New York State Nursing Homes: Sponsorship as a Defining Factor in Outcomes

2012

Quality Staffing Outcomes Acuity Hospitalization rates
Facility Spending Deficiencies Discharges

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Executive Summary

This report is intended to inform providers, payers and policymakers about differences in select nursing home characteristics across New York State based on ownership status. Following a detailed analysis of cost, survey, and clinical data, we found that:

- **Hospitalization rates are considerably higher in for-profit (FP) nursing homes than in not-for-profit (NFP) homes.** The difference is 32% or more for short-stay residents and 25% or more for long-stay residents. Avoiding unnecessary hospitalizations is a policy imperative of government, payers and advocates due to the associated clinical, cost and quality implications.

- **A typical FP facility had 16% more deficiencies per 100 beds than a NFP home (i.e., 3.9 vs. 3.4).** This is consistent with the findings of a recent government report that nursing homes owned by private investment companies and other FP operators had higher numbers of survey deficiencies than NFP facilities.

- **NFP nursing homes had higher levels of staffing than FP facilities.** The average number of RN hours per resident day is 27% higher in NFP than in FP homes, and skill mix is noticeably higher in NFPs than in FPs. These higher staffing levels are reflected in 15% higher spending per day in nursing costs among NFP homes versus FP facilities.

- **FP homes reported patient acuity that was 6.6% higher than in NFP homes, but not commensurately higher staffing.** If a facility's case-mix index (CMI) accurately measures resident care needs, homes with higher acuity levels should have higher staff hours and a higher skill mix. Our results, however, show the opposite is true – average CMI is higher in FP than in NFP facilities but FP homes have lower average staff hours and skill mix.

- **A greater proportion of residents are discharged back to home from NFP than FP facilities.** Based on 2009 data, 49.7% of total discharges from NFPs were to home versus 41.3% for FP facilities, which amounts to a 20% difference. Discharges to home are typically indicative of resident improvement in condition and are considered a positive outcome of care.

- **NFP homes had statistically better outcomes in twice as many CMS quality measures as FP homes.** Of the ten CMS quality measures we examined, NFP homes had statistically significant lower rates in four areas (i.e., prevalence of antipsychotic use in high risk and low risk residents, residents with urinary tract infections, and high risk residents with pressure ulcers); higher rates in two areas; and no difference in the remaining four measures.

These system-wide findings suggest that sponsorship is a significant variable in explaining the outcomes of nursing home care. While not a focus of this examination, region-to-region and facility-to-facility variations exist and may be significant. Further analysis is suggested to explore the inter-relationships between these findings, their broader system implications and the associated public policy ramifications.

Introduction

Nursing homes (NHs), otherwise known as "skilled nursing facilities" or "nursing facilities" and in New York State as "residential health care facilities," are congregate care facilities that serve individuals who need 24-hour nursing care and supervision due to their clinical conditions, functional impairments and/or need for specialized services. Nursing homes (as they will be referred to in the balance of this report) offer a broad array of room and board, medical, nursing, rehabilitative, personal, social, recreational and spiritual services. Many individuals will return home or go to another setting after a brief rehabilitative stay in a nursing home, while others require care for an extended period due to chronic health conditions.

In New York and elsewhere in the U.S., most nursing homes are owned and operated in the private sector by either not-for-profit (NFP) or for-profit (FP) organizations. The impact of ownership structure on nursing home operations and outcomes has been the subject of considerable analysis and debate over the years. If, in fact, the form of ownership of a nursing home affects quality of care and quality of life, this information should influence the development and administration of payment and regulatory policies and be of great interest to consumers and payers.

This report comes at a time of unprecedented change in health care delivery and financing. Medicaid redesign in New York and federal health reform efforts are leading to increased emphasis on new service models, managed care and care coordination, changes in payment policy and rebalancing of risk between payers and providers. As the state prepares to move to a Medicaid pricing model for nursing home services and, ultimately, away from fee-for-service reimbursement to capitated managed care arrangements, recognizing differences among facilities in the structure, process, and outcome dimensions of care becomes an even more important consideration.

We reviewed the literature on the effect of sponsorship differences on the quality of care in nursing homes. This provided a broad theoretical context, helping us to frame the issues, formulate hypotheses and arrive at the framework to guide our analysis of resident assessment, survey, staffing, admission/discharge and cost data. The objective of our meta-analysis was to examine the quality of care in FP and NFP (privately and publicly owned) nursing homes to enhance the evidence base for public policy.

This report is intended to summarize our findings, and to inform providers, payers and policymakers about differences we identified in select nursing home characteristics across New York State based on ownership status.

Background on NY's Nursing Homes

Nursing homes in New York State are licensed and regulated by the NYS Department of Health (DOH) and the federal Centers for Medicare & Medicaid Services (CMS). Under state and federal law, nursing homes (NHs) can be owned and operated under the following auspices:

- *Not-for-profit (NFP) corporations*, which include religious, fraternal and community-based organizations;
- *For-profit (FP) entities,* which include sole proprietorships, partnerships, corporations and limited liability partnerships/corporations. In New York State, corporations that are publicly traded (i.e., listed on a stock exchange) are not permitted to own and operate NHs; and
- *Public entities,* which include state, county and municipal governments and their instrumentalities, including public benefit corporations located in certain counties of New York State.

As of July 2010, there were 111,407 individuals residing in 632 NHs throughout New York State (NYS) (MDS 2.0, July 2010). NFP operators accounted for 42.4% of the facilities and 42.1% of the residents served (the corresponding national average is 30%). For-profit (FP) entities operated 50.6% of the facilities and served 48.5% of the total residents, and public entities accounted for the remaining 7.0% of facilities and 9.4% of residents (Table 1).

Across the 7 DOH regions of the state, the total percentage of residents served by NFP NHs varied from 18.9% in Long Island to 57.7% in Rochester (Appendix A, Table A1).

Table 1: Residents Served by Sponsor, Statewide

	NFP	FP	Public	All
Number of facilities	268	320	44	632
Number of residents	46,935	54,009	10,463	111,407
Market share	42.1%	48.5%	9.4%	100.0%

Table 2 identifies statewide nursing home counts by sponsor, and percentage of facilities by sponsor based on ranges of certified bed capacity. As shown, NFP organizations are more likely to operate small (i.e., <100 beds) facilities than FP organizations. The most prevalent facility capacity across sponsorship groups is 100-199 beds.

Table 2: Statewide Facility Counts and Bed Size Ranges

	NFP	FP	Public	All
Number of facilities	268	320	44	632
Bed size				
• 1-49	9.0%	5.0%	2.3%	6.5%
• 50-99	18.3%	14.1%	11.4%	15.7%
• 100-199	36.6%	41.9%	34.1%	39.1%
• 200+ beds	36.2%	39.1%	52.3%	38.8%

Review of Sponsorship Literature

The impact of sponsorship on nursing home performance has been the subject of considerable review and debate over the years. Some argue that all nursing home care should be provided by NFP organizations because FP institutions sacrifice quality of care so their owners can earn greater profits, while others contend that FPs encourage entrepreneurship, innovation and lower costs of providing nursing home care (Santerre, 2007-08).

