monitoring behaviors can hope to achieve a reduction in the incidence of emergency medical episodes. They cannot, however, realistically claim to help residents cope with their physical limitations so that they can better satisfy their everyday household needs.

We also designate as part of the structural environment the demographic and vulnerability profiles of the older residents. Resident composition is at once a product of the structural environment and an influence on it. For example, older people with more demanding needs for supportive and healthcare services will likely select those housing-care settings that enable them to cope with their physical and cognitive disabilities and unmet social needs (Closs and Tierney, 1993). As they incur more demanding needs for assistance and services, housing-care operators may respond by modifying their physical infrastructure or adding more services.

Studies have offered far more information about the structural environments of housing-care settings than about either their process aspects or care outcomes. Two different explanations account for this bias. First, methodologically, it is far more straightforward to describe and assess the structural environment of a housing-care setting than it is to evaluate how well or effectively it is delivering care or assistance to its tenants, and it is certainly far easier than assessing its care outcomes. Second, housing-care settings consist of a very diverse array of properties and organizations. The emphasis on describing and assessing their structural environments is an acknowledgment that they differ substantially in their capacity to accommodate the service and care needs of their older residents.

Many analyses have focused on the physical infrastructure of housing-care settings. Most find that they usually do not have the physical design features (for example, nurses stations, wide corridors, medication carts) or staffing attributes (for example, workers in nursing uniforms as opposed to street clothes) that resemble a nursing home and its medical model of care. Still, some properties have more institutional-like physical features than others (Wilden and Redfoot, 2002).

Other generalizations are more difficult. These settings differ regarding how well their dwelling units address the safety and accessibility needs of their vulnerable older occupants and whether they contain common areas, such as commercial kitchens, dining areas, and spaces to perform health assessments and therapeutic activities. Haley and Gray (2008) argue that these variations influence the ability of older tenants to age in place in these properties.

Typically, housing-care settings that are licensed and regulated as assisted-living communities have the most extensive physical infrastructures, and they usually must offer additional design and security features if their residents suffer from dementias such as Alzheimer's disease (Redfoot and Kochera, 2004). Government-assisted rental properties that want to be licensed under their state's assisted-living programs have sometimes received funding from the Assisted Living Conversion Program. Since 2001, this HUD program has funded the costs of physically renovating and retrofitting the apartment units and common spaces of its government-assisted rental properties (except public housing) (HUD, 2005). Public housing facilities have used their Section 9 Capital Fund Formula Grants and funding from the HOPE VI program to accomplish similar conversions (Milbank Memorial Fund and Council of Large Public Housing Authorities, 2006).

The HUD Section 202 Supportive Housing for the Elderly Program is often identified as an affordable rental property program that has produced exemplary housing-care settings. But much variation exists in the physical infrastructure of the properties produced under this program, often depending on when the properties were built. Those constructed more recently tend to be smaller and have fewer amenities than those built in the program's earliest phase (1959 to 1974). These smaller housing-care settings often lack the scale to justify the expenses required to introduce physical infrastructure improvements or do not have the physical space to set aside as common areas (Redfoot and Kochera, 2004). Those constructed during the mid-1980s, when government cost-containment measures influenced the design of the projects, are particularly unlikely to have common spaces for service delivery.

The physical layout of the property may also be influential. Efficiency units accommodating the more frail residents in a property may be concentrated in one section of the senior housing building to facilitate more efficient service delivery. But, as one report concluded (Milbank Memorial Fund and Council of Large Public Housing Authorities, 2006: 10), "When services are in one location, it may be difficult to increase or decrease program size as demand changes, which may lead to vacant units or people not receiving services."

Variations in the care and assistance capacity of housing-care settings can often be attributed to the service delivery philosophies of their owners or sponsors. They can hold very different beliefs regarding whether their properties should cater to older people who require help to arrange for their own assistance (Golant, 1999; Harahan, Sanders, and Stone, 2006; Levine and Robinson Johns, 2008). Housing providers can also be influenced by the preferences of their healthier tenants. Older people in some properties often do not welcome a more enriched service environment to help their frail neighbors because they fear that their property will begin to look like a nursing home and they will be continually reminded about the prospects of their own frailty (Golant, 1999).

Together these influences result in housing-care settings with very different care environments. Some owners or managers will assist only their most vulnerable tenants with their housekeeping and transportation needs, or help them find their own services. At the other end of the spectrum are providers who offer their tenants a comprehensive array of supportive services: housekeeping, communal meals, case management, health and wellness services, personal care services, and health-related services. A study of three senior housing communities in the Denver metropolitan area emphasized how housing providers can have very different care goals. Management companies ranged from being proactive to laissez faire in linking their needy residents with supportive services, although tenant participation in each of their service programs was voluntary (Washko et al., 2007). Studies rarely address whether the capacity of a housing-care setting's supportive environment is appropriate in light of the needs of its older occupants and whether it can reasonably accommodate the vulnerabilities of its occupants.

Housing providers also depend on different strategies to provide health-related and supportive services to their more vulnerable tenants (Sheehan and Oakes, 2006). Typically, the approaches fall along a continuum, ranging from providers who use their own in-house staff to offer services to those who contract or partner with their state's or local planning district's aging and health agencies, community-based home care and healthcare agencies, businesses, health professional schools, or hospitals.

Housing-care settings sometimes arrange for their tenants to use the supportive and health-related services offered by co-located or nearby PACE (Program of All-Inclusive Care for the Elderly) centers. A PACE center enrolls older people who meet the criteria for nursing home care and who are eligible for Medicare and Medicaid. It offers both acute and long-term care. Based on age, sex, and medical morbidity criteria, the program receives capitation funding from both Medicare and Medicaid and operates under global risk for all healthcare costs. PACE organizes and coordinates care and social support at a community day health center where participants gather every day; participants' dwellings are also used as gathering points. PACE relies on intensive case and care management of its older participants to control costs. A survey of PACE programs found that nearly all served tenants in multifamily senior housing, both nonprofit-sponsored facilities and public housing. Most were located within a 5 to 10 mile radius and nearly one-third of PACE programs co-located at least one of their day health centers with senior housing (National PACE Association, 2003).

The following list shows the diverse service delivery approaches that housing providers use (Institute for the Future of Aging Services, 2009: 4):

- Paid service coordinators who provide information and referral to community health providers.
- Use of resident volunteers and other lay people trained by health educators to assist residents with the management of chronic illnesses.
- Direct employment of health providers, such as nurses or nurse practitioners, by the housing sponsor to serve residents in one or more of its properties.
- Onsite health clinics operated at regularly scheduled times by community health providers such as a nurse, nurse practitioner or geriatrician.
- Formal collaborations with community health providers (for example, health systems, hospitals, managed care companies, physician practices, public health clinics, federally qualified health centers, pharmacies, etc.) to bring selected health and medical services, health promotion, and preventive care to residents.
- Collaboration with academic health centers to provide clinical learning experiences for medical, nursing or other health professional students.
- Co-location of health providers in or adjacent to the housing community, such as a physician office, a senior center, an adult day health center, or a PACE site.
- Networking one or more residential components co-located within the same campus, such as an assisted living facility and/or a nursing home, with the independent living

property so that residents have access to additional health programs and services (for example, nighttime and weekend emergency assistance, health education and preventive care offerings, personal care, etc.).

- Operation of a licensed home health agency, owned/managed by the housing provider on behalf of residents and the broader community.
- Partnering with a local home health agency to bring personal care services to residents at a more affordable rate.

When deciding on their service delivery strategies, housing-care administrators inevitably must make difficult tradeoffs. For example, contracting for personal care services from an experienced outside vendor may make it easier for a housing provider to initiate a supportive services program and make it unnecessary for the property to be licensed as an assisted-living community. It also reduces exposure to liability, simplifies staff payrolls, and allows the housing provider to offer a more complex menu of services (Milbank Memorial Fund and Council of Large Public Housing Authorities, 2006). In return, however, the housing provider must give up some control over the qualifications and experience of the staff and the frequency, regularity, and continuity of delivered services. There is a dearth of research that has investigated how housing providers decide to offer their services, the strengths and weaknesses of their approaches, and how these decisions influence outcomes.

Most experts agree that service coordinators are key front-line staff in the housing-care setting, because they have the following key responsibilities (Levine and Robinson Johns, 2008: 2):

- Determining the service needs of eligible residents.
- Identifying appropriate services available in the community.
- Linking residents with the needed services.
- Monitoring and evaluating the effectiveness of the supporting services.
- Performing other functions to enable frail and at-risk low-income elderly and nonelderly people with disabilities to live with dignity and independence.

Service coordinators, however, have a very uneven presence in housing-care settings. For example, even in the most lauded HUD Section 202 Supportive Housing for the Elderly Program, only 46 percent of the properties had HUD-funded service coordination and 8 percent had non-HUD-funded service coordination (Levine and Robinson Johns, 2008). Service coordination availability also differs by location. In rural areas and in the South, Section 202 properties were much less likely to have this staff person (Haley and Gray, 2008; Robinson Johns, 2008)—partly because of the smaller buildings in that area of the country. Service coordinators were even less likely to be found in other publicly assisted housing properties, such as those financed by the LIHTC Program (Redfoot and Kochera, 2004).

Generalizing about the job assignments of service coordinators is also not straightforward. Some coordinators are charged only with offering information to their tenants and referring them to appropriate providers. Others act more proactively on any signs of tenants' difficulties, initiating an evaluation of functional limitations, health status, and service needs; referring them to appropriate services; and then monitoring the effectiveness of their care and assistance (Sheehan and Guzzardo, 2008b; Stone, Harahan, and Sanders, 2008). Along with differences in their job descriptions, the coordinators vary in their ability to carry out their responsibilities, which fundamentally is influenced by how many hours a week they work and the number of older tenants they work with, both of which also vary widely (Levine and Robinson Johns, 2008). The different job responsibilities of service coordinators—and their potential effect on resident outcomes—is a good example of why it is so important for studies to carefully describe and evaluate the variations in the service delivery strategies that housing-care settings use.

Housing-care settings will differ considerably regarding their ability to secure the community-based assistance and care that their tenants need (Golant, 2006). At one end of the continuum will be communities that have earned labels such as “healthy,” “friendly,” “livable,” or “life-long” places to age (Lawler and Berger, 2009), because they have local governments and nonprofit charitable organizations that are committed to creating living environments that enable their lower income and vulnerable seniors to age in place (Alley et al., 2007). In urban centers with large academic medical centers and an extensive network of nonprofit community service organizations, for example, there is a greater possibility that housing-care settings may offer onsite care clinics and the full spectrum of supportive and health services for their tenants (Yaggy et al., 2006). At the other end of the continuum are resource-poor, remotely located rural communities that have difficulty delivering most services (Golant, 2003b).

Even though HUD-administered programs make the dwellings of housing-care settings affordable, they infrequently fund the supportive services. Two notable exceptions exist. First, beginning in 1978, the Congregate Housing Services Program offered funding to privately owned, HUD-subsidized rental projects of up to 40 percent of the costs of nonmedical supportive services, such as transportation, personal assistance, housekeeping, meals, and the support of a service coordinator. Since the mid-1990s, the program has no longer accepted new applicants, but privately owned, HUD-subsidized rental projects currently operate 60 previously awarded programs. Second, since the 1992 Housing and Community Development Act, the hiring of service coordinators has been an eligible expense for all HUD-assisted, multifamily developments designed or designated for the low-income elderly (HUD, 1996). Public housing projects also receive service coordinator funding through the Resident Opportunities and Self Sufficiency (ROSS) grant program.

More commonly, the owners or sponsors of HUD-assisted, multifamily properties and public housing projects secure funding from multiple sources, such as private foundations, resident contributions, nonprofit charitable (often faith-based) social agencies, Older Americans Act, the Community Development Block Grant, and state development and service agencies. Funding their supportive service and healthcare programs is one of the biggest challenges housing providers face. When they consider financing alternatives, they must decide whether they are willing to abide by the inevitable rules and regulations that can restrict the incomes and care needs of those they serve. These standards can influence whether they can offer their older tenants light care (for example, help with housekeeping) or heavy care (for example, assistance with more serious mobility limitations). As one example, housing-care settings relying on Medicaid waivers to fund their services must restrict eligible applicants to those with extremely low incomes and limited assets. Prospective tenants must also have the same level of care needs as those residents admitted to their state's nursing homes. These requirements were met by the Coming Home program that the National Cooperation Development Corporation developed and the Robert Wood Johnson Foundation funded in the early 2000s. It achieved an impressive record of developing affordable assisted-living communities in rural areas, but it required that 25 percent or more of a housing-care property's units and services be made "available to persons using Medicaid to pay for services and SSI (Supplemental Security Income) level incomes to pay for rent and meals" and excluded "providers who offer only 'light care' programs intended as a pre-nursing home service" (Jenkens, Carder, and Maher, 2004: 181).

Evaluating the Process of Housing-Care Settings

Process evaluations focus on the extent that the occupants of a housing-care setting take advantage of its design changes and services and whether these are competently and effectively introduced or implemented. This layer of inquiry goes beyond examining a property's business plans, payrolls, contracts, service plans, and mission statements that indicate how things are supposed to perform. Evaluating the process of care reveals whether housing-care settings "are doing the right things, which ones are not, and where we need to improve" (Wenger, 2008: 7). It would reveal, for example, whether management and staff are treating their older tenants more as residents than as clients and how well their supportive services and delivery strategies are actually helping tenants live independently.

An example is helpful. If management of a housing-care setting contracts a nurse to perform wellness services twice a week—6 hours each visit—this service strategy would describe an aspect of its structure—the "capacity" of the housing-care setting to deliver services. An evaluation of process, however, would focus on the actual count of service episodes or visits that the nurse conducted (over some period), along with how well he or she performed these duties.

The research literature offers very little information about how well these housing-care arrangements provide care and whether errors, omissions, inconsistencies, or other failings occur. We know little about whether hired staff members have sufficient training or experience, whether they receive clearly specified job descriptions, and whether they competently attend to the needs or problems of the elder residents. We lack evidence regarding whether housing-care settings implement services using the person-centered approach recommended by many advocates of a social model of care, which emphasizes the importance of management and staff respecting the individuality, privacy, and autonomy of residents (Calkins and Keane, 2008).

What we do know comes mainly from studies of the performance of service coordinators and their relationships with their housing-care setting's management. Sometimes, the job description is at odds with the demands of the position. Service coordinators have complained that they have too many residents in their properties to effectively do their job and report that they are "totally overwhelmed" (Sheehan and Guzzardo, 2008b: 240). The management of the housing-care arrangement may expect coordinators to assess the competence of all applicants, even though they presumably only assist residents who voluntarily accept their services.

Coordinators may also interpret their job descriptions differently than their property managers do, sometimes resulting in "a lack of clear distinctions between the manager's and service coordinator's responsibilities and lines of decision-making authority" (Sheehan and Guzzardo, 2008b: 242). One concern is that if older residents see the service coordinator as simply a representative of management, "they may be less inclined to share personal problems with her" (Sheehan and Guzzardo, 2008b: 240). Guidelines may also be unclear regarding whether service coordinators can share personal information about residents with management—and thus possibly violate their confidentiality rights. Another source of disagreement is the extent to which housing managers assume service coordinators' responsibilities—such as learning about a health problem or resolving residents' complaints and then acting without having carefully consulted with the service coordinator. This practice is potentially troublesome, because managers and coordinators often have divergent interests. The manager is often more inclined to evict rather than help a troubled resident, and the coordinator is more inclined to advocate for the tenant.

Sometimes, how service coordinators interpret their position may not be in the best interests of their older residents. They often "view their responsibility to care for the elder as an emotional obligation and express personal concern for their client" (Sheehan and Guzzardo, 2008a: 260). They describe their relationships with older residents as "family-like" and "feel a strong sense of obligation or duty to care for familyless or isolated elders" (Sheehan and Guzzardo, 2008a: 267). A possible danger is that service coordinators may abuse their influence because of their close, trusting relationships with the older residents. This situation can result in their "disregarding residents' decisions or coaxing residents into changing their mind." Residents may fear retribution if they refuse help. Thus, rather than "empowering residents, these actions may make them more vulnerable" (Sheehan and Guzzardo, 2008a: 276).

An examination of the research literature strongly suggests that the process of care is the most understudied of the three Donabedian assessment components. Ultimately, to evaluate process in these settings, researchers must collect data on numerous key variables, such as the skills and actions of any direct-care providers or the effectiveness of supportive services that outside service agencies, vendors (for example, pharmacies), partnered organizations, and contracted management programs offer. Researchers must measure how physical infrastructure and design changes translate into greater resident safety and accessibility. Reliably measuring these variables is significantly more difficult in housing-care settings than in more regulated environments such as nursing homes and hospitals, where mandated data collection and reporting are routine, most staff have a common employer, and parameters are more clearly defined.

Evaluating the Outcomes of Housing-Care Settings

The range of outcome categories (see exhibit 1) draws attention to the multiple stakeholders who can benefit from the supportive and health-related services offered in housing-care settings. It also emphasizes that judgments regarding the success or failure of these housing-care settings depends largely on who is doing the evaluating—residents, providers, community leaders, or those with public policy agendas. The typology also distinguishes research assessments by whether they rely more on objective ratings than on the subjective appraisals or assessments of individuals—

residents, housing managers, or service coordinators. Past housing-care evaluations have focused on only a limited number of these indicators and some more than others. This failing is potentially important because these indicators will measure very different housing-care setting consequences and thus potentially result in very different judgments of success or failure.

When comparing two or more housing-care settings and attributing outcomes to their property and service environments or contexts, research investigations have not always carefully controlled for the effects of their tenants' demographic and vulnerability profiles (Oakes, 2004). Research investigations have paid even less attention to the complex and reciprocal pathways by which the housing-care arrangement's structural environment and process behaviors have influenced its outcomes.

Federal agencies such as HUD and state government agencies charged with conducting long-term care programs have most frequently judged these housing-care arrangements by whether, in delaying or preventing their tenants from occupying nursing homes, they result in lower long-term care costs (Black, Rabins, and German, 1999; Weinberger et al., 1986).

This evaluation protocol was emphasized early in studies of HUD's Congregate Housing Services Housing Program and the HOPE IV Program. Both programs were designed to link low-income, rent-assisted older residents with a broad range of supportive services. A HUD-contracted report found that these services did not consistently lower nursing home use, hospital admission rates, costs, or mortality rates, nor did they produce gains in individual physical functioning (Ficke and Berkowitz, 2000; Monk and Kaye, 1991).

On the other hand—

> …receipt of services was significantly related to a range of positive outcomes…Service recipients scored significantly higher in four major mental health dimensions (anxiety, depression, loss of behavioral/emotional control, and psychological well-being), social functioning (quantity and quality of social activities), vitality (energy level and fatigue), and other measures of social well-being. (Ficke and Berkowitz, 2000: 3)

Thus, these same authors concluded—

> These findings are consistent with the assumptions in the research designs and the results of prior studies that show the impacts of similar programs address quality of life and care, rather than changing such overt outcomes as institutionalization or otherwise having to leave one's home due to frailty. (Ficke and Berkowitz, 2000: 3)

As four decades of research testify, showing that affordable housing-care settings or, for that matter, any home- and community-based service program can produce cost savings or delay the entry of older people into nursing homes is notoriously difficult (Grabowski, 2006; Muramatsu et al., 2007; Wiener and Brown, 2004). Moreover, the validity of reported outcomes is sometimes unclear, because studies have not consistently implemented careful, randomized treatment control designs that take into account the vulnerabilities of their tenants or the variations in the capacity of housing-care settings to address tenant needs. Regarding the "evaluating the process" section discussed previously, these studies have also not typically evaluated whether the services were delivered competently and effectively. At least one expert has argued that focusing on overall cost savings or reducing nursing home use “creates an especially lofty and difficult-to-meet standard of success” and runs a greater risk of “unfavorable program assessments that weaken arguments for initiating or continuing a supportive service program” (Golant, 2003a: 40).

In contrast, studies that have measured success by relying on less ambitious goals have more positively evaluated the quality of care offered in these settings. These studies have measured the extent to which the tenants report successfully accessing and benefiting from the physical amenities and service resources of the housing-care setting, or the extent to which they have experienced measurable health and well-being outcomes (Harahan, Sanders, and Stone, 2006).

A study of the Massachusetts Supportive Housing Program reported many favorable outcomes. Developed in 1999, the program was designed to create “an assisted living like environment in state funded, public elderly housing” (Mollica and Morris, 2005: i). It offered “service coordination and case management, 24-hour personal care, on-call response, homemaker services, laundry, medication reminders, social activities and at least one meal a day” (Mollica and Morris, 2005: 2). Among the reported findings: earlier recognition of tenant needs; tenant and family members’ greater sense of safety, security, and support; avoidance of tenant crisis situations; the benefits of relieving property managers of tenant “supportive service” responsibilities; reduced tenant turnover; and more effective intervention strategies.

Researchers studying nutrition and human services interventions that targeted older and younger people with disabilities living in the Seattle Housing Authority’s Low Income Public Housing program reported similarly favorable outcomes (Siu, 2009). HUD’s ROSS Resident Service Delivery Models—Elderly and Persons with Disabilities grant program funded the study. Using a quasi-experimental research design, researchers reported greater social interaction with other residents, fewer residents with chronic conditions, lower eviction rates, improved grocery delivery service, and more frequent preventative health procedures.

A clinic operated by student nurses, which provided health screening, education, and outreach and referral services 2 days a week in the community rooms of several public housing properties, also reported favorable results: better access of older residents to needed care, better identification and management of hypertension, improved diabetes disease outcomes, and better preparation for emergency medical situations (Ellenbecker, Byrne, O’Brien, and Rogosta, 2002). Comparable healthcare use outcomes were tracked in a case study of clients using an academic nursing clinic located in a highrise apartment building for low-income seniors. Hospitalizations and emergency room use were reduced over a 1-year period (Badger and McArthur, 2003).

Assessment and intervention programs specifically designed for elderly people in public housing have tended to prudently focus on the most demanding health issues, such as psychiatric illness. Evaluation of the PATCH (Psychogeriatric Assessment and Treatment in City Housing) Program adds to the evidence base regarding mental illness and elderly people in public housing. This randomized clinical trial compared usual care with a specific intervention: training case-manager personnel to provide onsite referrals coupled with mobile onsite nurse assessment for psychiatric illness. Positive outcomes included reduced symptom severity, but, when comparing the treatment group with the usual care group, no reduction in residential moves of the elderly people was found, as measured by evictions or the frequency of shifts to other settings, including nursing homes and board-and-care facilities (Rabins, et al., 2000; Robbins et al., 2000).

A very promising ongoing monitoring and evaluation system is being conducted at two NORC sites within the Charles E. Smith Life Communities in Rockville, Maryland. Here, the residents are receiving onsite social and health services from four service agencies. The evaluation is focusing on service provision and utilization patterns, staff compliance, and client satisfaction. The study is one of the first to recognize the importance of measuring the initial health status of a tenant sample with the intention of measuring how health outcomes change over time (Cohen-Mansfield and Frank, 2009). Worth noting, however, is that it would be difficult if not impossible to implement this research design in HUD-assisted housing because laws related to the Fair Housing Act would not allow for the mandatory collection of individual resident health data. Acknowledging individual privacy rights while increasing understanding of resident healthcare needs remains a challenge (Fair Housing Act, 1968).

Studies have not specifically examined how PACE sites, which may have different care patterns, influence the outcomes of senior housing occupants (Mukamel et al., 2007; Temkin-Greener, Bajorska, and Mukamel, 2008). Hospital admission rates of the frail older population in PACE centers, however, usually match the general Medicare population rate and are well below rates experienced by nursing home residents (Wieland et al., 2000). In addition, the number of hospital and nursing home days, in general, is also reduced (Hirth, Baskins, and Dever-Bumba, 2009; Sands et al., 2006).

The most consistently reported outcome in housing-care settings is the high ratings of service coordinators that both residents and managers give (Ficke and Berkowitz, 2000). Service coordinators receive credit for increasing service awareness, better linking older people with needed services, and finding solutions to their problems (Levine and Robinson Johns, 2008; Sheehan and Guzzardo, 2008b). Older residents emphasize they have a greater "sense of security and emotional support" and stronger social supports (Sheehan and Guzzardo, 2008a: 263).

The operators of rent-assisted housing-care properties have consistently emphasized that they can manage their buildings more easily and effectively because the service coordinators take responsibility for addressing their residents' assistance and health needs. The following bullet points list some of the favorable outcomes (Commission on Affordable Housing and Health Facility Needs for Seniors in the 21st Century, 2002; Golant, 2003a; Levine and Robinson Johns, 2008; Stone, Harahan, and Sanders, 2008):

- Lower apartment turnover and vacancy rates.
- Fewer housekeeping and repair crises.
- Decrease in legal fees/evictions/time in court.
- Greater marketability of units.
- Fewer unscheduled visits from human service professionals.

- Fewer crises, such as fires or accidents.
- Fewer off-hour emergency calls to management and local paramedics.
- Better bricks and mortar building management.
- Fewer failed unit inspections.
- Reduced time pressures on administrators.
- Better tenant-housing management relations.

An Evidence-Based Research Investigation: Emergency Room Use in Publicly Assisted Rental Housing in Richmond

A research project just under way applies this articles' quality-of-care conceptual framework to evaluate whether lower income older residents occupying more service-enriched affordable rental complexes are less likely to use acute care health services—as indicated by their ambulance-related emergency room usage (the outcome indicator).

Research Plan

The focus is on the federally funded rent-assisted housing buildings in the southeastern city of Richmond, Virginia. Three major rental housing programs are included: (1) Section 202, (2) seniors-only and mixed-age Public Housing Authority buildings, and (3) privately owned conventional apartment buildings occupied by elderly residents who are recipients of Section 8 vouchers. Older recipients of Section 8 vouchers are specifically included as a control or reference group, because their buildings are less likely to offer any supportive services or health-related services. Emergency room use patterns are treated as baseline measures that are compared with those of older residents in the other two programs, which are more likely to offer services.

The settings will be structurally distinguished by their physical features, the demographics of their older tenants, the types and delivery strategies of their supportive services, and, specifically, the availability of onsite staffing, such as service coordinators or equivalent positions. We will distinguish several characteristics of the neighborhoods of these buildings, particularly the poverty status of their populations.

Process indicators will include the roles played by service coordinators in the service delivery process and the frequency and timeframe of the service delivery strategies by which tenants receive different types of supportive and health-related services.

Research Methods

HUD administrative data for elderly people occupying the rent-assisted housing in Richmond, Virginia, will be linked with individual-level ambulance records from the Richmond Ambulance Authority database for a 2-year period (calendar years 2005 through 2006). U.S. census tract data will be linked with tenant-level data from HUD's Public Information Center (PIC) and Tenant

Rental Assistance Certification System (TRACS), which HUD uses to manage its rental assistance programs. PIC enables housing authorities to electronically submit tenant-level information to HUD, including resident characteristics such as age, race, and gender. TRACS contains data fields describing household characteristics, such as financial income and sources, rent and expense allowances, unit characteristics, the presence or absence of disability, previous housing circumstances, and reasons for moving out.

A telephone survey will be administered to the managers of the rent-assisted and voucher-occupied buildings to obtain measures of service availability (for example, presence of onsite social worker, care coordinators, or nursing services). The interview schedule will be pretested within one public housing, one Section 8, and one Section 202 building to assure content validity of interview questions.

Planned multivariate statistical analyses will disentangle the effects of housing program type, building-specific characteristics, community context features, service resource capacity, service use, and resident characteristics on the tenants' emergency room use. Of particular interest will be emergency room use comparisons with buildings occupied by housing voucher recipients who cannot avail themselves of onsite supportive services—representing a control group for this analysis. Although this analysis does not provide direct resident-level health status information, it does begin to evaluate the differences between and among program types and demonstrate how the availability of support services influences one type of healthcare use, namely, emergency ambulance transport. Higher rates of ambulance transport are likely to indicate that differences in the health status of individuals exist within the housing programs, but they may also reflect the absence of structured support programs.

More comprehensive and definitive future evaluations that also measure individual physical well-being from healthcare records and resident assessments can build on the findings of this study. The current missing link in studies evaluating the effectiveness of support services in housing programs is the availability of resident-level health data that can be linked to health and cost outcomes. A need exists to develop randomized studies that include the structure of the housing setting (context) combined with resident health characteristics (including level of frailty), while assessing the effect of the process of care delivery on health outcomes over time. Only then will we be able to fully define and evaluate housing service outcomes that can support policy change. Donabedian's conceptualization provides an easy-to-apply framework to help guide the designing of evaluation research focused on residents and their housing programs.

Summary

Affordable clustered housing-care arrangements have emerged as an important option that can help frail low- and moderate-income older populations maintain their health and independence. Despite the many descriptive studies of these housing arrangements, we still lack carefully constructed evidence-based assessments to justify their receiving stronger public policy commitments and funding support or to gain the participation of most affordable-housing providers. Given the economic constraints facing governmental programs for housing and health care, we must offer more compelling evidence of the beneficial outcomes that result from linking affordable housing with independence-supporting and health-related services. We need more research on what works, who benefits, and why. We have proposed an evaluative framework based on the work of Donabedian to identify the range of quality-of-care assessment questions and issues, have reviewed how the current literature now informs this assessment framework, and have outlined an ongoing research study illustrating its applicability. Affordable clustered housing-care settings offer one important public policy solution that can respond to the aging-in-place demands of tomorrow's older baby boomer population and should be included in any discussions on how American society can best cope with its age wave, which is building in strength and nearing the shore.

Acknowledgments

Stephen Golant thanks AcademyHealth and the Commonwealth Fund for their earlier support of his research on affordable clustered housing-care.

Authors

Stephen M. Golant is professor of geography at the University of Florida, Gainesville.

Pamela Parsons is assistant professor of internal medicine in the Section of Geriatrics at Virginia Commonwealth University.

Peter A. Boling is interim division chair, Division of General Medicine, and Director of Long-Term Care and Geriatrics at Virginia Commonwealth University.

References

Alley, Dawn, Phoebe Liebig, Jon Pynoos, Tridib Banerjee, and In Hee Choi. 2007. "Creating Elder-Friendly Communities: Preparations for an Aging Society," *Journal of Gerontological Social Work* 49: 1–18.

Badger, Terry A., and Donna B. McArthur. 2003. "Academic Nursing Clinic: Impact on Health and Cost Outcomes for Vulnerable Populations," *Applied Nursing Research* 16: 60–64.

Black, Betty S., Peter V. Rabins, and Pearl S. German. 1999. "Predictors of Nursing Home Placement among Elderly Public Housing Residents," *The Gerontologist* 39: 559–568.

Calkins, Margaret, and William Keane. 2008. "Tomorrow's Assisted Living and Nursing Homes: The Converging Worlds of Residential Long-Term Care." In *The Assisted Living Residence: A Vision for the Future*, edited by Stephen M. Golant and Joan Hyde. Baltimore: The Johns Hopkins University Press: 86–118.

Closs, S. Jose, and Alison J. Tierney. 1993. "The Complexities of Using a Structure, Process and Outcome Framework: The Case of an Evaluation of Discharge Planning for Elderly Patients," *Journal of Advanced Nursing* 18: 1279–1287.

Cohen-Mansfield, Jiska, and Julia K. Frank. 2009. "The Development of an Ongoing Monitoring and Evaluation System in a NORC Service Organization," *Health Services Management Research* 22: 17–26.

Commission on Affordable Housing and Health Facility Needs for Seniors in the 21st Century. 2002. *A Quiet Crisis in America: A Report to Congress*. Washington, DC: U.S. Government Printing Office.

Donabedian, Avedis. 1992. "The Role of Outcomes in Quality Assessment and Assurance," *Quality Research Bulletin* 18: 356–360.

———. 1966. "Evaluating the Quality of Medical Care," *Milbank Memorial Fund Quarterly* 44: Suppl: 166–206.

Ellenbecker, Carol H., Kathleen Byrne, Eileen O'Brien, and Christine Rogosta. 2002. "Nursing Clinics in Elder Housing: Providing Access and Improving Health Care Outcomes," *Journal of Community Health Nursing* 19: 7–15.

Evashwick, Connie, and Timmothy J. Holt. 2000. *Integrating Long-Term Care, Acute Care, and Housing: Building Success through a Continuum of Care*. St. Louis, MO: The Catholic Health Association of the United States.

Fair Housing Act Executive Order 11063, Title VIII of the Civil Rights Act of 1968. 1988. http://www.hud.gov/offices/fheo/FHLaws/index.cfm (accessed February 2, 2010).

Ficke, Robert C., and Susan G. Berkowitz. 2000. *Report to Congress: Evaluation of the Hope for Elderly Independence Demonstration Program and the New Congregate Housing Services Program*. Washington, DC: U.S. Department of Housing and Urban Development.

Golant, Stephen M. 2009. "Aging in Place Solutions for Older Americans: Groupthink Responses Not Always in Their Best Interests," *Public Policy & Aging Report* 19 (1): 33–39.

———. 2008. "Affordable Clustered Housing-Care: A Category of Long-Term Care Options for the Elderly Poor," *Journal of Housing for the Elderly* 22: 3–44.

———. 2006. "Supportive Housing for Frail, Low-Income Older Adults: Identifying Need and Allocating Resources," *Generations* 24: 37–43.

———. 2004. "Do Impaired Older Persons with Health Care Needs Occupy U.S. Assisted Living Facilities?" *Journal of Gerontology: Social Sciences* 59: S68–79.

———. 2003a. "Political and Organizational Barriers to Satisfying Low-Income U.S. Seniors Need for Affordable Rental Housing with Supportive Services," *Journal of Aging and Social Policy* 12: 36–57.

———. 2003b. "The Urban-Rural Distinction in Gerontology: An Update on Research." In *Annual Review of Gerontology and Geriatrics, Vol. 23, Aging in Context: Socio-Physical Environments*, edited by Hans-Werner Wahl, Rick J. Scheidt, and Paul G. Windley. New York: Springer: 280–312.

———. 1999. *The CASERA Project*. Tallahassee, FL: Stephen M. Golant and Margaret Lynn Duggar & Associates, Inc. http://www.geog.ufl.edu/faculty/golant/CASERAREPORTFINAL.pdf.

Grabowski, David C. 2006. "The Cost-Effectiveness of Noninstitutional Long-Term Care Services: Review and Synthesis of the Most Recent Evidence," *Medical Care Research and Review* 63: 3–28.

Haley, Barbara A., and Robert W. Gray. 2008. *Section 202 Supportive Housing for the Elderly: Program Status and Performance Measurement*. Washington, DC: U.S. Department of Housing and Urban Development, Office of Policy Development and Research.

Harahan, Mary F., Alisha Sanders, and Robyn I. Stone. 2006. *Lessons From the Workshops on Affordable Housing Plus Services Strategies for Low- and Moderate-Income Seniors*. Washington, DC: Institute for the Future of Aging Services.

Heumann, Leonard, Karen Winter-Nelson, and James R. Anderson. 2001. *The 1999 National Survey of Section 202 Elderly Housing*. Washington, DC: AARP.

Hirth, Victor, Judith Baskins, and Maureen Dever-Bumba. 2009. "Program of All-Inclusive Care (PACE): Past, Present, and Future," *Journal of the American Medical Directors Association* 10: 155–160.

Housing Assistance Council. 2006. *Formulas for Success: Housing Plus Services in Rural America*. Washington, DC: Housing Assistance Council.

Institute for the Future of Aging Services. 2009. *Affordable Senior Housing Communities and Health-Related Services*. Washington, DC: Institute for the Future of Aging Services.

Jackson, John H., Cyril P. Morgan, and Joseph G.P. Paolillo. 1986. *Organization Theory: A Macro Perspective for Management*. Englewood Cliffs, NJ: Prentice Hall.

Jenkens, Robert, Paula C. Carder, and Lindsay Maher. 2004. "The Coming Home Program: Creating a State Road Map for Affordable Assisted Living Policy, Programs, and Demonstrations," *Journal of Housing for the Elderly* 18: 179–201.

Lawler, Kathryn, and Cathie Berger. 2009. "Lifelong Communities: Re-Imagining the Atlanta Region from the Ground Up," *Generations* 33: 76–78.

Levine, Cheryl A., and Ashaki Robinson Johns. 2008. *Multifamily Property Managers Satisfaction with Service Coordination*. Washington, DC: U.S. Department of Housing and Urban Development, Policy Development and Research.

Lezzoni, Lisa I. 1994. *Risk Adjustment for Measuring Health Care Outcomes*. Ann Arbor, MI: Health Administration Press.

Mark, Barbara A., Linda C. Hughes, and Cheryl B. Jones. 2004. "The Role of Theory in Improving Patient Safety and Quality Health Care," *Nursing Outlook* 52: 11–16.

Medicare Payment Advisory Commission. 2001. *Report to the Congress: Medicare in Rural America*. Washington, DC: Medicare Payment Advisory Commission.

Milbank Memorial Fund and Council of Large Public Housing Authorities. 2006. *Public Housing and Supportive Services for the Frail Elderly: A Guide for Housing Authorities and Their Collaborators*. New York: Milbank Memorial Fund.

Mollica, Robert, and Michael Morris. 2005. *Massachusetts Supportive Housing Program*. New Brunswick, NJ: Rutgers Center for State Health Policy.

Monk, Abraham, and Lenard W. Kaye. 1991. "Congregate Housing for the Elderly: Its Need, Function, and Perspectives." In *Congregate Housing for the Elderly: Theoretical, Policy, and Programmatic Perspectives*, edited by Lenard W. Kaye and Abe Monk. New York: Haworth Press: 5–19.

Mor, Vincent, Jacqueline Zinn, Joseph Angelelli, Joan M. Teno, and Susan C. Miller. 2004. "Driven to Tiers: Socioeconomic and Racial Disparities in the Quality of Nursing Home Care," *Milbank Quarterly* 82: 227–256.

Mukamel, Dana B., Derick R. Peterson, Helena Temkin-Greener, Rachel Delavan, Diane Gross, Stephen J. Kunitz, and T. Franklin Williams. 2007. "Program Characteristics and Enrollees' Outcomes in the Program of All-Inclusive Care for the Elderly (PACE)," *Milbank Quarterly* 85: 499–531.

Muramatsu, Naoko, Hongjun Yin, Richard T. Campbell, Ruby L. Hoyem, Martha A. Jacob, and Christopher O. Ross. 2007. "Risk of Nursing Home Admission Among Older Americans: Does States' Spending on Home- and Community-Based Services Matter?" *Journal of Gerontology: Social Sciences* 62: S169–178.

National PACE Association. 2003. *PACE and Senior Housing Survey*. Alexandria, VA: National PACE Association.

Oakes, J. Michael. 2004. "The (Mis)Estimation of Neighborhood Effects: Causal Inference for a Practicable Social Epidemiology," *Social Science & Medicine* 58: 1929–1952.

Pynoos, Jon, Penny Hollander Feldman, and Joann Ahrens. 2004. *Linking Housing and Services for Older Adults: Obstacles, Options, and Opportunities*. New York: Haworth Press.

Pynoos, Jon, Phoebe Liebig, Dawn Alley, and Christy M. Nishita. 2004. "Homes of Choice: Towards More Effective Linkages between Housing and Services," *Journal of Housing and the Elderly* 18: 5–49.

Rabins, Peter V., Betty S. Black, Robert Roca, Pearl German, Marsdens McGuire, Bettrice Robbins, Rebecca Rye, and Larry Brant. 2000. "Effectiveness of a Nurse-Based Outreach Program for Identifying and Treating Psychiatric Illness in the Elderly," *Journal of the American Medical Association* 283: 2802–2809.

Redfoot, Don, and Andrew Kochera. 2004. "Targeting Services to Those Most at Risk: Characteristics of Residents in Federally Subsidized Housing," *Journal of Housing and the Elderly* 18: 137–163.

Robbins, Beatrice, Rebecca Rye, Pearl S. German, Mary Tlasek-Wolfson, Jane Penrod, Peter V. Rabins, and Betty S. Black. 2000. "The Psychogeriatric Assessment and Treatment in City Housing (PATCH) Program for Elders with Mental Illness in Public Housing: Getting through the Crack in the Door," *Archives of Psychiatric Nursing* 14: 163–172.

Sands, Laura P., Yung Wang, George P. McCabe, Krisofer Jennings, Catherine Eng, and Kenneth E. Covinsky. 2006. "Rates of Acute Care Admissions for Frail Older People Living With Met Versus Unmet Activity of Daily Living Needs," *Journal of American Geriatrics Society* 54: 339–344.

Sheehan, Nancy W., and Mariana T. Guzzardo. 2008a. “Personalization of Helping Relationships: Resident Service Coordinators’ Work with Elderly Residents,” *Home Health Care Services Quarterly* 27: 259–279.

———. 2008b. “Resident Service Coordinators: Roles and Challenges in Senior Housing,” *Journal of Housing for the Elderly* 22: 240–262.

Sheehan, Nancy W., and Claudia E. Oakes. 2006. “Bringing Assisted Living Services Into Congregate Housing: Housing Directors’ Perspectives,” *Journal of Aging and Social Policy* 18: 65–86.

———. 2003. “Bringing Assisted Living Services Into Congregate Housing: Residents’ Perspectives,” *The Gerontologist* 43: 766–770.

Siu, Collin. 2009. *Impacts of Nutrition and Human Services Interventions on the Health of Elderly and Disabled Persons in Public Housing*. Washington, DC: Congressional Hunger Center.

Stone, Robyn I. 2009. “Affordable Senior Housing Plus Services: Opportunities for Research.” Paper presented at Gerontological Society of America (Pre-Conference), November 18, Atlanta, GA.

Stone, Robyn I., Mary F. Harahan, and Alisha Sanders. 2008. “Expanding Affordable Housing with Services for Older Adults: Challenges and Potential.” In *The Assisted Living Residence: A Vision for the Future*, edited by Stephen M. Golant and Joan Hyde. Baltimore: The Johns Hopkins University Press: 329–350.

Temkin-Greener, Helena, Alina Bajorska, and Dana B. Mukamel. 2008. “Variations in Service Use in the Program of All-Inclusive Care for the Elderly (PACE): Is More Better?” *Journal of Gerontology: Biological Sciences and Medical Sciences* 63: 731–738.

U.S. Department of Housing and Urban Development (HUD). 2005. “Assisted Living Conversion Program (ALCP) for Eligible Multifamily Housing Projects,” *Federal Register* 70: 14148–14166.