It was Kenneth Arrow (1963) who first hypothesized that NFP organizations exist in health care markets to provide quality assurance to poorly informed consumers. NFP nursing homes have a competitive advantage in trustworthiness and FP nursing homes have greater incentives for efficiency, therefore inter-sector competition can yield better outcomes than a market consisting exclusively of one type of sponsorship (Grabowski and Hirth, 2003).

A recent Agency for Healthcare Research and Quality (AHRQ) patient safety survey revealed that NFP/government operated nursing homes had a higher percentage positive response than FP homes on all 12 patient safety composites (e.g., feedback on incidents, resident "handoffs," management support for resident safety, overall perceptions of resident safety, staffing, etc). In addition, NFP/government nursing homes had a higher percentage of respondents who indicated they would tell their friends that this is a safe nursing home for their family (80%) than FP homes (72%) (Sorra et al, 2011).

On the issue of quality, Comondore, et al. (2009) reviewed 82 articles from 1965 to 2003 comparing quality of care in FP versus NFP nursing homes, focusing on the 4 most frequently reported quality measures: staffing, pressure ulcers, physical restraints and deficiencies. Based on the systematic review and meta-analysis conducted, the evidence suggested that, on average, NFP nursing homes deliver higher quality care than do FP nursing homes.

A report recently issued by the U.S. Government Accountability Office (GAO) found that on average, NHs owned by private investment companies and other for-profit homes were cited with more survey deficiencies by government inspectors than NFP homes both before (2003) and after (2009) acquisition (GAO, 2011).

In spite of the tendency of these studies to support the premise that NFP homes provide higher quality services overall than their FP counterparts, the debate continues in the literature and elsewhere as to whether sponsorship plays a role in the quality of care provided in nursing homes today.

Methodology

To determine whether there are differences in NYS nursing homes based on sponsorship, we analyzed several data sources including resident assessment information (the Minimum Data Set (MDS) version 2.0, 2009-10), federal survey and staffing information (Online Survey Certification and Reporting (OSCAR), 2009-10) and financial and other facility information (NYS Medicaid cost reports, 2009).

Ownership status for all analyses was categorized as either not-for-profit or for-profit, while some analyses also included public NHs as a third category. Although we recognize that public NHs play a unique and important role in serving many hard-to-place residents, these facilities have very different characteristics than their NFP and FP counterparts (i.e., younger residents with longer stays, more behavioral issues, lower case-mix indices and significantly different cost/financing structures) which make them less able to be validly compared than NFP and FP facilities. Furthermore, public facilities represent a relatively smaller proportion of the marketplace, operating only about 7% of the facilities and serving 9% of total residents. Therefore, for purposes of this study, most of the comparisons made will be between NFP and FP NHs.

There are many theories on how best to measure and interpret quality in long term care settings. We based our analysis, in large part, on a widely regarded framework for analyzing quality in health care settings (Donabedian, 1966) which states that quality is composed of three interacting elements:

1. ***Structure,*** which refers to institutional characteristics. We examined structure by analyzing several facility and resident characteristics and various staffing measures relating to the amount and types of staff.
2. ***Process,*** which refers to what is done to and for the resident. We analyzed facility performance on a subset of the CMS quality measures, survey deficiencies, spending in selected areas and culture change initiatives; and
3. ***Outcomes***, which refer to what happens to the resident as a result of the structure and process of care delivery. We analyzed hospitalization rates, discharges to home, length of stay, a subset of the CMS quality measures and level of private payment.

Although results reported here focus mainly on overall statewide differences based on sponsorship, we recognize there is often significant regional variation. Regional breakouts of the analyses are available in Appendix A, but were not a focus of this examination.

Results

Structure: Resident-Level Characteristics

Here, we examined a series of resident-level descriptive characteristics. Our findings for each characteristic are summarized in Table 3 and the descriptions below.

Table 3: Resident-level Characteristics

	NFP	FP	Public	All
Average age (years) short-stay residents (<=100 days)	78.7	77.3	77.7	78.0
Average age (years) long-stay residents (>100 days)	81.6	79.6	78.4	80.3
% of residents <=65 years old				
• Metro regions	15.8%	17.8%	27.5%	----
• Non-metro regions	7.7%	10.6%	10.6%	----
% of residents >=91 years old				
• Metro regions	20.4%	16.0%	11.6%	----
• Non-metro regions	25.1%	20.8%	20.6%	----
Activities of Daily Living (ADL) Score				
• Length of stay <= 100 days	13.1	13.2	12.2	13.1
• Length of stay > 100 days	12.9	12.3	11.9	12.5
Cognitive Performance Score (CPS)				
• Length of stay <= 100 days	1.7	1.8	2.1	1.8
• Length of stay > 100 days	2.9	2.9	2.8	2.9

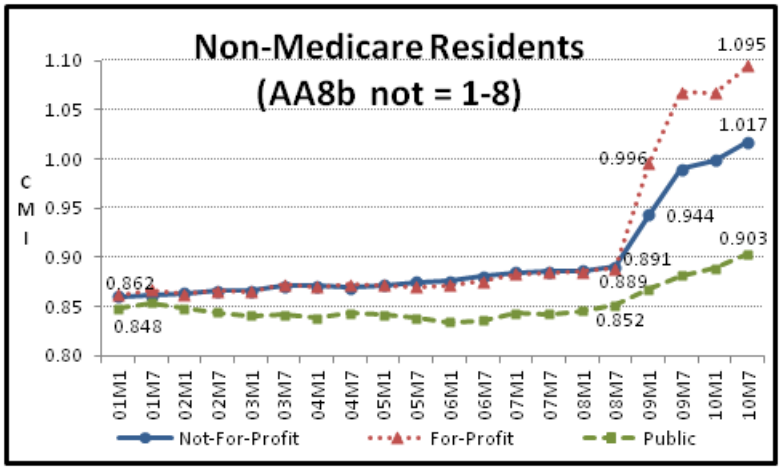
Age: Age is a potential indicator of resident frailty. As shown, short-stay (i.e., length of stay <=100 days) and long-stay (i.e., LOS >100 days) residents were older on average in NFP NHs than in FP facilities by 1.8% and 2.5%, respectively. Within the averages, there are significant sponsorship and regional variations in the percentages of young-old (i.e., <=65 years old) and old-old (i.e., >=91 years old) residents.

Activities of daily living (ADL): ADLs are an empirical measure of residents' functional abilities such as eating, toileting and transferring from one position to another. They are derived from a standardized assessment tool (i.e., MDS 2.0) and translated into an aggregate score based on the level of assistance the resident needs to perform each ADL function. As shown in Table 3, while there is little difference in the average ADL scores between NFP and FP facilities for short-stay residents, long-stay residents of NFPs have a 4.8% higher ADL score on average.

Cognitive performance scale (CPS): The CPS quantitatively measures a resident's cognitive ability. Based on resident assessment data, the CPS is used to identify residents who demonstrate moderate to severe cognitive impairment as a basis for case-mix index calculation and the level of Medicare and Medicaid reimbursement. Not surprisingly, as Table 3 indicates, long-stay residents demonstrate significantly higher CPS scores on average than short-stay residents. The differences by facility sponsor in both LOS groups are insignificant.

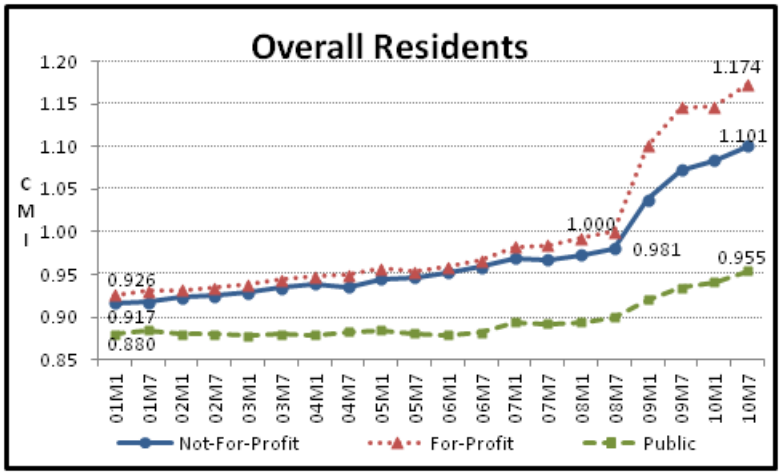
Case-mix index (CMI): CMI is an empirical measure of the relative acuity (i.e., complexity) of residents based on their clinical status, functional impairments and need for specialized services as identified in a standardized assessment tool (i.e., MDS 2.0). As shown in Figure 1, the average CMI for non-Medicare residents (i.e., predominantly Medicaid) was very stable from January 2001 through July 2008 for all sponsorship types. From July 2008 to January 2009, CMI increased significantly, most likely resulting from changes in the Medicaid reimbursement methodology in NYS during that time period.

Figure 1: Trend of CMI of Non-Medicare Residents (2001-2010)



In July 2010, the average CMI for non-Medicare residents (i.e., largely the basis for the Medicaid rates) in FP NHs was 7.7% higher than in NFP homes and 21.3% higher than in public facilities. For all residents (which includes Medicare-covered individuals), the average CMI reported in FP homes was 6.6% higher than in NFP homes and 18% higher than in public facilities (Figure 2). The pattern of changes seen in CMI suggests that FP NHs are more responsive to changes in Medicaid payment rules than NFP and public homes.

Figure 2: Trend of CMI of All Residents (2001-2010)



Chronic conditions: As shown in Table 4, our analysis of the most common chronic conditions in individuals aged 65 years+ found that NFP NHs had slightly lower percentages of residents with chronic obstructive pulmonary disease (COPD) (14.8% vs. 18.4%), diabetes (31.3% vs. 34.1%), and hypertension (67.8% vs. 69.8%) than FP NHs, and a slightly higher percentage of residents with congestive heart failure (18.8% vs. 18.2%). The prevalence of each of the chronic diseases varies considerably across regions, as shown in Table A3 of the Appendix.

Table 4: Statewide Prevalence of NH Resident Chronic Conditions

Condition	NFP	FP	Public	All
Congestive heart failure	18.8%	18.2%	16.2%	18.3%
Emphysema/COPD	14.8%	18.4%	16.8%	16.7%
Diabetes mellitus	31.3%	34.1%	32.0%	32.7%
Asthma	3.8%	3.7%	2.6%	3.6%
Hypertension	67.8%	69.8%	66.4%	68.7%

Payer mix: Using a snapshot of July 2010 data, we identified the primary source of payment for NH residents. As shown in Table 5, the percentage of Medicaid residents was approximately 5% lower in NFPs than FPs while the percentage of Medicare residents was the same. Other payer sources – which include private pay (i.e., out-of-pocket and insurance) – were a third higher in NFP homes than FP facilities based on this measure. See Table A4 in the Appendix for regional breakouts.

Table 5: Percentage of Residents by Primary Source of Payment (July 2010)

Payor	NFP	FP	Public	All
Medicaid	71.8%	75.7%	76.1%	74.1%
Medicare	14.1%	14.1%	9.3%	13.6%
Private and Other	14.1%	10.3%	14.6%	12.3%

Structure: Facility Characteristics

Nursing home care is highly dependent on the level, types and stability of staffing, as well as on the characteristics of the physical plant itself. Here, we examined a series of staffing measures and building features, as well as the availability of non-nursing home services. Our findings for each characteristic are summarized below.

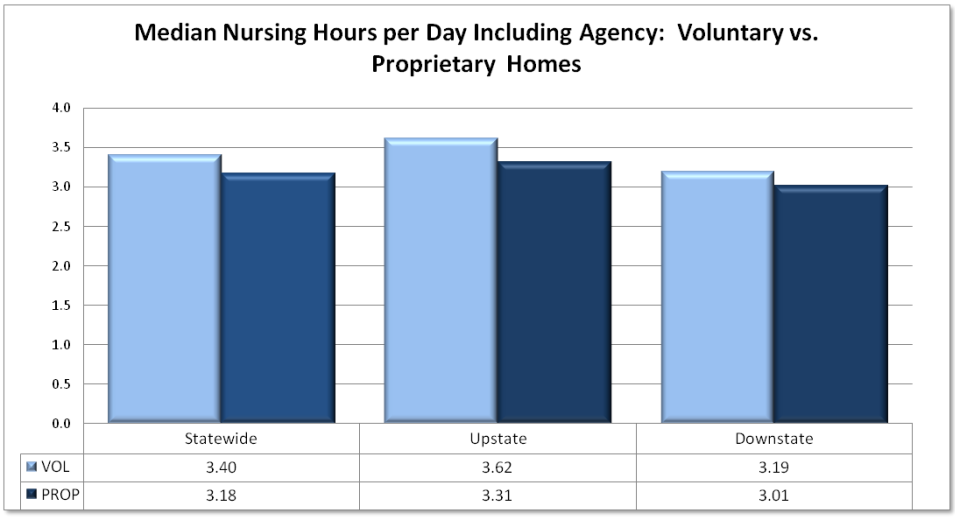
Staffing levels and mix: Six measures of average staffing levels and types were analyzed and the results are reported in Table 6 and Figure 3, and further discussed below.

Table 6: Staff Hours and Skill Mix

Measure	NFP	FP	Public	All
Number of RN hours per resident per day	0.71	0.56	0.67	0.63
Number of LPN/LVN hours per resident per day	0.82	0.77	0.86	0.80
Number of CNA hours per resident per day	2.39	2.18	2.62	2.30
Total staff hours (RN+LPN/LVN+CNA) per resident per day	3.93	3.52	4.15	3.73
Staff mix (RN/Total staff hours*100)	17.8%	16.0%	15.7%	16.7%

1. *Registered nurse (RN) hours per resident day.* The NFP figure was 26.8% higher than the corresponding FP figure.
2. *Licensed practical nurse (LPN) hours per resident day.* The NFP figure was 6.5% higher than the corresponding FP figure.
3. *Certified nurse aide (CNA) hours per resident day.* The NFP figure was 9.6% higher than the corresponding FP figure.
4. *Total staff (i.e., RN, LPN and CNA) hours per resident day.* The NFP figure was 11.6% higher than the corresponding FP figure.
5. *Skill mix (i.e., RN hours divided by total staff hours, expressed as a percentage).* The NFP figure was 11.3% higher than the corresponding FP figure.
6. *Median total staff hours per day including agency/contract staff.* When agency/contract staff (i.e., non-employees of the facility) is included, nursing staffing (RN, LPN and CNA) was 7% higher statewide in NFP NHs than in their FP counterparts. See Figure 3 below.