Washko, Michelle, Alisha Sanders, Mary F. Harahan, Robyn I. Stone, and Enid Cox. 2007. *Connecting Affordable Senior Housing and Services: A Descriptive Study of Three Colorado Models*. Washington, DC: Institute for the Future of Aging Services.

Weinberger, Morris, Jeffrey C. Darnell, William M. Tierney, B.L. Martz, Sharon L. Hiner, Jennifer Barker, and Peggy J. Neill. 1986. “Self-Rated Health as a Predictor of Hospital Admission and Nursing Home Placement in Elderly Public Housing Tenants,” *American Journal of Public Health* 76: 457–459.

Wenger, Neil S. 2008. *Do We Want to Measure the Quality of Care for Vulnerable Older People? The Acove Approach*. Syracuse, NY: Maxwell School of Syracuse University, Center for Policy Research.

Wieland, Darryl, Vicki L. Lamb, Shae R. Sutton, Rebecca Boland, Marleen Clark, Susan Friedman, Kenneth Brummel-Smith, and G. Paul Eleazer. 2000. “Hospitalization in the Program of All-Inclusive Care for the Elderly (PACE): Rates, Concomitants, and Predictors,” *Journal of American Geriatrics Society* 48: 1373–1380.

Wiener, Joshua M., and David Brown. 2004. *Home and Community-Based Services: A Synthesis of the Literature*. Washington, DC: Administration on Aging.

Wilden, Robert, and Donald L. Redfoot. 2002. *Adding Assisted Living Services to Subsidized Housing Serving Frail Older Persons with Low Incomes*. Washington, DC: AARP, Public Policy Institute.

Yaggy, Susan D., J. Lloyd Michener, Duncan Yaggy, Mary T. Champagne, Mina Silberberg, Michelle Lyn, Fred Johnson, and Kimberly S. Yarnall. 2006. "Just for Us: An Academic Medical Center-Community Partnership to Maintain the Health of a Frail Low-Income Senior Population," *The Gerontologist* 46: 271–276.

Integrating Community Services Within a NORC: The Park La Brea Experience

Susan Enguidanos
Jon Pynoos
Maria Siciliano
University of Southern California

Laura Diepenbrock
Susan Alexman
Jewish Family Service of Los Angeles

Abstract

Naturally Occurring Retirement Communities (NORCs) are neighborhoods or buildings in which older people represent a significant proportion of the population, but for whom the communities were not planned to meet their needs. Bringing activities and services to these communities provides a mechanism for increasing access to needed resources and supports, enabling older adults to continue to reside within their community, or age in place. In 2003, Jewish Family Service of Los Angeles (JFS-LA) received funding to develop social services within Park La Brea, a 162-acre, private apartment complex consisting of 4,200 apartment units located in eighteen 13-story towers with approximately 1,500 senior residents. The program, termed LIFE (Living Independently in a Friendly Environment), was designed to involve organizations that could offer support, provide feedback, link the program to the wider community, and create innovative approaches. The development of the program included formative evaluation, program implementation, and outcome measurement. This article describes the process of engaging the private owners of the apartment community; methods employed to involve community residents on many levels, including conducting needs assessments, developing volunteer roles, and creating a leadership training program and an advisory council; and programs and services that were developed in response to these processes. The article also discusses implications for sustainability.

Background

This case study examines the efforts of a social service agency to develop services and programs in Park La Brea, a Naturally Occurring Retirement Community (NORC) in Los Angeles. Although this residential community had a large population of older adults, it was not planned to meet their needs and had no formal connections to services. A primary objective of the program was to identify and develop needed services to help maintain seniors in the community, create an opportunity for older people to act as resources, enable different generations to interact, and take advantage of the economies of scale to efficiently provide new services and activities. In many ways, the approach built on the NORC Supportive Services Program (NORC-SSP) model, pioneered by Fredda Vladeck and her colleagues in New York (Vladeck, 2004).

The process included achieving buy-in from the property management company, conducting a needs assessment of residents, and developing a range of services and activities, including opportunities for volunteering.

Park La Brea NORC Program: LIFE

In 2003, the Administration on Aging (AoA) awarded Jewish Family Service of Los Angeles (JFS-LA) a grant to develop services for NORCs. One site for the JFS NORC program, entitled LIFE (Living Independently in a Friendly Environment), was Park La Brea. Park La Brea is a 162-acre private development, managed by a for-profit company, consisting of 4,200 apartment units located in eighteen 13-story towers, with garden apartments ranging from one to three bedrooms. The towers resemble blocks of housing located around green spaces, inspired by the work of Le Corbusier, the internationally renowned French architect and planner.

Sometimes referred to as a “minicity,” Park La Brea has its own security patrol and recreation center. The apartments were initially planned and developed in the 1940s and 1950s as a residential community for moderate-income people by Metropolitan Life Insurance Company, which also built a “sister” complex with a similar street layout, Parkmerced in San Francisco, and other large communities, such as Stuyvesant Town and Peter Cooper Village in New York. In many ways it appears as an eastern model that has been transplanted to Southern California.

Park La Brea was partially gated in 1980. By 1995, to market the community as a more upscale setting, the owners had updated it by adding a community center, health club, pool, and café. Park La Brea also began to attract an increasing number of Korean Americans, partly drawn by its close proximity to shopping and a highly regarded nearby grammar school.

JFS staff considered Park La Brea a community where older people who were aging in place needed services, but from which very few residents sought assistance from its nearby Freda Mohr Senior Center. The exception was for Meals on Wheels. Staff thought that older Park La Brea residents either were unaware of the Freda Mohr Senior Center or perceived that it “was for poor people, but not for them.” Nevertheless, JFS considered the older residents of Park La Brea an untapped market whose lives would be improved considerably by the addition of services and activities.

In 2000, Park La Brea had a sizeable older population that totaled about 1,500 people over the age of 60, or 14 percent of its 11,000-resident population, many of whom were aging in place. The median income of residents aged 65 to 74 was $34,926; for those aged 75 and older, it was $30,167, with about 2.6 percent of people over the age of 65 living below the poverty level (U.S. Census Bureau, 2000).

NORC Structure

Three initial partners on the project included the Jewish Federation of Greater Los Angeles, a local medical center (Cedars-Sinai), and the Area Agencies on Aging (AAAs) of the city and county of Los Angeles. JFS, the grant recipient, was responsible for overall planning and implementation of the project. The medical center helped plan the initial needs assessment and provided health screenings, and the AAAs were available to receive referrals for services.

LIFE formed a steering committee, a service-provider coalition, and an advisory council at Park La Brea to guide and support the program. The steering committee, which consisted of more than 20 organizations, agencies, and political representatives, had the purpose of engaging community leaders and organizations in actively participating in the NORC program. The service-provider coalition was composed of local agencies and government departments that might provide services to residents and refer clients to LIFE. The advisory council consisted of local community residents charged with tasks such as helping to identify needs and recruiting members and volunteers.

Initially, LIFE owed its slow start to the relative newness of the program, the difficulty in recruiting residents to participate in the needs assessment, the absence of an advisory council, and the need to develop a trusting, positive relationship with property management and the existing tenant organization. In addition, few existing onsite services or programs were offered specifically for older people. The leaders (themselves older men) of the Park La Brea tenant organization, which predated the NORC, had been individually trying to assist tenants, but they were stretched beyond their capacity. Consequently, many residents in need were not receiving outside supportive services or assistance from community-based organizations and agencies. LIFE therefore introduced a unique set of programs and events into the community.

NORC Program Components

Management Buy-In

The relationship with the property's management is considered key to the success of a NORC. The greater the support and continued participation by management, the more successful the NORC will be at responding to residents' needs and concerns (MacLaren, Landsberg, and Schwartz, 2007). Because Park La Brea was relatively new territory for JFS and had a private owner with whom JFS had had no previous relationship, the extent of management support and participation was unknown. JFS assumed that older residents were not a priority for the management, because marketing of the complex targeted younger people, and many older residents lived in rent-stabilized units, keeping rents lower than they otherwise would have been. On the other hand, older people were considered relatively stable tenants who paid their rent on time, stayed for long periods of time, and caused few disturbances. The small number of older people who had difficulties were those who needed help with social services or were isolated, both problems that the Park La Brea management and its security patrol felt unqualified to address.

Park La Brea management staff felt overburdened by the problems brought to them by older residents and dismayed about the prospect of having to evict older tenants who could no longer care for themselves or their apartments. Management bought into the concept of being part of a national demonstration project and the positive public relations this would provide as a senior-friendly community. As it turned out, Park La Brea staff were relieved to have the burden taken off them and pleased to have help in trying to meet older residents' needs. The management agreed to provide office space, offered priority use of their facilities for programming and activities, and brought in their activity director to partner on activity planning, which made branding of the program easier and facilitated access to program services.

Cooperation from the Park La Brea management staff was a key factor in the success of the project. In addition to providing space, management staff helped to publicize and distribute the needs assessment survey, introduced LIFE staff to key residents, and referred seniors to LIFE programs and services. This support was critical to ensure the ability to provide an onsite presence by LIFE, including designated office space, areas to run activities, and help from maintenance staff to set up spaces for meetings and large events.

Needs Assessment

The first phase of LIFE consisted of a comprehensive needs assessment process. The needs assessment process is critical to identifying the exact needs of communities, NORCs, and their residents. An assessment can determine or verify gaps or duplications in service coordination, locate missing linkages, determine the availability and accessibility of services, gauge resident awareness (or lack thereof) of services, identify the ways in which residents prefer to access service information, and can identify the most important needs of residents (Nolin et al., 2006). Programs can then be structured to respond to the identified needs.

The needs assessment conducted for LIFE included focus groups with older residents, a targeted survey of Park La Brea senior residents, and an assessment of the residents' perceived needs among service providers. The needs assessment, which was intended to drive the program, also served as an initial entrée into the community and a mechanism to involve seniors.

Before the formal needs assessment, JFS sent a survey asking older residents what types of activities they currently engaged in and if they already volunteered themselves or would like to. Respondents were recruited to participate in the formal needs assessment. Focus group data provided qualitative feedback from participants, and the needs assessment survey provided quantitative indication of needs and interests of these older community members. Data from the older residents were triangulated with survey results from the service providers to determine whether the needs existed because of gaps in service provision versus other possible barriers in accessing services (for example, knowledge, service eligibility, transportation).

Focus Groups

From June through July 2004, six focus group sessions were held with older adults residing in Park La Brea, involving 41 individuals. LIFE social workers conducted the focus groups, which were approximately 45 minutes long. The social workers, who conducted the focus groups in English, asked the following questions:

- What are the needs of older adults in your community?
- What would make it easier for you to participate in activities or access services?
- Identify one service you would create if you could select anything.
- Identify several features of your community that indicate that it is a good place to grow old.

All focus groups identified safety as a primary concern, including issues such as physical access (for example, wheelchair ramps, stairwell lighting), emergency preparedness (for example, earthquake, fire), personal emergencies, and emergency response systems. In addition, across the groups, participants identified needs such as transportation; emergency support and other services for frail, isolated older residents living alone; a resource directory; and social activities. They often cited both public and private transportation as needs, along with the availability of parking. They listed a reliable means for daily transportation and a need for emergency transportation from the hospital and other emergency care facilities. They identified daily telephone check-in programs for isolated older residents to ensure these residents' safety. Almost every group mentioned the need for centralized, comprehensive information or resource handbooks listing activities, events, and other services available to older adults. Participants used the focus groups as an information exchange opportunity. The final question from the assessment asked what community features residents thought contributed to making Park La Brea a good place to grow old. In response, residents consistently identified the safety and security of the complex, its convenient location, the beauty of grounds, and easy access to security and maintenance personnel for assistance.

Needs Assessment Survey

The needs assessment survey was anonymous and lengthy, about five pages long. Locating seniors to complete the needs assessment survey was challenging, despite the varied methods used to distribute the form (for example, via mail, senior-service providers, and focus groups). This challenge may have resulted from the lack of existing social networks of older adults within the Park La Brea community; hence, no existing groups or social structures existed for recruiting the older residents. In addition, the lengthiness of the survey may have been viewed as overly taxing for frail older adults. In fact, most (78 percent) of the needs assessment respondents were recruited from the focus groups. As a result, the respondents may not necessarily be a representative sample of the community at large and may represent an easier to access, healthier, more active segment of the population and not the frail or homebound senior residents of Park La Brea. This hypothesis was later confirmed as LIFE staff gradually became aware of the fairly large population of frail homebound seniors living in Park La Brea, a reality that became apparent only after the LIFE Program had an established and trusting relationship with both the community and the residents association. No previous data described the activity limitations or disabilities of Park La Brea's older residents, so determining the representativeness of the respondents on these variables was not possible. (A HUD regulation in the Fair Housing Amendments Act of 1988 prevents property owners from collecting demographic characteristics of resident.[1])

Of the 63 residents of Park La Brea who completed the survey, most were female (83 percent). About one-half were widowed, and the mean age of respondents was 81 years, ranging in age from 63 to 96 years. Of those sampled, 75 percent lived alone. Among the remaining 25 percent of respondents living with another person, most (93 percent) lived with their spouse; 20 percent indicated they were taking care of someone.

Developed to elicit detailed information about the health, wellness, and needs of seniors living in the community, the needs assessment survey covered a variety of topics—current activities, activities interests, barriers to participation in activities, volunteer interests, supportive services currently used, need for supportive services, physical and emotional health status, use of medical services, fall prevention, transportation issues, exercise, and community perception.

Current Activities and Barriers to Participation

The survey included several questions regarding respondents' current activities and their interest in participating in those activities. Respondents reported current engagement in a number of activities, with more than one-half indicating that they watched TV and movies (64 percent) and read (56 percent). About one-third of the respondents reported that they currently used a computer; went to concerts, theater performances, and museums; attended exercise classes; listened to the radio; talked with family; or traveled. Residents had significant levels of interest in participating in many of the activities, with the three top areas of interest being attending concerts and theater performances, going on field trips, or attending a lecture. In addition, almost one-third of the respondents expressed interest in travel, learning about and using the computer, involvement in political activity, and exercise. The primary barriers identified among the respondents in accessing activities were economic constraints, lack of transportation, and lack of awareness of activities.

Park La Brea needs assessment respondents reported interest in participating in the following top three activities:

- Concerts/theatre (57%)
- Field trips (46%)
- Lectures (43%)

Volunteering Interest

Although a considerable proportion of the respondents reported volunteering, the responses indicated a potential for much more involvement. An early version of the needs assessment survey did not include questions on volunteer interests; therefore, only 33 (52 percent) individuals were

---

[1] 24 CFR 100.202 (c); also see the Fair Housing Act, as amended, at 42 U.S.C. 3601 – 3619, which states "It shall be unlawful to make an inquiry to determine whether an applicant for a dwelling, a person intending to reside in that dwelling after it is so sold, rented or made available, or any person associated with that person, has a handicap or to make inquiry as to the nature or severity of a handicap of such a person."

surveyed regarding what type of volunteer work they were currently involved in or interested in doing. About one-fourth of respondents reported that they currently assist other seniors with information, referrals, and services. Nearly all (88 percent) expressed interest in volunteering in at least one of the options listed. It appears that a core of respondents were interested in administrative support activities, such as helping with mailings (39.4 percent) and planning activities (39.4 percent). More than one-half (55 percent) were interested in more direct service involvement, such as providing information and referrals, checking on seniors, and counseling.

Supportive Service Needs

Among the respondents, only one-third reported needing some sort of supportive assistance. Housework was the most frequently reported need for assistance in terms of daily living, followed by going to appointments, laundry, and errands. This low level of in-home supportive needs may represent a response bias to the survey, because healthier, more active seniors in the community were more likely to participate in the needs assessment survey.

Service Provider Survey

In an effort to identify the needs of older adults and the potential barriers to service use as perceived by service providers, the JFS LIFE program engaged a master's level social work intern to help conduct interviews and focus groups with local service providers. JFS LIFE asked Park La Brea and the city of West Hollywood area organizations and private businesses to participate in a phone interview, an in-person interview, or a small focus group at their site. The intern conducted 15 interviews and 7 focus groups over a 2-month period. A total of 76 individuals participated, with 55 participating in focus groups and 17 participating in in-person or over-the-phone interviews. Participants represented myriad agencies, ranging from fire department and cab service to medical facilities and community case management agencies.

Results of this assessment revealed several gaps and barriers in service provision, including transportation; lack of coordinated and structured care; staff turnover and agency transition; social isolation and lack of social activities; diversity of populations served; and lack of awareness, education, and sensitivity about senior issues and available services.

Summary

Overall, triangulation of the three needs assessments revealed significant consistencies in identified needs. Transportation, population diversity issues, social activities, and lack of awareness of available services were identified among all three assessment techniques. Interestingly, social isolation was not identified through the senior populations surveyed; however, this response was clearly a reflection of the response bias for both survey and focus groups, and, as the program began to unfold and the frail populations began to be identified, the LIFE staff had concrete evidence of this hidden population.

Service Development

Providing and coordinating social services are key elements of NORCs; the social services include transportation, social activities, service coordination, personal care services, and physical and mental health services (Black, 2005). Most services, activities, and support that the LIFE program provided were in direct response to the identified needs of the community. Although the LIFE program did not directly address all the broader concerns identified in the needs assessment (for example, the issue of affordable housing), the programs and services that LIFE provided were generally consistent with what older people said they wanted.

Since the goal of the LIFE program was to maintain older adults in their community, addressing the concerns and interests expressed in the needs assessment process was critical. As a result of this process, the Park La Brea LIFE program developed a basket of services that improved access to information and referrals, including activities in the areas of health and wellness, social events, concerts, and day trips. Promotion of health and wellness was accomplished through educational lectures and workshops, health fairs conducted in partnership with a local medical center and other health collaborators, and a peer-to-peer senior Talkline. Also, the LIFE program created a drop-in center in Park La Brea, which held office hours to serve senior residents seeking assistance or information.

In addition, partnerships with other service providers brought activities to the community, including case management, transportation assistance, health monitoring, fitness, and disease prevention. For example, in an effort to address the issue of transportation, LIFE staff used existing JFS transportation services to provide rides to grocery stores and medical appointments. LIFE staff also referred homebound clients to social workers at the JFS Multipurpose Center, a previously existing JFS service at another location for ongoing case management services. They also created a resource directory to assist volunteers who provided information and referrals to Park La Brea residents.

Safety and Home Modifications

Although safety issues and access to Park La Brea facilities were primary areas identified in focus groups, access issues were not acted on because JFS considered it to be outside the agency's scope of expertise and too difficult to correct because of the age of the buildings, which had been constructed before the Americans with Disabilities Act (ADA) and the Fair Housing Amendments Act. Instead, JFS worked with residents and volunteers to overcome some of the access barriers by providing volunteers to help residents in their homes and to help them get to activities and medical appointments. One internal collaborator, JFS Home Secure Program, worked with management and residents to install grab bars, hand-held showers, and other small-scale equipment in apartments to help older residents carry out activities such as bathing and to prevent falls and accidents.

Educational Lectures and Workshops

In collaborations with multiple community service provider partners, the LIFE staff conducted numerous lectures and workshops on health topics, general interest and community information, emergency preparedness, benefits, and transportation. Health lectures included informational presentations on vision, depression, heart health, and physical activity. The program also provided flu shots. LIFE staff identified general interest lecture themes by conducting annual community activity surveys and by gathering information from the constituent member activities committee. Community members and outside experts presented lectures on a variety of topics (for example, conservatorship, investments, and consumer fraud) and provided information on elections. The two other partners (Cedars-Sinai and AAA Steering Committee) and members of the service provider coalition often participated in these activities. Over the course of 3 years, they presented approximately 63 lectures. More than 100 people got their flu shots through the program. Combined, more than 760 individuals (duplicated) attended LIFE educational lectures and workshops during the project. Multiple collaborations with community groups provided opportunities for intergenerational sharing to benefit older adults, such as Spring Chore Day, when college students helped seniors turn their mattresses, and the Veterans History Project, in which local high school students came to Park La Brea to receive firsthand accounts of war from veterans residing at Park La Brea.

Health and Information Fairs

The LIFE staff held a health fair and several senior outreach events in conjunction with other community service partners, focusing on activities, health, and disaster preparedness. They provided health screenings, increased awareness of services and safety issues, and connected seniors with services and programs. The health fair attracted 115 older residents.

Talkline

A primary mechanism for providing ongoing information, referrals, and support was Talkline. The initial intent of Talkline was to (1) increase volunteer involvement and develop leadership capacity among senior volunteers, (2) increase access to services and community activities, and (3) provide ongoing support to seniors. Volunteers operated the Talkline phones. To advertise the availability of Talkline, the LIFE staff ran ads in local newspapers and distributed flyers to local senior-based service agencies. Between September 2005 and November 2006, the staff made 693 contacts, 48 percent of which were incoming calls to the Talkline. On average, Talkline volunteers spent 12 minutes (range: 2 to 90 minutes) per call. About one-half of the calls were outgoing to provide social support and specifics on upcoming activities and events and general information and referrals. Working on the Talkline represented about 39 percent of all volunteer hours.

Initially, Park La Brea's Talkline volunteers called older residents in response to messages that they left on Talkline's voice mail for information, referrals, and event RSVPs. The volunteers, however, saw the additional need for friendly support calls to LIFE members who were homebound, socially isolated, and frail. In addition to providing telephone support, volunteers also assessed the clients' needs and made appropriate referrals. Talkline therefore evolved to meet the needs of frail and homebound residents, serving as a bridge to LIFE social services, case management, and referrals.

Park La Brea Office Hours and Home Visits

The LIFE program established office hours in direct response to findings from focus groups that indicated the need for a centralized information source; those established hours became an important mechanism for increasing access to community resources. LIFE's social work staff, consisting of one full-time and one part-time social worker, kept regular office hours and provided services such as information and referral, case management, and the development of care plans to help residents age in place. They made referrals to services such as home-delivered meals, home health, and home modification. They also assisted residents with a variety of other needs, such as crisis intervention, case management, grief counseling, and advocacy with medical services (U.S. Social Security Administration and government agencies that handled housing assistance). As the demand for these services increased, Park La Brea's social workers required additional support, which volunteers, who acted as case aides, provided. These volunteers received training and weekly supervision from the LIFE staff. Combined, social work office visits, home visits, friendly visitors, and peer counseling made more than 2,000 contacts and provided referrals and resources to Park La Brea residents, many of which involved home visits.

Transportation

Transportation was a high priority on the needs assessments of Park La Brea residents. The LIFE program established a JFS van service to provide local transportation to medical appointments, shopping, and LIFE program-related activities. Between September 2005 and February 2007, residents used transportation services for 2,628 one-way trips, 51 percent of which were for medical appointments, 45 percent for shopping, and 4 percent for LIFE-related activities. The program provided transportation to the activities center to attend LIFE events only if three or more residents requested services.

At the end of the grant period, funds were no longer available to subsidize the transportation service. JFS transportation services continued to provide transportation for errands and medical appointments at a cost of 50 cents each way through its city of Los Angeles AAAs funding. The addition of a charge for this service did not affect general ridership; residents continued to use the van and did not complain about the cost. Transportation to LIFE events ceased, however. As a result, many Park La Brea members who were unable to drive and could not physically walk the distance from their apartment to the activities center found it difficult to attend activities.

LIFE arranged transportation to—

- 1,353 medical appointments
- 1,176 shopping trips
- 99 LIFE activities

Social Events and Day Trips

Throughout the course of the program, LIFE held a number of social events, ranging from picnics and barbeques to regular meetings of groups such as the coffee klatch and the crafts group. These groups increased social interaction among LIFE members and enhanced civic engagement as participants were drawn into discussions of the wider community. Day trips were one of the top identified desired activities in the needs assessment. In response, LIFE began organizing and offering day trips to residents for a nominal fee that ranged from $5 to $15 during the first year. As the range of activities increased over subsequent years, so too did the cost for participants, with some as high as $35 to events such as the musical *Fiddler on the Roof*. The staff made a special effort to ensure that costs varied month to month so as not to exclude individuals unable to afford the more expensive trips. LIFE offered day trips monthly, with attendance ranging from 10 to 45 participants and with 24 day trips provided from November 2004 to February 2007.

NORC Membership

A core aspect of NORCs involves developing a membership of older people living in the community (Vladek, 2004). LIFE membership was a concept based on NORC models on the east coast, where members paid monthly or annual membership fees that entitled them to a basket of services. It also was viewed as a way to build identification with the program, a sense of camaraderie, and sustainability. Membership created a way to track participants in the program, create community buy-in, and attract and retain seniors. By becoming a member, an older adult would have full access to LIFE activities, lectures, transportation, and services.

The membership process evolved throughout the LIFE project, beginning informally and gradually developing into a formalized application process in 2005. Although LIFE enrollment initially was free, it was envisioned that, once seniors were engaged in LIFE services and programs, they would be willing to pay a membership fee. A total of 467 members were enrolled in LIFE from May 2004 to June 2007. Although the members paid no membership charges or dues during the 3 years of the LIFE program, at the end of the grant funding period, a group of residents at Park La Brea instituted a membership fee to help sustain the program. The committee recommended an annual membership fee of $25, which was approved by the LIFE Advisory Board. The fee went into effect in July 2007. Since implementation, approximately 150 residents pay the $25 annual dues. In addition, when day trip prices exceeded $15 per trip, attendance decreased dramatically, but an increase in the price of the exercise class from $2 to $3 per session yielded no decline in participation. Thus, the implementation of dues had a somewhat negative effect on both membership and day trip participation, although smaller increases in weekly group activities did not seem to affect participation.

Volunteerism

Creating volunteer opportunities, building senior empowerment and ownership, and engaging seniors in leadership and governance roles, core features of successful NORCs (Vladek, 2004), were specific objectives of LIFE. Just as management's buy-in is important, so is buy-in by residents. Moreover, participation enables residents to take an active role in the decisionmaking process in their community (MacLaren, Landsberg, and Schwartz, 2007), further ensuring that community needs will be met. The importance of the role of volunteers, particularly in terms of program sustainability, contributed to the decision to evaluate the role and contribution of the LIFE volunteers.

LIFE volunteer roles fell into four areas: governance, individual support service, programmatic activities, and administrative and program development support. Volunteer governance roles included participation on advisory councils and various program committees. In addition, volunteers received leadership and advocacy training and helped to educate government officials on seniors' issues in their city, at the state capital, and at the federal level. Volunteers also led activities, staffed the office, helped with fundraising, and took on important roles in programmatic activities, such as Talkline, peer counseling, friendly visiting, and CONNECT (a volunteer-led program helping frail, older adults and adults with disabilities to access transportation). Total recorded volunteer hours from August 2004 through June 2007 were 2,215 hours (see exhibit 1).

Overall, volunteer involvement proved to be a critical element in the operation of the LIFE program. Not only did the number of volunteers increase over the course of the program, but the amount of time spent volunteering was also significant. Between March 2005 and August 2006, volunteers kept a log documenting the types of activities they conducted as volunteers and the time spent in each activity, with 866 volunteer hours logged.

Exhibit 2 lists specific LIFE activities in which volunteers contributed their time.

Exhibit 1

Total hours spent volunteering

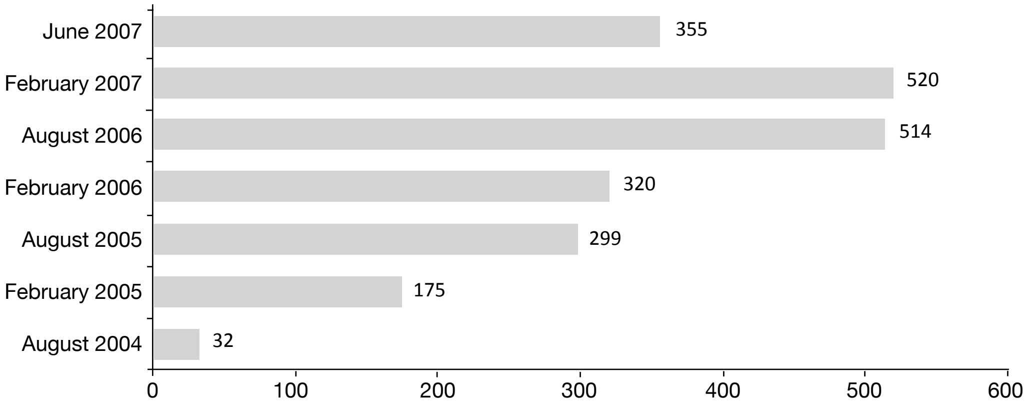


Exhibit 2

LIFE activities for which senior residents volunteered

Governance

Advisory council meetings
Activities committee meetings
Resource development committee

Individual Supportive Services

Senior Talkline
Peer counseling
Friendly visiting
Case aid

Program Activities

Educational lectures
Game time group
Coffee klatch
Walking group
Leading day trips
Play reading group

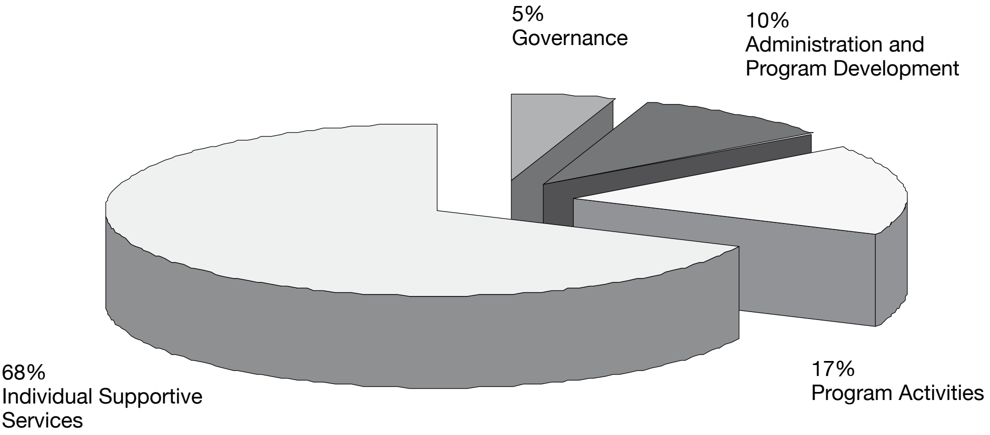
Administration and Program Development

Outreach
Transportation meetings
LIFE member needs assessment

Between February 2005 and September 2006, Park La Brea volunteer activities focused largely on providing individual supportive services (see exhibit 3). Within this category, volunteers spent a large segment of their time working on the Talkline, providing friendly visiting, conducting peer counseling, and serving as case aides by providing information and referrals to people who contacted the office. Leading activities was also a primary focus of volunteers. The highest number of hours spent volunteering related to providing individual supportive services, followed by conducting program activities in Park La Brea.

Exhibit 3

Percentage of time spent in specific volunteer categories: February 2005–September 2006



One of the greatest challenges in the volunteer segment of the LIFE program was the ability to recruit and retain LIFE volunteers. Most of the program's volunteers were 80 years old or older. Although the LIFE program provided an opportunity for older adults to remain active and involved in the community, their volunteer commitment was a variable because of health problems, health-care issues, and caregiving responsibilities. LIFE staff found that younger seniors, however, were reluctant to commit to regular, ongoing volunteer assignments or to engage in a regular volunteer job because of employment (many worked full time) or other commitments. Such barriers led LIFE staff to design flexible roles such as friendly visitors and disaster specialists. These types of assignments enabled volunteers to set their own schedules, often carrying out their responsibilities in the evening or on weekends. LIFE continued to struggle, however, with recruiting and retaining volunteers throughout the program period.

Sustainability

Securing funding for service provision and administrative staff has been a continuing challenge for NORC programs, many of which subsist on a combination of fundraising by resident organizers, service fees, family contributions, and government and foundation grants. Studying 17 NORC organizations, Wilden and Redfoot (2002) found that 16 received substantial funding from residents, 6 were principally funded by Medicaid, and 6 were subsidized by gifts and donations from private organizations and federal, state, and county governments. Among the Administration on Aging-funded NORC programs, only 3 out of 41 NORCs had fees for membership. Some services were open only to members; others, to everyone.

Most of the long-running east coast NORC programs have sustained their programs and activities through internal support rather than external funding. Although many NORC programs began with an external funding base, as these funds began to diminish, they shifted to internal sources, including resident fees, costs for activities, and building manager and co-op fees. Given the lack of previous experience in developing of NORCs on the west coast, and the difference in culture and populations, issues of sustainability were critical to the program.

Residents and management alike highly valued the LIFE program at Park La Brea. As noted previously, Park La Brea management provided in-kind support by contributing office and program space. In addition to contributing their time, residents donated funds to the program and paid a membership fee ($25 per year). These funding sources, however, were insufficient to pay for LIFE's core staff or service provision. The membership fee, for example, fell far below the $600 to $800 that Beacon Hill Village, a program in Boston, and its approximately 50 replicated programs charge. Created by residents aging in place in Boston's Beacon Hill, the Village provides its residents with a variety of services, the total cost of which covers about 60 percent of its operations, leaving it with the task of raising additional funds from private sources to fill the gap. Although the management of Park LA Brea was willing to continue and increase its in-kind support, it was not able to commit funds for staffing of the program nor was it willing to add a surcharge to resident rents to support the program. Fortunately, an anonymous donor through the Jewish Federation of Greater Los Angeles contributed $100,000 to JFS that supported the LIFE Program and that was supplemented by the membership fee. In addition, in 2008, JFS was able to obtain another grant from the AoA.

Discussion

Overall, the LIFE program accomplished a great deal even with its many challenges. It developed a significant range of services and programs, and the number of members consistently grew each year. Members reported that LIFE increased their knowledge of community services and provided the appropriate amount of services in an effective manner. In addition, they believed that LIFE had a positive effect on their community. Connecting seniors to their community and developing a social network was a major success of LIFE. Recruiting and retaining volunteers, however, was a constant struggle. Nevertheless, LIFE was able to involve a substantial number of volunteers who themselves benefited from their participation and contributed to the well-being of others.

Initially, it was challenging to empower seniors. The strategy was to involve community residents on many levels, including needs assessments, developing volunteer roles, and creating a leadership training program and an advisory council. This approach was a radical shift in the service-delivery paradigm, requiring seniors to see themselves as partners in service delivery rather than just recipients. Gradually, resident participation and engagement increased. Residents gained an overall sense that the services that LIFE developed and provided were in direct response to the needs that community members identified. Members identified strongly with LIFE and actually ran some of the programs. Advisory council members felt a strong commitment to LIFE and took their roles as representatives of other residents seriously.

Securing funding for service provision and administrative staff has been a continuing problem for NORC programs—LIFE has been no exception. By the time federal funding for LIFE ended, there was a concerted effort by both Park La Brea residents and LIFE staff to obtain funding to support continuation of the program. Fortunately, as mentioned earlier, the Jewish Federation of Greater Los Angeles was able to secure a donation to JFS that supported LIFE social work staff at the site, which was supplemented by membership fees referred to earlier. The direct funding from property management, however, for core staff support did not materialize as hoped.

Conclusion

JFS's LIFE program in Park La Brea represents a NORC-SSP in a large private development operated by property management staff. NORCs have a number of challenges, including obtaining buy-in from management, gaining residents' support and participation, accurately assessing residents' needs, creating breadth and flexibility of services, and securing long-term funding (Black, 2005). The experience with Park La Brea indicates that, in spite of these challenges, such a program can be successful in building a community, providing services to people in need, and engaging older people in both activities and helping each other. It can take several years, however, to build up the trust of both residents and management.

Bringing services directly to the community has enabled JFS to reach many older adults who were previously underserved. The successful recruitment and training of volunteers has enabled the program to serve many more seniors than traditional care management programs would, given the small professional staff. Using volunteers is a relatively low-cost way to help enable older adults to remain independent, a meaningful way to involve them in giving back to their community, and an approach that ensures that residents have a say in the types of services that will enable them to remain independent.

Despite the multiple benefits associated with NORC-SSPs, significant challenges remain in sustaining these models following the expiration of grant funding. This experience clearly illustrates the ongoing need for a trained professional social work presence and the need for continuity in leadership with the program. Although community volunteers can administer and maintain significant aspects of the NORC, the role of the professional paid program administrator is critical in maintaining the volunteer base, securing ongoing funding support, and coordinating numerous activities that include interacting and coordinating with health and community service organizations.

Acknowledgments

The authors thank the many residents of Park La Brea who participated in the project and also thank the management of the community.

Authors

Susan Enguidanos is the Hanson Family Assistant Professor of Gerontology at the Leonard Davis School of Gerontology, University of Southern California.

Jon Pynoos is the UPS Foundation Professor of Gerontology, Policy, and Planning at the Andrus Gerontology Center, University of Southern California, and Co-director of the Fall Prevention Center of Excellence, Los Angeles, California.

Maria Siciliano is a doctoral student and research assistant at the Leonard Davis School of Gerontology, University of Southern California.

Laura Diepenbrock is the LIFE program manager at Jewish Family Service of Los Angeles.

Susan Alexman is the director of Older Adult Services at Jewish Family Service of Los Angeles.

References

Black, Kirsten J. 2005. “A Conceptual Model of the Evolution of NORCs and Their Associated Supportive Services Program.” Annual Meeting of the Gerontological Society of America, Orlando, Florida, November 22, 2005.

MacLaren, Catharine, Gerald Landsberg, and Harry Schwartz. 2007. “History, Accomplishments, Issues, and Prospects of Supportive Service Programs in Naturally Occurring Retirement Communities in New York State: Lessons Learned,” *Housing for the Elderly: Policy and Practice Issues:* 127–144.

Nolin, JoAnn, Sharon T. Wilburn, Kenneth T. Wilburn, and Dax Weaver. 2006. “Health and Social Service Needs of Older Adults: Implementing a Community-Based Needs Assessment,” *Evaluation and Program Planning* 29: 217–226.

U.S. Census Bureau. 2000. “Summary File 3, Table P56.” In: *2000 Decennial Census.* http://factfinder.census.gov (accessed August 31, 2009).

Vladeck, Fredda. 2004. *A Good Place To Grow Old: New York's Model for NORC Supportive Service Programs.* A special report from United Hospital Fund. New York: United Hospital Fund.

Wilden, Robert, and Donald L. Redfoot. 2002. *Adding Assisted Living Services to Subsidized Housing: Serving Frail Older Persons with Low Incomes.* Washington, DC: AARP, Public Policy Institute.

Additional Reading

Carpenter, Brian D., Dorothy F. Edwards, Joseph G. Pickard, Janice L. Palmer, Susan Stark, Peggy S. Neufeld, Nancy Morrow-Howell, Margaret A. Perkinson, and John C. Morris. 2007. “Anticipating Relocation: Concerns About Moving Among NORC Residents,” *Housing for the Elderly: Policy and Practice Issues*: 165–184.

Centers for Disease Control and Prevention (CDC), National Center for Health Statistics. 2001. National Health Interview Survey.

Hunt, Michael E., and Leonard Ross. 1990. "Naturally Occurring Retirement Communities: A Multi-Attribute Examination of Desirability Factors," *The Gerontologist 30* (5): 667–673.

United Hospital Fund. N.d. "NORC Blueprint." http://www.norcblueprint.org (accessed August 2009).

Health-Related Needs Assessment of Older Residents in Subsidized Housing

Victoria Cotrell
Paula C. Carder
Portland State University

Abstract

When a nonprofit organization with nursing-home and assisted-living experience purchased a 30-year-old highrise apartment building in downtown Portland, Oregon, the new owners were faced with how to manage a building that provided housing to more than 200 older residents whom they knew very little about. As long-term care providers, they knew that older people were at risk for developing chronic illnesses, disabilities, and other factors that could result in moves to nursing homes, hospitalizations, and early death. They also knew that older adults in subsidized housing, such as this Section 8 building, have higher levels of disability than their age cohorts in unsubsidized housing and apartment rentals (Redfoot and Kochera, 2004). What they did not know was whether and in what ways these residents' independence and quality of life might be jeopardized by unmet health and social service needs. In collaboration with the Portland State University School of Social Work, a multidimensional needs assessment was developed and conducted to identify the most important unmet needs of the residents as a group so that targeted services could be planned. Findings based on interviews with 130 residents revealed a heterogeneous population of older adults whose health status varied considerably, especially among the four different ethnic and language groups living in the building. This article describes how the results of such an assessment can be used to plan for enriching services to those most in need.

Introduction

Housing sponsors have increasingly begun to address the questions of whether and how to confront the health and supportive service needs of older tenants. Many older people move into independent housing hoping that they will never leave. Whether planned or not, subsidized housing for older adults serves individuals who are increasingly in need of assistance to maintain the level of stability required to reside in independent housing. This article presents a case study of how a housing sponsor, Cedar Sinai Park (CSP), and a university partner, the Portland State University (PSU) School of Social Work (SSW), implemented a health-related needs assessment of older tenants of a U.S. Department of Housing and Urban Development (HUD) Section 8 building. The goal of the assessment was to collect empirical data that would result in accurate statistics on the resident population that could be used to plan the most appropriate services to support aging in place.

"Aging in place" is a goal that some licensed facilities (such as assisted-living facilities and board-and-care homes) have espoused but not one that subsidized-housing providers have actively adopted. Instead, housing sponsors have traditionally offered services specific to property management, community-building activities, and information and referral regarding community programs (Heumann, Winter-Nelson, and Anderson, 2001; Kochera, 2002). Reasons that housing sponsors have not inquired about residents' needs in the past include a respect for resident privacy, a commitment to providing independent housing, and a lack of financial incentive to provide services. Several forces have converged, however, to pressure sponsors to either offer or coordinate supportive services; those forces include an organizational desire to reduce costly and disruptive resident turnover, an awareness that current residents of subsidized housing are older than in previous decades (in part because they enter at older ages), and an increasing national interest in strategies that support aging in place as a more sustainable way to deal with a swelling demographic of older adults (Harahan, Sanders, and Stone, 2006).

What Services Should Be Provided?

Little is known about the health-related service needs of older adults who live in subsidized housing. Such tenants might require supportive services because they may have some combination of age-based chronic illnesses, disabilities, and limited social supports, in addition to having modest incomes. In HUD Section 202 properties, the average age increased from 72 years in 1983 to 75 years in 1999; in the oldest buildings (those built before 1975), the average age of residents was 78.2 years in 1999, and almost 39 percent were more than the age of 80 (Heumann, Winter-Nelson, and Anderson, 2001). The aging of the population has widespread implications for housing sponsors, as Heumann, Winter-Nelson, and Anderson (2001: 19) have explained:

> The increase in average resident age, the increase in residents aged 85 and older, and the fact that projects are admitting older applicants have far-reaching implications for the management, staff training, and service orientation. Older tenants are likely to require unique support and services as well as barrier-free and supportive physical design.

The population of current older residents is more diverse than in previous years, with nearly one-fourth of the residents identifying themselves as non-White. In addition to increasing age and racial or ethnic diversity is an increased need for services. In 1999, HUD 202 managers indicated that 22.3 percent of residents were frail and that residents more than 80 years old listed the combination of support services, improved security, and increased social contacts as important reasons for moving into a Section 202 building (Heumann, Winter-Nelson, and Anderson, 2001).

A 2001 survey of properties financed through the low-income housing tax credit (LIHTC) indicates that 42 percent of properties completed between 1987 and 1998 were for older people (Kochera, 2002). The survey asked property managers to estimate the number of tenants who were frail or disabled (defined as having difficulty walking or performing everyday tasks); their responses indicate that about one-third of the residents were frail or disabled (Kochera, 2002).

In response to the service needs of residents, some subsidized-housing programs have hired designated staff, such as a service coordinator. This person coordinates the "provision of supportive services to the low-income elderly and non elderly people with disabilities to prevent premature and inappropriate institutionalization, thereby improving residents' quality of life" (Levine and Robinson Johns, 2008: 1). Duties for the position include determining the service needs of eligible residents and then linking residents with services available in the local community. A survey of HUD-assisted developments reported that 46 percent had a HUD-funded service coordinator, 8 percent had a coordinator funded through other sources, and 43 percent never had a service coordinator (Levine and Robinson Johns, 2008). An older study of HUD 202 properties found that slightly more than one-third of the residents had a service coordinator (Heumann, Winter-Nelson, and Anderson, 2001). A survey of LIHTC-financed properties reported that 21 percent of residents had an on-staff service coordinator, and 47 percent of the properties reported that residents could access a community-based service coordinator (Kochera, 2002).

Although property managers can determine the need for some services required by older residents, property management staff might lack information about residents who fear that disclosure of medical, psychiatric, or social problems will affect their housing tenure. Service coordinators are more likely to have an accurate assessment of the service needs of residents, but, as indicated previously, these coordinators are not available to residents in many properties. Neither property managers nor service coordinators are likely to have the skills to accurately and systematically assess the bio-psycho-social functioning of older residents. All of these factors informed the decision of the housing sponsor described in this article to conduct the comprehensive health-related needs assessment described in this article.

Cedar Sinai Park

The housing sponsor initiating the assessment described in this case study, Cedar Sinai Park (CSP), is a nonprofit, faith-based organization that provides comprehensive retirement and long-term healthcare services to older adults. Multiple facilities are located on a 27-acre campus in Portland, Oregon, including a long-term care facility and assisted-living and active-lifestyle apartments. CSP recently purchased a 17-story apartment building located in downtown Portland as part of its organizational mission to serve the needs of low-income older people. The building, which has 235 one-bedroom apartments, was privately built in 1979 under a HUD Section 8 housing contract to provide subsidized housing for low-income older and disabled individuals. The most notable feature of the resident population is that approximately 40 percent of the residents do not speak English and represent three distinct cultural groups: Chinese (both Mandarin and Cantonese) speakers, Russian speakers, and Farsi speakers. A small number of Korean speakers also live in the highrise building.

CSP aimed to extend the option for residents to age in place by making available needed long-term care services rather than expecting residents to move out if they require more care. Facing an expected demand for choice among lower income members of the baby boom cohort, CSP was motivated to explore a variety of community-based care models, including housing with services. As long-term healthcare providers, they realized that it is not financially sustainable to meet the level of demand for health-related services using traditional institutional approaches. Their objective was to collaborate with local service providers and with county, state, and federal government and organizational leaders, all of whom have a vested interest in creating successful models of housing with supportive services. CSP believed that to be considered successful, models must reduce healthcare costs and operational inefficiencies while maximizing the independence and quality of life of older adults.

CSP and PSU Partnership

The SSW at PSU and CSP have a long-standing partnership in providing practicum experiences in gerontology for graduate students in social work and in collaborative research on topics regarding long-term care. Research in gerontology is conducted by SSW faculty through the Regional Research Institute for Human Services, a research unit of the SSW that does evaluation and planning research in health and human services across the lifespan.

The housing sponsor and the first author, a member of the SSW gerontology faculty, met to discuss mutual interests in CSP's new sponsorship of the apartment building. The sponsor was primarily interested in acquiring a description of the mental, physical, and social needs of the residents, especially those of the large immigrant population, to help establish priorities and allocate resources for services. For example, the sponsor was considering an onsite day health and respite program, a potentially costly venture if neither the need nor resident support existed.

The SSW partners wanted to explore the residents' perceptions of health, well-being, and services using a modified participatory method. This approach would include resident involvement to actively identify and examine specific issues of health and well-being. Resident participation addresses the need for motivation and buy-in from targeted consumers to produce positive changes in health-related behavior. The process of conducting a health-related assessment could be leveraged to increase personal control and ownership over issues of health and well-being by involving the participants in the research process and outcomes. This buy-in would be important for implementing future health-related services and research.

Both partners wanted to explore the feasibility of linking the benefits of assisted-services technology with the needs of older and disabled tenants living in low-income housing. Both partners were also interested in better understanding the residents' needs and acceptable responses to the needs of the various ethnic groups that lived in the building. A needs assessment was an important first step in pursuing the goal of providing services to enhance aging in place; it would be important when applying for funding from external sources after the needs were identified.

The SSW team provided expertise in conceptualizing and implementing the assessment and acquired a small planning grant from PSU to cover the assessment costs. The sponsor organized stakeholders to provide feedback on the questionnaire and to identify additional resources and partnerships. The stakeholders also helped interpret the study findings and develop program goals and objectives based on the findings.

Because this project was university based, it provided assurance to residents that confidentiality of information would be independently secured through the PSU Institutional Review Board for protecting research participants. This assurance was particularly important to residents who believed that disclosing information might affect their housing status. Information collected from specific residents remained confidential, and only the PSU research staff knew the identity of the participants.

Methods

Resident Sample and Recruitment

All tenants capable of providing informed consent were eligible to participate in the study. Several issues arose when acquiring a list of eligible tenants that could be used to select a probability sample. Turnover in tenant occupancy was especially rapid at that time because of the transition in building ownership, which took some time to resolve, and an unusually high rate of deaths and transitions to higher levels of care. Accurate tenant lists, especially those identifying ethnic groups, were not available at the time. Many residents, particularly those who did not speak English, could not be reached by telephone because they did not have one, or they required a translator if they did have a phone. More importantly, omitting residents for sampling reasons would have created considerable confusion and misunderstanding among those who were not selected and suspicion among those who were. Residents may have been justified to feel uncertain about their continued residency given their lack of familiarity with the new building sponsors. This uncertainty was a potential problem in establishing trust and resident motivation for future health-related collaborations. Although using a nonprobability recruitment strategy is problematic in assuring accurate representation of the population, the assessment used multiple recruitment strategies to enroll as many residents as possible in the study and to respond to residents' concerns. These strategies included the following:

- The assessment team held six open meetings, two in English and one each in the four other main language groups, to explain the needs assessment, discuss residents' perceptions of the study, and request their participation. They held two meetings in English to accommodate day and evening schedules. Because of the expense of interpreters, only one meeting each in Mandarin and Cantonese Chinese, Russian, and Farsi was held. These meetings were particularly helpful in building trust and beginning a public dialogue about health and community. At these meetings, residents were able to make an appointment for an interview or sign a list to be contacted for further information.

- Following the open meetings, the assessment team posted informational flyers in the residents' languages on the doors of those who had not been enrolled in the study and in public areas.
- Those residents who had been interviewed conveyed knowledge of the needs assessment to nonparticipating residents, which produced additional volunteers. This snowball effect was particularly effective among the Russian and Chinese speakers and resulted in a response rate of more than 80 percent for these two groups.
- Residents who spoke limited English often volunteered to act as consultants to provide information about the cultural behaviors and perceptions of their language group and provided ongoing feedback about the assessment. This information was extremely useful in recruiting and interviewing non-English-speaking residents and assessing the effectiveness and acceptability of research interviewers. Consultants also helped explain historical events that led to the immigration of the various groups and the regional differences represented within each group.
- The assessment team provided a $15 gift card to the local supermarket as an incentive to each resident to participate in an interview. Although the gift card was a small amount, the participants appreciated the material gift; many of them said that the gift card was a primary motivation for participation.

The assessment team interviewed 130 residents (63 percent of the eligible population) for this study. The previous service coordinator, a member of the property management staff, reviewed the list of tenants to determine if the nonparticipants might represent a systematic bias in the characteristics of residents who volunteered for the study. Among the individuals not included were those who had guardians who needed to be contacted to provide consent to participate and individuals who were largely isolated from the staff and residents of the building. Also, older individuals with apparent dementia were underrepresented.

Data Collection. The questionnaire used for this project included basic physical, psychological, and social measures of functioning; questions about the resident's use of services; three questions concerning the resident's use of technology; and two open-ended questions about the resident's experience of the environment and community life of the apartment building. Open-ended questions were particularly helpful in identifying the issues of greatest concern to the resident. Answers to these questions enabled the researcher to check the validity and reliability of items identified in the structured aspects of the questionnaire and to identify and clarify items of concern not mentioned during the structured interview. The researcher selected the Older Americans Resources and Services (OARS) Multidimensional Functional Assessment Questionnaire (OMFAQ) developed at Duke University as the foundation for the questionnaire because it contains most of the content needed to assess functional abilities of residents and which services they use (Fillenbaum, 1988). The five basic areas of functioning contained in the OMFAQ are predictive of nursing facility placement (Brody et al., 2002), morbidity, and death (Miller and Weissert, 2000), and so are important indicators for ability to age in place. The researcher then modified the questionnaire to fit the characteristics of the resident population and the needs of this particular project. For instance, they modified the scale for economic resources and the health insurance options to be consistent with those available in Oregon. They also added other questions specific to the resident population. Because many of the residents had immigrated as adults from China, Russia, Iran, and Korea, immigration and citizen status were important in determining eligibility for services.

Both property owners and property management staff reviewed the questionnaire; they requested questions related to problems observed by staff, such as failure to manage medications successfully. Additional social and psychological scales were substituted to assess problems observed in social interaction and psychological functioning. All scales selected for the questionnaire were previously evaluated for reliability and validity and have been tested with older adults.

An ongoing issue in questionnaire construction was how to include the basic measures of functioning and services use, add content specifically requested by partnering groups, and keep the questionnaire to a length that could be administered during a single interview with individuals who may fatigue easily. The questionnaire was pilot tested by graduate students in a gerontology research course, and 30 older adults in various community-based settings completed an interview using the questionnaire and provided feedback to the SSW students about their understanding of the questions and interview length. Final modifications of the assessment tool, including a small reduction in length, were made based on participant and student feedback. A copy of the final instrument is available from the first author.

Interviewing the Residents

The assessment team interviewed residents over a 6-month period. To enhance the quality of the data they collected, interviewers used face-to-face interviews with individual residents. They conducted interviews in the apartments of residents or in another location of the participant's choosing. The length of the interviews ranged from 1 to 2.5 hours and varied depending on the individual's cognitive abilities, complexity of health conditions, and extensiveness of open-ended comments. The SSW hired and trained three interviewers for English-speaking residents and five interviewers for the non-English speakers. Most interviewers were current or former university students or individuals who worked in social service organizations and were able to interview in the evenings or on weekends. All English-speaking interviewers were experienced in interviewing older adults and with administering evaluation instruments; they remained on the team throughout the study.

Locating and training interviewers who spoke both English and one of the other four languages were the biggest challenges to the project. Using the assistance of an interpreter to interview each non-English-speaking resident would have been cost prohibitive and would have greatly increased the length of the interview. Because of budget constraints, it was not possible to translate the entire questionnaire into each language and then back-translate it. When possible, translated versions of the scales were used, although the cultural validity of these instruments cannot be assumed for all translated versions. Instead, bilingual interviewers verbally translated the questions and the participant's responses. Suitable interviewers were sometimes difficult to find, and their availability was often unpredictable because of conflicts with academic or work schedules. Training the bicultural interviewers sometimes involved hours of dialogue as we worked through the questions to achieve an understanding of the instrument that was culturally acceptable and yet captured the concepts inherent to western medicine and supportive services. These interviewers provided invaluable insight into the non-English-speaking communities and identified important areas of cultural variation in the delivery of health-related services.

Residents' Participation and Debriefing

During the data analysis phase of the assessment, the assessment team held both formal and informal check-in meetings with residents. Following the completion of the data analysis and interpretation, the researcher prepared and had translated (as needed for each language group) written reports summarizing the survey results. Health characteristics and risks and prioritized lists of concerns and questions pertinent to each language group were emphasized in separate reports. These translated reports were distributed during meetings that the assessment team held with each language group. During these meetings, the CSP chief executive officer discussed the health and service initiatives he envisioned for the building and spoke with the residents about their concerns and suggestions. These efforts were used to further engage the residents as partners in their own health care as the partners planned the transition from data collection to the next phase of the project, identifying and implementing appropriate services (not discussed in this article).

Findings

Sample Description

A total of 130 residents were interviewed, although participation varied by language group: 50 percent of the English speakers (n = 61), 81 percent of the Chinese speakers (n = 35), 83 percent of the Russian speakers (n = 20), and 58 percent of the Farsi speakers (n = 11) participated, as well as three out of the six Korean residents.

The mean age of the entire sample was 75.5 years, and 30 percent were 80 years of age or older. This age is comparable to the mean age of 75.5 reported in a national survey of Section 202 residents (Heumann, Winter-Nelson, and Anderson, 2001). The Russian residents were significantly older than other groups with a mean age of 82.3, and 60 percent were 80 years of age or older. No statistical differences existed in the mean ages of the other groups, but only one of the Mandarin-speaking residents was 80 years or older.

Females made up 75 percent of the sample, and 32 percent reported that they were married or partnered, although not all were living with their spouse. Great educational diversity existed among the residents, both between and within the language groups. About 24 percent had less than a high school education, 19 percent completed high school, 19 percent reported some college or trade school, 29 percent completed college, and 9 percent had postgraduate degrees. Of the residents who immigrated to the United States, most (86.3 percent) did so when they were 50 years of age or older and 55 percent were 60 or older. The median number of years of tenancy with the building was 6, with the shortest period being 1 to 2 months and the longest being 23 years.

Health Status

Residents were asked to report their currently diagnosed illnesses, the extent to which these illnesses interfered with their activities, and their prescribed medications (see exhibit 1). The most frequently reported illnesses were common to older adults, although not all language groups reported the same illnesses. Hypertension (64 percent) and arthritis (63 percent) were predominant illnesses

Exhibit 1

Illness-Related Characteristics and Sensory Deficits of Residents (N = 130)

Illnesses	
Mean #	4.3
Min/max	0–10
Illness interfering	
Mean #	3.1
Min/max	0–10
Prescribed meds	
Mean #	5.4
Min/max	0–17
No med strategy	27%
Difficult pain	30.5%
Poor or blind vision	20%
Poor or deaf hearing	17.7%

across all language groups. The mean number of illnesses per individual varied by language group, ranging from 2.6 illnesses for one group to 6.9 for another group.

Similarly, medication usage varied among ethnic groups, with the average number of medications as high as 8.7 in one group to a low average of 3.4 in another group. Residents in this study took between 0 and 17 prescribed medications, and 25 percent of them took 8 or more. More than one-fourth of residents who took 2 or more medications could not identify a strategy for consistently taking their medications. We were interested in the complexity of the physician-prescribed medication regimen for the purpose of evaluating potential for a resident to adhere to the schedule. The use of nonwestern, alternative, and over-the-counter treatments and medications, however, was frequent among respondents and complicated both the adherence strategy and the coordination of resident care. Residents were asked (1) about frequency of pain and whether they used prescribed pain medications, (2) if they had poor vision or were legally blind with corrected vision, and (3) if they had poor hearing or were deaf without the use of hearing aides. Nearly one-third of the sample reported frequent and significant pain, and 20 percent had severe visual deficits that could not be corrected with glasses. Of the residents interviewed, 18 percent reported poor hearing or deafness without hearing aides, yet only 8 percent used hearing aides. Considerable variation existed among the language groups on these factors.

Functional Status and Physical Activity

Instrumental Activities of Daily Living. Most residents in this sample were independent in their instrumental activities of daily living (IADL), with the exception of heavy housekeeping (for example, cleaning the bathtub, scrubbing the floor, and cleaning the windows) and transportation to places beyond walking distance (see exhibit 2). A notable difference existed among the language groups in their level of independence in the other IADLs, with some groups reporting extensive need and others reporting only a need for some assistance with heavy cleaning. A need for heavy housekeeping services was common in all language groups and was reported by more than 40 percent of the residents, many of whom reported being unable to perform these tasks even with assistance. More than 25 percent of the sample, consistent across most language groups, required some assistance with transportation that was beyond walking distance. Foreign language speakers mostly reported problems resulting from language barriers to navigating the many options for public transportation that exist near the building, while the English speakers reported problems with their ability to access public transportation because of health conditions.

When individuals reported that their performance of an IADL task was independent but difficult, carrying heavy objects and heavy housekeeping were most frequently identified as the reason for this difficulty. Many residents who reported such difficulty thought they could not continue performing these tasks unassisted much longer.

Personal Activities of Daily Living. Nearly all residents were independent in personal ADLs, and one language group reported nearly all of the need for assistance (see exhibit 3). The exception was assistance in bathing, reported by two groups. Most residents requiring help when bathing were afraid of falling (and some had previously fallen) when they stepped into and out of the bathtub.

Physical Abilities. In a measure of physical abilities separate from IADL and ADL, we looked at an individual's core physical abilities that reflect endurance, strength, coordination, and range of motion. This measure provided a more explicit description of problems with ambulation and

Exhibit 2

Status of Instrumental Activities of Daily Living Skills (N = 130)

IADL Skill	% Independent	% Independent/ Difficult	% Some Help	% Unable
Finance management	90	(3)	3.8	3.8
Medications management	90	(3)	5.4	(3)
Telephone	90	4.6	3.8	(2)
Services	84.6	(1)	8.5	6.2
Meal preparation	78.5	6.9	3.8	10.8
Shopping	74.6	7.7	11.5	6.2
Light housework	72.3	7.7	4.6	15.4
Transportation	66.2	6.2	20.8	6.9
Carry objects	64.6	16.9	4.6	13.8
Heavy housework	46.9	10.8	8.5	33.8

IADL = instrumental activities of daily living.

Note: Numbers in parentheses indicate actual counts that are fewer than five residents.

Exhibit 3

Status of Personal Activities of Daily Living Skills (N = 130)

ADL Skill	% Independent	% Independent/ Difficult	% Some Help	% Unable
Dressing	84.6	11.6	(4)	(1)
Grooming	93.1	(4)	(5)	0
Bed transfer	88.5	9.2	(2)	(1)
Bathing	78.5	8.5	11.5	(2)

ADL = activities of daily living.

Note: Numbers in parentheses indicate actual counts that are fewer than five residents.

other physical movements. It is clear that a large percentage of residents reported deficits in core physical abilities (exhibit 4). In addition, approximately 30 percent of residents reported falling in the past year and that balance interfered greatly with their activities; 25 percent of residents regularly use canes or walkers. Language groups varied greatly; for instance, 89 percent of one group reported they had no problems with walking, while only 20 percent of another group reported no difficulties. Residents often mentioned concerns about experiencing undiagnosed problems with balance, strength, or range of motion. Some individuals received a few sessions of physical therapy after an injury or surgery, but the insurance benefits were too limited to achieve much long-term remedial benefit.

Residents were also asked whether they pursued any type of physical activity on a regular basis. Many individuals reported participating in regular exercise (69 percent), but the primary exercise reported was short walks on an irregular basis (for example, roundtrip destinations located within two to four blocks). For those who walked for exercise, many stopped their activity when the weather was inclement. Only one language group reported a varied exercise program that included classes and social sports several times a week.

Exhibit 4

Percentage of Residents Reporting Difficulties With Core Physical Skills (N = 130)

Core Skill	A Little	A Great Deal	Total
Walking	23.1	29.2	52.3
Balance	27.7	20.8	48.5
Stairs	22.3	32.3	54.6
Reaching	10.0	22.3	32.3
Lifting	24.6	23.1	47.7
Carrying	22.3	21.5	43.8

Social and Mental Health Status

Not all residents reported a support network of friends and family (see exhibit 5 below). Many residents have no contact with family but have developed support networks with other residents or individuals outside the residence. Only seven residents reported that they had no one they could call on for help if they had a problem or an emergency. Individuals who were unable to extend their social contacts to the broader community because of health or other factors, however, could depend only on the microneighborhood of the building to develop adequate social networks, which did not always occur.

Non-English speakers are more vulnerable to isolation because of the language barriers that may discourage them from easily taking part in community activities. Having a close network of individuals who share the same language, however, provided support for many non-English groups. Most non-English speakers mentioned a language barrier as the most important issue in their open-ended remarks. They requested English classes, more translation services, and access to media in their languages.

Many residents reported feeling lonely occasionally, but reports of frequent loneliness were rare. The degree to which residents reported that they would like to have more relationships with other residents in the building varied greatly among language groups. Interestingly, the degree of reported loneliness was not always associated with the desire for more relationships with other residents.

Depression, as measured by the Geriatric Depression Scale, was reported across all language groups; however, the percentages of individuals reporting depression varied among language groups from a low of 9 percent in one group to a high of more than 50 percent in two other groups. Most reports of depression scored within the mild range. About one-half of the residents evaluated their current mental health as about the same as 5 years earlier, while about one-third of residents felt it had worsened. The perception that their mental health had worsened was usually attributed to health problems (including memory problems) or the death of individuals close to them.

The Mini-Mental State Examination (MMSE) was used as a brief screen for cognitive impairment. MMSE scores of 26 or lower were identified (see exhibit 5) as possible instances of dementia based on an adjustment of cutoff scores that was suggested by Van Gorp et al., (1999). The authors determined that the best overall cutoff score, intended to reduce instances of misclassification of undiagnosed cases of dementia (false positives), is a score of 26 or less. This adjustment produces more accurate classification rates than either the original MMSE cutoff score of 23 or the sole use of age and education as adjusted norms. Approximately 22 percent of residents across all language groups reported MMSE scores of 26 or lower (ranging from 19 to 26). Because our recruitment efforts did not reach individuals who were cognitively unable to volunteer or independently follow through with study participation, the rates reported in this survey were probably conservative and tend to represent milder forms of impairment.

Exhibit 5

Percentage of Residents Reporting Social/Mental Health Needs (N = 130)

Health Need	Percentage
At risk of social isolation*	31.5
Often lonely	9.4
More opportunity for relationships	
A little	41.5
A great deal	32.3
Depression**	29.5
Mental health worse than 5 years ago	31.5
MMSE score of 26 or lower	22.4

MMSE = Mini-Mental State Examination.

**Scores lower than 12 on Lubben Social Network Scale.*

***Scores 5 or greater on the Geriatric Depression Scale.*

Service Use

Exhibit 6 summarizes the most frequently used services by residents. Nearly all residents across language groups saw a physician within 6 months before the interview, and approximately 22 percent had been admitted to the hospital during this period. Two of the language groups accounted for most of the hospitalizations. Patients' stays in the hospital ranged from 1 to 20 days, with most lasting only 1 to 2 days. One language group reported using more services than any of the other

Exhibit 6

Percentage of Residents Using Services in Past 6 Months (N = 130)

Services Used	Percentage
Doctor visit within past 6 months	91.5
Hospital admission within past 6 months	21.5
Physical therapy	14.0
Homemaker	21.7
Shopping	11.6
Meal preparation	14.0
Personal care	11.6
Mental health services	10.9

Note: R-square for the current formula is 0.787; 0.927 for the Administration's proposal.

groups. Only four residents reported using medication consultation or a service to check and organize their medications, while an additional three individuals reported receiving assistance in managing their medications from an informal source.

Discussion

This section provides a brief discussion of the four primary assessment domains followed by a summary and implications.

Health Status

In general, most residents reported that their illnesses interfered very little or not at all with their life. Illnesses such as hypertension, diabetes, or glaucoma, however, may be silent, threatening one's independence if these conditions go undiagnosed and untreated (Butler, 2008). For instance, hypertension is one of the two most frequently reported illnesses in this sample, yet it does not have the same immediate and noticeable effect on ability to perform daily activities as arthritis, the other highly reported illness, does. Providing education and health guidance for high-risk but silent conditions before they produce functional decline is one important way of promoting aging in place.

In this sample, the large number of medications taken by a sizable percentage of the residents is worrisome, especially given that few residents felt they needed any assistance in managing their medications, and many residents could not identify any strategy for taking multiple medications accurately. The average number of prescription medications used by these residents is 5.4, which is comparable to residents of licensed assisted-living facilities who average 6 medications (Armstrong, Rhoads, and Meiling, 2001). Even in assisted-living facilities, where most residents receive care services, finding the best medication management strategy is a challenge (Carder, Zimmerman, and Schumacher, 2009). The implications for poorly or mismanaged medications include increased negative drug interactions, increased side effects, increased falls, and increased instances of resident hospitalization and institutionalization (Hanlon et al., 2002; Tinetti and Speechley, 1989). Many residents, including both English and non-English speakers, said that they substituted and added alternative treatments to their medication regimen without the knowledge or recommendation of their primary care physicians. A final problem for residents with multiple illnesses and medications is that treatment requires more out-of-pocket expense, which may exceed affordability for low-income people. Inadequate finances may lead to reduced compliance with medical treatment and inadequate contact with medical professionals. Residents with high numbers of illnesses and prescribed medications often reported a lack of resources to meet medical needs, most often resulting from high numbers of medical copays. Improvement to existing services include, greater access to consultations on specific medications, greater access to information about alternative treatments and potential negative interactions with other medications in the patient's regimen, and more assistance in developing strategies to assure adherence to prescribed regimens. These consultations should also be accessible to those who do not speak English and may have nonwestern views of medicine.

Finally, this diverse sample of residents highlights the need to consider the distinct health profiles that various ethnic and racial groups may have. The assessment results helped to identify some of the differences among language groups that may represent distinct health risks, patterns of service use, and lifestyle behaviors that contribute to health resiliency. Identifying these differences can allow for more specific and cost-effective targeting of health-related services. For instance, attention should be given to the need to locate bilingual health providers and individuals who can accompany non-English-speaking residents to medical appointments when they do not have friends or family to provide an accurate translation of medical information. Non-English-speaking residents often complained of excessively long waits to see a physician and did not always understand their physician's diagnoses or recommended treatments.

Functional Status and Physical Activity

Functional status is usually the basis for determining an individual's eligibility and cost of long-term care services, so it is important in any assessment of needs (Kane, 2000). As a measure of an individual's functional status, both IADLs (Lawton and Brody, 1969) and ADLs (Katz et al., 1963) were assessed. An individual's loss of ability to perform these activities (that is, a decline in their functional status) increases their risk of institutionalization and death (Miller and Weissert, 2000).

Heavy housekeeping and lifting are the most widely reported unmet service needs among residents across language groups. These needs were often reported by individuals who were not eligible for homemaker services but could not afford to purchase them privately. Transportation to places beyond walking distance was the next most frequently reported need. Most residents had easy access to different forms of transportation and rarely reported a complete inability to use transportation. Providing language-appropriate instruction to diverse residents about the use of local transportation systems, especially to new tenants, would be particularly helpful in this setting.

Residents seldom reported unmet personal care needs. The assessment, however, provided data on structural problems in the building that contributed to falls and limited accessibility for residents using wheelchairs and walkers in bathrooms equipped with bathtubs only. A group of mobility-impaired residents provided specific information on inaccessible areas of the building or areas that were difficult to navigate safely. The assessment also identified which non-English-speaking groups were receiving needed services from providers sponsored by their ethnic communities and which were without such resources.

Most residents reported that they exercised, but very few approached the level of activity recommended in Healthy People 2000 and The National Blueprint: Increasing Physical Activity Among Adults Age 50 and Older (CDC, 2007). A frequent response to the open-ended questions concerning health-related suggestions included access to onsite exercise equipment and a desire to pursue an exercise program. Extensive literature supports the strong positive effects of exercise on many of the most debilitating health conditions of older adults, including but not limited to falls, diabetes, obesity, hypertension, cardiovascular disease, pain, depression, and even cognitive deficits. Increasing the physical activity of older residents and promoting a culture of health among residents would greatly improve both the general effectiveness and cost effectiveness of health-related supportive services in subsidized housing. The Centers for Disease Control and Prevention (2007) and Environmental Protection Agency (2007) both provide strategies for reaching this goal.

Social and Mental Health Status

About one-third of the participants in this study reported social networks that may not provide adequate social support. Inadequate social support (social isolation) has been considered a health risk by the World Health Organization for more than 20 years and has been extensively researched (CDC and NACDD, 2008). Supportive ties to others have been found to enhance the physical and mental health of individuals, providing a preventative effect and reducing the severity of existing health problems. Social networks can also provide an individual a safety net in times of need. Methods that may address this need include creating opportunities for enhancing meaningful social connections through activities that build community and an individual’s sense of belonging and through the use of mental health services that address individual barriers to developing social connections.

Mental and emotional health is an important part of overall health and well-being, not only for the distress that conditions such as depression can cause, but also because these conditions affect physical health and motivation for self care (Stephens, 1988). Providing mental health support to address depression, a condition frequently experienced by older adults, and other mental health disorders is a critical and often missing piece of health-related services. Untreated mental health conditions can contribute to the development of social behavioral problems that influence length of tenancy for individuals in independent housing. Services that address these mental health conditions are not adequately funded (Kleyman, 2005), and geriatric-mental-health professionals are often difficult to locate (Rosen, 2005). Mental health support was an important unmet need reported by all resident groups in this study.

Individuals with varying stages of cognitive impairment are a major challenge for any aging in place initiative. In this study, 22 percent of residents demonstrated performance on the MMSE that suggests some problems with cognitive functioning, especially memory loss. Because many things can produce alterations in cognitive abilities, evaluation for underlying causes is an important first step. Barriers to the evaluation of cognitive functioning in non-English-speaking populations include the availability of culturally appropriate assessment instruments and personnel capable of administering them. It should not be assumed that individuals diagnosed with progressive dementia cannot live independently in subsidized housing, especially during the earlier stages of the illness. Subsidized housing combined with appropriate supportive services can extend the duration of an individual’s independence; the degree to which this is possible is just beginning to be explored.

Service Use

In general, the residents who reported heavy service needs were also heavy users of services. When we review IADL and ADL needs, heavy housekeeping and lifting stand out as the two most widely reported unmet services need among residents.

Other needs identified by the assessment included medication management, mental health services, and physical therapy, yet the use of services in these areas is meager. Poor adherence to a medication regimen is often not acknowledged as a problem by individuals because they are unaware of their actual compliance rate and because they often lack awareness of the potential dangers in the complexity of their drug regimen (both prescribed and not prescribed.) Mental health services are probably underutilized because of the unavailability of affordable mental health services for older adults, the questionable acceptability of such services (especially to many non-English-speaking individuals), and a lack of awareness and knowledge of mental health symptoms. Finally, given the high number of reported difficulties with core physical skills and fall risk, a significant need exists for physical therapy and other remedial and preventative programs to address physical deficits in strength, balance, endurance, coordination, and range of motion. Many residents need consultation with a physical therapist to develop a personalized rehabilitative or preventative program, including evaluations for fall risk and generating appropriate referrals.

Summary and Implications

Conducting a multidimensional needs assessment is an effective tool for identifying the service needs of older adults who reside in subsidized housing. This case study suggests that most residents of this Section 8 building are not at near risk of hospitalization and nursing home admission; however, a significant few are. The findings helped the housing sponsor determine that most residents did not need onsite adult day care. Assessment data such as that described in this article can be used to identify and target services to the residents who are at highest risk, thus preventing costly mistakes made from less objective approaches to decision making. Residents in this study identified significant needs differences among language groups and age groups, trends that can be used to plan culturally sensitive and age-appropriate responses.

After service options are implemented, evaluation of each service option's effectiveness should be weighed against its identified goals. Service modifications can be made throughout the evaluation to further improve the services and model of service delivery. Periodic reassessments of residents' health status could be used to inform the housing sponsor and service provider, if any, if the residents' profile of health needs has changed. Resident participation in these efforts helps to ensure that services are consumer focused and that older adults stay active in their own health care.

University-community partnerships can be win-win relationships. Subsidized housing for older adults can provide rich opportunities for university researchers and evaluators to explore questions critical to gerontology while providing valuable information to property owners and older residents. University-community partners can apply for external funding to pursue needs assessments, program evaluations, and other applied research projects. Both students and residents benefit from university-sponsored internships and class projects that integrate learning and service opportunities. Housing sponsors, in turn, receive systematically collected information to help them plan and evaluate services. Universities usually provide an accepted protocol for collecting personal health information in research-defined projects. This protocol allows residents the opportunity to discuss their health and housing concerns with professionals who are not affiliated with the housing provider.

In the case of the present study, a school of social work with faculty expertise in gerontology was an existing partner of the housing sponsor. Other disciplines with training in geriatric assessment might include nurses, physical or occupational therapists, physicians, or psychologists. A college or university with a designated program in aging (gerontology or geriatrics) would be a good starting point for identifying such professionals.

We need to know more about the residents of subsidized housing for older people. Future projects should include multiple housing communities, possibly in partnership with state or local housing and aging services offices, to profile the larger population of older people who live in subsidized housing. We need to evaluate how the information gained in comprehensive health-related assessments will improve the health and quality of life of residents at the same time that it addresses organizational needs of housing sponsors, such as reduced tenant turnover and readmissions from hospitals, housing stability, and community partnerships.

It is important to keep ahead of the game. Providing services to those in need is an important goal of aging in place, but identifying and addressing health risks that will lead to functional losses and needs for supportive services are critical. Screening for these risks, educating and encouraging older adults to pursue proactive health behaviors, and creating a culture of health awareness is critical for reducing unnecessary disability and costly services.

Finally, federal attention to the need to coordinate housing and services is increasing, as indicated by a recent letter to housing authority directors from HUD and the Centers for Medicare and Medicaid Services (CMS) that “urges” public housing authorities to provide a “local admission preference” for current nursing home residents (HUD, 2009). This call for admission preference responds to the Supreme Court’s 1999 Olmstead ruling that states must afford people with disabilities the opportunity to reside in the community rather than in an institution (Folkemer and Coleman, 2006). How authorities will respond to this joint HUD-CMS request is currently unfolding, but this federal attention suggests that housing providers and service agencies will need to work together to systematically assess residents’ needs. They can then use the findings to strategically coordinate services for individuals whose health-related needs might be greater than, if not comparable to, those described in this article.

Acknowledgments

The authors acknowledge financial support for this project from Portland State University, Office of Research and Sponsored Projects.

Authors

Victoria Cotrell is an associate professor at the School of Social Work at Portland State University.

Paula C. Carder is an assistant professor at the Institute on Aging at Portland State University.

References

Armstrong, Edward, Mark Rhoads, and Forest Meiling. 2001. "Medication Usage Patterns in Assisted Living Facilities," *Consultant Pharmacist* 6: 65–69.

Brody, Kathleen, Richard E. Johnson, L. Douglas Ried, Paula C. Carder, and Nancy Perrin. 2002. "A Comparison of Two Methods for Identifying Frail Medicare-Aged Persons," *Journal of the American Geriatrics Society* 50: 562–569.

Butler, Robert. 2008. *The Longevity Revolution*: *The Benefits and Challenges of Living a Long Life*. New York: Public Affairs.

Carder, Paula. C., Sheryl Zimmerman, and John G. Schumacher. 2009. "Understanding the Intersection of Individual Needs and Choices With Organizational Practices: The Case of Medication Management in Assisted Living," *The Gerontologist* 49: 463–473.

Centers for Disease Control and Prevention (CDC). 2007. "The National Blueprint: Increasing Physical Activity Among Adults Age 50 and Older." http://www.rwjf.org/files/publications/other/Age50BlueprintSinglepages.pdf (accessed August 1, 2009).

Centers for Disease Control and Prevention (CDC) and National Association of Chronic Disease Directors (NACDD). 2008. *The State of Mental Health and Aging in America Issue Brief 1: What Do the Data Tell Us?* Atlanta, GA: National Association of Chronic Disease Directors.

Environmental Protection Agency. 2007. "Building Healthy Communities for Active Aging National Recognition Program." www.epa.gov/aging/bhc/about.htm (accessed March 26, 2010).

Fillenbaum, Gerda G. 1988. *Multidimensional Functional Assessment of Older Adults: The Duke Older Americans Resources and Services Procedures*. Hillsdale, NJ: Lawrence Erlbaum Associates.

Folkemer, Donna, and Barbara Coleman. 2006. *Long-term Care Reform: Legislative Efforts to Shift Care to the Community*. Washington, DC: National Conference of State Legislatures. Available at http://www.ncsl.org/default.aspx?tabid=14479.

Hanlon, Joseph T., Gerda G. Fillenbaum, Maggie Kuchibhatla, Margaret B. Artz, Chad Boult, and Cynthia R. Gross. 2002. "Impact of Inappropriate Drug Use on Mortality and Functional Status in Representative Community Dwelling Elders," *Medical Care* 40: 166–176.

Harahan, Mary, Alisha Sanders, and Robyn Stone. 2006. *Creating New Long-Term Care Choices for Older Adults: A Synthesis of Findings From a Study of Affordable Housing Plus Services Linkages.* Washington, DC: Institute for the Future of Aging Services. Available at http://www.aahsa.org/uploadedFiles/IFAS/Publications_amp;_Products/ltc_choices_final.pdf.

Heumann, Leonard, Karen Winter-Nelson, and James R. Anderson. 2001. The 1999 National Survey of Section 202 Elderly Housing. Washington, DC: AARP.

Kane, Robert L. 2000. "Mandated Assessments." In *Assessing Older Persons: Measures, Meaning, and Practical Applications,* edited by Robert L. Kane and Rosalie A. Kane. New York: Oxford University Press: 458–482.

Katz, Sidney, Amasa Ford, Roland Moskowitz, Beverly Jackson, and Marjorie Jaffee. 1963. "Studies of Illness in the Aged: The Index of ADL: A Standardized Measure of Biological and Psychosocial Function," *Journal of the American Medical Association* 185: 9414–9419.

Kleyman, Paul. 2005. "Experts Warn of Mental Health Crisis if Elders' Needs Ignored: 2005 NCOA ASA Joint Conference," *Aging Today* 26 (3): [page no. not available on line]. Available at http://www.asaging.org.

Kochera, Andrew. 2002. *Serving the Affordable Housing Needs of Older Low-Income Renters: A Survey of Low-Income Housing Tax Credit Properties.* Washington, DC: AARP.

Lawton, M. Powell, and Elaine M. Brody. 1969. "Assessment of Older People: Self-Maintaining Instrumental Activities of Daily Living," *The Gerontologist* 9: 179–186.

Levine, Cheryl, and Ashaki Robinson Johns. 2008. *Multifamily Property Managers' Satisfaction with Service Coordination.* Washington, DC: U.S. Department of Housing and Urban Development. Available at http://www.huduser.org/Publications/PDF/Multifamily_prop.pdf.

Miller, Edward A., and William G. Weissert. 2000. "Predicting Elderly People's Risk for Nursing Home Placement, Hospitalization, Functional Impairment, and Mortality: A Synthesis," *Medical Care Research and Review* 57: 259–297.

Redfoot, Donald, and Andrew Kochera. 2004. "Targeting Services to Those Most at Risk: Characteristics of Residents in Federally Subsidized Housing." In *Linking Housing and Services for Older Adults: Obstacles, Options, and Opportunities*, edited by John Pynoos, Penny Hollander Feldman, and Joann Ahrens. New York: Haworth Press: 137–163.

Rosen, Anita L. 2005. "The Shortage of an Adequately Trained Geriatric Mental Health Workforce." In *Testimony to the Policy Committee of the White House Conference on Aging* (January 24). Available at http://www.whcoa.gov/about/policy/meetings/Jan_24/Rosen%20WHCOA%20testimony.pdf.

Stephens, Thomas. 1988. "Physical Activity and Mental Health in the United States and Canada: Evidence From Four Population Surveys," *Preventive Medicine* 17 (1): 35–47.

Tinetti, Mary, and Mark Speechley. 1989. "Prevention of Falls Among the Elderly," *New England Journal of Medicine* 320: 1055–1059.

U.S. Department of Housing and Urban Development (HUD). 2009. "Dear Executive Director" Letter. http://www.hud.gov/offices/pih/programs/ph/am/newsletter/doc015.pdf (accessed August 1, 2009).

Additional Reading

Agency for Healthcare Research and Quality and the Centers for Disease Control. 2002. "Physical Activity and Older Americans: Benefits and Strategies." http://www.ahrq.gov/ppip/activity.htm (accessed August 28, 2009).

Center for Aging Services Technologies (CAST). 2007. *Progress and Possibilities: State of Technology and Aging Services, 2003.* White paper. Washington, DC: American Association of Homes and Services for the Aging. Available at http://www.agingtech.org/documents/Progress%20and%20Possibilities_110107.pdf.

Center for Health Program Development and Management. 2004. *Changing Interagency Service Delivery Systems To Help Older Public Housing Residents Access Services To Assist Them To Age in Place.* Baltimore: University of Maryland, Baltimore County. Available at http://www.mdoa.state.md.us/publications.html (accessed March 26, 2010).

Crum, Rosa., James Anthony, Susan Bassett, and Marshall Folstein. 1993. "Population-Based Norms for the Mini-Mental State Examination by Age and Education Level," *Journal of the American Medical Association* 269: 2386–2391.

Folstein, Marshall, Susan Folstein, and Paul McHugh. 1975. "Mini-Mental State: A Practical Method for Grading the Cognitive State of Patients for the Clinician," *Journal of Psychiatric Research* 12: 189–198.

Golant, Stephen. 1999. *The CASERA Project: Creating Affordable and Supportive Elder Renter Accommodations.* Tampa, FL: University of Florida.

Lee, Pearl, Christine Cigolle, and Caroline Blaum. 2009. "The Co-Occurrence of Chronic Diseases and Geriatric Syndromes: The Health and Retirement Study," *Journal of the American Geriatrics Society* 57: 511–516.