Figure 3: Median Nurse and Aide Hours Per Day, Including Agency Staff



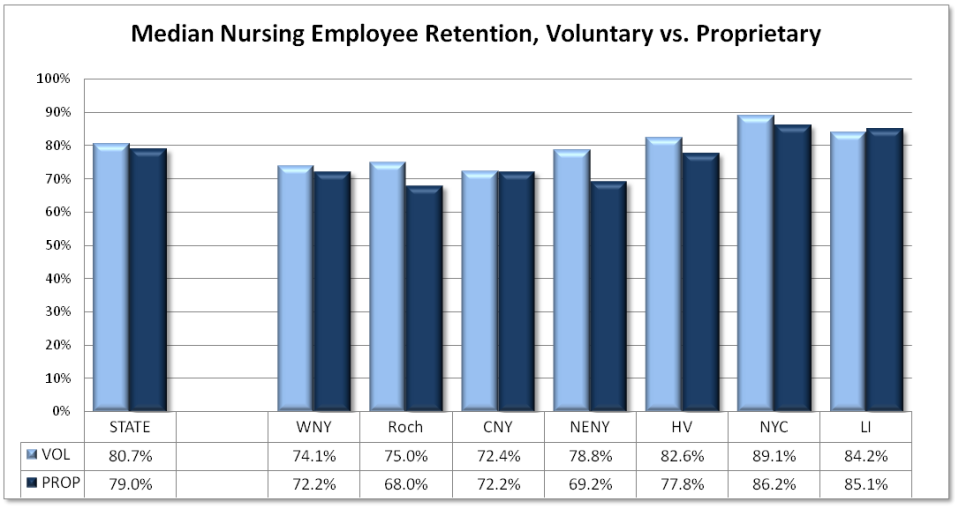
Based on all of these measures, NFP NHs had significantly higher levels of staffing than FP facilities. Examined at the facility level, nearly two-thirds of NFP homes staffed higher than the statewide median, based on total staff hours per resident day. The corresponding figure was 39% for FP facilities.

As previously indicated, FP homes reported an average case-mix index that was 6.6% higher than that of NFP homes. If in fact the CMI is a valid indicator of resident acuity levels, facilities with higher CMIs would be expected to have higher staff hours as well as higher staffing skill mix. Our results, however, show the opposite is true – average CMI is higher in FP NHs than in NFP facilities, yet FP homes have lower average staff hours and skill mix.

Staff retention: Staff retention has been found to be related to quality of care. NFP homes reported more staff stability than their FP counterparts. Based on 520 homes that reported staff retention data in 2009 (i.e., the number of employees employed in January that were still employed at the end of the year), staff retention is higher on average in NFP facilities (80.7%) than in FP facilities (79.0%). While the statewide figures differ by 2.1%, there are wide differences between NFP and FP staff turnover in most regions (Figure 4).

Research has shown that tenure of key leaders (i.e., medical directors, directors of nursing and administrators) is higher in NFP homes than FP facilities, and this has been found to be a potentially significant factor in quality outcomes (Resnick et al, 2009).

Figure 4: Statewide and Regional Nursing Employee Retention



	STATE	WNY	Roch	CNY	NENY	HV	NYC	LI
VOL	80.7%	74.1%	75.0%	72.4%	78.8%	82.6%	89.1%	84.2%
PROP	79.0%	72.2%	68.0%	72.2%	69.2%	77.8%	86.2%	85.1%

Facility square footage: The physical plant within which residents live and receive services is a major part of the care delivery and quality of life experiences. Federal and state governments have minimum standards as to dimensions of resident rooms. However, with regulatory expectations for resident care conferences and resident activity programs, the desire to create more "home-like" living environments and resident acuity on the rise, the amount of space in a facility and how it is deployed become increasingly important considerations.

In this regard, our analysis revealed that the median square footage per bed reported by NFP homes was 49.2% higher than the corresponding figure in FP facilities (Table 7).

Table 7: Facility Square Footage

Measure	NFP	FP	Public	All
Median Housekeeping Sq Ft per bed (2009)	510.5	342.2	553.8	405.2

Other services: NFP organizations that sponsor nursing homes are more likely than their FP counterparts to also establish and operate other facility-based and home- and community-based services and programs. This is a reflection of their missions to serve the needs of seniors and other disabled people in their communities, as well as state policy that has encouraged the development of these service alternatives. Table 8 below identifies the percentages of NFP and FP sponsors of various types of services and programs, based on data from nursing home Medicaid cost reports. The cost report data undercounts certain types of services, such as adult care facility/assisted living and independent housing.

Table 8: Non-Nursing Home Services

Service	NFP	FP
Adult Care Facility (including assisted living)	100%	0%
Independent Housing	100%	0%
Home Care	82%	18%
Adult Day Health Care	74%	26%
Dialysis	50%	50%
Respite (short term)	61%	39%

Source: 2009 RHCF-4 Medicaid Cost Reports.

Process

Here, we examined process-related quality measures, survey deficiencies, facility spending in selected areas and "culture change" initiatives. Our findings for each characteristic are summarized below.

Quality measures: CMS has developed 34 MDS 2.0-based nursing home quality indicators/ quality measures (QMs), 17 of which are publicly-reported. The QMs are based on resident assessment data and evaluate residents' physical and clinical conditions and abilities, as well as preferences and life care wishes. We selected 7 of the 17 publicly-reported QMs and 3 that are not publicly-reported (i.e., two measures of anti-psychotic use and a measure of falls) for analysis and evaluation. Of the 10, 4 are considered process measures and the remaining 6 are outcome measures that will be covered in the next section of this report.

The 4 CMS process measures we examined for statistically significant differences based on facility sponsorship were: (1) use of indwelling catheters (risk-adjusted); (2) prevalence of antipsychotic use in high-risk residents; (3) prevalence of antipsychotic use in low-risk residents;

and (4) residents who were physically restrained. As indicated in Table 9, we found no statistically significant differences in indwelling catheter use or restraint use among sponsors. However, NFP facilities were associated with lower rates of antipsychotic use among both high-risk (9.8% lower) and low-risk (14.3% lower) residents.

Table 9: CMS Process Quality Measures

Quality Measure	NFP	FP	Public
Indwelling catheter (risk-adjusted)	4.37	4.20	6.01[H]
Prevalence of antipsychotic use, in the absence of psychotic or related conditions: high risk	41.38[L]	45.86	43.77
Prevalence of antipsychotic use, in the absence of psychotic or related conditions: low risk	14.52[L]	16.95	14.92[L]
Residents who were physically restrained	3.06	2.45	3.32[H]

Note: [H] means the rate is statistically higher than the rate in for-profit facilities and [L] means the rate is statistically lower than the rate in for-profit facilities.

Survey deficiencies: To maintain their licensure, nursing homes must meet federal and state regulatory requirements. State survey agencies (e.g., DOH) are required to conduct health inspections of nursing homes every 12 months, on average. The survey inspection covers over 180 regulatory requirements relative to the care, room, board and other services provided to residents. When the inspection team finds that a nursing home does not meet a specific regulatory standard, it issues a deficiency citation. The facility is expected to correct the deficiency within a certain timeframe, and the state and/or federal government can impose fines and invoke other enforcement actions. The state is currently in the process of implementing a new survey protocol known as the Quality Indicator Survey (QIS), which does not lend itself to valid comparisons to the previous process.

Based on a review of the most recent 500 non-QIS surveys conducted throughout New York State, we found that the typical FP facility had 16% more deficiencies per 100 beds than its NFP counterpart (See Table 10). This finding is consistent with the recent GAO report that found NHs owned by private investment companies and other FP homes had a higher number of survey deficiencies than NFP facilities (GAO, 2011).

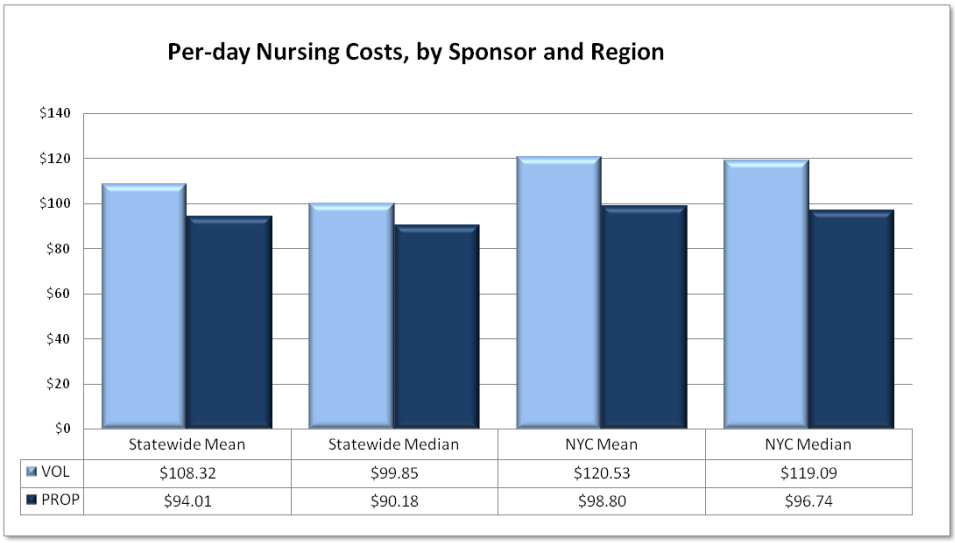
Table 10: Survey Deficiency Citation Rates

	NFP	FP	Public
Average # deficiencies per 100 beds (excluding QIS surveys)	3.4	3.9	2.4

Facility spending: Based on analysis of audited Medicaid cost reports from 2009, we conclude that NFP nursing homes spend more, on average, than their FP counterparts in areas that would suggest an enhanced quality of life for residents.

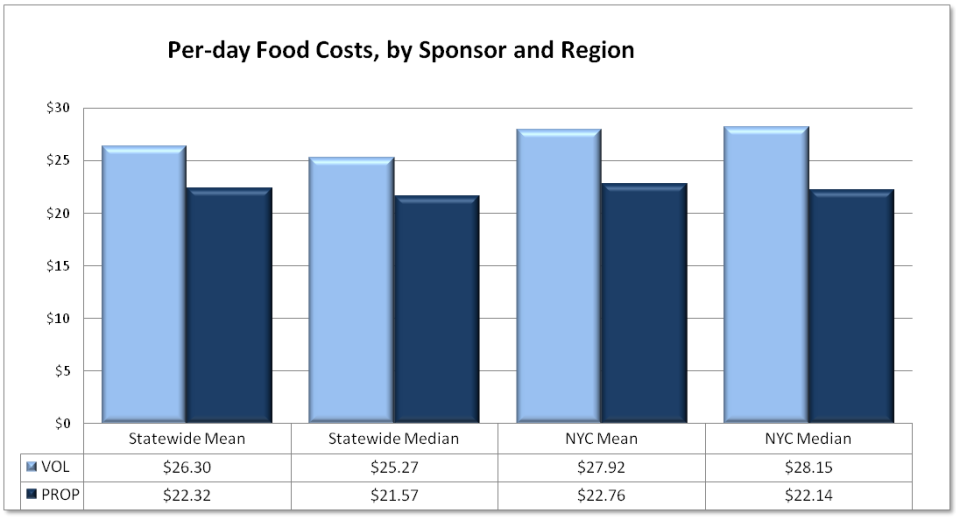
On average, NFP homes devoted 15.2% more spending to direct caregivers (i.e., RNs, LPNs and CNAs) than FP facilities on a per resident day basis (Figure 5). This is largely a function of the higher hours of staffing and greater skill mix present in NFPs discussed previously.

Figure 5: Median and Mean Nursing Costs



Another area where we found a significant difference in average cost was resident food. Mealtime is an important part of the residents' day, and whether the food is appetizing, of good quality and nutritious is a determinant of quality of life and health status. As shown in Figure 6, we found that NFPs spent 17.8% more, on average, than FPs on resident meals.

Figure 6: Resident Food Costs Statewide and Regionally



We identified other cost centers related to resident quality of life and determined the average cost per resident day for NFP and FP facilities. The results are summarized below:

1. *Housekeeping:* NFP spending was 7.4% higher than the corresponding FP figure.
2. *Social services:* NFP spending was 9.2% higher than the corresponding FP figure.
3. *Laundry and linen:* NFP spending was 7.8% higher than the corresponding FP figure.
4. *Activities:* NFP spending was 1.9% higher than the corresponding FP figure.
5. *Plant operations:* NFP spending was 4.5% lower than the corresponding FP figure.

As indicated, NFP homes devoted more funds to the first four areas and exhibited somewhat lower spending on plant operations.

Culture change: According to the Pioneer Network, "culture change" refers to the national movement to transform senior services, based on person-directed values and practices where the perspectives of older adults and those working with them are considered and respected. Core person-directed values are choice, dignity, respect, self-determination and purposeful living. Culture change transformation may require changes in organization practices, physical environments and workforce roles (www.pioneernetwork.org). Studies have shown that culture change organizations are more likely to have higher staff retention rates, higher rates of resident and family satisfaction, and provide more hours of direct care per resident than non-culture change organizations (Kane et al, 2007; Doty et al, 2008).

NFP organizations are much more likely to adopt culture change initiatives than FP operators. For example approximately 98% of the "Green House" facilities nationally and 100% in New York State have been developed by NFP organizations. The Green House model significantly redesigns the philosophy of life and care, physical environment, and operational approach by substituting small, flexible, organizationally flat, and customer-driven models of care for institutional settings.

Outcomes

Hospitalization rates: Not only are hospitalizations of nursing home residents costly to Medicaid and Medicare, they also increase the risk of infections, functional declines, transfer trauma and other adverse outcomes. Consequently, potentially avoidable hospitalizations are an indicator of poor nursing home quality of care and are increasingly a target of quality improvement efforts.