Lubben, James, Eva Blozik, Gerhard Gillmann, Steve Iliffe, Wolfgang von Renteln Kruse, John C. Beck, and Andreas Stuck. 2006. "Performance of an Abbreviated Version of the Lubben Social Network Scale Among Three European Community-Dwelling Older Adult Populations," *The Gerontologist* 46: 503–513.

Lubben, James, and Matteo Gironda. 2000. "Social Support Networks." In *Comprehensive Geriatric Assessment,* edited by Dan Osterweil, Kenneth Brummel-Smith, and John Beck. New York: McGraw Hill: 121–137.

Yang, John, George Tomlinson, and Gary Naglie. 2001. "Medication Lists for Elderly Patients," *Journal of General Internal Medicine* 16: 112–115.

Yesavage, Jerome, T.L. Brink, Terrence Rose, Owen Lum, Virginia Huang, Michael Adey, and Von Otto Leirer. 1983. "Development and Validation of a Geriatric Depression Screening Scale: A Preliminary Report," *Journal of Psychiatric Research* 17: 37–49.

Health Indicators: A Proactive and Systematic Approach to Healthy Aging

Fredda Vladeck
Rebecca Segel
United Hospital Fund

Mia Oberlink
Michal D. Gursen
Center for Home Care Policy and Research,
Visiting Nurse Service of New York

Danylle Rudin
Consultant

Abstract

The challenge of serving a burgeoning elderly population that has an increasing burden of chronic illness cannot be met within the existing paradigm of "one hip fracture at a time"—a limited approach using discontinuous, reactive responses to crises that can be prevented or delayed. As the gap between needs and resources continues to grow, and as the understanding of how to effectively manage chronic conditions improves, a proactive system is needed: a community-oriented, evidence-based approach involving three components—self-care, medical care, and community care and support systems. Merely locating traditional health and social services in communities is not sufficient; any endeavor to effectively integrate these three components at the community level requires good data, strategic partnerships, thoughtful targeting, explicit cross-sector standards, and the capacity to track and measure the effort's effectiveness.

This article describes a data-driven, community-based, collaborative effort under way in 34 low- and moderate-income communities in New York City. The Health Indicators in NORC (naturally occurring retirement community) Programs initiative, started in 2007, has enabled community-based programs with limited resources to become more systematic in addressing the management of clients with diabetes, heart disease, or an increased risk for falls.

Background

In 2000, the Centers for Disease Control and Prevention (CDC) embarked on an ambitious national campaign, called Healthy People, with the intent of improving the health of the American people (HHS, ODPHP, 2010). Using key health indicators to measure the health of the nation every 10 years, the CDC established improvement objectives related to: what individuals can do to better care for themselves (self-care), what service providers can do to ensure that people have access to and are receiving appropriate care (medical care), and what communities can do to overcome known environmental barriers or stresses and provide appropriate supports to promote residents' health and well-being (community care). The Administration on Aging, as part of the wider government goal of improving health, has turned to evidence-based models as a way to promote healthy aging. Evidence-based health promotion programs (including A Matter of Balance, Healthy IDEAS [Identifying Depression, Empowering Activities for Seniors], PEARLS [Program to Encourage Active, Rewarding Lives for Seniors], Chronic Disease Self-Management Program, and others) are now offered by the Administration on Aging's network of aging-services providers. Because "many communities lack the chronic disease and risk factor data to effectively set priorities and evaluate programs" (Brownson and Bright, 2004), evidence-based health promotion programs are being offered to all older adults (regardless of their health condition) to prevent, slow the progression of, or lessen the consequences of health problems prevalent among the elderly, such as hypertension, diabetes, heart disease, and an increased risk for falls.

About 80 percent of today's elderly population has a single chronic condition and 62 percent has more than one (HHS, AHRQ, 2010). Effective care and management of chronic conditions require a complex set of coordinated activities among clients, health providers, and community support systems—a necessary partnership that can accomplish the right things, in the right communities, with the right people, at the right time.

Health Indicators in NORC (naturally occurring retirement community) Programs (Health Indicators) is a data-driven, quality-improvement process that employs evidence-based interventions and strategies to measurably improve the health status of older adults. This article begins with an overview of the NORC program model in New York City, followed by a description of Health Indicators and its results to date.

The NORC Program Model

Throughout the United States, an increasing number of older adults live in communities not built specifically for the elderly—naturally occurring retirement communities, or NORCs. First used by Michael Hunt in 1984, the term NORC is now used as a demographic descriptor for age-integrated housing developments or neighborhoods where older adults comprise a significant portion of the residents. NORCs cannot be built; rather, they evolve over time, in a variety of ways. Adults remain in communities where they raised their families; young people leave in search of opportunities, leaving behind older generations; and older adults move to a building or neighborhood because of amenities and services that fit with their retirement lifestyle. Analyses of census data from 1990 and 2000 document steady growth in the number of NORCs in urban centers and firstring suburbs in metropolitan areas across the United States (Lanspery and Callahan, 1994; Puentes and Warren, 2006).

NORCs consist of heterogeneous mixes of older adults in varying stages of health and well-being, with a variety of interests and needs that fluctuate over time. The relatively dense population in NORCs has made it possible to rethink conventional service delivery paradigms. Historically, aging, health, and long-term care services have been delivered to individuals in silos, disconnected from the community where an older adult lives. This approach bases service on a categorical eligibility that is usually triggered by a crisis and often involves a hospital stay.

NORCs have given policymakers and service providers the opportunity to shift their efforts from delivering specific services to specific individuals to focusing on the health and well-being of subpopulations of seniors within communities. In 1986, the first NORC Support Service Program (NORC-SSP, or simply "NORC program") began in response to the needs of a large concentration of older adults in Penn South Houses, a housing development in New York City. Using a mix of philanthropic funds and support from the housing company itself, a new service program integrating housing, social services, and health services was developed (Vladeck, 2004).

Based on the success of the original Penn South program and two other similar housing developments, in 1995, New York State provided financial support for the NORC program model because of its innovative approach to a public policy focused on aging in place; New York City followed suit in 1999. Today, $11.4 million in city and state funding leverages an equal amount in private sector revenue and in-kind support for 54 NORC programs operating in moderate- and low-income housing developments and neighborhoods. NORC programs have since been started in communities in 25 other states, and the model is now being tested as part of the Administration on Aging's Community Innovations for Aging in Place Demonstration Program.

New York City's NORC programs are structured partnerships among housing developments (or neighborhoods), residents, health and social service providers, and other community stakeholders. These programs work at both the community level and individual level to address the challenges to aging in place in the NORC. The NORC model builds communities and provides for services aimed at the following:

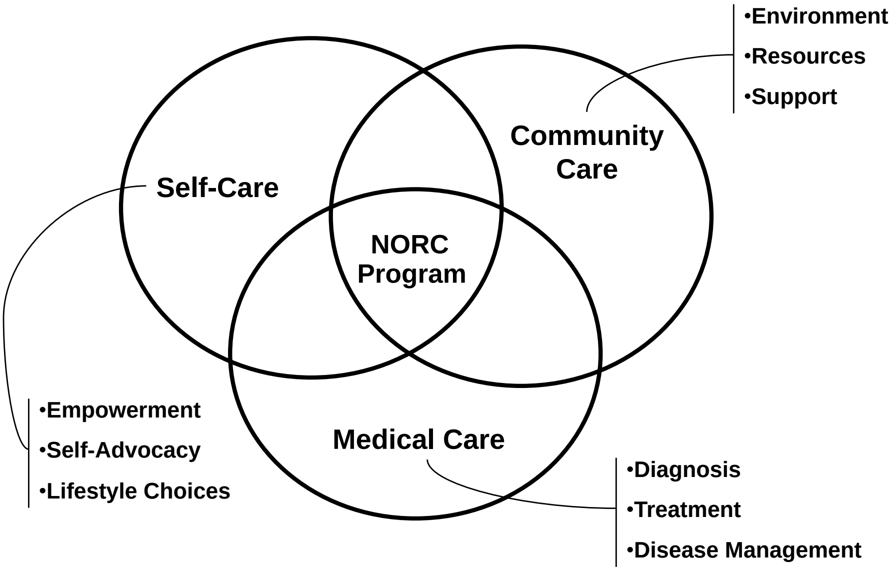
- Empowering older adults to take on new roles in their community.
- Fostering connections among residents within the community.
- Maximizing the health and well-being of all older adults in the NORC.

The 34 NORC programs funded by New York City are located in large and small public and private housing developments and are composed of both garden-style apartment complexes and single-family homes. Ten NORCs are located within New York City Housing Authority (NYCHA) public housing developments. In most instances, the lead agency is a social service provider from the network of aging-services providers; the health service partner is typically a home care agency, a local hospital, a nursing home, or a combination. Social workers, nurses, and residents staff NORC programs (UHF, 2010). Many of the program's health partners provide nurses as an in-kind resource to the programs, with each program receiving between 2 to 55 hours per week.

NORC programs, which integrate housing, social service, and health care for seniors, are located at the intersection of self-care, medical care, and community resources—making them ideally situated to maximize the health and well-being of older adults (exhibit 1).

Exhibit 1

Community Chronic Care Model



Source: United Hospital Fund, 2008

Origins of Health Indicators

The extent of positive effects that NORC programs have on the health of older adults in their communities has been a challenge to measure from the programs' inceptions. The programs' staff had few resources to determine which health risks were most prevalent in their community, making it difficult to connect residents' needs to appropriate services, and thereby limiting the staff's ability to reduce primary health risks to residents living with chronic conditions. Consequently, before 2007, the health components of the NORC programs focused on providing health education and health promotion activities (lectures on specific health topics and a range of physical and cognitive exercises); blood pressure checks (a very popular offering); and nurses monitoring the health of frail or medically complex residents, to help residents (and their caregivers) manage health conditions and to help residents navigate the healthcare system maze. Powerful stories of individuals who had been helped illustrate the value of NORC programs. The success rate of the program is measured by the number of forestalled hospitalizations and nursing home placements attributed to program interventions.

Shifting from a case-by-case, reactive crisis management style to a systematic, proactive practice style based on evidence required fundamental changes by NORC program staff. They needed to learn how to collect, interpret, and use relevant data to target their efforts toward a particular health issue; appropriately integrate and apply standards of practice; develop strategies to exchange relevant information with other sectors and leverage additional resources; and measure the effectiveness of their interventions over time.

Health Indicators in NORC Programs

In 2007, New York City's Department for the Aging (DFTA) turned to the United Hospital Fund (the Fund), a research, policy, and grant-making organization focused on shaping positive change in the healthcare delivery system, to help NORC programs move to evidence-based practice. To help develop and implement the Health Indicators initiative, the Fund engaged the Center for Home Care Policy and Research of the Visiting Nurse Service of New York as a technical consultant for data collection tool development, website and database development and management, and data analysis.

Health Indicators involve three steps:

1. Identifying key health risks in a community-client population through a baseline survey.
2. Targeting, designing, implementing, and evaluating interventions focused on a specific health condition, using a quality-improvement process.
3. Periodically following up to measure effectiveness and identify new health risks.

The following paragraphs describe Health Indicators—the tools, the processes, the Fund's implementation process across New York City's NORC programs, and the results thus far.

Step One: Identifying Key Health Risks

The Health Indicators process begins with a survey examining three of CDC's key components of healthy aging. It is based on the belief that effective NORC programs promote healthy aging by ensuring that older adults (1) have access to health care; (2) engage in health promotion, disease prevention, and wellness activities; and (3) are able to manage their chronic conditions. (See appendix A for domains and indicators.) The Fund developed a 75-item survey instrument that corresponds to the three components and their relevant indicators. The instrument draws on standard or slightly modified questions derived from validated national and local surveys, including the Behavioral Risk Factor Surveillance System (HHS, CDC, 2010), the National Health Interview Survey, the U.S. Census, and the AdvantAge Initiative tool (VNSNY, Center for Home Care Policy & Research, 2010).[1] It takes 15 to 20 minutes for NORC program staff (social workers, nurses, or administrative staff) to administer the survey to clients and about 5 minutes to enter it into a web-based, electronic database developed specifically for Health Indicators. To get started, program directors were instructed to administer the questionnaire over a 3-month period to the health and case management staff and to health and case assistance clients seen during the course of their regular work. Interviews were conducted in person at the NORC program offices or in clients' homes.

---

[1] The AdvantAge Initiative is a project that has developed tools and processes to help communities measure their elder-friendliness (Visiting Nurse Service of New York, Center for Home Care Policy and Research, 2010).

The report format developed for the programs focused on identifying the most prevalent health conditions in each individual NORC program and in the aggregate of all programs. Reports identified and described the characteristics of people with the identified health conditions and explored differences by demographic characteristics and health condition. The Fund helped each program use the data to begin a conversation with community stakeholders about the findings. Each NORC program was given comparative city, state, and federal data, when available, in a standard format that arrayed program findings and comparative data for easy sharing with program partners and community stakeholders.

A total of 5,069 surveys were completed and entered into the database, representing 44 percent of the client caseloads across the NORC programs from 2006 through 2007. For the first time, each NORC program (and DFTA) had information about the most prevalent health risks in each community and learned how seniors with heart disease, diabetes, or an increased risk for falls were faring.

Survey Results

Demographics. As exhibit 2 illustrates, the 5,069 seniors surveyed were predominantly female (76 percent), lived alone (58 percent), and were White non-Hispanic (56 percent); 37 percent were either Black non-Hispanic or Hispanic. Of those surveyed, 66 percent were between the ages of 65 and 84, and 26 percent were 85 or older. NORC programs in NYCHA developments had a high concentration of ethnic minorities (72 percent non-White) and a higher concentration of younger residents than seen in non-NYCHA (that is, private, moderate-income) developments: 51 percent versus 27 percent were 60 to 74 years old and 48 percent versus 72 percent were 75 or older, NYCHA versus non-NYCHA, respectively.

Exhibit 2

Demographic Characteristics

Characteristic		Aggregate (100%) N=5,069	NYCHA (32%) N=1,615	Not NYCHA (68%) N=3,454
Age	60–64	7%	10%	5%
	65–74	28%	41%	22%
	75–84	38%	34%	40%
	85+	26%	14%	32%
Gender	Male	24%	24%	24%
	Female	76%	76%	76%
Race/ethnicity	White (Non-Hispanic)	56%	26%	70%
	Black (Non-Hispanic)	18%	20%	17%
	Asian	5%	9%	4%
	Hispanic	19%	43%	8%

NYCHA = New York City Housing Authority.

Note: Percentages may not add to 100 percent because of rounding and missing data.

Source: United Hospital Fund Health Indicators in NORC Programs Initiative, 2007 through 2008

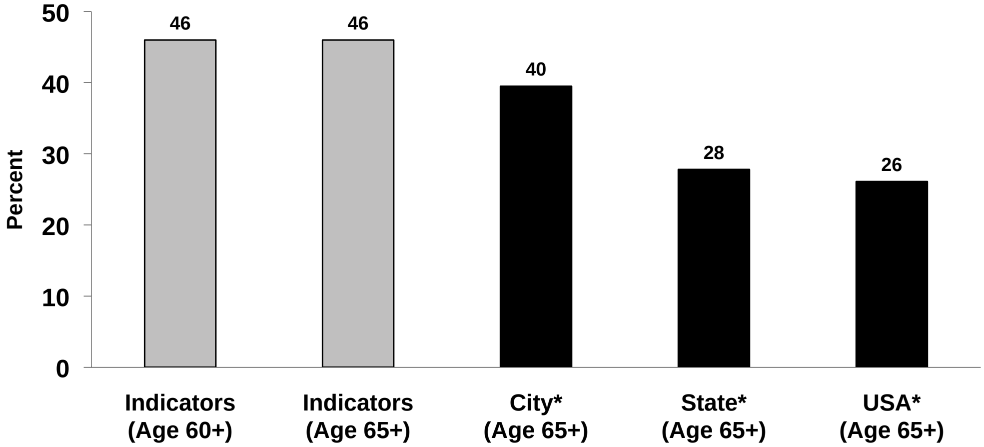
Access to Health Care. Nearly all the seniors surveyed had primary health insurance coverage (99 percent) and prescription drug coverage (95 percent). Most had a regular source of care (96 percent); among those, virtually all had seen their doctor at least once in the past year, and 22 percent of them had seen their health provider seven times or more over the year. Of those surveyed, 34 percent had used an emergency room in the past year, and 13 percent had done so more than once.

Health Promotion and Disease Prevention. Respondents in the 65-and-over age group were slightly more likely to rate their health fair to poor (46 percent) than the 65-and-over population of New York City as a whole (40 percent), as shown in exhibit 3. These figures exceeded the statewide rate (28 percent) and the national rate (26 percent), a difference that held true even when including younger respondents by expanding the age group to 60 and over. A self-reported health status of fair to poor was dramatically more common among people with certain chronic conditions—for example, 57 and 62 percent, respectively, for people with diabetes and heart disease.

Nearly all the clients surveyed (96 percent) reported taking at least 1 medication, and 15 percent reported taking 10 or more. In 2007, the group had higher rates of flu immunization (77 percent) and pneumonia vaccination (58 percent) than the citywide rates (57 and 48 percent, respectively). Only 4 percent of the women surveyed had never had a mammogram, and only 24 percent of all seniors surveyed had never had a colonoscopy, compared with a citywide rate of 33 percent for people over 65 (NYC DOHMH, 2006). The rate of social connections (frequency with which individuals see or speak to family members and friends) was high, at 93 percent, and 77 percent of the seniors surveyed reported leaving their homes three times a week or more. The levels of physical activity were consistent with national rates: 28 percent of seniors surveyed reached the recommended level of physical activity, and 35 percent reported no physical activity.

Exhibit 3

Fair/Poor Health Status (Indicators data compared with city, state, and national data)



** Percentages are rounded to the nearest whole number.*

Sources: United Hospital Fund Health Indicators in NORC Programs Initiative, 2007 through 2008; www.nyc.gov (city); http://www.cdc.gov (state); http://www.cdc.gov (USA)

Chronic Conditions. Only 16 percent of seniors surveyed reported having no chronic conditions. Overall, 25 percent had diabetes, 32 percent had heart disease, 66 percent had hypertension, 20 percent had lung disease or breathing problems, 26 percent were overweight or obese, 12 percent had suffered a stroke (in two of the NORC programs, 20 percent or more had suffered a stroke), 63 percent had arthritis, 32 percent had osteoporosis, and 27 percent had fallen in the past 12 months.

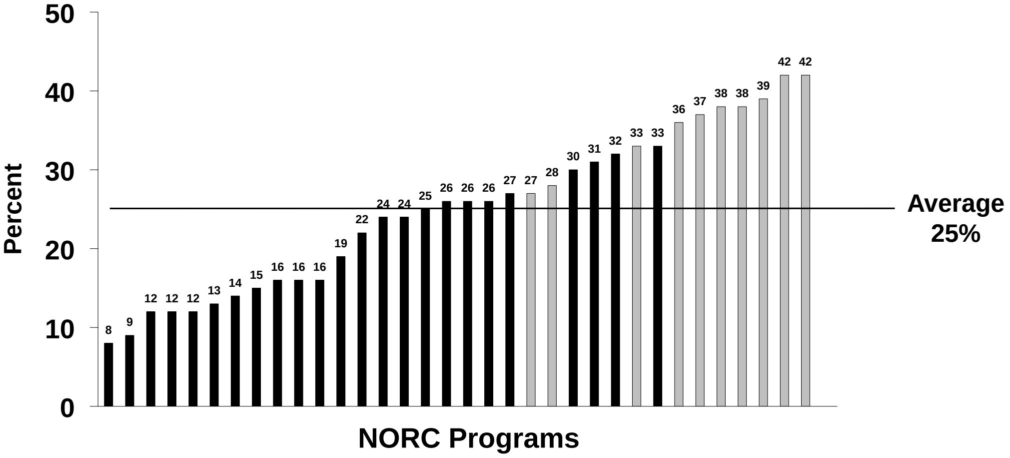
The power of the data is better revealed by looking at some of the findings in more detail. Diabetes data provide a useful example. Of those surveyed, 25 percent had diabetes. (The citywide prevalence of diabetes in a comparable age group is 23 percent). Of the NORC program clients with diabetes, 57 percent rated their health as fair to poor, and nearly one-fifth (18 percent) acknowledged difficulty managing the disease. Although diabetes is not curable, effective management of the disease can slow its progression and prevent life-threatening consequences.

The data also document patterns of chronic disease prevalence by community. Exhibit 4 shows the diabetes rates for seniors served by New York City's NORC programs. Each bar represents a NORC program. The gray bars represent the 10 programs in public housing, all of which are above the aggregate rate (25 percent), mirroring the prevalence of diabetes in New York City as a whole—namely, that it is concentrated in non-White, poorer, and younger populations.

Collectively, the data painted an informative picture of the health and well-being of seniors served by New York City's NORC programs. Access to care appeared not to be an issue because most NORC residents reported having insurance and a regular source of medical care. The surveyed seniors reported seeing their doctors frequently and taking a lot of medication. Nonetheless, they suffered from multiple chronic conditions and reported not feeling well. Overall, the data portrayed a population that needed help systematically addressing the health risks and symptoms associated with chronic conditions and common health problems. The challenge for NORC programs was to make that help relevant to its clients.

Exhibit 4

Prevalence of Diabetes Mellitus by NORC Program



Gray bars represent New York City Housing Authority programs.
Source: United Hospital Fund Health Indicators in NORC Programs Initiative, 2007 through 2008

Step Two: Targeting, Designing, Implementing, and Evaluating Interventions

Standards of Practice. After discussions with program partners and community stakeholders, NORC programs selected from heart disease, diabetes, or increased risk for falls (based on what was most prevalent) as a target for their interventions. To determine how well the NORC programs were addressing the known risk factors associated with the target condition, the Fund developed NORC Program Standards of Practice (SOPs), which reflect best practices and clinical guidelines in self-care, medical care, and community supports. The SOPs cover five areas: Knowing and Managing Your Numbers, Appropriate Medication Management, Healthcare Maintenance, Diet and Physical Activity, and Education and Information. Each SOP contains a series of detailed measures relating to the standard. The SOPs and measures were based on extensive literature reviews, established clinical guidelines, and evidence-based best practices. After being adapted for use by NORC programs, they were reviewed by a board-certified geriatrician and a group of NORC program nurses. (See appendix B for the SOPs.)

Quality Improvement. With NORC Program SOPs in place, a continuous quality-improvement process was designed in which program staff identify gaps in meeting the SOPs ("benchmarking"), set improvement goals and objectives, develop and implement strategies to reach their goals and objectives, measure progress through benchmarking at appropriate intervals, and repeat the process.

Benchmarking Process. The Health Indicators benchmarking tools comprise a short series of questions that NORC program staff complete by chart review, thus reinforcing for staff the crucial importance of documentation. The questions were designed to gauge what program staff know and have documented about their clients and to measure change in that documentation over time. For questions addressing the measures of the different SOPs, the choices are "yes," "no," or "don't know." (For example, "Is NORC program nurse monitoring client's blood pressure at least quarterly?") Even movement from a "don't know" to a "no" at different time points represents progress, because the program then knows who needs further attention (and what sort of attention), which, if effectively delivered, will generate a "yes" in time.

To assist programs with documentation, checklists were developed that align the SOPs and the benchmarking tools. Program staff use the checklists to track each client's status. The checklists resemble one-page nursing flowsheets, with space to record clinical values and boxes to check when these results are reviewed with the client.

The tools yield valuable information about both the individual NORC program clients and about the programs themselves. At an individual level, the checklist can indicate specific courses of action. When aggregated, the benchmarking results make it possible to look across all clients with a particular health issue to identify patterns among the group and devise and test strategies that increase program effectiveness. For example, if a large percentage of the diabetic clients in a program are not getting the recommended level of physical activity, the program might consider starting an evidence-based exercise program specifically for this group. Such information is invaluable to programs if they are to deliver more targeted and systematic interventions. Without it, programs have no way of knowing which seniors need assistance, what kind of assistance they need, and whether the assistance is helping them effectively manage their diabetes.

The quality improvement process began in December 2008, when programs conducted their initial benchmarking (referred to below as "T1"). All programs were provided with a registry of clients affected by the selected health issue, derived directly from the initial Health Indicators data. (Program staff can continually update the registry as other clients are identified with a particular health condition or existing clients die or move away.) Using the initial benchmarking reports as their guide, programs then set improvement goals and specific objectives. They developed and implemented improvement strategies and saw the fruits of their labor when the second benchmarking occurred 6 months later, in July 2009 ("T2").

Benchmarking Results

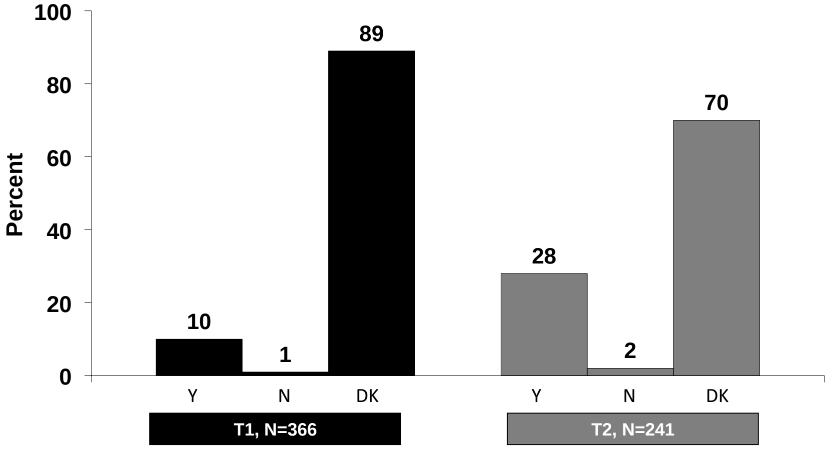
Results from the first two benchmarking periods provide a solid measure of the utility of the quality improvement process in helping programs systematically address health needs by following the NORC Program SOPs. This section of the article focuses on the results for programs addressing diabetes, although similar progress was seen in programs addressing heart disease and increased risk for falls. Across all issue areas, improvement was seen in measures within the different SOPs (Knowing and Managing Your Numbers, Appropriate Medication Management, Healthcare Maintenance, Diet and Physical Activity, and Education and Information), although this improvement occurred at different rates for different measures and standards.

The 10 programs focusing on diabetes ask the question, "Has client's hemoglobin level (HbA1c) been tested at least twice in the past 12 months?" (The HbA1c test shows average blood glucose level over the past 2 to 3 months. See appendix B for other standards of practice concerning diabetes.) At T1, the "don't know" response was given for 89 percent of the clients; at T2, this number fell to 70 percent. The percentage of "yes" responses increased over time as well (exhibit 5).

Similar patterns were seen for other indicators of effective diabetes management and control. In response to a question about whether blood pressure was being measured quarterly, the percent-

Exhibit 5

Diabetes: HbA1c Tested at Least Twice in Past 12 Months



DK = Don't know. N = No. Y = Yes.

Source: United Hospital Fund Health Indicators in NORC Programs Initiative, 2007 through 2008

age of “don’t know” responses decreased from 34 percent at T1 to 26 percent at T2, and “yes” responses increased from 26 to 49 percent. In response to a question about cholesterol testing, the percentage of “don’t know” responses decreased from 75 to 56 percent between T1 and T2, and “yes” responses increased from 24 to 44 percent.

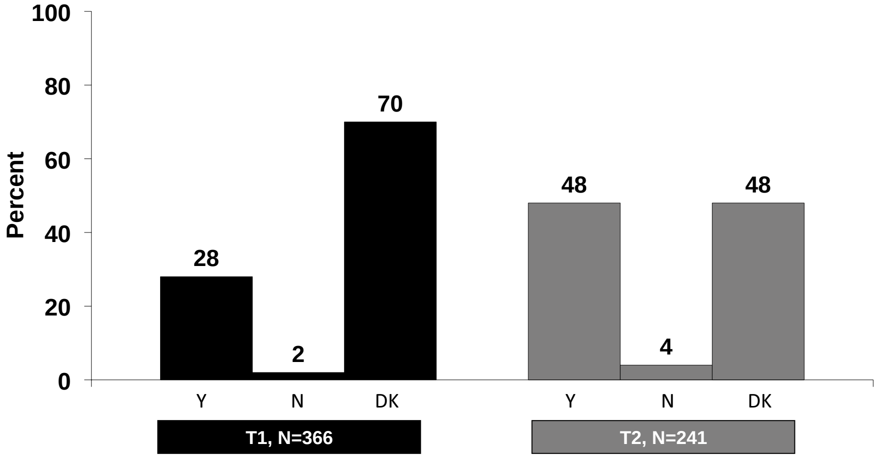
The bar charts in exhibit 6 also show steady improvement in the documentation of annual dilated eye exams for clients with diabetes between T1 and T2. Similarly, documentation improved on whether clients had an individualized diet plan—another essential component of effective diabetes care. “Yes” responses increased to 32 percent at T2 from 17 percent at T1.

NORC programs that focused on the other target conditions documented similar patterns in the benchmarked results. For example, the 15 programs that focused on heart disease asked program staff (in a questionnaire) if they knew whether their clients had a cholesterol test within the past 12 months. The response of “yes” increased from 36 to 62 percent and the “don’t know” response decreased from 61 to 37 percent. Similarly, the “yes” responses to a question about the presence of EKG documentation rose from 36 to 64 percent. The eight programs that selected to focus on fall risk reduction documented dramatic improvements in several key measures: in orthostatic hypotension assessment, where the “yes” response rose from just 10 percent to 60 percent, and the “don’t know” response dropped from 37 to 4 percent; in trigger drug assessment, where the “yes” response rose from 19 to 72 percent, and the “don’t know” response dropped from 35 to 6 percent; and in assessments of gait, balance, and strength, where the “don’t know” response dropped from 69 to 35 percent. We expect even more progress as this process continues and programs learn to work differently, both as a team and in the community.

It was not surprising that results from the first benchmarking period showed a high percentage of “don’t know” responses. Previously, interventions were mere reactions to crises that happened to be noticed, rather than intentional responses in a systematic, comprehensive approach. The high

Exhibit 6

Diabetes: Dilated Eye Exam in Past 12 Months



DK = Don’t know. N = No. Y = Yes.

Source: United Hospital Fund Health Indicators in NORC Programs Initiative, 2007 through 2008

percentages documented for "don't know" responses prompted the creation of a set of straightforward objectives that included regularly performing specific tasks, asking clients basic questions about their health care, and documenting these activities accordingly. Armed with the benchmarking data, NORC programs can measure improvement using the SOPs at both the client and program levels and follow up with individuals to address their specific needs. Each benchmarking question is designed to trigger a deliberate and evidence-based response.

Followup takes many forms, requires strategy development and implementation, and is often tailored to the individual. Using diabetes control as an example, clients first must be educated on the importance of the hemoglobin level test. The NORC programs require a copy of the lab results—either from the client or directly from the healthcare provider. Depending on the lab results, followup care may be recommended. Does the diabetic client require a medication change by a doctor, or nutrition counseling? Or, in the case of an eye exam, it is important to know why a client has not had one in the past 12 months. For example: Does the client have an issue of access? Is the lapse based on a client's fear? Are there other barriers, such as a lack of transportation? The followup questions and practices that result from the benchmarking have practical value for individual clients, because they indicate who may need assistance managing health needs and what form that assistance should take.

The benchmarking results are promising up to this point. Across all three health issues, programs have seen dramatic improvements in what they know and document, and they are also making great strides in developing and implementing strategies to better address clients' needs. Changing the programs' practices will not happen overnight, but programs are seeing the value of a targeted and systematic approach, which sets clear goals and objectives, and are measuring progress at regular intervals. Because benchmarking by these programs continues through 2010, DFTA is carefully examining how to incorporate elements of this data-driven, quality-improvement process into its own performance standards and measures across all its service delivery systems.

Step Three: Periodically Following Up

In 2011, participating programs will resurvey their client populations using the Health Indicators survey to identify new or emerging health risks. From there, programs can identify any new health issues on which to focus their quality improvement process. Eventually, the Standards of Practice will be embedded into regular program practice, helping to maximize the health and well-being of NORC program clients, and programs will no longer pursue a practice of "one hip fracture at a time."

Conclusions

As the nation grapples with the growing burden of chronic illness, especially in the elderly, both healthcare and aging-services providers have been encouraged to strengthen their participation in preventive efforts, especially in better educating patients about reducing and managing risk factors. The healthcare provider community, at varying rates among different institutions, is gradually adopting quality-improvement strategies and tools to focus on doing a better, more systematic job of managing the health of their patients with chronic illness or patients at risk for chronic illness.

Aging-services providers have been asked to encourage willing older adults to adopt healthier lifestyles by using an assortment of "evidence-based" health promotion programs.

These prevention and risk reduction efforts have largely taken place within the separate organizational silos of health care and aging services. This separation is particularly counterproductive with respect to older adults, many of whom have multiple chronic health conditions requiring coordinated, integrated management and care. Health promotion and preventive activities are of limited use if they are not getting to those who need them most, when they need them, and where they need them. NORC programs are perfectly positioned to take on the integrative functions of bringing together the separate realms of self-care, medical care, and community-based support. Mere positioning, however, is not sufficient; NORC programs also need specific tools to help improve the health status of older adults in a measurable, systematic way.

Health Indicators, a highly replicable suite of tools and processes, has already been demonstrated to help NORC programs shift practice from providing services on a first-come, first-served basis to targeting those most at risk and helping them get the education, care, and support they need for long-term living with chronic conditions. This approach should also be readily applicable to other providers serving communities with dense concentrations of older adults. To date, most aging-services practitioners have lacked the knowledge and tools to engage in evidence-based community health practice and, instead, do what they know best—react to specific acute illnesses, or install broad health promotion programs that are not targeted to a particular population. Borrowing experience from the healthcare community and adapting the quality-improvement process for community-based aging-services providers, Health Indicators uses data to drive what aging-services providers do and with whom they do it. It changes the expectations of community-based aging-services providers, shifting focus from the reactive provision of units of service to a more proactive, targeted, and systematic approach, continually measuring not only what they do, but also its effects, and enabling them to modify their strategies on the basis of reliable data. Although community-based aging-services providers will experience a steep learning curve in adopting such a change in approach, they can achieve the change.

In addition to helping community-based aging-services providers, Health Indicators also provides a vehicle for attaining the long-sought, but rarely realized, aspiration to better integrate health and social services in programs for the elderly. By providing accessible and understandable tools for aging-services providers, drawn largely from healthcare literature, Health Indicators equips providers to, first, work more effectively with the healthcare community and, second, to educate their clients in how they can better manage their own health care. At the same time, Health Indicators empowers the aging-services providers to monitor the performance of the healthcare system in the interest of their shared clients. In so doing, it creates a standardized, medically validated playing field on which aging-services and healthcare providers—and their clients—can work cooperatively to achieve shared goals.

Rooted as it is in the quality-improvement principles of continual feedback, learning, and programmatic adaptation, Health Indicators is, by definition, a work in progress. We already have come far enough, however, to have confidence that it can serve as the framework for long-sought changes in service delivery that will bring both short-term and long-term benefits to improve the health and well-being of elderly clients.

Appendix A
Health Indicators in NORC Programs: Domains and Indicators

GOAL: To advance healthy aging in the community

I. Objectives
- Identify health risks among NORC residents aged 60+
- Plan interventions/programs
- Measure the impact of NORC program interventions

II. Data to be collected in pilot NORC sites

A. Demographics
- Age
- Gender
- Living arrangements
- Language
- Race
- Ethnicity
- Living children & their proximity
- Country of origin

B. Domains & Indicators

1. Access to Care and Information
    - Health insurance status
    - Regular source of care & frequency of MD and ER visits
    - Source of information about health concerns and service needs
    - Health care proxy

2. Health Promotion, Disease Prevention, & Wellness
    - Self-reported health status
    - Number of prescription & non-prescription medications
    - Problems paying for prescription medications
    - Immunizations (flu shot & pneumococcal vaccine)
    - Screenings (blood pressure reading, hearing test, eye exam, mammogram, Pap smear, PSA, colonoscopy, bone mass)
    - Physical activity
    - Tobacco use
    - Alcohol use

- Connection to family, neighbors & friends
- Frequency of leaving the home

3. Health Conditions
    - Diagnosis and management of health conditions (diabetes, lung disease or breathing problems, high blood pressure, heart disease, stroke, arthritis, osteoporosis, obesity)
    - Interference with activities of daily living due to poor health
    - Falls
    - Depression
    - Use of assistive devices (eyeglasses, hearing aid, cane, walker, wheelchair, shopping cart, personal emergency device)

Appendix B
NORC Program Standards of Practice for Care of Client With Diabetes

Standard of Practice 1: Knowing and Managing Your Numbers

Elements of Practice for Knowing and Managing Your Numbers

1. **HbA1c** tested and reviewed with doctor at least twice annually at least 3 months apart or as otherwise prescribed.
    1a. **Adherence** to prescribed changes in care regimen as needed.
2. **Blood pressure** tested at least quarterly or as prescribed by doctor and discussed with client.
    2a. **Adherence** to prescribed changes in care regimen as needed.
3. **Lipids** tested and reviewed annually with doctor or as otherwise prescribed.
    3a. **Adherence** to prescribed changes in care regimen as needed.
4. **Microalbumin** level in urine tested and reviewed annually with doctor or as otherwise prescribed.
    4a. **Adherence** to prescribed changes in care regimen as needed.
5. **Weight goal** identified by appropriate professional and discussed with client (weight loss, gain, or maintenance).
    5a. **Appropriate followup** to ensure progress toward weight goal.

Standard of Practice 2: Appropriate Medication Management

Elements of Practice for Appropriate Medication Management

1. **Glycemic control** with glucose monitor (if prescribed)—glucose level tested as prescribed by doctor.
    1a. **Adherence to prescribed changes** in care regimen as needed.
2. **Annual medication review** by doctor, nurse, or pharmacist.
    - Medication review with each change in medication regimen (addition or subtraction of medication, dosage adjustment).
    - Medication review with any significant change in health status.

    2a. **Medication regimen adjustment** by doctor(s) as needed.
    2b. **Adherence** to prescribed medication regimen.
3. **Medication understanding assessment** by NORC program nurse every 6 months.
    3a. **Education and followup** as needed.

Standard of Practice 3: Healthcare Maintenance

Elements of Practice for Healthcare Maintenance

1. **Full foot examination** at least annually by trained healthcare provider.
    - **Foot inspection** at each primary care visit.
    - **Self-examination** daily.
2. **Dilated eye examination** annually.
    - **2a. Followup** vision care as appropriate.
3. **Flu vaccination** annually.
4. **Pneumonia vaccination** one time after age 65 or as otherwise indicated.
5. **Smoking cessation** services and ongoing support offered if client smokes.

Standard of Practice 4: Diet and Physical Activity

Elements of Practice for Diet and Physical Activity

1. **Individualized diet** plan provided by appropriate professional.
    - **1a. Adherence** to prescribed diet.
2. **Physical activity** as prescribed.

Standard of Practice 5: Education and Information

Elements of Practice for Education and Information

1. **Diabetes education** provided by diabetes educator or appropriate healthcare professional as needed.

Acknowledgments

The authors thank the New York City Department for the Aging for its support, NORC programs and staff for participating in this initiative, and Miles P. Finley for editorial assistance.

Authors

Fredda Vladeck is the director for the Aging in Place Initiative, United Hospital Fund.

Rebecca Segel is the program manager for the Aging in Place Initiative, United Hospital Fund.

Mia Oberlink is the senior research associate at the Center for Home Care Policy and Research, Visiting Nurse Service of New York.

Michal D. Gursen is the research project manager at the Center for Home Care Policy and Research, Visiting Nurse Service of New York.

Danylle Rudin is a consultant to the United Hospital Fund.

References

Brownson, Ross C., and Frank S. Bright. 2004. "Chronic Disease Control in Public Health Practice: Looking Back and Moving Forward," *Public Health Reports* 119: 230–238.

Lanspery, Susan C., and James J. Callahan, Jr. 1994. *Naturally Occurring Retirement Communities: A Report Prepared for the Pew Charitable Trusts*. Waltham, MA: Brandeis University.

New York City (NYC) Department of Health and Mental Hygiene (DOHMH). 2006. "EpiQuery Interactive Health Data." http://www.nyc.gov/health/epiquery (accessed April 13, 2010).

Puentes, Robert, and David Warren. 2006. *One-Fifth of America: A Comprehensive Guide to America's First Suburbs*. Washington, DC: The Brookings Institution.

United Hospital Fund (UHF). 2010. "NORC Blueprint: A Guide to Community Action." http://www.norcblueprint.org (accessed April 13, 2010).

U.S. Department of Health and Human Services (HHS), Agency for Healthcare Research and Quality (AHRQ). 2010. "Medical Expenditure Panel Survey (MEPS)." http://www.meps.ahrq.gov/mepsweb/ (accessed April 13, 2010).

U.S. Department of Health and Human Services (HHS), Centers for Disease Control and Prevention (CDC). 2010. *Behavioral Risk Factor Surveillance System Survey Questionnaire*. Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention.

U.S. Department of Health and Human Services (HHS), Office of Disease Prevention and Health Promotion (ODPHP). 2010. "Healthy People." http://www.healthypeople.gov (accessed April 13, 2010).

Visiting Nurse Service of New York (VNSNY), Center for Home Care Policy & Research. 2010. AdvantAge Initiative. http://www.advantageinitiative.org (accessed April 13, 2010).

Vladeck, Fredda. 2004. *A Good Place to Grow Old: New York's Model for NORC Supportive Service Programs*. New York: United Hospital Fund.

Aging in Place Partnerships: A Training Program for Family Caregivers of Residents Living in Affordable Senior Housing

Alisha Sanders
Robyn Stone
Institute for the Future of Aging Services

Rhoda Meador
Cornell University

Victoria Parker
Boston University School of Medicine
VA Boston Healthcare System

Abstract

This article describes the development and testing of a program to expand the capacity of family caregivers of residents in affordable senior housing properties and enhance the partnerships between family caregivers and the housing properties to help residents meet their needs and "age in place." A needs assessment revealed that, although family caregivers are providing a great deal of assistance to residents in affordable senior housing properties, they can benefit from expanding their caregiving knowledge and skills. It also revealed that the interaction between family caregivers and housing properties is often minimal. Incorporating input from service coordinators, family caregivers, and residents, a two-part workshop was created and piloted in three affordable senior housing properties. The first part focused on helping the family caregiver understand and build empathy for the challenging tasks that residents and caregivers face; the second focused more specifically on how family caregivers can strengthen their skills and knowledge and partner with housing properties to support aging in place. Participants in the pilot workshops reported being very satisfied with the workshops and more prepared to fulfill their caregiving role. The program team will use the results from the training program to refine the program and explore the potential for dissemination through a "train-the-trainer" approach.

Introduction

This article describes the development and testing of a program that was designed for the family caregivers of residents in affordable senior housing properties. The program's goal was to improve support for and ensure the sustainability of the efforts of these family caregivers by increasing their knowledge, building their skills, and strengthening their partnership with the housing properties' service coordinators. The program had three key objectives:

- Identify the specific needs and knowledge gaps of these family caregivers to inform the development of a training program that would help service coordinators and family caregivers collaborate more effectively in providing support to elderly residents to help them remain in an independent living setting.
- Make housing properties and service coordinators aware that family caregivers can be an integral part of the service network and offer them useful skills on how to train and engage with family caregivers.
- Teach family caregivers about the role of the housing property and service coordinator in helping elderly residents remain safely in their apartments and about how they can establish a partnership to facilitate independent living for their family member.

Background

About two million low-income seniors, most of whom are single women in their mid-70s to early 80s, live in federally subsidized independent rental housing (Wilden and Redfoot, 2002). Research shows that older renters in subsidized housing are twice as likely as older homeowners to be disabled (Heumann, Winter-Nelson, and Anderson, 2001). More than one-half of older renters report limitations in activities such as walking and climbing stairs and one-third report difficulty shopping or going to the doctor. In a 1999 survey, managers of the Section 202 Supportive Housing for the Elderly Program reported that 30 percent of vacancies occurred because of transfers to nursing homes (Heumann, Winter-Nelson, and Anderson, 2001).

The Institute for the Future of Aging Services (IFAS) has spent several years exploring the potential of "affordable housing plus services," a residential care model linking subsidized, multiunit, independent housing for lower income older adults with needed services and supports. The goal is to enable residents to "age in place" as their needs change, rather than having to transfer to a higher and more costly level of care. By doing so, the strategy may provide a means for meeting some of the long-term care needs of lower income seniors who want to remain in an independent living setting as they age.

In one study, IFAS examined how three affordable senior housing communities in Colorado helped residents maintain independent living despite their growing frailty and/or disability (Washko et al., 2007). Each community was committed to helping residents age in place and had developed a strategy to foster independent living and support aging residents in the face of changing needs. Two of the three properties employed formal service coordinators to help elderly individuals obtain needed services. One property offered an extensive array of "inhouse" services.

Each property was embedded in a community with a broad network of aging-service providers. In what was a surprise to IFAS researchers, the study found that residents did not report using many formal services but did rely to a significant extent on family caregivers. Interviews with housing staff buttressed the important role families played in these housing settings. Family support was considered crucial to a resident's general well-being and an essential factor in whether the property was able to help residents maintain their independence. Staff also thought that the availability of informal care was uneven and that, as a result, some residents suffered.

Unpaid family caregivers have traditionally been the primary source of long-term care in the United States, and more than 90 percent of long-term care recipients receive some informal care (Cafferata, Sangl, and Stone, 1987; Houser and Gibson, 2008; Spillman and Black, 2005). Research shows almost all informal caregivers value their caregiving roles and feel appreciated by the care recipient (Donelan et al., 2002; Toseland and Smith, 2001). A substantial body of research, however, also demonstrates that caregivers' physical and mental health can be compromised by caregiving responsibilities (Feinberg, Wolkwitz, and Goldstein, 2006). A recent analysis of national data found caregiver stress as a key variable in the decision to place a family member in a nursing home (Spillman and Long, 2007).

Numerous studies have also examined the efficacy of programs to educate and train caregivers (Knight, Lutzky, and Macofsky-Urban, 1993; Pillemer et al., 2003; Toseland, Smith, and McCallion, 2001; Zarit and Terri, 1992). Most of these studies find that caregiver education and training programs have some effect on (1) increasing knowledge about services and resources, (2) improving caregiver well-being, and (3) improving caregiver problemsolving skills (Toseland and Smith, 2001). Researchers have also documented important differences in the caregiving experiences of African-American, Hispanic, and White families (Janevic and Connell, 2001; Navaie-Waliser et al., 2001; Weiss et al., 2005).

Few studies have addressed the role and effect of caregiving in community residential care settings, such as assisted-living and senior housing. According to data from the National Long-Term Care Survey, approximately 30 percent of children with a parent in a community residential care setting, such as assisted living, provide informal care (Spillman and Black, 2005). Port, et al. (2005) analyzed family involvement with residents with dementia in assisted-living settings and nursing homes and found family caregivers of assisted-living residents more involved in helping with instrumental activities of daily living (IADLs) and monitoring medical status and well-being than caregivers with family members in nursing homes. Caregivers of assisted-living residents also wanted more advice and encouragement from the facility to support their caregiving roles (Port et al., 2005). Another study examined effects of a care management intervention to help family caregivers of adult daycare users develop problemsolving and coping skills and better manage the problem behaviors of their family members. The study found the intervention reduced symptoms of depression, enhanced overall perceived well-being among caregivers, and increased the use of formal services by users of the adult daycare program (Gitlin et al., 2006).

Researchers have paid little attention to the role played by family caregivers in helping maintain independent living of aging residents in publicly subsidized housing. The IFAS study of the three senior housing communities in Colorado described previously is one of the few to actually interview families, residents, and housing staff about informal caregiving and its perceived effect on care recipients. IFAS researchers and their partners are convinced that strategies to link publicly subsidized rental housing communities to both formal services and informal care offers low- and modest-income seniors a new and important choice about where they can live despite increasing disability and declining health. Most of these seniors will not be able to afford assisted living, which largely remains a high-end product (Wright, 2004). Most older adults want to remain in their own homes as long as possible (AARP Public Policy Institute, 2009).

Methods

The goal of this program was to develop and test a program that would expand the capacity of family caregivers of residents in affordable senior housing properties and enhance the partnerships between family caregivers and the housing properties. The research team identified a purposive sample of four properties in the Washington, D.C. area to participate in the pilot program. To participate, the housing property was required to have at least one service coordinator, at least 100 units, and a diverse resident population to capture any ethnic/cultural issues that might need to be considered for the family caregiver-training program. One site was dropped during the program development phase because the property was unable to participate fully in the required activities.

The three remaining pilot sites were HUD-subsidized properties, including two Section 202 properties and one Section 236 property. Section 202 and Section 236 are programs restricted to low- and very low-income individuals that, through different subsidy mechanisms, offer residents affordable rents generally no higher than 30 percent of their monthly income. The median income of residents in Section 202 properties across the country is $10,236. In Section 236 and other related HUD-subsidized properties, it is $10,526 (Haley and Gray, 2008). Two of the pilot sites were located in inner cities and one was in a suburban setting. As exhibit 1 shows, the properties were racially and ethnically diverse.

Exhibit 1

Characteristics of Pilot Sites and Residents*

	Property 1	Property 2	Property 3
Location	Washington, DC	Baltimore, MD	Rockville, MD
Property type	Section 202	Section 202	Section 236
Number of units	140	200	250
Residents' age	Under 75: 42% 75–84: 40% 85 and over: 19%	Under 75: 52% 75–84: 38% 85 and over: 10%	Under 75: 11% 75–84: 31% 85 and over: 58%
Residents' race/ethnicity	Latino: 29% White: 51% Black: 30% Asian: 0% Native Hawaiian: 0% American Indian: 0% Other: 6%	Latino: 4% White: 17% Black: 80% Asian: 2% Native Hawaiian: 1% American Indian: 7% Other: 0%	Latino: 0% White: 96% Black: 2% Asian: 1% Native Hawaiian: 0% American Indian: 0% Other: 1%
Mean time in property (range)	6.9 years (6 months–30 years)	7.2 years (6 months–26 yrs)	4.5 years (6 months–21 years)

** Residents' characteristics represent those residents who participated in the self-administered survey (Property 1, n=53, response rate=35%; Property 2, n=96, response rate=49%; Property 3, n=100, response rate=36%).*

Family caregivers of residents in the three pilot sites were recruited through a variety of mechanisms. Invitation letters were distributed to every resident living at the property to pass on to their family members and flyers were posted in prominent areas throughout the properties. In addition, the service coordinators contacted family caregivers to inform them of the program and also provided names of family caregivers to the research team who then contacted the caregivers and invited their participation.

Several activities were conducted on the properties to help inform the development of the program, including interviews with five service coordinators (n=5), focus groups with a total of 30 residents, and focus groups with a total of 25 family caregivers of residents. In addition, self-administered surveys were conducted with residents in the participating housing properties (response rate=35 to 49 percent across the three properties) and with family caregivers recruited to participate in the program (response rate=70 percent). By combining the data gathered during these activities with the research on family caregiving and the program teams' prior experience in developing family caregiver-training programs, a workshop curriculum was developed. The program and the components of the workshop curriculum are detailed later in the article.

Family caregivers of residents in each of the housing sites were recruited (n=56) to participate in the pilot program and were randomly assigned to either an intervention group or a control group. Those in the intervention group subsequently attended the caregiver-training workshop, which was held in each of the three pilot sites.

A post-training survey was sent to all family caregiver participants (both intervention and control group) approximately 6 months after the completion of the caregiver-training workshops to attempt to gauge what effect the workshop may have had on the attendees. The small number of surveys returned for both groups, however, was insufficient to draw meaningful statistical conclusions.

The Need for and Status of Family Caregiving in Affordable Senior Housing Properties

Little is known about the health and functional characteristics of residents of affordable senior housing properties. To better understand the residents' potential support needs and therefore the type and degree of engagement that may be required of a family caregiver, the self-administered resident questionnaire included questions about their physical health and functional status. Because no previous study has examined family caregiving in affordable senior housing properties, the program team also attempted to understand the level and intensity of caregiving that was occurring at the pilot sites.

Resident Health and Functional Needs

Of the residents who answered the questionnaire, 60 percent reported they were in good to excellent health, but 40 percent perceived their health as fair to poor. Residents were asked to self-report specific health conditions or problems they were experiencing. Exhibit 2 shows that the most commonly reported health conditions across the three properties were high blood pressure (65 percent of all respondents), arthritis (51 percent), heart problems (30 percent), and diabetes (26 percent).

Because individuals suffering from multiple health conditions tend to have more complex health and supportive care needs, the program team examined the proportion of residents experiencing multiple conditions. As shown in exhibit 3, nearly one-half of the residents across the three properties reported experiencing three or more of the health conditions listed in exhibit 2.

Residents were also asked about their functional status to help understand the levels and types of disabilities residents are experiencing and the need for assistance to compensate for functional limitations. Exhibit 4 presents the proportion of residents reporting functional limitations. Functional limitations are classified into two categories: limitations in activities of daily living (ADLs), such as eating, bathing, dressing, getting in and out of bed, and using the toilet, and limitations in IADLs, such as preparing meals, managing money, shopping, doing housework, and using a telephone. Across the three properties, slightly more than one-half of the residents reported needing assistance with one or more IADL and one-third need assistance with one or more ADL.

Exhibit 2

Health Conditions Reported by Residents

	Property 1 (%)	Property 2 (%)	Property 3 (%)	Combined (%)
Glaucoma	17.0	16.1	19.8	17.8
Wear hearing aid	7.6	7.5	31.3	16.9
Diabetes	24.5	40.8	12.5	26.0
Cancer	5.7	10.8	15.6	11.6
Lung disease	9.4	6.4	8.3	7.8
Heart problem	30.2	30.9	28.1	29.6
Psychiatric problem	7.5	7.5	10.4	8.6
Arthritis	50.9	51.1	51.0	51.0
High blood pressure	45.3	81.9	57.9	64.5
Chronic pain	18.9	24.5	27.1	24.3

Columns do not total 100 percent because residents may have reported multiple health conditions.

Exhibit 3

Residents Reporting Multiple Health Conditions

	Property 1 (%)	Property 2 (%)	Property 3 (%)	Combined (%)
No health conditions	18.9	3.2	9.4	9.1
1 to 2 conditions	41.5	45.9	39.5	42.4
3 or more conditions	39.6	50.9	51.1	48.5

Columns total 100 percent.

Exhibit 4

Residents Reporting Functional Limitations

	Property 1 (%)	Property 2 (%)	Property 3 (%)	Combined (%)
ADLs				
No limitations	73.6	66.3	62.0	66.5
One limitation	15.1	11.2	19.0	15.3
Two or more limitations	11.3	22.5	19.0	18.2
IADLs				
No limitations	52.8	47.2	47.0	48.4
One limitation	11.3	10.1	7.0	9.1
Two or more limitations	35.9	42.7	46.0	42.5

ADLs = activities of daily living. IADLs = instrumental activities of daily living.

Columns total 100 percent for ADLs and for IADLs.

The residents' health and functional status information suggests a large proportion living in independent housing have chronic conditions and/or functional limitations that put them at risk for falls, increased emergency department use, preventable hospital stays, and nursing home placement. Families and service coordinators face these concerns as they attempt to help elderly residents remain in their apartments and communities. These data also provide insight into the types of interventions that could be achieved through partnerships between the families and properties.

The Level of Family Caregiving Occurring in Affordable Senior Housing Properties

The extent of family caregiving involvement with residents in the housing sites was influenced by how the residents came to reside in the properties. In Property 1, several residents had relocated to the area when they were younger for professional reasons and many did not have family in the area. In Property 2, many residents were native to the community and their families also lived in the area. In Property 3, most residents had relocated to the area late in life to be closer to their children. In the resident self-administered survey, 59 percent of residents in Property 1 reported they had family in the area that could assist them when needed compared with 79 percent in Property 2 and 89 percent in Property 3.

Service coordinators at all three properties reported that they see a range of family member engagement, from those who visit residents regularly and frequently to those who come occasionally and those who never visit. In one property, the service coordinator estimated that one-fourth to one-third of residents have a high level of involvement with their family. In another, the service coordinator estimated approximately 35 percent of residents have families that are actively engaged and consistently at the property every week.

Residents were asked in the survey about the level of interaction they have with their family members and the type of assistance they typically receive from them. As exhibit 5 shows, almost one-half of the resident respondents across the three properties have family members call them daily and 38 percent receive a call weekly. In addition, 18 percent receive daily visits from a family member and 42 percent have a weekly visit.

Exhibit 5

Resident and Family Member Interaction

	Property 1 n=44 (%)	Property 2 n=90 (%)	Property 3 n=97 (%)	Combined n=231 (%)
Call				
Daily	36.4	50.0	50.5	47.6
Weekly	38.6	36.7	38.1	37.7
Monthly	18.2	8.9	9.3	10.8
Less than monthly	2.3	3.3	1.0	2.2
Never call	4.5	1.1	1.0	1.7
Visit				
Daily	19.5	25.0	11.5	18.2
Weekly	29.3	35.2	54.2	42.2
Monthly	17.1	25.0	16.7	20.0
Less than monthly	22.0	11.4	14.6	14.7
Never visit	12.2	3.4	3.1	4.9

Columns total 100 percent for calls and for visits.

Family caregivers who participated in the pilot program were also surveyed about the frequency of assistance they provide their family member living at the participating housing sites. Of those surveyed, 18 percent said they assist daily and 44 percent said they help their family member multiple times each week. Nearly all family caregivers talk with their family member on the phone either daily (49 percent) or multiple times a week (46 percent).

Residents were also asked to describe the intensity of assistance they receive from their family members. As exhibit 6 shows, one-fourth of respondents reported receiving "considerable assistance" from their family members. Almost one-third reported that they "do not need assistance"; however, it should be noted that, later in the survey, many of these residents described the types of assistance their family members provide them. When asked how they felt about the level of assistance they receive from their family members, 80 percent of respondents felt they receive "just the right amount," but 18 percent wished they received "more assistance."

Residents reported receiving assistance from their family members in several areas. As exhibit 7 shows, the most frequent areas of assistance included transportation (53 percent), shopping or running errands (49 percent), companionship (37 percent), arranging medical care and communicating with doctors (33 percent), and tracking bills or other financial matters (33 percent). In focus

Exhibit 6

Intensity of Assistance From Family Members

	Property 1 n=45 (%)	Property 2 n=87 (%)	Property 3 n=93 (%)	Combined n=224 (%)
Do not provide assistance	18.2	14.9	8.6	13.0
Limited assistance	11.4	10.3	21.5	15.2
Moderate assistance	13.6	16.1	18.3	16.5
Considerable assistance	13.6	27.6	26.9	24.5
I do not need assistance	43.2	31.0	24.7	30.8

Columns total 100 percent.

Exhibit 7

Areas of Assistance From Family Members

	Property 1 n=40 (%)	Property 2 n=76 (%)	Property 3 n=87 (%)	Combined n=203 (%)
Transportation	26.8	63.2	57.5	53.4
Shopping or running errands	25.0	60.5	49.4	48.8
Housekeeping/laundry	15.0	18.4	13.8	15.8
Preparing meals	12.5	19.7	4.6	11.8
Personal care needs	5.0	10.5	3.4	6.4
Managing medications	5.0	11.8	14.9	11.8
Arranging medical care/communicating with doctors	20.0	26.3	44.8	33.0
Tracking bills or other financial matters	12.5	29.0	46.0	33.0
Financial assistance	22.5	18.4	17.4	18.8
Finding and applying for benefits and services programs	5.0	18.4	18.4	15.8
Companionship	35.0	31.6	43.7	37.4
Social activities	30.0	31.6	24.1	28.1

Columns do not total 100 percent because residents may have reported multiple areas of assistance.

groups with residents, many participants stated they were getting a great deal of assistance from their family members, but some had family who were not as active. Some participants noted that their children were working and caring for their own children, and they appreciated that they did not always have a great deal of time to spend with them.

Family caregivers participating in the program also reported assisting their family members with a variety of activities. More than one-half of respondants said they are assisting their family member with six or more tasks. The most common areas in which family caregivers reported providing assistance include socializing, transportation, running errands, monitoring medical care, and managing bills and other paperwork. Discussion in the focus groups with family caregivers echoed that many are providing their family members with an extensive level of support. Some visit daily or multiple times per week to prepare meals, handle household chores, pick up and monitor medications, handle financial obligations, manage and take their family member to medical appointments, shop for or take their family member shopping, and provide companionship. Some family caregivers' description of their family member and the level of assistance they are providing them illustrate that their family member would likely be unable to remain in "independent" housing without their continued support.

Informing the Development of the Workshop Curriculum

To help inform the content of the family caregiver-training program, the program team gathered information from the surveys completed by the residents and family caregivers and from the interviews and focus groups with service coordinators, family caregivers, and residents. Key findings from the team's analyses are summarized in the following paragraphs.

Issues Experienced in the Caregiving Relationship

Service coordinators in the pilot sites were asked about the nature and magnitude of the issues they see residents and family caregivers experiencing in their interactions with each other. Residents and family caregivers participating in the focus groups were also asked about their experiences in their caregiving relationship. Several dynamics were revealed.

Service coordinators believed family caregivers and residents experience tensions over the evolving roles and boundaries between each other. Some family caregivers, the service coordinators believe, are reluctant to step in and do things for their family member because that is not their traditional role in the relationship. They feel uncomfortable telling their family member how to act and are concerned about violating their privacy; these issues become even more prominent as the resident's abilities decline. The service coordinators also reported that residents and family caregivers experience conflicts between the giving and receiving of care.

Participants in both the resident and family caregiver focus groups echoed these challenges. Parents and children frequently mentioned they are experiencing a role reversal in which the child is now acting as the parent and vice versa. Other caregivers, however, were unable or unwilling to assume any power in the relationship, and were constantly bending to the demands of their family members. Some caregivers spoke of how their older family member may be in denial of or embarrassed by their changing conditions and are unwilling to ask for and/or accept help or change their habits and practices. Several family caregivers described balancing their desire to preserve their family members' ability to make their own decisions while taking responsibility for their safety and the safety of those around them.

Service coordinators also believed that some family caregivers are in denial of their family member's physical or mental decline and do not understand how their functioning will change as they age. Family caregivers want their family members to continue to act and behave as they always have—getting dressed every day, enjoying cooking, socializing frequently, walking at a reasonable pace, etc. Service coordinators thought that caregivers sometimes believe their family member is "being difficult," or they may be unwilling or unable to recognize that a change in behavior may be a sign of a health-related problem.

Service coordinators observed that family caregivers often have their own responsibilities that can make it difficult to help their family members, especially those needing a greater level of assistance. Many caregivers are employed and have their own families to care for, making it challenging to find adequate time to assist with their family members' needs.

Service coordinators thought that family caregivers in general had limited knowledge about the services available in the community. The survey of family caregivers participating in the pilot program supported this perception. Although about one-fourth were "mostly" or "very" aware of the resources available in the community that could potentially help meet their family members' needs, 62 percent were only "somewhat aware" and 12 percent were "not at all aware."

Service coordinators were asked about the areas in which they thought family caregivers needed additional knowledge and skills to enhance their caregiving capacity. Coordinators believed family caregivers need a better understanding of the aging process and how that process would affect their family member's physical and mental health and functional status. Service coordinators thought family caregivers often lose patience with family members who may be experiencing a decline and think the family member is "being difficult" or stubborn. Coordinators thought family caregivers need to understand how these changes would affect their ability and desire to partake in their daily tasks and hobbies. They also need to recognize when a change in behavior may be the sign of a health-related issue that needs to be addressed.

Service coordinators also believed family caregivers need to be taught about handling a resident's transition back to their apartment after a hospital stay. Family caregivers often do not know what to ask of the physicians and discharge planners to ensure their family member is, in fact, ready to return home. Coordinators thought that the elderly relative or the family caregiver do not have the necessary knowledge and resources to successfully manage post-hospitalization care. Service coordinators also believed family caregivers need greater awareness in the area of medication management. They thought some need to have better oversight of the resident's medication regimen and recognize that changes in physical and mental health can be related to complications with medications.

Family Caregivers' Perceptions of Their Caregiving Role and Experience

Family caregivers participating in the pilot program were asked in the survey and in focus groups about their perceived role and experiences as a caregiver. Some family caregivers did not identify themselves as "caregivers." In fact, during the focus groups, several caregivers asked why the program team was asking them about the assistance their family members needed or that they provided because their family members lived in "independent" living properties. The resulting perception was that they were therefore not caregivers to their family members.

In addition to asking the family caregivers what types of assistance they provided their family members, the survey also asked caregivers about their use of community services and resources to meet their family members' needs. When asked how often they or their family members access services from the community, 61 percent said "rarely" or "never." Among the family caregivers who answered rarely or never, the top reasons given for why they do not access outside services were: "I can take care of my family member's needs on my own" (48 percent), "my family member won't let anyone other than me assist them" (33 percent), "we can't afford to purchase services" (24 percent), and "I'm not aware of available services" (24 percent).

During the focus groups, several family caregivers also spoke of how it was their "duty" to assist their family member. They believed that because their family member had raised them, it was now their obligation to help their family member. Some family caregivers also said they were the only person their family member would allow to assist them; their family member was reluctant to have strangers entering their apartment or knowing the details of their lives. A handful of participants, particularly those who appeared to be newer caregivers, seemed unaware of the community resources that could possibly help their family member.

The survey also asked family caregivers about the effect their caregiving experience has had on them personally (see exhibit 8). In general, the respondents did not feel overwhelmingly stressed or burdened by their caregiving relationship, although a sizable proportion did indicate that they were sometimes strained by their responsibilities.

Several family caregivers participating in the focus groups initially indicated they were not burdened by their caregiver role. As the discussions progressed, however, many began to reveal

Exhibit 8

Feelings About Family Caregiving Experience (n=38)

	Never/Rarely (%)	Sometimes (%)	Frequently/Always (%)
Do you feel that because of the time you spend with your family member that you don't have enough time for yourself?	55.9	41.2	2.9
Do you feel stressed between caring for your family member and trying to meet other responsibilities for your family or work?	44.2	47.1	8.8
Are you afraid of what the future holds for your family member?	26.6	41.25	32.3
Do you feel strained when you are around your family member?	41.2	47.1	11.7
Do you feel your health has suffered because of your involvement with your family member?	84.85	15.2	0
Do you feel you should be doing more for your family member?	32.4	50.0	17.6
Do you feel burdened by caring for your family member?	58.9	35.29	5.8

the frustrations and challenges they experience in their caregiver relationship. As noted previously, several participants believed it was their duty to care for their family member and may have felt they were not allowed to feel burdened by the role. Most participants had never discussed their experiences before, and the conversation with other family caregivers seemed to provide a comfortable opportunity for them to reveal their thoughts and feelings.

Family caregivers also expressed that, although the rewards of caregiving were obvious when they started assisting their family member, rewards became harder to find over time as the interaction shifted from being predominantly social to more indepth caretaking. Some respondants noted their fear of the future for both themselves and their family members. About one-third of respondants said they are frequently or always afraid of what the future holds for their family member. They are concerned about how their family member may continue to decline over time and what they, in turn, will have to juggle or drop in their own lives to meet their family member's greater demands and needs. Several caregivers were also very anxious about the possibility of their family member eventually moving to a nursing home; some said they would never allow it. In their opinions, nursing homes were bad places, and it seemed they perceived their family member moving to a nursing facility as a sign of their own failure as a caregiver. In some instances, the family member had told the caregiver they would never go to a nursing home. In other instances, however, the family member had told them they would go to a nursing home when necessary, but the family caregiver could not envision allowing the move to happen.

Interaction Among the Housing Properties, Service Coordinators, and Family Caregivers

The family caregiver survey asked caregivers about their expectations of the housing property concerning their family members' needs for services and supports as they age. As exhibit 9 shows, nearly two-thirds of respondents expect the housing property "to tell my family member or me about services that might help my family member." More than one-fourth of participants, however, said, "I have no expectations of them; this is an independent living property."

About three-fourths of survey respondents are aware of the service coordinator and in an open-ended question described the role as providing information on service and resources, helping arrange and coordinate services, or just generally "helping." Approximately one-fourth of respondents are either not aware of the service coordinator or do not know what they do.

Exhibit 9

Expectations of the Housing Property (n=38)

Expectations of the Housing Property	Caregivers Who Selected the Expectation (%)
I have no expectations of them; this is an independent living property	26.5*
To check on my family member and alert me when there are problems	47.1
To tell my family member or me about services that might help my family member	64.5
To help arrange for the services my family member needs	38.2
To provide my family member the assistance they need	14.7
I don't know	2.9

** Percentages do not total 100 percent because respondents were allowed to select multiple answers.*

Of the family caregivers who were asked how often they approach the service coordinator for information or advice regarding their family member, 62 percent said "never" or "rarely" and 32 percent said "sometimes." Of those respondents who said rarely or never, 59 percent said, "I generally already know how to take care of my family member's needs" and almost one-fourth said, "I can figure out the answer on my own." Feedback from the service coordinators concerning their level of interaction with family caregivers reflected the survey responses. Although some family caregivers approach service coordinators frequently, coordinators said many never approach them. Service coordinators believe family caregivers see the properties as apartment complexes and do not expect property staff to assist them with issues related to caring for their family member. Family caregivers confirmed this perspective in the focus groups. Several participants said they do not expect housing property staff to assist them or their family member because it is "independent living." Service coordinators also said family caregivers often do not approach them until a crisis is occurring and often have had no prior connection with them until the crisis.

When asked how much of a resource they consider the service coordinator to be with respect to helping to meet their family member's needs, 24 percent of survey respondents find them "somewhat helpful" and 36 percent find them "very helpful." One-third, however, said they "never" ask the service coordinator for help. Family caregivers gave little indication that it was challenging for them to talk with the service coordinator about their family member's needs, with only 6 percent saying it is "very" or "somewhat" difficult. When asked if they believe the housing property and/or service coordinator can play a role in helping them meet their family member's changing needs, approximately one-third reported "definitely" and just less than one-half said "somewhat."

The Family Caregiver Program and Workshop Curriculum

The program team used the previously described findings, information gleaned from a literature review of family caregiver training programs, and their collective experience in developing and testing family caregiver training programs in other settings to develop the format for the training program and the specific curriculum content.

Assumptions

The program team started with two assumptions about the caregiver-training program. It became evident that both of these assumptions needed to be reexamined. The first assumption was that the workshop curriculum would be adapted from an existing caregiver-training program called Partners in Caregiving (PIC). PIC is a successful program that was initially developed to train nursing home staff and family caregivers about communication techniques and conflict resolution skills and has been adapted for other care settings. As a result of the data gathered from service coordinators, residents, and families, however, it became clear that PIC was not appropriately adaptable for affordable housing communities. This conclusion was based on observed differences in the nature of the settings, the relationships between the housing staff and the family caregivers, and the types of issues experienced in the relationship between residents and their family caregivers. Because housing properties are intended for "independent" living, the property staff's responsibility for residents, and thus the power relationship between property staff and family caregivers, is quite different from nursing home settings where the staff is responsible for residents' care. Thus, in an independent living setting, the level of tension and conflict between housing staff and family caregivers is minimal. In addition, family caregivers of housing property residents are in a much more active caregiving role because the housing property is not responsible for caring for the resident. Family caregivers are playing a lead role in ensuring the residents get their needs met. They must be much more knowledgeable about how to assist their family member and how to deal with a variety of issues in their caregiving relationship.

The "independent" nature of the housing properties was a recurring subject of discussion in the service coordinator interviews and the family caregiver focus groups. Service coordinators believed their role is to support the resident in meeting their needs and by doing so become an advocate for the resident. In some instances, they thought the advocate-resident relationship could result in conflict during interactions with family caregivers. They also respect residents' privacy and, therefore, may know little about the resident and their family caregivers if the caregivers do not seek out the service coordinator. Several family caregivers did not identify themselves as "caregivers" because their family member lived in "independent" housing and many did not expect the housing properties to help support their family member because it was "independent" living. For both groups, however, the goal was to help residents remain in their own apartments and to ensure that residents remained active decisionmakers in their own lives.

It became clear that the program's focus was not easing tensions between family caregivers and property staff; rather, the focus was building mutual understanding between caregivers and property staff to reinforce residents' ability to safely age in place. Family caregivers contribute their time and knowledge of the resident while service coordinators contribute their technical expertise of available resources and services.

The second assumption was that the program would use a train-the-trainer model in which the service coordinators in the housing property would be trained to deliver the caregiver-training workshop and then would conduct the workshop with family caregivers. With their expertise on available services and resources and established community relationships, service coordinators play a key role in helping residents meet their needs. Because one goal was to enhance family caregivers' use of this expertise, the program team thought it logical for service coordinators to conduct the caregiver-training workshops both because of their expertise and to help establish a connection between the two groups. A train-the-trainer curriculum was developed and the service coordinators participating in the program attended a daylong, train-the-trainer workshop.

When the time came to conduct the actual caregiver-training workshops, however, it became apparent that the participating service coordinators did not feel entirely comfortable in this teaching role. Service coordinators may feel uneasy delivering the workshop for multiple reasons. The background and training of service coordinators are quite varied, ranging from those without college degrees to those with master's degrees. Although they may be knowledgeable about services and perform one-on-one education, many may not have prior experience working with family caregivers or delivering group training. The service coordinators in the pilot program viewed themselves primarily as advocates for the residents and seemed to express a concern that interacting with family caregivers in this way may conflict with this role. Service coordinators are also generally managing a large number of residents and may feel they do not have the time to take on an additional program that is not directly focused on residents. In addition, not all senior housing properties have service coordinators who could deliver the workshop. Although the family caregivers of residents living in properties without service coordinators could benefit from enhancing their caregiving skills and knowledge, some formal entity would have to be hired or partnered with to deliver a training program such as the one developed for this pilot.

Recognizing the lack of willingness among the three pilot service coordinators to deliver the training, the program team members themselves conducted the workshops in each of the three pilot housing sites. Given the small number of sites in the pilot, it is not clear that all service coordinators would be unwilling to deliver the workshop. Exploring alternative methods for delivery of the workshop, however, will be the next phase in the refinement of the curriculum and delivery process.

The Curriculum

When developing the workshop curriculum, the program team considered all the information that had been gathered through the service coordinator interviews and resident and family caregiver focus groups. The team was also mindful of the family caregivers' time constraints and tried to keep the program length at a span that would not be overwhelming. The final program consists of two 2-hour sessions. The intention is to deliver the sessions on different days; however, it is possible to deliver them in a single, longer session. The sessions are designed to be interactive, asking for input from participants and incorporating role-playing activities to practice the knowledge and techniques being taught.

Session one, entitled *Understanding Aging in Place*, focuses on helping the family caregiver understand and build empathy for the challenging tasks that residents and caregivers face. The session addresses the changes and needs that accompany the aging process, the changing role of the caregiver in relation to those needs, and self-care strategies to help cope with the stress of the caregiving role. Session two, entitled *Helping My Resident Age in Place*, focuses on helping the family caregiver identify specific resources and strengthen specific skills that can help support their family member. The session covers the roles of the service coordinator and housing property and how they can work together with the family caregiver to better understand their family member's needs and the available services and resources to help meet those needs and to improve communication skills to enhance positive interaction with their family member.

Satisfaction With Family Caregiver-Training Workshops

According to results from workshop evaluations, participants were overwhelmingly satisfied with the family caregiver-training workshops. Two-thirds gave them an overall rating of excellent and one-third said they were good. When asked how prepared they now felt to help their family member age in place, nearly all participants said they felt well prepared or very well prepared. One participant felt only somewhat prepared but also noted that he had picked up tools in the workshop that he is ready to try. All participants said they would recommend the workshop to others.

Asked what they liked most about the workshop, several participants said they appreciated that they picked up new ideas and techniques to address some of the challenges they face in assisting their family member. Participants also liked the role-playing exercises, which gave them the opportunity to practice applying what was taught in the workshop to issues they may face with their family member. Several participants also noted that they appreciated the dialogue with other participants and learning that they share common challenges and concerns and that they are not alone in their caregiver experience.

Discussion

The program team's conversations and surveys conducted with service coordinators, family caregivers, and residents affirmed the need for a training program for family caregivers of affordable senior housing residents. Clearly, both service coordinators and family caregivers are providing a tremendous level of support and assistance to the residents in these settings. Although the health and frailty levels of residents range across the properties, a number of residents need a great deal of assistance and would likely be in nursing homes were it not for the support they are receiving, primarily from family caregivers.

Family caregivers do appear to lack awareness of available services and resources in the community and, sometimes, at the housing property. Although many feel they can take care of their family member's needs on their own, they recognize that a time may come when they need to access outside services. Caregivers may also benefit from beginning to accept that it is permissible for them to accept assistance and that they are not obligated to do everything for their family member. Family caregivers also have to navigate difficult terrain in terms of accepting and adapting to the changes in their family member's condition and abilities, while at the same time helping their family members come to terms with their declining independence. Family caregivers can benefit from additional skills in handling these difficult conversations.

It also appears that, in many cases, family caregivers and services coordinators are not regularly communicating with each other. As a result, they are not sharing their respective knowledge and resources and may not be minimizing burdens on themselves or maximizing the success they could have if they worked more cooperatively. For example, family caregivers sometimes must have difficult conversations with their family member that touch on the resident's loss of independence. Caregivers may have to convince family members to stop a certain behavior, accept assistance in particular areas, or discuss the potential need to move to a higher level of care. Service coordinators participating in the pilot reported they can "play the bad guy" in these discussions and help preserve the relationship between the resident and family caregiver. Service coordinators may also have the expertise to identify behaviors or actions that are actually the result of a medical problem that can be overcome, or they may be aware of resources for additional support that might limit the effect on the family member or forestall a need to move to a higher level of care.

The dynamic interaction between the family caregivers who came together in the program was surprising. It seemed several of the participants did not appreciate that they needed an outlet for talking about their caregiver experiences and challenges before attending the focus groups, but they highly valued the opportunity to share their thoughts and feelings. Many family caregivers assumed natural peer-mentor roles during the focus groups, giving other participants advice on how to deal with their issues. When the focus groups ended, participants asked when the group would meet again and many lingered to talk with each other. None of the family caregivers in the focus groups had met before and almost all said they did not know other resident family caregivers, aside from seeing people around the building.

In one workshop, the participants noted that they made up a natural support network because of the commonality they share of having a resident in the property and the desire for that resident to remain there. The group could be an opportunity to voice frustrations and challenges and to share information and solutions they have learned that might help each other. Other participants expressed concern for the residents in the properties who did not have family members to help them. Building a family network could possibly bring additional resources to the property assist these residents on occasion or provide other supports to the property.

One challenge in implementing the caregiver-training program is identifying the family caregivers who are less engaged with their family member. An initial goal of the program was to develop a training program that would encourage less active caregivers to increase and enhance the assistance they are currently providing to better meet the needs of their family member. An attempt was made to recruit minimally engaged family caregivers to participate in the pilot program; however, the program team was unsuccessful in this effort. It may require a more targeted appeal from a service coordinator or property staff to entice this type of caregiver. Perhaps the creation of family caregiver peer groups that are active in the property could serve as an avenue for engaging these less engaged family caregivers over time.

Another challenge is identifying the most appropriate trainers to deliver the curriculum. This research found that the service coordinators in the pilot sites were not comfortable in the training role, in part because they were concerned that training families might conflict with their responsibility as advocates for the residents. The coordinators also, however, did not believe they had the skills to conduct the training. As the curriculum development moves from the pilot to the refinement phase, decisions about who should do the training, including whether the curriculum should be delivered by an independent third party, need to be addressed.

Next Steps

Given that nearly 2 million older individuals currently reside in some type of subsidized housing and many are receiving some type of support from family caregivers, this program has the potential to reach a large group of caregivers and elderly residents. The development and dissemination of a successful caregiver-training program could significantly improve the ability of senior housing properties to help their elderly tenants remain in their own homes by minimizing the need for evictions and avoiding more costly transfers to assisted-living facilities or nursing homes. As senior-housing providers experience the aging of their residents and are struggling to meet the needs of an increasingly frail and disabled resident population, supporting family caregivers and strengthening their partnerships with service coordinators may help make “aging in place” a reality for many older adults in communities across the country.

Several next steps have been identified for this program. The program team would like to further refine the caregiver-training workshop curriculum based on the experience of testing the pilot program, feedback from participants, and suggestions from an expert advisory group that was assembled to help guide the dissemination of the program. As part of this process, the team wants to explore potential community partners for delivery of the training and diffusion of the program. One possibility includes developing a partnership with local area agencies on aging that are already experienced with providing caregiver-training and support programs and with working with senior housing properties. Other potential collaborators include local community groups such as AARP chapters, Red Cross chapters, senior centers, social service organizations, or care managers. These groups represent entities that may already be offering family caregiver-training programs, and partnering with senior housing properties can provide an efficient mechanism for reaching a large group of family caregivers and retaining their participation. After refining the workshop curriculum and exploring different possibilities for disseminating the program, the program team would like to conduct further evaluation to measure the effect of the program on the participating entities.

Acknowledgments

The authors acknowledge the generous funding from the Langeloth Foundation in support of the development and testing of this training program. They also thank the service coordinators and family members who took time out of their busy schedules to participate in the focus groups and pilot training.

Authors

Alisha Sanders is a senior policy research associate at the Institute for the Future of Aging Services, American Association of Homes and Services for the Aging.

Robyn Stone is the executive director of the Institute for the Future of Aging Services and senior vice president for research at the American Association of Homes and Services for the Aging.

Rhoda Meador is the associate director for Extension and Outreach, New York State College of Human Ecology at Cornell University.

Victoria Parker is an associate professor, Boston University School of Public Health, Boston University School of Medicine, and a research scientist at the Center for Organization, Leadership and Management Research, VA Boston Healthcare System.

References

AARP Public Policy Institute. 2009. *Providing More Long-Term Supports and Services at Home: Why It's Critical for Health Reform.* Fact Sheet. Washington, DC: AARP.

Cafferata, Gail Lee, Judith Sangl, and Robyn Stone. 1987. "Caregivers of the Frail Elderly: A National Profile," *The Gerontologist* 25 (4): 352–357.

Donelan, Karen, Craig Hill, Catherine Hoffman, Kimberly Scoles, Penny Hollander Feldman, Carol Levine, and David Gould. 2002. "Challenged To Care: Informal Caregivers in a Changing Health System," *Health Affairs* 21 (4): 222–231.

Feinberg, Lynn Friss, Kari Wolkwitz, and Cara Goldstein. 2006. *Ahead of the Curve: Emerging Trends and Practices in Family Caregiver Support.* Washington, DC: AARP.

Gitlin, Laura, Karen Reever, Marie P. Dennis, Esther Mathieu, and Walter W. Hauck. 2006. "Enhancing Quality of Life of Families Who Use Adult Day Services: Short- and Long-Term Effects of the Adult Day Services Plus Program," *The Gerontologist* 46 (5): 630–639.

Haley, Barbara A., and Robert W. Gray. 2008. *Section 202 Supportive Housing for the Elderly: Program Status and Performance Measurement.* Washington, DC: U.S. Department of Housing and Urban Development.

Houser, Ari, and Mary Jo Gibson. 2008. "Valuing the Invaluable: A New Look at the Economic Value of Family Caregiving, 2008 Update." *Insight on the Issues 13*. Washington, DC: AARP Public Policy Institute.

Huemann, Leonard F., Karen Winter-Nelson, and James R. Anderson. 2001. *The 1999 National Survey of Section 202 Elderly Housing*. Washington, DC: AARP.

Janevic, Mary R., and Cathleen M. Connell. 2001. "Racial, Ethnic, and Cultural Differences in the Dementia Caregiving Experience: Recent Findings," *The Gerontologist* 41 (3): 334–347.

Knight, Bob G., Steven M. Lutzky, and Felice Macofsky-Urban. 1993. "A Meta-Analytic Review of Interventions for Caregiver Distress: Recommendations for Future Research," *The Gerontologist* 33 (2): 240–248.

Navaie-Waliser, Maryam, Penny H. Feldman, David A. Gould, Carol Levine, Alexis N. Kuerbis, and Karen Donelan. 2001. "The Experiences and Challenges of Informal Caregivers: Common Themes and Differences Among Whites, Blacks, and Hispanics," *The Gerontologist* 41 (6): 733–741.

Pillemer, Karl, Jill Suitor, Charles R. Henderson, Rhoda Meador, Leslie Schultz, Julie Robison, and Carol Hegeman. 2003. "A Cooperative Communication Intervention for Nursing Home Staff and Family Members of Residents," *The Gerontologist* 43 (Special Issue II): 96–106.