As detailed in Table 11, we analyzed nursing home resident hospitalizations and calculated hospitalization rates based on two different measures:

1. *The percentage of residents who were hospitalized within a one-year period or since their admission to the nursing home, whichever came first.* Based on this measure, for short-stay residents (LOS <=100 days), the hospitalization rate at FP facilities averaged

8.2%, which was 34.4% higher than the corresponding NFP figure. For long-stay residents (LOS >100 days), FP facilities averaged a rate that was 28.2% higher than the NFP rate.

2. *The average number of hospitalizations per 10,000 resident days after adjusting for resident age.* For short-stay residents, the hospitalization rate under this measure was 32% higher in FP facilities than in NFP homes. Among the long-stay population, the average FP facility hospitalization rate was 25% higher than the corresponding NFP rate.

Table 11: Statewide Nursing Home Hospitalization Rates

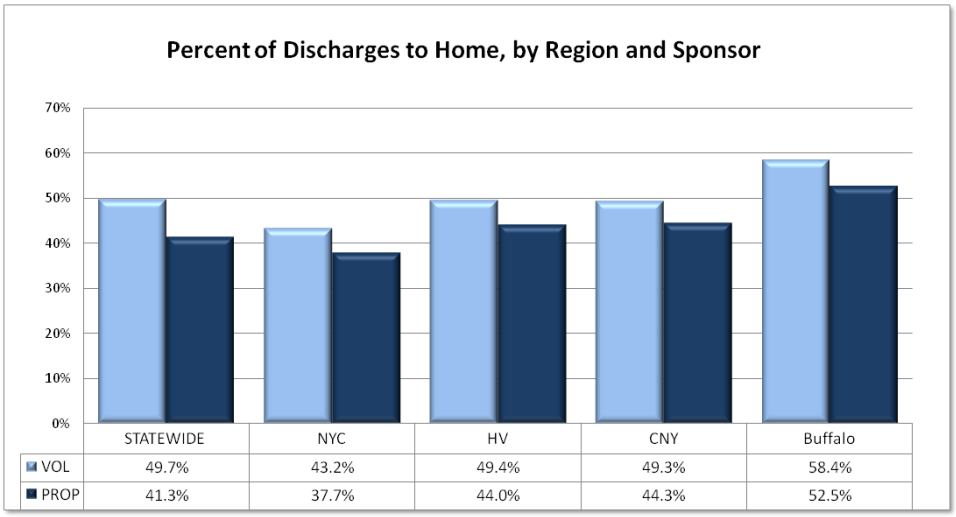
Measure	NFP	FP	Public	All
% of residents hospitalized in past year or since admission, whichever came first:				
- Length of stay <= 100 days	6.1	8.2	7.0	7.2
- Length of stay > 100 days	24.5	31.4	23.2	27.7
Hospitalization rate: number of hospitalizations per 10,000 resident days (age-adjusted):				
- Length of stay <= 100 days	20.0	26.5	19.7	23.2
- Length of stay > 100 days	10.3	12.9	8.2	11.3

New York's Medicaid program reimburses a nursing home based on its per diem rate to hold a bed for a Medicaid recipient who has been hospitalized, provided certain criteria are met (e.g., the person is expected to return within a certain period, the nursing home has a high occupancy rate, etc.). We analyzed the prevalence of such Medicaid "bed hold" days billed in connection with hospitalizations, as a proportion of each 1,000 total Medicaid resident days billed. On this basis, FP facilities billed 11.8 bed hold days per 1,000 Medicaid days, which was 24.2% higher than the corresponding rate (9.5) in NFP homes. This is relatively consistent with the above findings regarding hospitalization rates.

Discharges to Home: Discharge of a resident from the nursing home back to the community is considered a positive outcome of care, most often indicative of an improvement in the individual's clinical and/or functional status. Frequently, such individuals are admitted to the nursing home following an acute care stay, and have a short-term goal of discharge. They receive restorative therapies, nursing care and other specialized services while in the nursing home.

We found that a greater proportion of residents are discharged to home from NFP homes than from FP facilities. Based on 2009 Medicaid Cost Report data, 49.7% of the discharges from NFP homes were to home, while the corresponding FP percentage was 41.3%, which amounts to a 20% difference. As shown in Figure 7, the same trend exists regionally.

Figure 7: Resident Discharges to Home



Length of stay: The length of time an individual spends in a nursing home is an obvious outcome of care, but is likely the result of a multiplicity of factors including the nature of the care provided (i.e., post-acute, long-term or end-of-life), the individual's functional and clinical status, quality of care provided and availability of alternative care settings. It is beyond the scope of this report to systematically assess and reach definitive conclusions about whether observed differences in LOS between sponsorship groups are the result of quality differences and, if so, to what degree.

With those caveats in mind, we identified the percentages of short-stay and long-stay residents and corresponding lengths of stay for each of these groups by sponsorship group, which are summarized in Table 12. NFP homes had a 5.5% greater proportion of short-stay residents (LOS <= 100 days) than their FP counterparts (see Figure 20). Median lengths of stay were shorter in NFP homes than their FP counterparts by 6.7% for short-stay residents and 3.7% for long-stay residents. Tables A8 and A9 in Appendix A provides regional breakouts.

Table 12: Statewide length of stay (LOS) (July 2010)

Indicator	NFP	FP	Public	All
Percentage of residents with LOS <= 100 days	21.2	20.1	13.4	19.9
Percentage of residents with LOS > 100 days	78.8	79.9	86.6	80.1
Median LOS of residents with LOS <= 100 days	28	30	40	29
Median LOS of residents with LOS > 100 days	854	887	932	876

Quality measures: As previously noted, we selected a total of 10 of the CMS QMs for analysis and evaluation, 6 of which are considered outcome measures. We examined these QMs for statistically significant differences based on facility sponsorship: (1) prevalence of falls; (2) residents who have become more depressed or anxious; (3) residents with a urinary tract

infection; (4) pressure ulcers in high-risk long-stay residents; (5) pressure ulcers in low-risk long-stay residents; and (6) pressure ulcers in short-stay residents (risk-adjusted).

As shown in Table 13 below, we found no statistically significant differences between FP and NFP facilities in the prevalence of pressure ulcers among low-risk long-stay residents or short-stay residents. However, NFP facilities were associated with lower percentages of residents with a urinary tract infection (11% lower) and high-risk long-stay residents with pressure ulcers (12.5% lower). Conversely, FP facilities had lower rates of falls (9.6% lower) and lower rates of residents becoming more depressed or anxious (9.5% lower) than their NFP counterparts. The rates of all 10 CMS process and outcome quality measures by region are presented in Table A10 in Appendix A.

Table 13: Outcome Quality Measures

Quality Measure	NFP	FP	Public
Prevalence of falls	10.63[H]	9.61	11.04[H]
Residents who have become more depressed or anxious	14.14[H]	12.79	13.58
Residents with a urinary tract infection	6.91[L]	7.76	6.98
High-risk residents with pressure ulcers	11.45[L]	13.09	9.51[L]
Low-risk residents with pressure ulcers	1.85	2.10	2.41
Short-stay residents with pressure ulcers (risk-adjusted)	18.70	19.52	19.37

Note: [H] means the rate is statistically higher than the rate in for-profit facilities and [L] means the rate is statistically lower than the rate in for-profit facilities.