Port, Cynthia L., Sheryl Zimmerman, Christianna S. Williams, Debra Dobbs, John S. Preisser, and Sharon Wallace Williams. 2005. "Families Filling the Gap: Comparing Family Involvement for Assisted Living and Nursing Home Residents With Dementia," *The Gerontologist* 45 (1): 87–95.

Spillman, Brenda C., and Kirsten J. Black. 2005. *Staying the Course: Trends in Family Caregiving*. Washington, DC: AARP.

Spillman, Brenda C., and Sharon K. Long. 2007. *Does High Caregiver Stress Lead to Nursing Home Entry?* Washington, DC: U.S. Department of Health and Human Services, Office of the Assistant Secretary for Planning and Evaluation, Office of Disability, Aging and Long-Term Care Policy.

Toseland, Ronald, and Tamara Smith. 2001. *Supporting Caregivers Through Education and Training*. A technical assistance monograph prepared for the National Family Caregiver Support Program Initiative of the U.S. Administration on Aging.

Toseland, Ronald W., Gregory C. Smith, and Phillip McCallion. 2001. "Helping Family Caregivers." In *Handbook of Social Work Practice With Vulnerable and Resilient Populations,* edited by Alex Gitterman. New York: Columbia University Press: 548–581.

Washko, Michelle, Alisha Sanders, Mary Harahan, Robyn Stone, and Enid Cox. 2007. *Connecting Affordable Senior Housing and Services: A Descriptive Study of Three Colorado Models*. Washington, DC: Institute for the Future of Aging Services.

Weiss, Carlos, Hector M. Gonzalez, Mohammed U. Kabeto, and Kenneth M. Langa. 2005. "Differences in Amount of Informal Care Received by Non-Hispanic Whites and Latinos in a Nationally Representative Sample of Older Americans," *Journal of the American Geriatric Society* 53 (1): 146–151.

Wilden, Robert, and Donald Redfoot. 2002. *Adding Assisted Living Services to Subsidized Housing: Serving Frail Older Persons With Low Incomes.* Washington, DC: AARP.

Wright, Bernadette. 2004. *An Overview of Assisted Living: 2004.* Issue Brief IB 72. Washington, DC: AARP Public Policy Institute.

Zarit, Stephen H., and Linda Teri. 1992. "Interventions and Services for Family Caregivers." In *Annual Review of Gerontology and Geriatrics,* Vol. 11, edited by K. Warner Schaie and M. Powell Lawton. New York: Springer: 287–310.

Real Estate Brokers' Duties to Their Clients: Why Some States Mandate Minimum Service Requirements

Anupam Nanda
University of Reading

Katherine A. Pancak
University of Connecticut

Abstract

This study attempts to determine why certain states have adopted real estate broker minimum service laws in the United States. The federal government and academic literature assume that such laws were the result of anticompetitive industry collusion and, therefore, serve no consumer protection justification. Using hazard models and state data over 8 years, however, we find that factors reflecting state brokerage influence—strong industry associations and broker membership on licensing boards—do not result in the enactment of minimum service laws. Factors suggesting consumer protection motivations—greater number of complaints against brokers, stricter prelicensing requirements, and a Democratic state legislature—increase the likelihood of law adoption.

Introduction

Ten states have recently enacted laws requiring a real estate broker[1] to provide a real estate consumer (buyer, seller, landlord, or tenant) with a minimum level of services, including requirements to help negotiate, to present and receive offers, and to answer questions. The U.S. Department of Justice (DOJ) Antitrust Division and the U.S. Federal Trade Commission (FTC) both oppose these

---

[1] In most states, a "broker" enters into an agency agreement with a client, and a "salesperson" works for a broker. Both brokers and salespersons who represent a client are "agents" of the client. Both also need to be licensed by their state to engage in the real estate business and, if licensed, are also referred to as "licensees." Throughout this article, we use the term broker.

types of requirements on the grounds that they are anticompetitive, and both agencies lobbied heavily against state enactment. These types of laws are deemed anticompetitive, primarily because they prevent a limited-service real estate broker from contracting with a seller to provide only access to the brokerage multiple listing services (MLSs) for a flat fee.

The purpose of this article is to determine what factors might have compelled states to enact minimum service laws despite significant federal government opposition. The analytical structure employs hazard models, which use a unique and rich set of economic and institutional data for the housing market in a yearly panel of the 50 states and the District of Columbia from 2000 through 2007. According to this analysis, the strength of state industry associations and the presence of brokers on state licensing boards both have a *negative* influence on the likelihood that state minimum service laws will be adopted. State-level complaints against licensed brokers, Democratic control of the legislature, stricter prelicensing requirements, and greater population growth have a positive influence on the likelihood that state minimum service laws will be adopted.

Following this introduction, this article is divided into seven sections. The first section discusses previous literature on minimum service laws for real estate brokers. The second section reviews the various categories of minimum service laws and considers the legislative backgrounds of states that have passed laws that require brokers to provide consumers with a minimum level of services. The theoretical hypotheses about the probability that a state will pass minimum service laws are discussed in the third section. The institutional and economic variables that influence the enactment of minimum service laws are introduced in the fourth section. The fourth section also contains hypotheses concerning the relationships between minimum service law adoption and selected independent variables. The fifth section presents the empirical method used in this study. The sixth section analyzes, compares, and contrasts the results obtained from different model specifications. The final section is a summary of findings from this study, which offer potential state legislative policy trends.

Previous Literature

A report, *Competition in the Real Estate Brokerage Industry*, compiled and published by the FTC and DOJ in April 2007 (FTC and DOJ, 2007), addresses the effect of minimum service requirements on brokerage competition and defines minimum service requirements as “laws and regulations that enumerate specific tasks that a broker must perform for a client.”[2] Missouri brokerage law is used as an example. In Missouri, all brokers entering into an exclusive brokerage agreement must (1) accept delivery of and present offers and counteroffers to clients and customers; (2) help clients and customers develop, communicate, negotiate, and present offers, counteroffers, and disclosure notices; and (3) answer clients’ and customers’ questions relating to offers, counteroffers, disclosure notices, and contingencies.

---

[2] It is important to distinguish between minimum service laws that increase the brokerage services a consumer must purchase as opposed to laws that define the special agency relationship between a broker and client. Many states have provisions codifying common law agency fiduciary duties of obedience, loyalty, disclosure, confidentiality, accounting, and reasonable care; these types of laws are not considered minimum service laws.

The DOJ and FTC strongly assert that such minimum service requirements are anticompetitive because they reduce a consumer's choice of real estate brokerage services, force real estate consumers to buy services they may not want, and block limited-service brokers from offering less than a full package of real estate brokerage services. Although the report considers the claims of supporters who assert that such laws protect both consumers and brokers, the DOJ and FTC conclude that no evidence exists to support these claims.

Very little academic literature exists on real estate broker minimum service laws. A handful of authors have examined the issue tangentially when analyzing whether the real estate brokerage service industry is competitive. Hahn, Litan, and Gurman (2006) identified state legislation establishing minimum service requirements as one impediment to competition. Based on a review of the academic literature and on interviews with real estate industry participants, the U.S. Government Accountability Office (GAO) concluded that widespread use of the Internet in real estate transactions should encourage more brokerage price variation, but may be hindered by obstacles such as minimum service laws (GAO, 2006). Miceli, Pancak, and Sirmans (2007) determined that minimum service laws might be an attempt to prop up a brokerage compensation scheme that while possibly in the best interests of brokers, is not in the consumer's interest. Magura (2007) proposed that state minimum service laws have a chilling effect on broker price-cutting by accommodating broker-steering behavior. White (2006) observed that mandatory minimum service requirements for sellers' brokers eliminated competition from discount brokers whose only service would be to provide access to an MLS.

Levitt and Syverson (2008) analyzed whether any consumer protection justifications for broker minimum service laws exist. They compared variables for houses listed with limited-service brokers with those listed with full-service brokers. They found that houses listed with limited-service brokers take longer to sell but eventually sell at similar prices to those listed with full-service brokers. They weighed the tradeoff between the lower fees charged by a limited-service broker and the longer time on the market, and reasoned that consumers using limited-service, flat-fee brokers were not worse off than those using full-service, full-commission brokers. Based on this analysis, their conclusion stated that broker minimum service laws are not needed to protect consumers.

Pancak (2008) examined specific state brokerage laws that could be interpreted as requiring a minimum level of services. Identifying a wide range of regulatory provisions, she compared state provisions with the DOJ's website that lists states with minimum service laws.[3] She found that the DOJ list was incomplete and incorrect. One primary weakness of the DOJ list is that some states with language requiring brokers to "present offers in a timely manner" are included on the anticompetitive list, but others are not. Without clear legislative history to the contrary, she concluded that these types of provisions should be interpreted as requiring timely communication when an offer is transmitted to the broker, not requiring that brokers be available to accept and present offers.

---

[3] The DOJ list is available at http://www.usdoj.gov/atr/public/real_estate/fee_details.htm. As of January 8, 2009, the DOJ listed the District of Columbia and the following states as having limited choice because of minimum service requirements: Alabama, Idaho, Illinois, Indiana, Iowa, Kansas, Maine, Missouri, Oregon, South Dakota, Texas, Utah, Washington, and West Virginia.

Pancak determined the actual level of minimum service laws in all states and arranged them into four categories: states with minimum service requirements in all brokerage relationships, states with minimum service requirements in certain brokerage relationships, states requiring timely communication of offers, and states with waivable minimum service requirements and/or that require timely communication of offers. The data presented in the Pancak article are the basis for the dependent variable in this article.

Enactment of State Minimum Service Laws for Real Estate Brokers

Evidence presented below indicates that state REALTOR® associations have been primary supporters of state minimum service laws. The NATIONAL ASSOCIATION OF REALTORS® (NAR) has not formally endorsed state minimum service laws, noting that some state associations are in favor of such laws but others are not (NAR, 2005). NAR has offered legal advice about such legislation, emphasizing that associations have the right to propose and lobby for laws that they support, even if the law is deemed anticompetitive by federal agencies.[4]

Supporters of minimum service laws maintain that real estate consumers need to be able to expect certain services from a broker hired to represent them, and laws are needed to guarantee a minimum level of services (DOJ and FTC, 2007). In addition, if a seller working with a limited-service broker does not receive assistance from that broker, the seller may need to ask for assistance from the buyer's broker. Supporters also claim that the buyer's broker needs to be protected from having the additional work of assisting a seller because the seller does not pay the buyer's broker, and helping the seller may create a dual agency conflict of interest. Finally, some proponents of the law are concerned that a buyer's broker may not be compensated when a seller using a limited-service broker decides to deal directly with a buyer.

The DOJ and FTC have taken an aggressive stance against existing and proposed minimum service laws. The DOJ website lists its efforts to eliminate minimum service laws, including links to numerous press releases and letters to state governors, legislatures, and real estate commissions (USDOJ, 2009). The DOJ and FTC can only urge states not to pass laws or to change current laws because the federal government may not sue state legislatures (and boards acting according to legislative intent) for federal antitrust violations.[5] The state agencies' efforts have been met with mixed reactions. Alabama, Idaho, Missouri, and Texas passed minimum service laws despite active federal opposition. New Mexico, Tennessee, and Michigan, however, changed proposed legislation to make minimum service laws waivable resulting from lobbying efforts made by the federal agencies.

---

[4] Roberts (2005) quoting Laurie Janik, general counsel for NAR, April 22, 2005, letter to state REALTOR association executives.

[5] This was decided in the U.S. Supreme Court case of *Parker v. Brown*, 317 U.S. 342 (1943). The DOJ, however, has sued NAR for the alleged anticompetitive nature of NAR's Virtual Office Website (VOW) policy. NAR had adopted a policy permitting brokers to selectively withhold or "opt out" of allowing other brokers to advertise MLS listing information on line. The DOJ and the Association settled this lawsuit in 2008.

In 2004, Illinois became the first state to adopt minimum service requirements, requiring all exclusive brokerage arrangements between a broker and client to specify that the broker will provide the following services:

- Accept delivery of and present to the client offers and counteroffers to buy, sell, or lease the client's property or the property the client seeks to purchase or lease.
- Help the client develop, communicate, negotiate, and present offers, counteroffers, and notices that relate to the offers and counteroffers until a lease or purchase agreement is signed and all contingencies are satisfied or waived.
- Answer the client's questions relating to the offers, counteroffers, notices, and contingencies.

No specific discussion occurred regarding the need for this new provision during the state senate consideration.[6] The Illinois Association of REALTORS® reported that the purpose of the requirement is to "promote greater professionalism and accountability within the industry and to provide greater protections for real estate consumers."[7]

An article in *Chicago Agent* entitled "The Value of Full Service" provides additional insight into Illinois real estate professionals' opinion that minimum service requirements are needed (Biver, 2005). The article states that the most common complaint from full-service brokers who have done deals with limited-service brokers is that no other professional is representing the other side so the full-service broker "feels the burden of doing both sides, and that doesn't feel fair or right." The full-service brokers think that this predicament is unfair financially because they have to do more work for the same commission.

Other states that have adopted minimum service requirements echo these types of consumer protection and broker protection rationale. The Texas Association of REALTORS® supported adopting a minimum service law in Texas stating "it would help ease confusion in real estate transactions and provide true consumer protections." In testimony before the Texas Real Estate Commission, the chairman of the association spoke in favor of the law, noting that he represented 70,000 members. He cited reports of sellers feeling confused and not helped by their limited-service brokers, and reports of buyers' brokers having to step in and help (Evans, 2005).

The Alabama Real Estate Commission stated that the intent of its minimum service law, which was passed in 2005, was to limit MLS-listing-only brokerage activity so that sellers would not be left on their own in transactions without anyone to answer their questions (Alabama Real Estate Commission,2005). In 2005, the Iowa Legislature passed Iowa's law specifying content of brokerage agreements.[8] Almost no legislative comments about why the bill passed exist; Iowa Real Estate Commission minutes only mention that it was modeled after the Illinois minimum service law (Iowa Real Estate Commission, 2005).

---

[6] Illinois Senate Transcript, March 24, 2004, available at http://12.43.67.2/senate/transcripts/strans93/09300090.pdf.

[7] Illinois Association of REALTORS®, Provisions of Senate Bill 2887 (Public Act 93-957), revised 10-04, available at http://www.illinoisrealtor.org/Member/government/issues/sb2887.asp.

[8] Iowa House File 375, an act relating to the duties imposed on a real estate broker by a brokerage agreement (unanimously passed both the Iowa House and Senate).

In addition to a previous administrative regulation that required a broker to use reasonable care in conveying information to a client, Arizona, in 2005, added additional language to the regulation that imposed an affirmative obligation on the broker to take reasonable steps to help a client confirm the accuracy of the information. Although they did not explain why they made this change, the Arizona Department of Real Estate (ADRE) stated that brokers must now actively advise clients, and not just tell clients, "I don't know, you figure it out" (ADRE, 2005)

An article reporting on Missouri's minimum service law, which was passed in 2005, credits the law's passage to heavy lobbying efforts by the Missouri Association of REALTORS® (Wagar, 2005). The Association purportedly hired a lobbyist for $50,000 to persuade the Missouri governor to sign the bill, which passed both the Missouri House and Senate unanimously, despite requests from the DOJ and FTC to veto it.

In 2005, Kentucky passed an administrative regulation that requires a broker representing a client to perform specific services, including helping the client develop, communicate, negotiate, and present offers and answering questions relating to offers. A broker's failure to comply with the minimum requirements is considered gross negligence. That this regulation is still on the books in Kentucky is interesting because the Kentucky Legislature contemplated enacting a state statute requiring similar services in 2006. After the state legislature received a letter from the DOJ, the minimum service language was taken out of the proposed statute.[9] Even though the legislature did not pass a minimum service law, the administrative regulation still stipulates a provision by which brokers have to abide, and which precludes a consumer from buying an MLS-listing-only service.

In 2007, Idaho enacted a law that requires any broker entering into a written contract to "be available" to the client to receive and present offers in a timely manner. This language alone, however, does not necessarily appear to require minimum services. In many states, this type of language is generally understood to mandate prompt communication rather than require a specific service be performed. For example, the Oklahoma attorney general found that language requiring a broker to "be available" to receive all offers does preclude a broker and client from agreeing that the client receive offers directly (Pancak, 2008). The Idaho Real Estate Commission, however, interprets the Idaho law as mandating that brokers receive and review all offers, although a broker does not have to provide advice to clients or negotiate on their behalf.[10] The bill's purpose is to clarify that receiving and presenting offers is a duty that brokers owe clients. While the Idaho Real Estate Commission was considering drafting its own legislation, the Idaho Association of REALTORS® sponsored a proposal that passed; the contact on that bill is the association's director of government affairs.[11]

Theoretical Model

Industry and government commentators have identified two predominant reasons why state legislatures enact minimum service laws: consumer protection and broker pressure.

---

[9] Kentucky Senate Bill 43. 2006. www.lrc.ky.gov/record/06RS/SB43.htm.

[10] Idaho Real Estate Commission Guideline #23, effective July 1, 2007, adopted January 17, 2008; http://www.idahorealestatecommission.com/guidelines/guideline23.pdf.

[11] Idaho House Bill 135 (2007).

The purpose of real estate licensing laws is to protect real estate consumers, which indicates that consumer protection justifications for minimum service laws may exist. In particular, a state experiencing a high level of real estate consumer complaints may enact laws to better protect consumers from perceived broker misconduct or representational shortcomings. Therefore, the first hypothesis we tested is as follows.

Hypothesis 1. A higher volume of complaints filed with a state real estate licensing board increases the likelihood that a state enacts minimum service laws.

The DOJ and FTC allege that brokers have a vested interest in protecting their traditional brokerage fee structure and therefore would pressure legislatures for minimum service laws.[12] Brokers exert lobbying influence through state brokerage associations, and they serve on administrative agencies regulating the brokerage industry that have significant influence on the endorsement of new laws and regulations.[13] This leads us to two more hypotheses.

Hypothesis 2. The probability of enacting state minimum service laws increases when state broker associations have greater political strength.

Hypothesis 3. The probability of enacting state minimum service laws increases when brokers have a stronger influence on state real estate licensing boards.

Other factors may have also affected a state's decision to enact minimum service laws. In the next section, we provide details on other possible independent variables and the reasons they were included in our empirical model.

Description of Variables

Since 2004, 10 states have enacted laws that require brokers to offer some minimum level of service in either all broker relationships or only in exclusive broker relationships. Enactment dates and relevant statutory or administrative regulatory provisions for each of these states are listed in exhibit 1. This study analyzed both institutional and economic variables that may have affected the likelihood of law adoption for all 50 states and the District of Columbia from 2000 through 2007 (408 observations). Using this time period allowed for sufficient observation in most of the states before and after adoption of minimum service requirements. Exhibit 2 presents the variables used in the analysis, and exhibit 3 reports the summary statistics of variables used in this study.

As reported by Pancak (2008), four other states also have laws requiring brokers to provide clients with some type of minimum services, but these laws were enacted before 2000.[14] These states are also listed in exhibit 1. Given that the anticompetitive concern about precluding limited-service

---

[12] The agencies also discussed other motivations for the laws.

[13] The Consumer Federation of America has speculated that a connection exists between minimum service laws and the number of brokers serving on state real estate boards. See Woodall and Brobeck (2006).

[14] In addition, seven states enacted laws since 2004 providing for minimum services: Florida, Michigan, Nevada, New Mexico, Ohio, Tennessee, and Wisconsin (Pancak, 2008). The laws in those states, however, are not mandatory because they allow a consumer to waive the services. For purposes of our analysis, we will include only states that enacted nonwaivable minimum service laws after 2000.

Exhibit 1

States With Nonwaivable Minimum Service Requirements (1 of 3)

State	Year Section Enacted	Code or Regulation Section	Summary of Applicable Provision(s)
Enacted After 2000			
Alabama	2005	Alabama Code §§ 34-27-84 (c)	At a minimum, all listing brokers must do the following: • Accept delivery of and present all offers to help the consumer negotiate offers. • Answer the consumer's questions relating to the transaction.
Arizona	2005 *Year language was added about taking reasonable steps to help a client confirm information.*	Arizona Administrative Code R4-28-1101	Brokers must do the following for a client: • Use reasonable care to obtain information material to a client's interests and relevant to the contemplated transaction, and communicate the information to the client. • Take reasonable steps to assist a client. • Take reasonable steps to help a client confirm the accuracy of information relevant to the transaction. Brokers must perform acts expeditiously, and cannot intentionally or negligently delay performance.
Idaho	2007	Idaho Statute § 54-2087(3)	If a broker enters into a written contract to represent a client, the broker must— • Be available to the client to receive and present offers in a timely manner. This duty is mandatory and cannot be waived. Although the state allows nonagency, this requirement applies to all types of representation or customer service agreements.
Illinois	2004	225 Illinois Compiled Statutes 454, Article 15, Section 75	In an exclusive brokerage agreement, the broker must provide the following services: • Accept delivery of and present offers. • Help the client develop, communicate, negotiate, and present offers. • Answer client questions.
Indiana	2006	Indiana Code 25-34.1-10-9.5	If a broker does not have an agency relationship with a consumer, at a minimum the broker must perform the following: • Be available to receive and present offers. • Help negotiate, complete real estate forms, and communicate. • Respond to questions. If a second broker performs those duties for the consumer because the first broker failed to perform them, an agency relationship between the second broker and the consumer would not exist. If a broker does have an agency relationship with a client, the broker must fulfill the terms of the agency relationship, and present all offers immediately upon receipt. Only applies to nonagency situations. Does not apply when a broker represents a client in a transaction, but only when a broker enters into a written agreement that does not involve agency.

Exhibit 1

States With Nonwaivable Minimum Service Requirements (2 of 3)

State	Year Section Enacted	Code or Regulation Section	Summary of Applicable Provision(s)
Iowa	2005	Iowa Code § 543B.56A	At a minimum, all brokerage agreements must state that the broker will do the following: • Accept delivery of and present offers. • Help the client develop, communicate, negotiate, and present offers. • Answer the client's questions relating to the brokerage agreements and negotiations. • Provide prospective buyers access to listed properties.
Kentucky	2005	201 Kentucky Administrative Regulations 11:045	At a minimum, all brokers representing a client must do the following: • Accept delivery of and present all offers. • Accept all earnest money deposits that are presented to the broker. • Help clients develop, communicate, negotiate, and present offers. • Answer questions relating to offers. Failure to comply with these minimum requirements is considered gross negligence. Regulations limits choice; it is interesting that a bill proposing minimum services was defeated in 2006. Allows nonagency transaction broker.
Missouri	2005	Missouri Revised Statute § 339.780 (7)	In an exclusive brokerage agreement, the broker must provide the following services: • Accept delivery of and present offers. • Help the client develop, communicate, negotiate, and present offers. • Answer client questions.
Texas	2005	Texas Occupations Code Title 7 § 1101.557	In an exclusive brokerage agreement, the broker must provide the following services: • Present offers to and from client. • Answer client questions.
Utah	2005	61-2-27 Utah Code Annotated	In an exclusive brokerage agreement, the broker must provide the following services: • Accept delivery of and present offers. • Help the client develop, communicate, negotiate, and present offers. • Answer client questions.

Exhibit 1

States With Nonwaivable Minimum Service Requirements (3 of 3)

State	Year Section Enacted	Code or Regulation Section	Summary of Applicable Provision(s)
Enacted Before 2000			
California	1987	California Civil Code Section 2079	Listings brokers must conduct a reasonably competent and diligent visual inspection of listed property, and disclose all facts materially affecting the value or desirability of the property that the inspection revealed.
Montana	1995	Montana Code Annotated § 37-51-313 (12)	Brokers must "endeavor to ascertain all pertinent facts concerning each property in any transaction in which the licensee acts" so the licensee can fulfill his or her obligation to avoid error, exaggeration, misrepresentation, or concealment of pertinent facts.
South Carolina	Before 2000	South Carolina Code of Laws Section 40-57-135 (D) (1)	Brokers must do the following: • Upon receipt, prepare and present offers. • Deliver written acceptances of offers to all parties. • Ensure that all of the terms and conditions of the transaction are included in the offer. • Ensure that changes or modifications made during negotiation are in writing and initialed and dated by both parties before proceeding with the transaction.
Wyoming	Before 2000	Wyoming Code § 33-28-111 (xxix)	Brokers must do the following: • Advise buyer and seller of all terms of a proposed sale at the time an offer is presented including estimated discounts and closing costs. • Submit all offers to a seller.

brokers has only developed in the past decade, we assume that laws enacted before 2000 were driven by factors different than those driving the laws enacted since 2004.[15] To check the robustness of this assumption, we also ran the analysis with those four states removed from the sample. As suspected, the change in magnitude, sign, and standard errors is negligible.

Institutional Variables

Most of the state institutional variable statistics that we used are derived from the *Digest of Real Estate Licensing Laws and Current Issues* (reports from 1999 to through 2007), compiled by the Association of Real Estate Licensing Law Officials® (ARELLO). These surveys consist of information collected during the preceding year (generally in the second half of that year) for publication in the current year. So, it implies a built-in lag in the ARELLO dynamic data items (that is, number of licensees and complaints) that we use in the article. Statistics from other sources are noted in exhibit 2.

---

[15] For example, California's law requiring that listing brokers conduct a reasonable, competent, and diligent inspection of listed property was in response to a California court case concerning property condition disclosure.

Exhibit 2

Independent Variables

Variable	Definition
Institutional Variable	
Complaints	Number of complaints per 100 real estate brokers
Association strength	State NATIONAL ASSOCIATION OF REALTORS® membership[a] as a percentage of active state brokers[b]
Board strength	Percentage of real estate industry members on the state licensing board[c]
Prelicensing education hours	Prelicensing hours required for salespersons[d]
Continuing education hours	Continuing education hours requirement
Consumer protection fund	Maximum consumer protection fund liability payout against a broker (in thousands of dollars)[e]
Political climate	Binary variable indicating whether a state legislature is controlled by Democrats or others (including Republicans)[f]
Economic Variable	
House price growth	Average of percent year-over-year change in quarterly FHFA purchase-only state-level house price index
Transaction growth	Percent change in number of transactions
Gross state product growth	Percent change in real gross state product
Population growth	Percent change in population
Income growth	Percent change in per capita income

FHFA = Federal Housing Finance Agency.

[a] *Data on NAR membership from NATIONAL ASSOCIATION OF REALTORS® monthly membership report for years ending December 31, 1999–2007.*

[b] *Association of Real Estate Licensing Law Officials (ARELLO) (1999–2007), "SALESPERSONS: Active Salespersons" and "BROKERS: Active Brokers" plus "BROKERS: Active Associate Brokers."*

[c] *ARELLO (1999–2007), "# members" heading and "# Industry Members" heading. For California: The Governor appoints the Real Estate Commissioner, who then appoints the Real Estate Advisory Commission 10 in total, 6 real estate brokers (industry members) and 4 public members. http://www.dre.ca.gov/pdf_docs/ref01.pdf.*

For Minnesota: We do not find any type of board or commission. The Governor appoints the Commissioner of the Department of Consumer Protection, who oversees all real estate licensing activities. We assume zero percent industry representation in the board.

[d] *ARELLO (1999–2007), "HOURS PRE-" heading.*

[e] *ARELLO (1999–2007), "MAX. FUND Liability: Broker" heading.*

[f] *Data compiled from the National Conference of State Legislatures.*

Exhibit 3

Summary Statistics

Variable	State-Level Characteristics: 2000–07: 408 Observations		
	N	Mean	Std. Dev.
Complaints	395	1.856	12.187
Association strength	393	50.688	15.435
Board strength	408	69.243	18.696
Prelicensing education hours	408	58.921	33.004
Continuing education hours	400	6.440	6.188
Consumer protection fund ($)	408	13,509.80	16,988.36
Political climate	408	0.367	0.483
House price growth	408	7.031	5.150
Transaction growth	402	2.656	10.630
Gross state product growth	408	2.464	2.087
Population growth	408	0.908	0.866
Income growth	408	4.380	2.805

Note: Because information is missing, some variables have fewer than 408 observations.

We use three independent variables to test our three hypotheses. Ideally, we want to test for volume of complaints against real estate brokers offering minimum services filed with a state real estate licensing board. The available data, however, do not make a distinction between complaints against brokers offering minimum services and those offering full services. Therefore, we evaluated the state's overall volume of complaints filed against all types of real estate brokers. We expect the volume of complaints filed with a state real estate licensing board to positively influence the likelihood that a state enacts minimum service laws. We control for state size by looking at the number of complaints per 100 real estate brokers and salesperson licensees in our analysis.

We measure the political strength of a state's broker association by looking at NAR membership as a percentage of total state brokers. If federal agencies were correct, we would expect an increase in the percentage of state NAR membership to positively influence the likelihood that a state enacts minimum service laws. We measure state broker influence on licensing boards as the percentage of licensed brokers or salespersons serving on a state board, expecting higher levels of membership would also positively influence the likelihood that a board will enact minimum service regulations or encourage state legislatures to pass minimum service laws.

We include a few other institutional variables to control for in our analysis. Interestingly, these variables also fit under the categories of either consumer protection or political pressure. Ease of entry into the real estate brokerage profession in a state may concern traditional brokers who fear competition from new limited-service brokers. A state's prelicensing education hours are an indication of licensing ease or difficulty. Also, a state's continuing education hours can indicate cost of maintaining a license. We expect a state's prelicensing hour requirement and continuing education hour requirement to be inversely related to the likelihood that a state enacts minimum service laws: the easier it is to enter or stay in the profession, the more likely full-service brokers may see limited-service brokers as a threat.

Many states have a consumer protection fund that compensates a consumer who is unable to collect a monetary judgment against a broker. The dollar amount limit varies by state. We expect a higher dollar limit to encourage states to enact minimum service laws because boards and legislatures may fear depleting their funds without these perceived additional consumer protection measures.

The political climate of a state often influences new legislation. We therefore include a variable for partisan control in the state legislation. Based on common political perceptions, a state that is controlled by a Democratic legislature may be more likely to pass a greater amount of consumer protection legislation.

Economic Variables

We also control for the effect of housing market changes in our analysis by including fundamental measures of state housing market activity and other state economic activity: house price trends, percent change in housing transactions, population growth, percent change in per capita income, and percentage change in real gross state product (GSP). To assess housing price changes, we use the repeat sales purchase-only quarterly Housing Price Index (HPI), reported by the Federal Housing Finance Agency (FHFA). We took the average year-over-year rate of change for a year. The data used for the other variables is obtained from the NAR, the U.S. Census Bureau, the U.S. Bureau of Labor Statistics, and the U.S. Bureau of Economic Analysis.

Weak state-broker productivity, as measured by the number of state residential transactions per year per real estate broker, may cause traditional full-service real estate brokers to feel the need to protect their business activity from encroachment by limited-service brokers. If this is the case, then we expect variables causing lower broker productivity to increase the likelihood of state enactment of minimum service laws, and variables resulting in higher broker productivity to decrease that likelihood.

Likewise, a decrease in any one of the other economic variables may threaten real estate broker activity, encouraging a protectionist position that supports reducing brokerage competition by restricting limited-service brokers. Therefore, we expect to see an inverse relationship between the change in any one of these variables and the likelihood that a state adopts minimum service laws.

Methodology

Taking into account both the institutional and economic variables set forth in the previous section, and following the works of Kiefer (1988), de Figueiredo and Vanden Bergh (2004), and Nanda (2008), we employed a discrete-time proportional hazard model to determine which factors may have led states to enact minimum service laws for real estate brokers. The hazard model allows us to look at the pre-enactment time-period observations (that is, time to event data) to understand the process that may lead to enactment. We model the law adoption process by specifying a probability distribution for the survival spell until death, which is law enactment in the current context.[16]

The probability distribution is given by

$$F(t) = \Pr(T < t) \tag{1}$$

---

[16] The baseline specification draws on Kiefer (1988) and chapter 20 in Wooldridge (2002).

which specifies the probability that the random variable T is less than some value t; $f(t)$ is the corresponding density function. The hazard function can be represented as

$$\lambda_0(t) = \frac{f(t)}{S(t)} = -\frac{d \ln S(t)}{dt} \tag{2}$$

$\lambda_0(t)$ is the rate at which spells will be completed at duration t, given that they survive until t.

A proportional hazard framework using time-invariant regressors can be written as

$$\lambda[t; x] = k[x]\lambda_0(t) \tag{3}$$

where $k(x) > 0$ is a nonnegative function of x, and $\lambda_0(t) > 0$ is the baseline hazard.

Time is separated from the explanatory variables so that the hazard is obtained by shifting the baseline hazard (which is common to all units) as the individual hazard function changes based on a function $k(x)$ of observed covariates (that is, for all the cross-section units, the hazard is proportional to the baseline hazard function). $k(x) > 0$ is parameterized as

$$\lambda[t; x] = \exp[x\beta]\lambda_0(t) \tag{4}$$

We can specify baseline hazard by including a function of time. Because no state has ever repealed a minimum service requirement law, we censor the data to the preadoption levels. We can estimate the hazard model in equation (4) using a standard logit specification. We can also incorporate time-varying covariates into the framework to obtain a conditional hazard function as

$$\lambda[t; x_m, \theta] = k[x_m, \beta]\lambda_m, \qquad m = 1,\dots\dots, M \tag{5}$$

where θ is a vector of unknown parameters.

Equation (5) demonstrates that time-varying covariates have a multiplicative effect in each time interval (for M intervals) and it allows for a flexible baseline hazard, which is common to all units. Incorporating time-varying covariates may be justified because the law has been adopted at different times by different states (Nanda, 2008). Because different states are likely to have different distributions of the duration dependence and some relevant factors may not be observed (that is, a potential omitted variable bias may exist), we control for the state-level heterogeneity. Following Wooldridge (2002), we can incorporate heterogeneity into the framework as

$$\lambda[t; v, x_m, \theta] = vk[x_m, \beta]\lambda_m, \qquad a_{m-1} \le t \le a_m \tag{6}$$

where $v > 0$ is a continuously distributed heterogeneity term.

We try the most common distribution for specifying heterogeneity (or frailty), which is the gamma distribution.

Results

We examined the enactment of minimum service laws along with time-varying covariates. Because minimum service requirements were enacted in different states at different times (that is, a disparate treatment exists because of state-level heterogeneity), we tried to bring in more information to the estimation system by incorporating time-varying covariates. Varied level of state real estate associations' strength may have a different effect on the probability of a minimum service law's enactment. When the industry association is well organized, the representatives may be reluctant to support legislation, but a weak association might, however, try to push for laws that protect its members. Therefore, we introduce a spline function for the NAR association strength variable. We put the 'break' or 'knot' at the 50-percent-strength level (that is, we estimate the model using two variables that represent greater than and less than 50-percent-strength levels).

Standard Discrete Choice Models

We present a hazard analysis framework in which we model the law enactment process conditioned on the adoption having not yet occurred. We start with standard discrete choice models. Exhibit 4 shows results from two different model specifications—logit and probit models. This analysis is done with state-level data.

Exhibit 4

Standard Discrete Choice Models (Dependent Variable: Law Adoption Dummy)

Regressor	(1)	(2)
Complaints	– 0.0631	– 0.0435
	(0.0728)	(0.0387)
Association strength (<=50%)	0.0731	0.0409
	(0.0462)	(0.0258)
Association strength (>50%)	– 0.0726***	– 0.0381***
	(0.0392)	(0.0198)
Board strength	– 0.0239	– 0.0117
	(0.0154)	(0.0078)
Prelicensing education hours	0.0396*	0.021**
	(0.0119)	(0.0058)
Continuing education hours	– 0.0887	– 0.0371
	(0.1031)	(0.0491)
Consumer protection fund	0.0001	0.0001
	(0.0001)	(0.0001)
Political climate	2.2334**	1.1987**
	(0.8915)	(0.4724)
House price growth	0.0849	0.0471
	(0.0689)	(0.0382)
Transaction growth	– 0.0653**	– 0.0361**
	(0.0291)	(0.0146)
Gross state product growth	– 0.0331	– 0.0187
	(0.1511)	(0.0778)
Population growth	1.7167*	0.9862*
	(0.5483)	(0.2847)
Income growth	0.2259	0.1255***
	(0.1416)	(0.0731)
Fixed effect?	Census division	Census division
Model description	Logit regression	Probit regression
Pseudo R^2	0.361	0.366
Log likelihood	– 53.139	– 52.744
N	248	248

** Denotes 1-percent significance level.*

*** Denotes 5-percent significance level.*

**** Denotes 10-percent significance levels.*

Notes: Robust standard errors are reported within parentheses. This analysis includes data for all 50 states and the District of Columbia, from 2000 to 2007.

In general, we find that stricter prelicensing educational requirements and weaker association (less than 50 percent representation) may favor law enactment; a greater number of complaints, stronger association (more than 50 percent representation), and stronger industry influence on the licensing board may not support enactment of minimum service requirements. Interestingly, Democratic legislature control increases the likelihood of minimum service law enactment.

Proportional Hazard Models

Models in exhibit 5 present more empirical results that further address the measurement error problem and state-level heterogeneity. Exhibit 5 takes the specification, used in exhibit 4, and reports alternative econometric specifications.

We assume that duration dependence (as represented by the hazard function) will follow the standard Weibull distribution model. Model (1) in exhibit 5 presents the baseline estimates from the hazard model with time-varying covariates with no lagged values. In general, we find statistically significant estimates that are consistent to a reasonable extent with our postulates. As assumed, association strength—especially more than 50-percent representation—and industry influence put significant negative feedbacks on the likelihood of enactment of the minimum service law. A more active housing market seems to present positive feedback.

As suggested by Nanda (2008) legislators may not have observed current year values, however, when deciding to pass a mandate. Furthermore, the law or the discussion around a possible enactment might have affected the current year observations (that is, some endogenous feedbacks may persist). To address this concern, we incorporate previous year's values of the institutional variables in model (2). Moreover, most institutional variables tend to be measured with error. Legislators may want to consider historical averages over a longer period to evaluate the need for a mandate. We take the average of 1-period and 2-period lagged values for the institutional variables in model (3) to control for measurement error. The estimates show remarkable improvement, validating the concerns of endogeneity and measurement error. We find statistically significant estimates that are consistent with our assumptions. In model (3), association strength (especially more than 50-percent representation) and industry influence put significant negative feedbacks on the likelihood of enactment of the minimum service law. We also find that a stricter prelicensing educational requirements and a greater number of complaints tend to favor a minimum service requirement law's enactment.

The process of enacting laws with minimum service requirements varies across states. Different states in our sample may have different distributions for the duration dependence. In model (4), we try to address this concern. We assume that the heterogeneity term ν in equation (6) is gamma distributed. We do not, however, find any significant improvement over model (3).[17] Four states—California, Montana, South Carolina, and Wyoming—adopted minimum service requirements before 2000. To test the robustness of our results, we exclude those states and perform key model analyses. The results do not show any significant differences from those shown in exhibits 4 and 5.

---

[17] Because of many small, omitted influences on law adoption, normal distribution may represent data better than the gamma distribution.

Exhibit 5

Proportional Hazard Models (Dependent Variable: Law Adoption Dummy)

Regressor	(1)	(2)	(3)	(4)
Complaints	– 0.1851	0.0796	0.2308*	– 0.8812
	(0.6047)	(0.0857)	(0.0843)	(0.6068)
Association strength (<=50%)	– 0.0873	– 0.2737	– 0.3729	0.1082
	(0.1863)	(0.1826)	(0.3028)	(0.1016)
Association strength (>50%)	– 0.2913**	– 0.3228**	– 0.5826*	– 0.0693
	(0.1308)	(0.1287)	(0.1644)	(0.0535)
Board strength	– 0.0813**	– 0.1044	– 0.1056**	– 0.0113
	(0.0333)	(0.0662)	(0.0519)	(0.0203)
Prelicensing education hours	0.0951*	0.1269**	0.1794*	0.0281
	(0.0269)	(0.0552)	(0.0587)	(0.0171)
Continuing education hours	– 0.1869	– 0.4084	– 0.3326	– 0.0859
	(0.2121)	(0.3676)	(0.3324)	(0.0682)
Consumer protection fund	0.0001	0.0001	0.0001	– 0.0001
	(0.0001)	(0.0001)	(0.0001)	(0.0001)
Political climate	6.3097*	8.4689**	9.7585**	0.2772
	(1.2832)	(3.9749)	(3.9486)	(0.9046)
House price growth	0.1809	0.1154	0.3443	– 0.1528
	(0.2043)	(0.1031)	(0.2113)	(0.1067)
Transaction growth	0.1513***	0.1531	0.0882	– 0.0573***
	(0.0848)	(0.0961)	(0.0669)	(0.0346)
Gross state product growth	– 0.2886	– 0.6364	– 1.1801	0.0062
	(0.3235)	(0.5653)	(1.0187)	(0.2908)
Population growth	3.9629**	7.8001	7.7221***	0.7402
	(1.8336)	(5.0208)	(4.6801)	(0.6139)
Income growth	– 0.2741**	– 0.7081	– 0.6719**	0.1592
	(0.1174)	(0.4464)	(0.3091)	(0.2101)
Model description	Current attributes	First lagged attributes	Average of first and second lagged attributes	Average of first and second lagged attributes
Modeling concern	More information	Regulators do not observe current values	Institutional variables measured with error	State–level heterogeneity
Distribution for duration dependence	Weibull	Weibull	Weibull	Weibull
Distribution for heterogeneity term				Gamma
Log likelihood	– 20.401	– 18.692	– 14.151	– 29.858
N	248	223	192	294

** Denotes 1-percent significance level.*

*** Denotes 5-percent significance level.*

**** Denotes 10-percent significance levels.*

Notes: Models include logarithm of time as the baseline hazard specification. Robust standard errors are reported within parentheses. This analysis includes data for all 50 states and the District of Columbia, from 2000 through 2007.

To facilitate interpretation of our results, in exhibit 6, we report odds ratios for the logit model in model (1) of exhibit 4 and hazard ratios for model (3) of exhibit 5. Column (1) of exhibit 6 shows that for each additional hour of state prelicensing requirements, the odds of enacting a minimum service requirement increase by a factor of 1.04. A one-percentage-point increase in association strength raises the odds of not enacting a minimum service requirement by a factor of 0.93. In terms of the hazard ratio from column (2) of exhibit 6, for each increase of 1 complaint per 100 brokers and each additional hour of state prelicensing requirements, the hazard rate of enacting minimum service requirements increases by factors of 1.26 and 1.19, respectively. One-percentage-point increases in association strength and industry influence suppress the hazard rate of enacting a minimum service requirement by factors of 0.56 and 0.90, respectively.