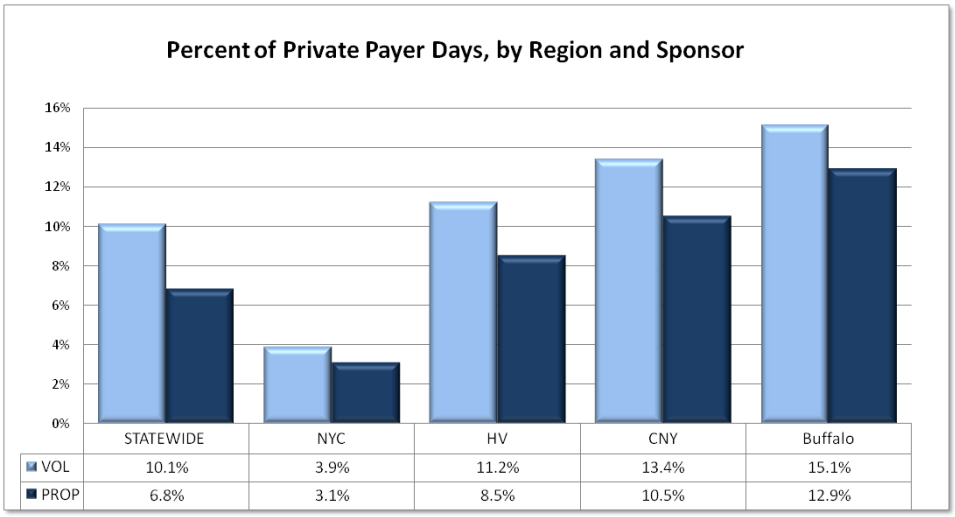
Private payment: Nursing home care is very costly, and the majority of it is paid for by government-financed programs (i.e., Medicaid, Medicare and Veteran's Administration). The remainder is paid for privately mainly through out-of-pocket sources and long term care insurance. According to an October 2011 survey, the average cost of nursing home care to privately paying individuals in New York State is between $344 and $358 per day, or over $125,000 per year (Metlife Mature Market Institute, 2011).

Individuals who can afford to pay out-of-pocket for their care and/or have long term care insurance will likely have more facilities to choose from to meet their care needs. Given the high cost of care, these individuals have a strong financial incentive to select a provider based on their preferences. These preferences relate to the facility's reputation, quality of care, location, proximity, affiliation (i.e., religious, community, fraternal), accommodations, staffing and other factors.

The previous finding on nursing home payer mix under "Structure: Resident-Level Characteristics" was based on a July 2010 snapshot. We also examined private pay days using annual reported data for 2009. As shown in Figure 8, the proportion of private pay days in NFP homes was 48.5% higher than in FP facilities. The trend is consistent regionally as well,

indicating that privately-paying consumers are more likely on average to select NFP facilities based on their preferences.

Figure 8: Prevalence of Private Payment



Discussion

While previous literature has tended to support the premise that NFP nursing homes provide higher quality services overall than their FP counterparts, there is continued debate in the research community and among policymakers as to whether sponsorship is predictive of overall quality of care.

Through analyses of available secondary data sources on resident characteristics, admission/discharge activity, survey inspection results, quality measures, staffing and facility characteristics, we set out to determine whether there are observable indications of differences in quality among NYS nursing homes based on sponsorship. We based our analysis on a widely regarded analytical framework that health care quality is attributable to the following interacting elements: (1) structure; (2) process; and (3) outcomes.

Our most significant finding relative to the structure of care is that NFP nursing homes exhibited higher levels of staffing than FP facilities, based on 6 measures. On average, NFP homes reported higher RN, LPN and nurse aide staffing hours per day and a higher skill mix than FP facilities. These differences, which were significant, may be understated since FP facilities reported a higher average resident acuity than their NFP counterparts which would suggest a need for higher staffing.

From a process standpoint, we found that NFP facilities exhibited statistically significant lower risk-adjusted rates of antipsychotic use. In addition, FP facilities exhibited higher rates of survey deficiencies than NFP homes. Studies have shown that inadequate staffing levels are related to

more and severe survey deficiencies (Kim, Harrington, and Greene, 2008; Hyer, Kalie, et al, 2011; Schnelle, Simmons et al, 2004), and that there is an association between staffing and the use of antipsychotic drugs (Kim and Whall, 2006). Our findings tend to support the conclusions of these studies.

In terms of outcomes, our most significant conclusion is that hospitalization rates are considerably higher in FP facilities than in NFP homes. Avoiding unnecessary hospitalizations is a policy imperative of government, payers and advocates due to the associated clinical, functional, psychological, cost and quality implications. Higher hospitalization rates are related to lower staffing levels, especially skilled staffing (Grabowski, Stewart et al, 2008). The literature also generally supports the conclusion that the profit-maximizing motivation of FP homes can increase the likelihood of resident hospitalizations (Grabowski et al, 2007).

According to one recent study, $972 million was spent on hospital admissions from nursing homes in New York during 2004 and $223.8 million (23%) of that amount reflects potentially avoidable admissions for conditions amenable to care in a nursing home setting (Grabowski, O'Malley et al, 2007). In an era of relatively fixed governmental funding and growing demands, the financial consequences of avoidable hospitalizations take on added significance.

Our analysis of other outcomes of care produced less definitive results than the differences in hospitalization rates noted above. Findings related to both higher rates of resident discharges to home and shorter lengths of stay in NFP homes are suggestive of quality differences, but would need to be examined much more closely to determine the potential effects of resident acuity and other quantitative and qualitative factors on these outcomes. Our analysis of selected CMS quality indicators produced mixed results. Further examination of these QMs could focus on validating the reporting of certain resident conditions and accounting for significant risk factors associated with the likelihood of these outcomes.

There are inherent limitations in the analyses discussed in this report and the resulting conclusions related to quality of care differences between NFP and FP nursing homes. These include the following:

1. *The data that were used.* Much of the data upon which the analysis relied is facility reported and unverified. Facilities are required to attest to certain data and to obtain third party review of other data, but we did not systematically verify the veracity of the data used.
2. *No agreed-upon definition of quality.* No standard definition of nursing home quality of care exists, nor are there standardized approaches for assessing the measures of quality or their effects on the final outcomes.
3. *Partial risk adjustment.* Many of the measures used herein are not at all risk-adjusted, or are only partially risk-adjusted for factors such as age. Incorporating empirically

validated risk adjustments into the analyses could yield different comparative values and conclusions.

4. *Cause and effect.* This study hypothesized that higher staffing and other structural and process elements lead to reduced rates of hospitalization and other outcomes of care. While our observational findings suggest these relationships and the literature supports certain cause and effect relationships among certain of these elements, we did not use statistical methods to prove causality.
5. *Generalization.* Given variations in the source data and results, any conclusions reached that relate to overall differences by sponsor do not translate effectively to the facility-level. Most certainly, there are individual FP facilities that provide excellent quality care, and individual NFP facilities that do not.

Nonetheless, our overall findings suggest that sponsorship is a significant variable in explaining the outcomes of nursing home care. While not a focus of this examination, region-to-region and facility-to-facility variations exist and may be significant. Further analysis is suggested to explore the inter-relationships between these findings, their broader system implications as well as the associated public policy ramifications.