Exhibit 6

Odds and Hazard Ratio

Regressor	Model (1) Exhibit (4) Odds Ratio	Model (3) Exhibit (5) Hazard Ratio
Complaints	0.9388	1.2596*
Association strength (<=50%)	1.0758	0.6887
Association strength (>50%)	0.9299***	0.5584*
Board strength	0.9764	0.8998**
Prelicensing education hours	1.0404*	1.1966*
Continuing education hours	0.9151	0.7171
Consumer protection fund ($)	1.0001	1.0001
Political climate	9.3313**	17,300.52**
House price growth	1.0886	1.4111
Transaction growth	0.9368**	1.0922
Gross state product growth	0.9674	0.3072
Population growth	5.5661*	2,257.606***
Income growth	1.2535	0.5107**

** Denotes 1-percent significance level.*

*** Denotes 5-percent significance level.*

**** Denotes 10-percent significance levels.*

Conclusion

This article has examined institutional and economic influences on state real estate broker minimum service laws. The federal government and previous academic literature have assumed that the anticompetitive attitudes of traditional brokers are the driving force behind the enactment of these laws, and that legislative evidence exists proving that state brokerage associations introduced, supported, and lobbied for minimum service laws that passed. Our results, however, show that stronger (more than 50 percent representation) state NAR presence and a greater percentage of real estate industry members on licensing boards decrease the likelihood that minimum service laws would be enacted in a state. Although many traditional real estate brokers may be vocal opponents of limited-service brokerage, many other brokers may embrace the evolving nature of the brokerage industry brought about by changing technology and new representational paradigms. On the other hand, these variables are capturing quantity of influence rather than quality of influence, and may actually be limited in their ability to approximate broker and association influence on minimum service law enactment.

Consumer protection was the stated purpose of many of the proposed minimum service bills that passed into law. Our results indicate that the rationale may be sincere because the level of complaints against brokers is considered the most significant indicator of enactment. This suggests that states have made changes to broker licensing laws in an attempt to address perceived consumer protection concerns or problems.

This article addresses the question of why minimum service laws were enacted. Legislative history suggests that lobbying efforts by broker associations influenced enactment. Contrary to our hypotheses that were based on this evidence, our empirical results indicate that stronger state NAR presence and greater broker licensing board membership both decrease the likelihood that minimum service laws will be enacted. We also found that a state experiencing high levels of complaints against brokers was more likely to enact minimum service laws. These results demonstrate that it may be overly simplistic for federal government agencies to allege that the brokerage industry as a whole is pushing for enactment of minimum service laws for anticompetitive reasons. State enactment of minimum service laws is more likely the result of the lobbying efforts of a handful of influential state real estate professionals. More research is now needed to determine the actual effect of enacted minimum service laws on both broker competition and on consumer protection.

Acknowledgments

The authors thank John Clapp, Mark Shroder, and three anonymous reviewers for their helpful comments. All remaining errors are ours.

Authors

Anupam Nanda is a lecturer in the School of Real Estate and Planning at the University of Reading, United Kingdom.

Katherine A. Pancak is a professor in residence in the Center for Real Estate and Urban Economic Studies in the Finance Department at the University of Connecticut.

References

Alabama Real Estate Commission. 2005 (Fall). *State of Alabama Real Estate Commission Update*. http://www.arec.state.al.us/pdf/Update/arec_update_rev1011.pdf (accessed April 7, 2009).

Arizona Department of Real Estate (ADRE). 2005. *Arizona Department of Real Estate Bulletin* 31 (2). http://www.re.state.az.us/Bulletins/Bulletin_05.05.pdf.

Association of Real Estate Licensing Law Officials® (ARELLO). 1999–2007. *Digest of Real Estate Licensing Laws and Current Issues*. Montgomery, AL: Association of Real Estate Licensing Law Officials.

Biver, Penelope. 2005. "The Value of Full Service," *Chicago Agent* 2 (2). http://www.chicagoagentmagazine.com/issue/article.asp?id=4&article=186&status=archived.

de Figueiredo, Rui J.P., Jr., and R.G. Vanden Bergh. 2004. "The Political Economy of State-Level Administrative Procedure Acts," *The Journal of Law and Economics* 47: 569–588.

Evans, Blanche. 2005 (April). "Remember the Alamo: Limited Service Dust-Up Brings Out State's Rights Argument Against DOJ, FTC," *Realty Times*. http://realtytimes.com/rtcpages/20050422_dojstepsin.htm (accessed April 7, 2009).

Federal Trade Commission (FTC) and U.S. Department of Justice (DOJ). 2007 (April). *Competition in the Real Estate Brokerage Industry*. Washington, DC: Federal Trade Commission and U.S. Department of Justice.

Government Accountability Office (GAO). 2006 (July). *Real Estate Brokerage: Various Factors May Affect Price Competition.* Report prepared for the Subcommittee on Housing and Community Opportunity, Committee on Financial Services, House of Representatives, #GAO-06-1005T. Washington, DC: Government Accountability Office.

Hahn, Robert W., Robert E. Litan, and Jesse Gurman. 2006. "Bringing More Competition to Real Estate Brokerage," *Real Estate Law Journal* 35: 86–118.

Iowa Real Estate Commission. 2005 (April). Iowa Real Estate Commission meeting minutes. http://www.state.ia.us/government/com/prof/sales/meet_schedule/2005/MIN4_14_05.htm (accessed April 7, 2009).

Kiefer, Nicholas M. 1988. "Economic Duration Data and Hazard Functions," *Journal of Economic Literature* 26 (2): 646–769.

Levitt, Steven, and Chad Syverson. 2008. "Antitrust Implications of Home Seller Outcomes When Using Flat-Fee Real Estate Agents," *Brookings-Wharton Papers on Urban Affairs 2008*: 47–93.

Magura, Matthew. 2007 (May). *How Rebate Bans, Discriminatory MLS Listing Policies, and Minimum Service Requirements Can Reduce Competition for Real Estate Brokerage Services and Why It Matters.* Washington, DC: U.S. Department of Justice, Economic Analysis Group.

Miceli, Thomas J., Katherine A. Pancak, and C.F. Sirmans. 2007. "Is the Compensation Model for Real Estate Brokers Obsolete?" *The Journal of Real Estate Finance and Economics* 35 (1): 7–22.

Nanda, Anupam. 2008. "Property Condition Disclosure Law: Why Did States Mandate 'Seller Tell All'?" *The Journal of Real Estate Finance and Economics* 37 (2): 131–146.

NATIONAL ASSOCIATION OF REALTORS® (NAR), Research Division. 2005 (November). *Structure, Conduct, and Performance of the Real Estate Brokerage Industry*. Chicago, IL: NATIONAL ASSOCIATION OF REALTORS®.

Pancak, Katherine A. 2008. "A Critical Examination of Broker Minimum Service Laws," *Journal of Housing Research* 19 (1): 17–36.

Roberts, Glenn. 2005 (May). "Federal Antitrust Agencies Attack Missouri Real Estate Law," *Inman News*: 1.

Roberts, Glenn, Jr. 2006. "Kentucky Shoots Down Real Estate Minimum-Service Proposal," *Inman News*, February 17, 2006. http://beta.inman.com/news/2006/02/5/kentucky-shoots-down-real-estate-minimum-service-proposal (accessed April 7, 2009).

U.S. Department of Justice (DOJ). *Fee-for-Service Brokerage Arrangements: Choice of Brokerage Services in Your State*. Map. http://www.justice.gov/atr/public/real_estate/fee_details.htm (accessed April 7, 2009).

Wager, Kid. 2005 (July). "Real Estate Brokers Face New Restrictions in Missouri," *Kansas City Star*. http://rismedia.com/2005-07-14/real-estate-brokers-face-new-restrictions-in-missouri/ (accessed April 7, 2009).

White, Lawrence. 2006 (April). *The Residential Real Estate Brokerage Industry: What Would More Vigorous Competition Look Like?* New York: New York University, Stern School of Business.

Woodall, Peter, and Stephen Brobeck. 2006. *State Real Estate Regulation: Industry Dominance and Its Consumer Costs.* Washington, DC: Consumer Federation of America.

Wooldridge, Jeffrey M. 2002. *Econometric Analysis of Cross-Section and Panel Data*. Cambridge, MA: Massachusetts Institute of Technology Press.

Trailers and Trouble? An Examination of Crime in Mobile Home Communities

William P. McCarty
University of Illinois-Chicago

Abstract

The purpose of this study is to ascertain whether the amount of crime in mobile home communities is greater than the amount of crime in other types of neighborhoods and to determine whether the difference in crime levels is significant even after controlling for multiple other variables. Using official crime reports and other data from Omaha, Nebraska, the study finds no significant difference in population-weighted crime rates between blocks with mobile home communities and other types of residential blocks. Multivariate models show that the presence of mobile home communities did not significantly affect crime rates. The implications of these findings for land use policy are explored.

Introduction

Mobile home communities (also known as manufactured housing communities or trailer parks) are often portrayed negatively. Historically, mobile home dwellers have been accused of not paying their fair share of taxes (Clark, 1972; Cowgill, 1941; Hager, 1954). Individuals living in residential neighborhoods near mobile home communities often perceive the trailers as ugly and the lifestyle of the inhabitants as questionable; consequently, they believe the communities diminish the value of their homes (Bair, 1971b; Wallis, 1991). Decades of this antipathy have resulted in these mobile home communities being relegated to blighted areas by municipal zoning boards, or not allowed at all (Bair, 1971a; Bair, 1967; Drury, 1972; Worden, 1963).

Despite the persistence of this negative stigma, academic research focusing on crime and life in mobile home communities has been virtually nonexistent. This lack of research is especially surprising in the field of criminology, in which crime has been analyzed in urban neighborhoods (for example, Sampson and Groves, 1989), rural areas (for example, Barnett and Mencken, 2002), and public housing complexes (for example, Ireland, Thornberry, and Loeber, 2003), all of which have features in common with mobile home communities. Guided by the social disorganization perspective, which often directs ecological studies of crime, this article examines the crime rates in and around mobile home communities in Omaha, Nebraska. Two research questions are particularly salient. First, how does the rate of crime on residential blocks with mobile home communities compare with the rate of crime on residential blocks adjacent to mobile home communities and with all other residential blocks?[1] Second, if significant differences do exist, do they remain significant when controlling for other variables selected for consistency with the social disorganization perspective?

Research on the spatial distribution of crime spans two centuries. In the 19th century, researchers discovered that they could detect meaningful patterns in the concentration of delinquents and crime by using ecological techniques (Balbi and Guerry, 1829; Mayhew, 1861). The work of the Chicago School sociologists in the early 20th century helped advance similar ideas in the United States (Park, Burgess, and McKenzie, 1925; Shaw and McKay, 1942). Shaw and McKay, in particular, argued that poor, constantly changing, and heterogeneous areas lacked the regulatory capacity to enable residents to achieve their common goals. They described this inability to regulate behavior as social disorganization (Shaw and McKay, 1942). Many subsequent works have used this theoretical perspective to guide inquiries into the correlations between crime and disorder (for example, Barnett and Mencken, 2002; Morenoff, Sampson, and Raudenbush, 2001; Sampson and Groves, 1989; Warner, 2007).

A common theme for many of these works has been a focus on urban neighborhoods in large cities, often characterized by a population composed of primarily minority residents. Much less attention, however, has been given to poor neighborhoods that are traditionally composed of non-Hispanic Whites. This lack of attention is not necessarily a function of oversight by criminologists. Poor neighborhoods with predominantly non-Hispanic White populations are an anomaly, especially in large cities. For example, Sampson, Raudenbush, and Earls (1997) found no neighborhoods in Chicago, Illinois, that were of low socioeconomic status and had a population that was at least 75 percent White. Thus, the current study is novel in analyzing a type of neighborhood that is often of lower socioeconomic status and traditionally White (McDonnell, 1975). The study presented in this article may well be the first study that has examined crime in mobile home communities. The research results will try to illuminate whether processes that lead to crime in poor urban neighborhoods with primarily minority populations have similar effects in poor neighborhoods with primarily non-Hispanic White populations.

Mobile Home Communities: A Closer Look

Most scholarly work on mobile home communities is out of date, and references to crime in these unique neighborhoods are nonexistent. Because little prior research on mobile home communities is evident, knowledge of these neighborhoods can best be derived from U.S. Census data, various trade publications that explore the evolution of this housing option, and a small number of

---

[1] Residential blocks were defined as those blocks with a population of at least one individual, according to the 2000 Census.

academic publications that seek to explore life in mobile homes (Benson, 1990; Cowgill, 1941; Johnson, 1971; MacTavish and Salamon, 2001; Marsh, Thomson, and Collins, 1982; Miller and Evko, 1985). The following sections detail what is known about these communities from these varied sources.

History of Mobile Home Communities

Mobile homes began to appear in the United States in the 1920s and 1930s. They started as automobile accessories, slowly transforming into stand-alone units that were used as permanent residences, often by older residents (Wallis, 1989). Mobile homes became more commonplace during the buildup to World War II, when the federal government installed these structures to accommodate the influx of workers who migrated to various cities to help in the nation's wartime manufacturing effort (Hager, 1954). After World War II, a fundamental shift in the demographics of the traditional mobile home resident occurred. Instead of housing mostly transitory workers and retired people, mobile homes became a means for younger, less educated, less affluent individuals, who may have been excluded from the conventional housing market, to obtain housing (French and Hadden, 1968; Marsh, Thomson, and Collins, 1982; Wallis, 1989).

As mobile home parks began gradually resembling traditional neighborhoods, President Richard M. Nixon recognized their status as a viable form of housing in 1970 (Pappas, 1991). That year also marked the first time that mobile homes were counted in the population census. In 1976, the U.S. Department of Housing and Urban Development (HUD) implemented a standard for mobile home safety and construction that all manufacturers were required to meet (Wallis, 1991). Ostensibly, this standard resulted in the vehicular aspects of the mobile home being deemphasized. The term *mobile home* is, consequently, a bit of a misnomer, because many of these units are permanent structures that are difficult, if not impossible, to move.

Mobile Homes Today

Mobile homes still represent a viable and popular form of housing today. According to the 2000 Census, 8.8 million mobile homes have been installed in the United States (U.S. Census Bureau, 2000). They represent 8.4 percent of the owner-occupied housing units and 4.3 percent of the renter-occupied housing units in the United States (U.S. Census Bureau, 2000). To clarify the perspective of these figures, mobile homes comprise the second largest percentage of all housing units in the United States after single-family detached units (U.S. Census Bureau, 2003).

Mobile home communities have traditionally been homogeneous in terms of race and class (Cowgill, 1941; Edwards, Lemmack, and Hatos, 1973; French and Hadden, 1968; Fry, 1979; Johnson, 1971; MacTavish and Salamon, 2001; Wallis, 1991). These communities are usually home to White residents who are employed, or were employed, in blue-collar occupations (Edwards, Klemmack, and Hatos, 1973; Johnson, 1971; MacTavish and Salamon, 2001). Compared with the wider community, mobile home residents have lower incomes and education levels (Hart, Rhodes, and Morgan, 2002). Mobile home communities seem to be isolated from the wider community as a culmination of decades of restrictive zoning practices and overt hostility (Edwards, Klemmack, and Hatos, 1973; Johnson, 1971).

Social Disorganization Theory

Public housing communities and mobile home communities have important features in common. Studies of crime in public housing complexes are often based on a social disorganization/systemic model (see Dekeseredy et al., 2003; Ireland, Thornberry, and Loeber, 2003; McNulty and Holloway, 2000). High levels of poverty, residential instability, and ethnic heterogeneity were expected to result in high levels of crime. This theoretical model has been supported with research that often indicates higher crime rates in and around public housing developments. Roncek, Bell, and Francik (1981), for example, found that blocks in Cleveland, Ohio, with public housing projects had more index crimes[2] compared with blocks without public housing. Dunworth and Saiger (1994) found that areas with public housing developments in Washington, D.C., Los Angeles, California, and Phoenix, Arizona, had higher reports of violent crime than areas without public housing (see also McNulty and Holloway, 2000; Newman, 1972). Although the populations of public housing and those of mobile home communities differ in race and/or ethnicity, the residents have in common undesirable locations, isolation from community services, lack of land ownership, and demographic indicators of disadvantage.

Undesirable Locations

Restrictive zoning practices have severely limited the number of mobile home parks, virtually excluding them from residential areas and often relegating them to undesirable locations on the periphery of cities (Bair, 1971a; Bair, 1967; Dawkins et al., 2008; Drury, 1972; Worden, 1963). If mobile homes are permitted in close proximity to residential areas, it is often in the least desirable areas near flood plains, industry, or blighted properties (Wallis, 1991; Worden, 1963). Worden (1963) noted that these zoning decisions were often justified on the grounds that mobile home communities create sewage disposal problems, cause school overcrowding, or severely diminish surrounding property values. Geisler and Mitsuda (1987) argued that restrictive zoning practices reflect a conflict between economic classes because upper class, affluent homeowners seek to control "lower class" mobile home residents by relegating them to undesirable locations.

The practice of continually allocating only blighted land for mobile home parks leads to a vicious cycle (McDonnell, 1975). Negative sentiment toward mobile home parks is manifested in restrictive-zoning practices that relegate mobile homes to undesirable areas. Placing mobile home parks in these undesirable areas reinforces the notion that these neighborhoods represent substandard communities (Wallis, 1991). Many communities adamantly oppose the development of this form of housing (Geisler and Mitsuda, 1987).

A similar pattern exists for public housing. McNulty and Holloway (2000) reported that many public housing projects were relegated to already poor, segregated, and impoverished parts of U.S. cities. Ireland, Thornberry, and Loeber (2003) found that many communities strongly oppose building or maintaining public housing.

---

[2] The eight crimes (homicide and non-negligent manslaughter, robbery, forcible rape, aggravated assault, burglary, larceny/theft, motor vehicle theft, and arson) the Federal Bureau of Investigation combines to produce its annual crime index.

Isolation From Community Services

Both public housing and mobile home communities are often isolated from essential city services, especially the police. For public housing, physical isolation is exacerbated by a difficult dynamic involving the residents, the police, and the public housing authorities (PHAs) that manage the units. Holzman, Kudrick, and Voytek (1996) found that confusion exists over the ownership and governmental responsibilities involving public housing. Police officers and PHAs often do not share information about problems that may be occurring, and residents may be dissatisfied, fearful, or distrustful of police (Holzman, Kudrick, and Voytek, 1996; Popkin et al., 1995; Skogan and Annan, 1994). Venkatesh (2000) labeled public housing projects as "cities within cities" that are virtually cut off from the larger community.

A similar level of isolation has affected mobile home residents for decades (Miller and Evko, 1985). Mobile home residents may be isolated from routine police patrols because many of the streets in these complexes are maintained and managed by the park owner instead of the city (Newcomb, 1971). As a result, police are less likely to patrol the neighborhood unless the park owner specifically requests or arranges for police patrols (Newcomb, 1971).

Lack of Land Ownership

PHAs own and manage their housing units, leaving little proprietary interest for the residents (Holzman and Piper, 1998). Bowie (2001) argued that the lack of property ownership among public housing residents exacerbates the crime problems in these communities. The situation in mobile home communities is similar regarding land ownership, but certain differences in terms of unit ownership exist. Most mobile home dwellers own the units in which they live but rent space or land from the development owner (Miller and Evko, 1985). A small percentage of mobile home residents who live in mobile home parks own both the unit and the land on which the unit is installed. These developments are referred to as "mobile home estates" (Newcomb, 1971). Excluding such estates, most mobile home dwellers do not own land, thereby decreasing the stake these residents have in the community (MacTavish, Eley, and Salamon, 2006).

Similar Demographics

Besides race and ethnicity, the demographic profiles of public housing and mobile home developments are strikingly similar. Populations of both public housing (Raphael, 2001; Rosenbaum and Harris, 2001) and mobile home (MacTavish and Salamon, 2001; Miller and Evko, 1985) communities are characterized as having lower incomes. According to HUD, the average annual income for public housing residents in the United States is $13,453 (https://pic.hud.gov/pic/RCRPublic/rcrmain.asp). In 1999, the median income for mobile home households was $28,041 (U.S. Census Bureau, 2003). In contrast, the median household income for all households was $41,851 (U.S. Census Bureau, 2003).

Similarities also exist in terms of age distribution. Most heads of household living in public housing are between the ages of 25 and 44 or are over the age of 62 (Bowie, 2001; see also Holzman, 1996). This age distribution is quite similar to mobile home households, which usually consist of young families or retired individuals (Wallis, 1989). A final demographic similarity involves educational status: both populations have less formal education than the general population has (Holzman, 1996; Wallis, 1989).

Data and Methods

This study uses data on crime in Omaha, measured using official reports from the Omaha Police Department from 2000, 2001, and 2002. Crime data were geocoded using MapInfo Professional 9.5 and then aggregated to the residential-block level. The data for most other variables came from the 2000 Census. With the exception of median income, mobility, and overcrowding, those Census variables were also tabulated at the residential-block level of analysis.[3] These data are available on the Census Bureau's website (http://www.census.gov). Between 2000 and 2002, the city of Omaha had 15 functional mobile home communities encompassing 32 city blocks; this collection of communities represented a sufficient number for conducting the following analysis.

Unit of Analysis

This study used a residential-block-level analysis. The block represents the smallest unit of analysis for which census data are tabulated (http://www.census.gov). Many advantages exist in using the block as a unit of analysis. The block's small size makes it a closer approximation to a neighborhood than census tracts or ZIP Codes, which are too large to facilitate interaction, encourage role obligations, or possess a unique rhythm like that found in street blocks (Appleyard, 1981; Jacobs, 1961; Roncek, 1981; Taylor, 1997). Larger units, such as census tracts, also tend to have greater variability regarding socioeconomic status and housing condition (Roncek, 1981).

Identifying Mobile Home Communities

The study ultimately identified 15 mobile home communities by using the phone book, accessing the Mobile Home Village website (http://www.mhvillage.com), conversing with manufactured housing dealers, and conducting discussions with city government officials. Researchers visited the sites to pinpoint the exact location of the development. They used city records to verify that those sites were functional mobile home communities between 2000 and 2002, the same period used for the crime data. All 15 communities studied met the definition of mobile home parks, in that multiple units are placed on the same property (Hart, Rhodes, and Morgan, 2002). The smallest community contained 10 mobile home units; the largest had close to 300 units.

Researchers, using MapInfo Professional 9.5, geocoded the locations of the 15 mobile home communities, which encompassed 32 street blocks.[4] They also identified 67 blocks directly adjacent to, but not in, mobile home communities to assess any possible crime diffusion effects occurring in the areas immediately surrounding mobile home communities.[5]

---

[3] Census data for median income, mobility, and overcrowding are not available at the block level but are available at the block-group level. Each block group contains, on average, 15 blocks. Data measuring the median income, mobility, and overcrowding for each block group were therefore imputed to all the blocks therein.

[4] Of the 32 blocks, 25 were entirely composed of mobile home communities. The other 7 blocks were partially composed of mobile home communities; that is, other types of housing stock could also be found in those 7 blocks.

[5] Adjacency was defined using Queen's contiguity, which defines a location's (or block's) neighbors as those areas (or blocks) with a shared border or vertex. Empirical examinations of public housing have found the presence of these structures may affect levels of crime in surrounding neighborhoods (see Holloway et al., 1998; Massey and Kanaiaupuni, 1993).

Variables in the Analysis

Multiple variables were examined during the course of the study. The following sections will discuss how the dependent and independent variables were measured as well as why they were included in the analysis.

Dependent Variables

This study used two outcome measures of crime. It measured the violent crime rate per 1,000 residents by adding the total frequency of homicides, assaults, sexual assaults, and robberies for each block from 2000 through 2002, dividing that number by the total number of residents per street block, and then multiplying by 1,000. The study measured the property crime rate by adding the total frequency of burglaries and auto thefts for each block from 2000 through 2002, dividing that number by the total number of residents per street block, and then multiplying by 1,000.[6] To avoid short-term fluctuations and produce more stable measures, the crime data from 2000, 2001, and 2002 were combined into one measure. This common technique has been used in prior research (see Roncek and Meier, 1991). Both crime rates were then transformed for the multivariate analysis, using their natural logarithms to help normalize the distribution of both variables.

Independent Variables

The study researchers then undertook a multivariate regression analysis of both violent crime and property crime rates across all city blocks. The two primary independent variables of interest are (1) a dichotomous indicator of whether a block had a mobile home community and (2) a dichotomous indicator of whether a block was adjacent to a mobile home community. The study also included an interaction term representing the product of the dichotomous presence of a mobile homes variable and the percentage of owner-occupied housing as an additional independent variable in an alternative multivariate analysis. This variable was included to ascertain whether home ownership had a distinctive effect in mobile home blocks. The analysis also included two dichotomous indicators of whether a block had a public housing structure or whether a block was adjacent to a public housing structure.

The study, which used 12 additional variables based on census data from the year 2000 in the multivariate models, included median income, racial heterogeneity, and mobility as the fundamental social disorganization variables (Shaw and McKay, 1942). Racial heterogeneity was measured as 1 minus the sum of the squared proportions for each racial group represented in the 2000 Census. This measure of heterogeneity is based on five major groups: Whites, African Americans, American Indians, Asian Americans, and Hispanics. Mobility was operationalized in terms of the percentage of residents who lived in a different house 5 years before the 2000 Census. The study also included additional proxy measures of disadvantage or social disorganization, including vacancy rate, percentage of owner-occupied housing, percent African-American residents, percent Hispanic residents, percent single mothers, and overcrowding. The study measured overcrowding as the total percentage of households with more than one occupant per room. The percentage of males 15 to 21 years of age and the percentage of residents 65 years of age and older were included

---

[6] Ideally, all eight index crimes would be included in the analysis. The data for larceny/theft and arson, however, were not available.

to control for characteristics of the population. The study included area of the block to control for differences in crime that might be occurring because of the size of the block. Studies commonly use all these variables in studies that explore the ecological correlates of crime (Sampson and Groves, 1989; Sampson, Raudenbush, and Earls, 1997; Warner and Pierce, 1993).

Findings

Exhibit 1 provides descriptive statistics of violent crime and property crime rates and census indicators across blocks with mobile home communities, blocks adjacent to mobile home communities, and all other residential blocks in Omaha. The average median income for block groups with mobile home communities ($37,690) in 2000 was lower than the average median income for block groups adjacent to mobile home communities ($40,160) and for all other residential block groups ($44,530). The average percentage of African-American residents (0.68) on blocks with mobile home communities was substantially lower than the average percentage on blocks adjacent to mobile homes (5.84) and on all other residential blocks (15.24). The average mobility rate (or the percentage of residents living in a different house 5 years before the 2000 Census) on block groups with mobile home communities (48.54) was higher than the rate recorded on adjacent block groups (44.94) and on all other residential block groups (44.50) in Omaha. Finally, blocks with mobile homes had larger average areas (29.68) and older populations (17.38 percent of

Exhibit 1

Distribution of All Variables for Blocks With Mobile Homes, Blocks Adjacent to Mobile Homes, and All Other Residential Blocks in Omaha, Nebraska

Variable	Mobile*	Adjacent**	All Other Residential Blocks***
	Mean (SD)	Mean (SD)	Mean (SD)
Outcome			
Violent-crime rate[a] (2000-02)	51.52 (234.31)	49.22 (249.28)	53.10 (443.20)
Property-crime rate[a] (2000-02)	150.43 (584.41)	330.79 (846.16)	132.23 (749.84)
Explanatory			
Racial heterogeneity	11.70 (14.26)	14.04 (17.03)	20.07 (19.67)
Median income[b, c]	37.69 (8.32)	40.16 (11.22)	44.53 (22.89)
Mobility[b]	48.54 (7.11)	44.94 (10.49)	44.50 (14.87)
Vacancy rate	6.40 (9.09)	1.98 (4.35)	4.55 (7.77)
% Owner-occupied housing	78.65 (21.07)	66.16 (36.46)	68.81 (31.60)
% Female head of household with chlidren under 18 years of age	8.26 (7.21)	7.38 (14.33)	8.59 (11.72)
% African American	0.68 (1.44)	5.84 (13.24)	15.24 (27.55)
% Hispanic	6.60 (15.19)	3.10 (6.95)	7.01 (14.17)
Area of block (acres)	29.68 (71.76)	28.71 (46.65)	8.61 (16.49)
% 65 years and older	17.38 (11.27)	14.92 (18.82)	13.40 (13.58)
% Males 15 to 21 years of age	2.90 (3.28)	3.31 (3.90)	4.81 (5.08)
Overcrowding[b]	4.34 (3.93)	4.48 (4.77)	3.73 (4.68)

SD = standard deviation.

** N=32. ** N=67. *** N=6,045.*

[a] *Per thousand population.*

[b] *Measured at the block-group level.*

[c] *In thousands of dollars.*

population 65 or older) than did adjacent blocks (28.71, 14.92 percent) and all other residential blocks (8.61, 13.40 percent).

Blocks with mobile homes had an average of 51.52 violent crimes per 1,000 residents from 2000 through 2002. This crime rate compares with an average of 49.22 violent crimes per 1,000 residents on blocks adjacent to mobile home communities and 53.10 violent crimes per 1,000 residents on all other residential blocks from 2000 through 2002. Blocks with mobile homes had an average of 150.43 property crimes per 1,000 residents from 2000 through 2002. Blocks adjacent to mobile home communities had an average property crime rate of 330.79 per 1,000 residents and all other residential blocks had an average property crime rate of 132.23 per 1,000 residents. An analysis of variance test indicated no statistically significant differences in the average rates of violent crime and property crime among blocks with mobile home communities, blocks adjacent to these communities, and all other residential blocks.

The study researchers then conducted separate regression analyses of the natural logs of property-crime and violent-crime rates across all street blocks in Omaha.[7] The results of the property-crime and violent-crime analyses appear in exhibit 2. The results of alternative models of property crime

Exhibit 2

Coefficients From the Regression of the Natural Log of Property Crime Rates and the Natural Log of Violent Crime Rates for Street Blocks in Omaha, Nebraska

Variable	Property Crime (natural log)		Violent Crime (natural log)	
	b[a]	*t*-statistic	b[a]	*t*-statistic
Presence of mobile homes	– 5.82	– 1.86	2.92	0.98
Adjacent to mobile homes	2.96	1.35	– 3.50	– 1.67
Presence of public housing	7.00	2.24*	6.32	2.12*
Adjacent to public housing	3.02	1.56	6.16	3.31*
Racial heterogeneity	0.06	3.80*	0.06	3.98*
Median income[b, c]	– 0.01	– 14.66*	– 0.01	– 8.49*
Mobility[b]	0.01	0.44	0.02	1.06
Vacancy rate	0.13	3.94*	0.09	2.86*
% Owner-occupied housing	– 0.18	– 18.18*	– 0.14	– 14.39*
% Single mothers	– 0.01	– 0.54	0.02	0.66
% African American	0.08	7.42*	0.13	12.49*
% Hispanic	0.03	1.39	0.01	0.30
Area of block	0.12	9.55*	0.10	8.48*
% 65 years and older	– 0.03	– 1.56	– 0.04	– 2.21*
% Males 15 to 21 years of age	– 0.01	– 1.10	0.08	1.76
Overcrowding[b]	0.30	4.56*	0.43	6.94*
Intercept	4.71*		2.11*	
Adj. R-squared	0.30		0.29	
N = 6,144				

* *p* < .05.

[a] *Unstandardized b-coefficients have been multiplied by 10 to avoid miniscule numbers.*

[b] *Measured at the block-group level.*

[c] *In thousands of dollars.*

---

[7] In the analysis, researchers also used spatial lag models, which take into account spatial autocorrelation. Those results virtually mirror the regression results reported here. The spatial lag model results are available on request.

and violent crime containing the same independent variables plus an interaction term of mobile home community with percentage home ownership appear in exhibit 3.

As exhibit 2 indicates, the dichotomous variable for the presence of a mobile home community was not a statistically significant predictor of the natural log of property-crime rates or violent-crime rates in Omaha. The dichotomous variable measuring whether a block was adjacent to a mobile home community also failed to reach the standard of statistical significance in both models. The three strongest predictors of property-crime rates were the percentage of owner-occupied housing, median income, and the area of the block. The three strongest predictors of the violent-crime rate were the percentage of owner-occupied housing, the percentage of African-American residents, and median income. As exhibit 3 indicates, the inclusion of the interaction term of mobile home community with percentage home ownership did have a significant effect on the natural log of property-crime and violent-crime rates. The interaction term had a statistically significant and negative effect on both crime measures, which indicates that increasing levels of home ownership in mobile home communities distinctly decreased both crime rates. The other results were virtually identical to what was found in exhibit 2.

Exhibit 3

Coefficients From the Regression of the Natural Log of Property Crime Rates and the Natural Log of Violent Crime Rates for Street Blocks in Omaha, Nebraska, With the Interaction Term of Mobile Home and Home Ownership

Variable	Property Crime (natural log)		Violent Crime (natural log)	
	b[a]	*t*-statistic	b[a]	*t*-statistic
Presence of mobile homes	2.82	1.21	2.51	1.17
Adjacent to mobile homes	2.98	1.36	– 3.48	– 1.67
Presence of public housing	7.00	2.24*	6.33	2.12*
Adjacent to public housing	3.05	1.57	6.17	3.32*
Mobile home* % own-occupy	– 0.43	– 2.89*	– 0.29	– 1.97*
Racial heterogeneity	0.06	3.81*	0.06	3.98*
Median income[b, c]	– 0.01	– 14.68*	– 0.01	– 8.50*
Mobility[b]	0.01	0.38	0.02	1.11
Vacancy rate	0.13	3.83*	0.09	2.77*
% Owner-occupied housing	– 0.18	– 18.08*	– 0.14	– 14.32*
% Single mothers	– 0.01	– 0.49	0.02	0.70
% African American	0.08	7.45*	0.13	12.51*
% Hispanic	0.03	1.42	0.01	0.32
Area of block	0.12	9.47*	0.10	8.41*
% 65 years and older	– 0.03	– 1.50	– 0.04	– 2.16*
% Males 15 to 21 years of age	– 0.01	– 1.14	0.08	1.76
Overcrowding[b]	0.29	4.51*	0.43	6.91*
Intercept	4.70*		2.10*	
Adj. R-squared	0.30		0.28	
N = 6,144				

* *p* < .05.

[a] *Unstandardized b-coefficients have been multiplied by 10 to avoid miniscule numbers.*

[b] *Measured at the block-group level.*

[c] *In thousands of dollars.*

Discussion

Official police data from 2000 through 2002 in Omaha indicate no statistically significant difference in the rates of crime between blocks with mobile home communities, blocks adjacent to mobile home communities, and all other residential blocks. In regressions controlling for a variety of other variables, the association of mobile home communities remained statistically insignificant. Blocks adjacent to mobile homes also manifested no significant association with either property-crime or violent-crime rates.

The study found that blocks and block groups with mobile home communities had lower percentages of female-headed households, young males, and African Americans and a higher percentage of home ownership than did the other types of blocks studied. Typically, these factors indicate lower levels of disadvantage (Sampson, Raudenbush, and Earls, 1997; Sampson and Wilson, 1995). This point is further reinforced by comparing blocks with mobile homes with blocks with public housing complexes. In 2000, the 34 blocks with public housing structures had, on average, an African-American population of 64.57 percent, a percentage of owner-occupied housing of 9.39, and a median income of $16,280.

Perhaps the most glaring difference between blocks with mobile home communities and those with public housing structures was the percentage of owner-occupied housing. The average percentage of owner-occupied housing on blocks with mobile homes was 78.65. Many individuals in these communities own their units (or mobile homes) and rent the land. This same arrangement does not exist for public housing residents.

The difference in the percentage of home ownership may be one reason why the crime rates in blocks with mobile home communities does not approach the level found in blocks with public housing structures. Home ownership has been an important factor in predicting lower levels of crime and disorder in a neighborhood in several previous works (see Roncek, 1981; Ross, 1977; Sampson, Raudenbush, and Earls, 1997). It is argued that individuals who own a housing unit have a greater stake, economically and socially, in maintaining the viability of the overall neighborhood. This study found that an interaction term for the presence of a mobile home community and the percent of households that are owner occupied had a statistically significant and negative association with both violent-crime and property-crime rates over and above the negative association of home ownership and crime in general.

Wilson (1987) and Sampson and Wilson (1995) have argued that higher rates of crime and disorder in low-income African-American communities exist because Whites and African Americans live in distinct communities with different levels of structural disadvantage. In these truly disadvantaged areas, residents are socialized to participate in criminal and deviant behavior because most of the other residents are already involved with criminal or deviant activities (Sampson and Wilson, 1995; Skogan, 1990). In addition, residents might deem criminal behavior the only option because of persistent unemployment (Krivo and Peterson, 1996). Residents in mobile home communities, in contrast, may at least have an owned asset, in the form of a manufactured home (Coleman, 1988; Yinger, 1995). They may also not face the level of discrimination that could be faced by African-American residents who attempt to obtain housing (Krivo and Kaufman, 2004; Massey and Denton, 1993; Turner, 1992).

Despite the apparent better standing of mobile home communities relative to public housing communities, mobile home communities in Omaha are not without problems. The descriptive data in exhibit 1 indicate the average block or block group within a mobile home community is characterized by a low-income population living in a large area with a higher vacancy and mobility rate when compared with adjacent blocks and all other residential blocks (see MacTavish et al., 2006 for similar conclusions). Mobile home communities also have higher frequencies of crime than the average Omaha block has. The average raw frequency (before being converted to population rates) of violent crime from 2000 through 2002 was 1.62 offenses in blocks with mobile home communities, .96 offenses in blocks adjacent to mobile home communities, and 1.24 offenses in all other residential blocks. For property crime, the average frequency was 5.84 offenses in blocks with mobile home communities, 4.54 offenses in blocks adjacent to mobile home communities, and 3.43 offenses in all other residential blocks. In their subjective experience, the residents of mobile home communities may not fully adjust for population in their encounters with crime, and they might well perceive their neighborhoods as more dangerous than average. They have some protective factors against crime, however, that the residents of “truly disadvantaged” communities lack.

Policy Implications

The results of the study suggest that cities and other municipalities should not be so reticent to allow the creation or expansion of mobile home communities. Mobile home developments are not dens of crime and disorder (Dawkins et al., 2008). The presence of such communities, at least in Omaha, does not significantly increase crime rates, after controlling for a variety of other demographic factors. Communities have a vested interest in providing housing options for those residents who are less affluent or cannot afford to own a traditional home. Dawkins et al. (2008) found that the price of manufactured housing is less than one-half the price of site-built housing, after adjusting for land costs. Finding affordable housing was a matter of deep concern for many communities even before the current economic crisis. Apprehension about mobile home communities, especially in terms of their possible effect on crime, may be overstated. The evidence of this article is supportive of Dawkins et al. (2008), who urge that local regulators should seek to make sure that the permitting system is disposed toward allowing greater placement of mobile home or manufactured-housing communities.

A more positive treatment of manufactured housing by planning commissions is undoubtedly difficult to achieve given the prevailing negative sentiment regarding mobile home communities. One factor driving this negative sentiment is the unsightly appearance of some mobile home communities, especially those with units built before the HUD standards were implemented in 1976. MacTavish, Eley, and Salamon (2006) point out that finding effective ways of replacing old units with new units is one of the most pervasive structural problems in mobile home communities. Some communities have had success using Community Development Block Grant funds and other local funds to help finance the replacement of older and dilapidated units (MacTavish, Eley, and Salamon, 2006). The replacement of older units can not only improve the appearance and functionality of mobile home communities but can also address the issue of overcrowding, which is significantly and positively associated with both violent-crime and property-crime rates.

The limitations of this study need to be acknowledged and, in future work, transcended. The use of block-group data in lieu of block-level data for three census indicators may affect the precision of these indicators. It is difficult to generalize the findings of the current study to mobile home communities in all areas of the United States; for example, in some places, especially in warm climates, mobile home communities cater to affluent and mostly retired individuals (Hart, Rhodes, and Morgan, 2002). Undoubtedly, the findings would be different for that type of mobile home community. The 15 communities studied in Omaha, however, were quite diverse, ranging from what Hart, Rhodes, and Morgan (2002) call utilitarian mobile home communities to upscale mobile home communities.

Future research about mobile home communities could take several directions. As Dawkins et al. (2008) suggested, the study of manufactured housing communities is stymied by the limited amount of data that exist about these developments. A more thorough collection of data about manufactured housing communities would help catalyze future research and understanding of these unique developments. Future studies of crime and residents' life in mobile home communities might also consider the extent of drug-related crimes, residents' relations with police, and relations among residents. Further, the physical designs of these communities and their possible effect on opportunities for crime should also be explored. Future scientific research may help erode existing stereotypes that are imbedded in decades of friction between mobile home communities and larger municipalities. Extending beyond this rhetoric allows municipalities, police, managers of mobile home communities, and residents to accurately identify and address the problems these unique neighborhoods face.

Acknowledgments

The author thanks Lisa Sample, Pete Simi, Amy Anderson, and Jeffrey Peake for their significant contributions and guidance on this project. He also thanks Rebecca Murray and Marc Swatt for their assistance with the data for this project. Finally, a special thanks to Yaw Boateng for his helpful and productive input on this manuscript.

Author

William P. McCarty is an assistant professor in the Department of Criminology, Law, and Justice at the University of Illinois-Chicago.

References

Appleyard, Donald. 1981. *Livable Streets*. Berkeley, CA: University of California Press.

Bair, Fredrick H., Jr. 1971a. *Modular Housing, Including Mobile Homes: A Survey of Regulatory Practices and Planners' Opinions*. Report Number 265. Chicago: American Society of Planning Officials.

———. 1971b. *Regulation of Modular Housing: With Special Emphasis on Mobile Homes*. Chicago: American Society of Planning Officials.

———. 1967. “Mobile Homes: A New Challenge,” *Law and Contemporary Problems* 32: 286–304.

Balbi, Adriano, and Andre M. Guerry. 1829. *Statistique Comparée de l’état de l’instruction et du nombre des crimes dans les divers arrondissements des académies et des cours royales de France.* Paris, France: Jules Renouard.

Barnett, Cynthia, and Carson F. Mencken. 2002. “Social Disorganization Theory and the Contextual Nature of Crime in Nonmetropolitan Cities,” *Rural Sociology* 67: 372–393.

Benson, Janet E. 1990. Good Neighbors: “Ethnic Relations in Garden City Trailer Courts,” *Urban Anthropology* 19: 361–386.

Bowie, Stan L. 2001. “The Impact of Privatized Management in Urban Public Housing Communities: A Comparative Analysis of Perceived Crime, Neighborhood Problems, and Personal Safety,” *Journal of Sociology and Social Welfare* 28: 67–87.

Clark, Major L., III. 1972. *The Illusion of Mobile Homes as Supplemental Housing for Low Income Families*. Council of Planning Librarians Exchange Bibliography #349. Monticello, IL: Council of Planning Libraries.

Coleman, James S. 1988. “Social Capital in the Creation of Human Capital,” *American Journal of Sociology* 94: S95–S120.

Cowgill, Donald O. 1941. “Mobile Homes: A Study of Trailer Life.” Ph.D. diss., Department of Sociology, University of Pennsylvania.

Dawkins, Casey J., C. Theodore Koebel, Marilyn Cavell, Steve Hullibarger, and David B. Hattis. 2008. *Regulatory Barriers to Manufactured Housing Placement in Urban Communities.* Washington, DC: U.S. Department of Housing and Urban Development.

DeKeseredy, Walter S., Martin D. Schwartz, Shahid Alvi, and Andreas Tomaszewski. 2003. “Crime Victimization, Alcohol Consumption, and Drug Use in Canadian Public Housing,” *Journal of Criminal Justice* 31: 383–396.

Drury, Margaret J. 1972. *Mobile Homes: The Unrecognized Revolution in American Housing.* New York: Praeger.

Dunworth, Terence, and Aaron Saiger. 1994. *Drugs and Crime in Public Housing: A Three-City Analysis*. Washington, DC: U.S. Department of Justice, Office of Justice Programs.

Edwards, John N., David L. Klemmack, and Louis Hatos, Jr. 1973. “Social Participation Among Mobile Home and Single-Family Dwellers,” *Social Forces* 51: 485–489.

French, Robert M., and Jeffrey K. Hadden. 1968. “Mobile Homes: Instant Suburbia or Transportable Slums?” *Social Problems* 16: 219–226.

Fry, Christine L. 1979. “Structural Conditions Affecting Community Formation Among the Aged: Two Examples From Arizona,” *Anthropological Quarterly* 52: 7–18.

Geisler, Charles C., and Hisayoshi Mitsuda. 1987. “Mobile-Home Growth, Regulation, and Discrimination in Upstate New York,” *Rural Sociology* 52: 532–543.

Hager, Don J. 1954. “Trailer Towns and Community Conflict in Lower Bucks County,” *Social Problems* 2: 33–38.

Hart, John F., Michelle J. Rhodes, and John T. Morgan. 2002. *The Unknown World of the Mobile Home*. Baltimore, MD: Johns Hopkins University Press.

Holloway, Steven R., Deborah Bryan, Roger Chabot, Donna M. Rogers, and James Rulli. 1998. “Exploring the Effect of Public Housing on the Concentration of Poverty in Columbus, Ohio,” *Urban Affairs Review* 33: 767–789.

Holzman, Harold R. 1996. “Criminological Research on Public Housing: Toward a Better Understanding of People and Places,” *Crime and Delinquency* 42: 361–379.

Holzman, Harold R., Tarl R. Kudrick, and Kenneth P. Voytek. 1996. “Revisiting the Relationship Between Crime and Architectural Design: An Analysis of Data From HUD’s 1994 Survey of Public Housing Residents,” *Cityscape: A Journal of Policy Development and Research* 2: 107–126.

Holzman, Harold R., and Lanny Piper. 1998. “Measuring Crime in Public Housing: Methodological Issues and Research Strategies,” *Journal of Quantitative Criminology* 14: 331–352.

Ireland, Timothy O., Terence P. Thornberry, and Rolf Loeber. 2003. “Violence Among Adolescents Living in Public Housing: A Two-Site Analysis,” *Criminology* 3: 3–38.

Jacobs, Jane. 1961. *The Death and Life of the American City*. New York: Vintage.

Johnson, Shelia K. 1971. *Idle Haven: Community Building Among the Working-Class Retired*. Berkeley, CA: University of California Press.

Krivo, Lauren J., and Robert L. Kaufman. 2004. “Housing and Wealth Inequality: Racial-Ethnic Differences in Home Equity in the United States,” *Demography* 41: 585–605.

Krivo, Lauren J., and Ruth D. Peterson. 1996. “Extremely Disadvantaged Neighborhoods and Urban Crime,” *Social Forces* 75: 619–650.

MacTavish, Katherine, Michelle Eley, and Sonya Salamon. 2006. “Housing Vulnerability Among Rural Mobile Home Park Residents,” *Georgetown Journal of Poverty Law and Policy* 13: 95–117.

MacTavish, Katherine, and Sonya Salamon. 2001. “Mobile Home Park on the Prairie: A New Rural Community Form,” *Rural Sociology* 66: 487–506.

Marsh, C. Paul, Randall J. Thomson, and John N. Collins. 1982. “Mobile Home Residency and Participation: Sociopolitical Effects of a Popular Housing Alternative,” *Journal of Community Development Society* 13: 11–20.

Massey, Douglass S., and Nancy Denton. 1993. *American Apartheid: Segregation and the Making of the Underclass*. Cambridge, MA: Harvard University Press.

Massey, Douglass S., and Shawn M. Kanaiaupuni. 1993. “Public Housing and the Concentration of Poverty,” *Social Science Quarterly* 74: 109–122.

Mayhew, Henry. 1861. *London Labour and the London Poor. London: A Cyclopaedia of the Condition and Earnings of Those That Will Work, Those That Cannot Work, and Those That Will Not Work.* New York: Kelly.

McDonnell, Lynda. 1975. *Mobile Homes: The Low-Cost Housing Hoax.* New York: Viking Press.

McNulty, Thomas L., and Steven R. Holloway. 2000. "Race, Crime, and Public Housing in Atlanta: Testing a Conditional Effect Hypothesis," *Social Forces* 79: 707–729.

Miller, Steven I., and Beverly Evko. 1985. "An Ethnographic Study of the Influence of a Mobile Home Community on Suburban High School Students," *Human Relations* 38: 683–705.

Morenoff, Jeffrey, Robert J. Sampson, and Stephen W. Raudenbush. 2001. "Neighborhood Inequality, Collective Efficacy and the Spatial Dynamics of Homicide," *Criminology* 39: 517–560.

Newcomb, Robinson. 1971. *Mobile Home Parks: An Analysis of Characteristics (Part I)*. Washington, DC: The Urban Land Institute.

Newman, Oscar. 1972. *Defensible Space: Crime Prevention Through Urban Design.* New York: Macmillan.

Pappas, Stephen G. 1991. *Managing Mobile Home Parks*. Chicago: Institute of Real Estate Management.

Park, Robert E., Ernest W. Burgess, and Roderick D. McKenzie. 1925. *The City*. Chicago: University of Chicago Press.

Popkin, Susan J., Lynn M. Olson, Arthur J. Lurigio, Victoria E. Gwiasda, and Ruth G. Carter. 1995. "Sweeping Out Drugs and Crime: Residents' Views of the Chicago Housing Authority's Public Housing," *Crime and Delinquency* 41: 73–100.

Raphael, Jody. 2001. "Public Housing and Domestic Violence," *Violence Against Women* 7: 699–706.

Roncek, Dennis W. 1981. "Dangerous Places: Crime and Residential Environment," *Social Forces* 60: 74–96.

Roncek, Dennis W., Ralph Bell, and Jeffrey Francik. 1981. "Housing Projects and Crime," *Social Problems* 29: 151–166.

Roncek, Dennis W., and Pamela A. Maier. 1991. "Bars, Blocks, and Crimes Revisited: Linking the Theory of Routine Activities to the Empiricism of Hot Spots," *Criminology* 29: 725–751.

Rosenbaum, Emily, and Laura E. Harris. 2001. "Low-Income Families in Their New Neighborhoods: The Short-Term Effects of Moving From Chicago's Public Housing," *Journal of Family Issues* 22: 183–210.

Ross, Marvin. 1977. *Economics, Opportunity, and Crime.* Montreal, Canada: Renouf.

Sampson, Robert J., and W. Byron Groves. 1989. "Community Structure and Crime: Testing Social-Disorganization Theory," *American Journal of Sociology* 94: 774–802.

Sampson, Robert J., Stephen W. Raudenbush, and Felton Earls. 1997. "Neighborhoods and Violent Crime: A Multilevel Study of Collective Efficacy," *Science* 227: 918–925.

Sampson, Robert J., and William J. Wilson. 1995. "Race, Crime, and Urban Inequality." In *Crime and Inequality,* edited by John Hagan and Ruth Peterson. Palo Alto, CA: Stanford University Press: 37–54.

Shaw, Clifford R., and Henry D. McKay. 1942. *Juvenile Delinquency and Urban Areas*. Chicago: University of Chicago Press.

Skogan, Wesley G. 1990. *Disorder and Decline: Crime and the Spiral of Decay in American Neighborhoods*. Berkeley, CA: University of California Press.

Skogan, Wesley G., and Sampson Annan. 1994. "Drugs and Public Housing: Toward an Effective Police Response." In *Drugs and Crime: Evaluating Policy Initiatives,* edited by Doris L. MacKenzie and Craig D. Uchida. Newbury Park, CA: Sage Publications: 129–150.

Taylor, Ralph B. 1997. "Social Order and Disorder of Street Blocks and Neighborhoods: Ecology, Microecology, and the Systemic Model of Social Disorganization," *Journal of Research in Crime and Delinquency* 34: 113–155.

Thomas, William I., and Florian Znaniecki. 1927. *The Polish Peasant in Europe and America.* New York: Knopf.

Turner, Margery A. 1992. "Discrimination in Urban Housing Markets: Lessons From Fair Housing Audits," *Housing Policy Debate* 3: 185–215.

U.S. Census Bureau. 2003. *Structural and Occupancy Characteristics of Housing: 2000*. Washington, DC: U.S. Department of Commerce. http://www.census.gov (accessed April 7, 2007).

———. 2000. *Units in Structure, Householder 65 Years and Over, and Householder Below Poverty*. Washington, DC: U.S. Department of Commerce. http://factfinder.census.gov (accessed April 11, 2005).

Venkatesh, Sudhir A. 2000. *American Project: The Rise and Fall of a Modern Ghetto*. Cambridge, MA: Harvard University Press.

Wallis, Allan D. 1991. *Wheel Estate: The Rise and Decline of Mobile Homes*. New York: Oxford University Press.

———. 1989. "House Trailers: Innovation and Accommodation in Vernacular Housing," *Perspectives in Vernacular Architecture* 3: 28–43.

Warner, Barbara D. 2007. "Directly Intervene or Call the Authorities? A Study of Forms of Neighborhood Social Control Within a Social Disorganization Framework," *Criminology* 45: 99–129.

Warner, Barbara D., and Glenn L. Pierce. 1993. "Reexamining Social Disorganization Theory Using Calls to the Police as a Measure of Crime," *Criminology* 31: 493–517.

Wilson, William J. 1987. *The Truly Disadvantaged: The Inner City, the Underclass, and Public Policy*. Chicago: The University of Chicago Press.

Worden, Rolfe A. 1963. “Zoning: Townships: Complete Exclusion of Trailer Camps and Parks,” *Michigan Law Review* 61: 1010–1014.

Yinger, John. 1995. *Closed Doors, Opportunities Lost: The Continuing Costs of Housing Discrimination*. New York: Russell Sage Foundation.

Graphic Detail

Geographic Information Systems organize and clarify the patterns of human activities on the earth's surface and their interaction with each other. GIS data, in the form of maps, can quickly and powerfully convey relationships to policymakers and the public. This department of Cityscape *includes maps that convey important housing or community development policy issues or solutions. If you have made such a map and are willing to share it in a future issue of* Cityscape, *please contact david.e.chase@hud.gov.*

Recovery Act of 2009—Public Housing Capital Fund: Obligations and Number of Jobs by ZIP Code

Todd W. McNeil
KBM Group, Inc.

The American Recovery and Reinvestment Act of 2009 (Recovery Act) is an unprecedented effort to jumpstart the economy, create or save millions of jobs, and address long-neglected challenges. The Recovery Act investments in the U.S. Department of Housing and Urban Development (HUD) programs will generate tens of thousands of jobs, modernize homes to make them more energy efficient, and help the families and communities hardest hit by the economic crisis. The Recovery Act includes a $4 billion appropriation for the Public Housing Capital Fund. The Public Housing Capital Fund program is expected to benefit the nation by (1) creating jobs; (2) transforming public housing into energy-efficient, green communities; (3) redeveloping distressed public housing; (4) addressing the needs of public housing residents who are elderly and disabled; and (5) providing funding for public housing projects that lack the private capital to proceed with development.

HUD has developed a series of maps using the Recovery Act program data from internal sources and external sources such as the FederalReporting.gov[1] and Recovery.gov[2] websites. One such map, shown in exhibit 1, represents the Public Housing Capital Fund program's distribution of funding

---

[1] FederalReporting.gov is the governmentwide data collection system for federal agencies and recipients of federal awards under Section 1512 of the Recovery Act. Recipients access FederalReporting.gov to fulfill their reporting obligations. Federal agencies, prime recipients, and subrecipients are required to submit data quarterly for grants, loans, and federally awarded contracts under the Recovery Act. Recipient data is posted on the Recovery.gov website after it passes a quality assurance check.

[2] Recovery.gov was created under the American Recovery and Reinvestment Act of 2009 to foster greater accountability and transparency in the use of funds made available. The site's primary mandate is to give taxpayers the user-friendly tools to track Recovery Act funds.

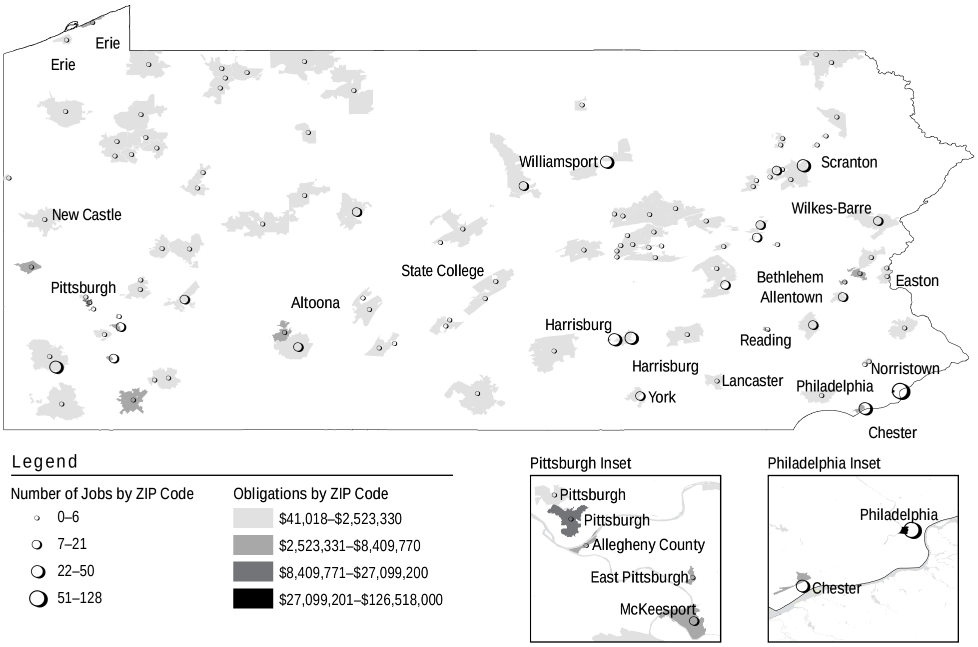
obligations and number of jobs by ZIP Code[3]. For example, exhibit 1 depicts the state of Pennsylvania with two major urban centers, Pittsburgh and Philadelphia, as insets. Pennsylvania is used as an example to show a graphic representation of Recovery Act program data.

Exhibit 1 illustrates areas of funding obligations by ZIP Code for the fourth quarter of 2009. The funding obligations are in ascending order and are indicated in grayscale on the map. A second dataset illustrates the number of jobs created or saved by ZIP Code for the same quarter. The cities with more than 25,000 in population are labeled at their ZIP Code centroid.

Exhibit 1 shows that the highest amount of funding obligations occurs within two ZIP Code areas within the two largest urban centers, Philadelphia and Pittsburgh. Philadelphia, a large-sized urban area, accounts for $126,518,000, or 45 percent of the total funding for Pennsylvania. Pittsburgh is a medium-sized urban area and is represented as two ZIP Code areas that account for $27,099,200, or 10 percent of the total funding for Pennsylvania. The remaining $126,622,616, or 45 percent, is distributed among the remaining ZIP Code areas that are found in small-sized urban areas. For example, Harrisburg is a small-sized urban area and is represented as two ZIP Code areas

Exhibit 1

Recovery Act of 2009—Public Housing Capital Fund Obligations and Jobs by ZIP Code



---

[3] ZIP Codes are mapped at their centroids—a point representing the geographic center of the polygon for a 5-digit ZIP Code.

that account for $9,035,250, or 3 percent of the total funding[4]. Finally, Chester, another small-sized urban area, accounts for $8,409,770, or 3 percent of the total.

As of December 2009, recipients of Public Housing Capital Fund grants in Pennsylvania have created or saved a reported 611 jobs based on recipient-reported data from FederalReporting.gov. The total number of jobs created or saved by all Recovery Act programs for all agencies is 12,248 for Pennsylvania as reported on Recovery.gov. The highest number of jobs created or saved occurs in a ZIP Code area in Philadelphia. Philadelphia accounts for 128 jobs, or 21 percent of the total jobs created or saved in Pennsylvania. In addition, Harrisburg accounts for 82 jobs, or 13 percent of the total jobs between the two ZIP Codes. Pittsburgh, which received the second highest funding amount, accounts for 5 jobs or less than 1 percent of the total jobs between two ZIP Codes. Finally, Chester, Williamsport, and Pittston, all small-sized urban areas, created or saved roughly a combined 143 jobs, or 23 percent of the total.

This map is intended to provide a snapshot view of the distribution patterns of funding and job creation under the Recovery Act 2009 Public Housing Capital Fund program in Pennsylvania. It suggests that the patterns would be similar in other states or metropolitan areas. Researchers and planners concerned about Recovery Act funding in their regions should consider exploring the HUD Recovery Act data to see whether these divergent patterns are consistent with facts on the ground and whether they hold true across other metropolitan areas for other programs. HUD is very interested in finding out how researchers are able to use the Recovery Act data. If you create any maps using the Recovery Act data that you want to share, or if you have any questions or comments, please send them to david.e.chase@hud.gov.

Acknowledgments

The author thanks David Chase for his assistance in editing this article.

Author

Todd W. McNeil is a GIS programmer and analyst at KBM Group, Inc.

---

[4] Some state-level grants are reported at the state capital rather than at their place of performance. This reporting variance could skew the results for Harrisburg.

Data Shop

Data Shop, a department of Cityscape, *presents short articles or notes on the uses of data in housing and urban research. Through this department, PD&R introduces readers to new and overlooked data sources and to improved techniques in using well-known data. The emphasis is on sources and methods that analysts can use in their own work. Researchers often run into knotty data problems involving data interpretation or manipulation that must be solved before a project can proceed, but they seldom get to focus in detail on the solutions to such problems. If you have an idea for an applied, data-centric note of no more than 3,000 words, please send a one-paragraph abstract to david.a.vandenbroucke@hud.gov for consideration.*

Using the Health and Retirement Study To Analyze Housing Decisions, Housing Values, and Housing Prices

Hugo Benítez-Silva
The State University of New York-Stony Brook

Selçuk Eren
Levy Economics Institute of Bard College

Frank Heiland
The City University of New York-Baruch College

Sergi Jiménez-Martín
Universitat Pompeu Fabra, and FEDEA

Abstract

Few existing surveys provide detailed longitudinal information on households and their homes. This article introduces a data source, the Health and Retirement Study (HRS), which has this detailed information but has received little attention by housing researchers to date. The HRS is a rich longitudinal data set that provides information on house values, house prices, and detailed personal characteristics of those who own and sell their homes. The HRS is a nationally representative longitudinal survey that originally sampled 7,700 households headed by an individual aged 51 to 61 in the

Abstract (continued)

first interviews in 1992 and 1993. It now also samples additional cohorts of older Americans. Although the HRS is the data set of choice when analyzing the retirement behavior, savings, and health status of older Americans, given its wealth of demographic, health, and socioeconomic data, it has been rarely used to answer questions regarding the housing market. A seldom used section of the questionnaire provides detailed information about real estate transactions by households, however, enabling researchers to repeatedly observe both self-reported house values and the actual selling prices of properties sold since 1992 (originally bought in the past five decades). The article describes a number of important housing-related measures available in the HRS and illustrates the usefulness of these data by conducting a statistical analysis of the accuracy of self-reported home values. Specifically, we analyze the predictive power of self-reported housing wealth when estimating housing prices using the HRS data. The evidence shows a slight overestimation of housing values by older Americans.

Introduction

Although the Health and Retirement Study (HRS) is the longitudinal data set of choice to analyze the retirement behavior, the decisionmaking regarding Social Security as well as the savings and health status of older Americans, given its wealth of demographic, health, and socioeconomic data, it has been rarely used to analyze questions regarding the housing market.[1] A seldom-used section of the HRS, however, provides very detailed information about real estate transactions by households, which enables researchers to repeatedly observe self-reported house values, the selling prices of properties sold in the 1994-to-2008 period, and the prices originally paid as far back as the 1950s.

The HRS is a nationally representative longitudinal survey of 7,700 households headed by individuals aged 51 to 61 as of the first interviews conducted in 1992 and 1993. It has since been expanded to include even older households that were previously surveyed in the Assets and Health Dynamics Among the Oldest Old (AHEAD) and younger cohorts, such as the Children of the Depression Age (CODA) and War Babies, which refresh and complement the original sample.

This article addresses the advantages and disadvantages of using this source of data to analyze housing-related behaviors and housing market outcomes. It provides information about the instruments available in the HRS and how to construct important additional variables, questions answered by the respondents, and empirical strategies intended to overcome some of the problems with these data. The article illustrates the use of these data by presenting an interesting empirical application that analyzes the accuracy of self-reported home values and shows a slight overestimation of housing values by older Americans.

---

[1] See Juster and Suzman (1995) and Gustman, Mitchell, and Steinmeier (1995) for an overview of the HRS. Also see the online publication, “Growing Older in America” at http://hrsonline/isr.umich.edu.

An Unfamiliar Source of Housing Data

Using data that track particular properties over time has many advantages. For example, they enable the researcher to account for the characteristics of the houses in a detailed analysis of the dynamics of prices by regions of the country. Such surveys, however, rarely provide access to detailed information about the characteristics of the owners of those houses, their behaviors, and how much they think their houses are worth.[2] Although, at first glance, self-reported house values might not seem a key variable of interest for housing economists, it does provide essential information to researchers in a variety of fields who use household-level data and who need reliable measures of household wealth. Housing wealth is one of the pillars of the well-being of American families. It represents more than 60 percent of the average net wealth of U.S. households, according to the Federal Reserve's 2004 Survey of Consumer Finances.[3] Hence, many important decisions that households make are expected to be influenced by what they believe their houses are worth. Consequently, what the owner thinks the property is worth is very valuable information for researchers who seek to understand household decisionmaking.

What Americans think their houses are worth should be a primary concern to all housing economists, because, without understanding how the valuation evolves and how it is determined, we cannot understand the homeowners' selling decisions, both in terms of whether they decide to sell and at what price they agree to do so. Self-reported housing values may provide only a very noisy picture of the actual value of the property. It would be ideal to also have access to selling prices and compare the two measures to analyze whether reported values can be taken at face value and can be readily combined with other measures of wealth when studying the decisionmaking at the household level.

The HRS is a high-quality longitudinal data set, largely unknown in the housing literature, which provides two types of variables: (1) what individuals think their house is worth and (2) the price at which they sell the home (if a sale occurs). Up until the recent work by Benítez-Silva et al. (2009), researchers had not fully exploited the level of detail on housing wealth information available in the HRS.[4] Selected earlier research (for example, Farnham and Sevak, 2007) has used the self-reported home value information in the frequently used housing wealth section of the study but did not explore the rich data on housing transactions from the responses to the questions in the capital gains section of the HRS.

---

[2] Most studies use the American Housing Survey, which follows houses rather than households, or the Survey of Consumer Finances (SCF), which is not a panel data survey. See Agarwal (2007), Goodman and Ittner (1992), and Kiel and Zabel (1999). The first study on this issue was published by Kish and Lansing (1954), using the 1950 SCF, and it was not until Kain and Quigley (1972) that the assessment of self-reported home values was revisited. Kain and Quigley (1972: 803) acknowledge that "…the only accurate estimate of the value of a house is its sale price…"; however, due to data limitations and what they perceived as possibly serious selection problems, their analysis focused, as did the early study, on comparisons of households' self-reports with appraisals by experts. The latter can be considered indirect market assessments, because they use information on similar properties and try to account in the econometric study for the observable characteristics of the property.

[3] See Bucks, Kennickell, and Moore (2006). This fraction is considerably lower than in some European countries. For example, in Spain, housing wealth represents 87.5 percent of net wealth.

[4] Venti and Wise (2002) and Farnham and Sevak (2007) analyze the role of housing in retirement decisions, using the information in the housing wealth section.

This article takes advantage of the detailed information on housing transactions and valuation provided in the HRS by combining data from the wealth section with information from the largely unfamiliar capital gains section. It is important to note from the outset a number of weaknesses and limitations of these data. First, the HRS was created to analyze the socioeconomic situation and decisions of older American households; therefore, it represents only that age group and that cohort, and, although it has incorporated some other cohorts, it continues to only represent those considered to be older Americans. Ideally, we would have this richness of information for a wider cross-section of the population, but the data sets designed to represent all American households, such as the Panel Study of Income Dynamics, do not have the level of detail that we are interested in here. Another weakness of the HRS, which is common to any household-level survey, is that all the information we discuss here is self-reported and, therefore, subject to measurement errors, misreporting, and possible biases. Ongoing debate continues in the literature about the usefulness and quality of self-reported data, but it is generally believed that when considerable consistency among several sections of the survey can be demonstrated, the more serious concerns about self-reporting are unlikely to dominate over the usefulness of the data.

The Information Available in the Health and Retirement Study

The housing wealth section of the HRS asks respondents about the value of their homes (and farms or mobile homes) if they were to sell them today, the mortgages on their homes (first or second mortgages), and any home equity loans, home equity lines of credit, or other debts backed by their properties. The questionnaire also asks about the price at which the home was originally purchased, the month and year of that purchase, and real estate taxes paid on the property. The key element of self-reported housing wealth information is that it directly asks heads of household to estimate their home's current selling price. We have no way to know whether the person is thinking of selling the house, or whether it is even for sale at the time of the interview. We also have no information about the quality of the individual's assessment, at least not in this section of the questionnaire. New respondents, or those who say that they moved between waves, get to answer this part again.

Researchers have typically not gone beyond these questions in the HRS, but the survey also provides detailed information about real estate transactions that happen between waves. These additional questions, however, are asked in a completely different section—the capital gains section (called the asset change section in later waves). This section not only asks about transactions on primary and secondary residences but also about the sales of business properties, other real estate, and even financial assets.

The information on housing transactions is very detailed. The survey gathers from the respondents whether the household has bought, sold, or bought and sold a property since the previous interview and, if one of the options is the case, the price at which the house was sold as well as bracketed ranges of sale prices for those who do not answer the direct amount question. Furthermore, the questionnaire also asks about the original purchase price of the home and the date of that purchase. One shortcoming of the wording of these questions is that they are not asked separately for both primary and secondary residences, so unless we match the information against answers in the housing section, we do not know whether the transaction was made on the primary or secondary residence. This matching is possible, but it only works if the individual purchased the primary and secondary residences in different years. If the transaction happened in the same year, there is no way to definitively know which property the person is talking about without looking at the reported values and guessing for which property the person has supplied the information. The latter option is time consuming and error prone because it requires going over every questioned transaction.

The survey also asks respondents about improvements made to the properties (again not differentiating between primary and secondary residence), both in terms of whether any improvements were made and the value of that work (which includes the value of the work they might have done themselves). Overall, this survey presents a fairly detailed picture of the housing assets these older American households have and the transactions they have completed during the 1992-to-2008 period.

With all these pieces of information, we can construct a number of useful variables beyond self-reported housing values, sale prices, and original purchase prices, such as the average capital gain that households experienced on their properties, the average equity in the properties, the number of years households own a house before selling it, and information about the property owners regarding their age, marital status, race, income, and so on.

Exhibit 1 summarizes some of the characteristics of financially knowledgeable homeowners and their assets. The columns break down the sample according to the selection criteria: whether or not individuals sell their house during the 1992-to-2002 period for which we are analyzing data. Note that, given the longitudinal nature of the sample, homeowners may be observed up to six times but are asked whether they sold a house they owned at only five of those occasions.

From the 1,086 observations we have in the first six waves of the HRS that report valid positive selling prices on households' homes and, at the same time, reported a valid value of a home they previously owned, we eliminated 210 observations because we did not have valid information about when they bought that home or when they sold it. Not having information on the first variable (when they bought the home) does not allow us to match the property exactly, and not having information on the second variable (when they sold the home) prevents us from using the difference in months between the time of the self-reported value and the time they sold the property, which is an important variable in our econometric application. We also eliminated homeowners who reported a sale price 0.2 times the self-reported house value and less, or 5 times the self-reported house value and more (a total of 40 individuals). These extreme values occur mostly due to coding errors.[5]

---

[5] Because of all these restrictions, our estimated sample is reduced to the 836 observations used in the ordinary least squares estimations. The selection-corrected estimations use only 665 observations because we lose some observations by including home equity in the selection equation as an exclusion restriction that allows us to nonparametrically identify the selection-corrected specification.

As shown in exhibit 1, those who did not sell a house during the observed period reported lower home values, purchase prices, and capital gains. The average home tenure for sellers is shorter than for nonsellers, but it is still almost 18 years. On the other hand, nonsellers have less home equity, are less likely to be White, have lower educational attainments, and lower earnings. The marital status, average age, and gender composition are similar for both sellers and nonsellers. Looking at the sellers, we observed that self-reported home values are greater than selling prices by around 2 percent.

Exhibit 1

Summary Statistics

Variable Name	Sellers		Nonsellers	
	Mean	Standard Deviation	Mean	Standard Deviation
Selling price	140,022	114,673		
Self-reported house value	143,199	108,510	122,947	111,984
Original purchase price	79,929	85,219	56,838	74,982
Capital gains	63,269	75,570	66,109	84,833
House tenure	17.41	11.30	21.28	11.41
Home equity	103,911	98,623	96,101	95,982
Bachelor's degree	0.3779	0.485	0.28	0.448
Professional degree	0.1411	0.348	0.109	0.311
Married	0.726	0.446	0.747	0.434
White	0.886	0.317	0.782	0.412
Age	61.52	5.84	61.53	5.65
Male	0.559	0.496	0.543	0.498
Earnings	87,820	113,314	75,525	119,157
Number of observations	836		18,144	

An Empirical Application: Testing the Accuracy of Self-Reported Housing Wealth

This interesting source of data can be used in a variety of ways to supplement, complement, and even contrast information on housing values, housing prices, and characteristics of homeowners obtained in other surveys. In this section we provide a simple empirical analysis that tests within a simple regression model the accuracy of self-reported housing wealth measures in the HRS.

In the data, we observe the market value of a property when the individual reports the transaction price of a house they have sold since the last survey wave. Therefore, the self-reported house value is obtained from the previous wave of data. Given data collection every other year only, as many as 24 months may pass between the measurement of the sale price and the self-reported house value. In the interview, individuals are asked about the current market value of their homes rather than asked to forecast the price for a future period. To correct for possible bias in the estimation of the coefficient of interest resulting from possible appreciation (depreciation) of the value of the house during that time, we control for the number of months between the observances of these two variables.[6] The ordinary least squares (OLS) specification can then be written as follows:

$$y_i^t = \beta X_i^{t-1} + \alpha T + \varepsilon_i \qquad (1)$$

where X_i^{t-1} represents the self-reported house value from the previous wave, and T represents the number of months between the time the market price refers to and the time of the self-reported home value estimation. The dependent variable is the price of the property reported by the individual, and, if the homeowners predict the market value of their house accurately, we expect to find that $E[\beta_i \mid X_i^t, \varepsilon_i] = 1$. If homeowners overestimate (underestimate) the value of their home, then the estimated slope coefficient β will be less than (more than) one.[7]

One underlying concern with the OLS specification presented is that we only estimate the relationship of interest for the sample of sellers. If sellers are very different from nonsellers on unobservable characteristics, we would not be able to generalize our results to the whole population. We follow the classic work of Heckman (1979), which reformulates this selection problem as a specification bias that has as a source the omission of a variable that represents the sample selection rule. We correct this problem by adding the inverse mills ratio, which results from estimating a selection equation, into the equation of interest. This selection equation can be the result of a probit estimation if we assume a Gaussian distribution of the error term of the binary choice model of selling a property. It is common to add an exclusion restriction to this selection equation to obtain nonparametric identification of this nonlinear model (the parametric identification is guaranteed by the nonlinearity of the model), and in our case the variable we use is the home equity on the home.

Exhibit 2 presents the results from the different specifications and estimation strategies. The OLS estimate of β, the coefficient on the self-reported house value when estimated without a constant, is 0.903. This point estimate implies an overestimation of about 10 percent in house values. If we estimate the model with a constant, the coefficient of interest goes down to 0.887, but the constant is estimated as not statistically different from zero. Both specifications explain a very large proportion of the variation in selling prices, which confirms the reliability of the model we present in this article.

---

[6] Notice that this discrepancy in the timing of the assessment suggests that the relationship in (1) is potentially nonlinear. We have allowed for the difference in months to enter nonlinearly (which could capture changing economic conditions in the months before the sale, which could affect the price, like movements in the interest rates), but the results have not changed. One possible alternative would be to adjust all the observed prices to the same time period. This adjustment, however, may create some unwanted measurement error because, in many cases, only a few months of difference existed between reports. The results of our preferred specification remain literally unchanged; therefore, the empirical evidence suggests that those who sell shortly after the interview do not report systematically more accurate estimates of the selling price of their properties than those who sell shortly before the following interview.

[7] There is no reason to believe that the model should contain a constant, because no minimum market value exists for the houses, and the left- and right-hand sides are measuring the same asset. In fact, we have run several empirical specifications with a constant and it comes out to be insignificant, as expected, no matter how we specify the model. In the empirical work, we present results with and without a constant in the regression.

Accounting for selection, we find the coefficient of the inverse mills ratio to be statistically insignificant, suggesting that there is no evidence that sellers differ from nonsellers in unobservable ways.[8] Although the coefficient for reported house values decreases slightly, the standard errors increase.

While given the precision of our estimates, we cannot reject the hypothesis that agents are assessing the value of their houses with accuracy; the point estimates indicate considerable overestimation of the value of the properties.

One additional concern with this model, which is explored in some detail in Benítez-Silva et al. (2009), is the endogeneity of self-reported home values due to unobserved heterogeneity grounded on local market conditions and unobserved house characteristics.

Exhibit 2

The Accuracy of Self-Reported Home Values

Dependent Variable: Sale Prices	OLS		OLS, No Constant		Selection Corrected	
	Coefficient	Standard Error	Coefficient	Standard Error	Coefficient	Standard Error
Self-reported house value	0.887	0.087	0.903	0.0601	0.894	0.092
Months between the report and the sale	468.41	351.06	741.04	407.13	527.62	389.24
Constant	7,056	13,411	—		—	
Inverse mills ratio	—		—		3,277	6,748
Adjustment R-squared	0.7067		0.882		0.8763	
Observations	836		836		665	

OLS = ordinary least squares.

Conclusions

Few existing surveys enable researchers to study households and their homes over time. The purpose of this article is to introduce one data source, the Health and Retirement Study (HRS), which has this information but has received little attention by housing researchers to date. The HRS is a longitudinal data set that provides information on self-reported house values, house prices, and detailed personal characteristics of those who own and sell their homes. The HRS is well known and frequently used among researchers in the fields of aging and retirement, but its rich section on housing, covering the prices of properties sold after 1992 and the prices of properties bought as early as the 1950s, is not well known and has rarely been used. This article discusses the potential and the limitations of the housing data collected in the HRS. We describe the housing-related instruments available in the HRS and show how to construct a number of important additional measures related to housing transactions and wealth. We illustrate the usefulness of these longitudinal data for housing research by conducting a statistical analysis of the accuracy of self-reported home

---

[8] In a related context but estimating a different type of home sale price equation, Ihlanfeldt and Martínez-Vázquez (1986) also found no evidence of sample selection bias when estimating an equation of sale prices.

values. This application is motivated by the fact that self-reported home values are widely used as a measure of housing wealth by researchers employing a variety of data sets and studying a number of different individual and household-level decisions.

Acknowledgments

Hugo Benítez-Silva acknowledges the financial support from Grant Number 5 P01 AG022481-04 from the National Institute on Aging on a related project. Benítez-Silva and Frank Heiland thank the Michigan Retirement Research Center for their support on a related project. Sergi Jiménez-Martín and Benítez-Silva acknowledge the financial support of the Spanish Ministry of Education through project number SEJ2005-08783-C04-01. Any remaining errors are the responsibility of the authors.

Authors

Hugo Benítez-Silva is an associate professor and Director of Graduate Studies in the Department of Economics at The State University of New York-Stony Brook.

Selcuk Eren is a research scholar at the Levy Economics Institute of Bard College.

Frank Heiland is an assistant professor and CUNY Institute for Demography Faculty Associate in the School of Public Affairs at The City University of New York-Baruch College.

Sergi Jiménez-Martín is an associate professor in the Department of Economics at the Universitat Pompeu Fabra and Fundación de Estudios de Economía Aplicada.

References

Agarwal, Sumit. 2007. “The Impact of Homeowners’ Housing Wealth Misestimation on Consumption and Saving Decisions,” *Real Estate Economics* 35 (2): 135–154.

Benítez-Silva, Hugo, Selcuk Eren, Frank Heiland, and Sergi Jiménez-Martín. 2009. How Well Do Individuals Predict the Selling Prices of Their Homes? Unpublished paper.

Bucks, Brian K., Arthur B. Kennickell, and Kevin B. Moore. 2006. “Recent Changes in U.S. Family Finances: Evidence from the 2001 and 2004 Survey of Consumer Finances,” *Federal Reserve Bulletin* 92: A1–A38.

Farnham, Martin, and Purvi Sevak. 2007. Housing Wealth and Retirement Timing: Evidence from the HRS. Working paper 2007-172 (October). Ann Arbor, MI: University of Michigan, Michigan Retirement Research Center.

Goodman, John, Jr., and John B. Ittner. 1992. “The Accuracy of Home Owners’ Estimates of House Value,” *Journal of Housing Economics* 4: 339–357.

Gustman, Alan L., Olivia S. Mitchell, and Thomas L. Steinmeier. 1995. "Retirement Measures in the Health and Retirement Study," *Journal of Human Resources* 30 (Supplement): S57–S83.

Heckman, James J. 1979. "Sample Selection Bias as a Specification Error," *Econometrica* 47 (1): 153–161.

Ihlanfeldt, Keith R., and Jorge Martínez-Vázquez. 1986. "Alternative Value Estimates of Owner-Occupied Housing: Evidence on Sample Selection Bias and Systematic Errors," *Journal of Urban Economics* 20 (3): 356–369.

Juster, Thomas F., and Richard Suzman. 1995. "An Overview of the Health and Retirement Study," *The Journal of Human Resources* 30 (Supplement): S7–S56.

Kain, John F., and John M. Quigley. 1972. "Note on Owners Estimate of Housing Value," *Journal of the American Statistical Association* 67: 803–806.

Kiel, Katherine A., and Jeffrey E. Zabel. 1999. "The Accuracy of Owner-Provided House Values: The 1978–1991 American Housing Survey," *Real Estate Economics* 27 (2): 263–298.

Kish, Leslie, and John B. Lansing. 1954. "Response Errors in Estimating the Value of Homes," *Journal of the American Statistical Association* 49: 520–538.

Venti, Steven F., and David A. Wise. 2002. "Aging and Housing Equity." In *Innovations in Retirement Financing*, edited by Zvi Bodie, P. Brett Hammond, and Olivia S. Mitchell. Philadelphia, PA: University of Pennsylvania Press and the Pension Research Council: 254–281.

Referees 2009–10

The Office of Policy Development and Research gratefully acknowledges the contributions of the referees listed below and their efforts toward making Cityscape *worth reading.*

Gino Aisenberg
Brent Ambrose
Mark Austin
Barbara Brown
Peter H. Brown
Barbara Butrica
Charles Capone
Mary Cunningham
Amy Crews Cutts
Andrew Dannenberg
Zhu Xiao Di
Gary Engelhardt
Allen Furr
Jacqueline Geoghegan
John Goering
Edward Goetz
Peter Hall
Timothy Ireland
Jim Kennedy
Ben Keys
Morris Kleiner
Marc Law
Daniel Lichter
Robert Litan
Jeff Lubell
Kate MacTavish
Janice Madden
Carson Mencken
Stephen Metraux
Robert Olshansky
Satyendra Patrabansh
Susan Popkin
Hazel Prelow
John Quigley
Joel Rast
Bill Reeder
Andrew Reschovsky
Barbara Robles
Emily Rosenbaum
Claire Rubin
Joseph Schilling
Terry Schum
William Siembieda
Stacy Sirmans
Stuart Sirota
Paul Smokowski
Ed Szymanoski
Paul Toro
Robert Van Order
David Varady
Susan Welch
Ming Wen
Alan White
Paul Willen
Laura Wolf-Powers

U.S. Department of Housing and Urban Development
Office of Policy Development and Research
Washington, DC 20410-6000

Official Business
Penalty for Private Use $300

FIRST-CLASS MAIL
U.S. POSTAGE PAID
HUD
PERMIT NO. G-795

Contents

Symposium

Aging in Place

Guest Editors: Cheryl A. Levine, Gavin Kennedy, and Emily Rosenoff

Refereed Papers

Departments

Graphic Detail

Data Shop

Cityscape
VOLUME 12, NUMBER 2 • 2010