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Appendix A – Detailed Regional Analyses

Table A1: Market share (July 2010)

Region	NFP	FP	Public	Total
Capital District Regional Office	41.8%	36.4%	21.8%	100%
Central New York Regional Office	54.7%	34.6%	10.7%	100%
Metropolitan Area Regional Office - Long Island	18.9%	73.5%	7.6%	100%
Metropolitan Area Regional Office - New Rochelle	43.1%	46.8%	10.0%	100%
Metropolitan Area Regional Office - New York City	44.4%	49.9%	5.7%	100%
Western Regional Office – Buffalo	39.0%	51.7%	9.3%	100%
Western Regional Office - Rochester	57.7%	26.4%	15.9%	100%
All	42.1%	48.5%	9.4%	100%

Data Source: MDS 2.0, 2010

Table A2: Average age of residents by sponsorship and region (July 2010)

Region	NFP	FP	Public	All
Length of stay <= 100 days				
Capital District Regional Office	82.8	79.1	82.6	81.2
Central New York Regional Office	81.7	78.7	82.6	80.7
Metropolitan Area Regional Office - Long Island	80.3	79.1	73.9	79.2
Metropolitan Area Regional Office - New Rochelle	80.6	77.0	79.3	78.8
Metropolitan Area Regional Office - New York City	75.4	74.9	69.6	75.0
Western Regional Office – Buffalo	79.9	79.6	80.0	79.7
Western Regional Office - Rochester	81.0	79.3	78.4	80.2
All	78.7	77.3	77.7	78.0
Length of stay > 100 days				
Capital District Regional Office	84.4	82.0	83.2	83.3
Central New York Regional Office	84.0	82.1	81.9	83.1
Metropolitan Area Regional Office - Long Island	83.8	81.2	74.0	81.0
Metropolitan Area Regional Office - New Rochelle	83.5	79.9	82.6	81.7
Metropolitan Area Regional Office - New York City	78.3	76.8	70.2	77.0
Western Regional Office – Buffalo	83.0	82.5	83.8	82.9
Western Regional Office - Rochester	84.4	82.6	78.8	82.9
All	81.6	79.6	78.4	80.3

Data Source: MDS 2.0, 2010

Table A3: Prevalence of common diseases/conditions

Region	NFP	FP	Public	All
Overall New York State				
Congestive heart failure	18.8%	18.2%	16.2%	18.3%
Emphysema/COPD	14.8%	18.4%	16.8%	16.7%
Diabetes mellitus	31.3%	34.1%	32.0%	32.7%
Asthma	3.8%	3.7%	2.6%	3.6%
Hypertension	67.8%	69.8%	66.4%	68.7%
Capital District Regional Office				
Congestive heart failure	15.3%	15.7%	15.4%	15.5%
Emphysema/COPD	16.5%	19.9%	20.1%	18.5%
Diabetes mellitus	26.5%	32.3%	29.6%	29.3%
Asthma	2.7%	3.0%	2.4%	2.7%
Hypertension	63.7%	65.3%	68.7%	65.4%
Central New York Regional Office				
Congestive heart failure	19.0%	17.6%	19.9%	18.6%
Emphysema/COPD	20.6%	21.1%	21.0%	20.8%
Diabetes mellitus	30.6%	32.5%	29.6%	31.1%
Asthma	3.4%	2.6%	1.7%	2.9%
Hypertension	68.9%	66.8%	66.7%	68.0%
Metropolitan Area Regional Office - Long Island				
Congestive heart failure	21.4%	19.7%	12.3%	19.4%
Emphysema/COPD	16.0%	19.9%	14.5%	18.8%
Diabetes mellitus	26.8%	31.3%	31.7%	30.5%
Asthma	2.6%	3.6%	2.5%	3.3%
Hypertension	72.6%	70.0%	61.6%	69.9%
Metropolitan Area Regional Office - New Rochelle				
Congestive heart failure	21.8%	19.7%	20.2%	20.7%
Emphysema/COPD	16.2%	19.7%	22.1%	18.4%
Diabetes mellitus	28.7%	31.9%	33.5%	30.7%
Asthma	2.3%	3.2%	3.1%	2.8%
Hypertension	65.1%	69.0%	70.7%	67.5%
Metropolitan Area Regional Office - New York City				
Congestive heart failure	17.5%	16.3%	9.3%	16.4%
Emphysema/COPD	11.1%	15.5%	7.2%	13.1%
Diabetes mellitus	34.6%	37.7%	34.3%	36.1%
Asthma	4.9%	4.6%	2.4%	4.6%
Hypertension	68.3%	70.7%	62.7%	69.2%

Data Source: MDS 2.0, 2010

Table A3: Prevalence of common diseases/conditions (Continued)

Region	NFP	FP	Public	All
Western Regional Office - Buffalo				
Congestive heart failure	22.7%	22.1%	26.8%	22.8%
Emphysema/COPD	18.3%	21.4%	24.8%	20.5%
Diabetes mellitus	29.9%	30.8%	32.5%	30.6%
Asthma	3.3%	2.4%	2.7%	2.8%
Hypertension	71.0%	71.7%	67.7%	71.0%
Western Regional Office - Rochester				
Congestive heart failure	17.7%	21.1%	18.5%	18.7%
Emphysema/COPD	14.8%	21.0%	16.8%	16.7%
Diabetes mellitus	29.6%	33.2%	32.1%	30.9%
Asthma	3.6%	3.0%	3.7%	3.4%
Hypertension	65.6%	71.1%	69.0%	67.6%

Data Source: MDS 2.0, 2010

Table A4: Percentage of residents by payor (July 2010)

Region	NFP	FP	Public	All
Overall New York State				
Medicaid	71.8%	75.7%	76.1%	74.1%
Medicare	14.1%	14.1%	9.3%	13.6%
Other	14.1%	10.3%	14.6%	12.3%
Capital District Regional Office				
Medicaid	63.8%	67.7%	75.2%	67.7%
Medicare	11.5%	15.6%	9.2%	12.5%
Other	24.8%	16.7%	15.5%	19.8%
Central New York Regional Office				
Medicaid	70.0%	72.9%	74.8%	71.5%
Medicare	15.5%	14.7%	9.5%	14.6%
Other	14.5%	12.5%	15.7%	14.0%
Metropolitan Area Regional Office - Long Island				
Medicaid	64.7%	72.2%	83.1%	71.6%
Medicare	20.5%	17.6%	8.3%	17.5%
Other	14.8%	10.2%	8.6%	10.9%
Metropolitan Area Regional Office - New Rochelle				
Medicaid	69.2%	72.8%	71.8%	71.1%
Medicare	18.2%	17.4%	13.1%	17.3%
Other	12.7%	9.8%	15.1%	11.6%
Metropolitan Area Regional Office - New York City				
Medicaid	79.3%	81.7%	77.9%	80.4%
Medicare	12.9%	12.0%	5.2%	12.0%
Other	7.8%	6.3%	17.0%	7.6%
Western Regional Office - Buffalo				
Medicaid	63.7%	71.5%	72.2%	68.5%
Medicare	11.4%	9.6%	11.1%	10.4%
Other	24.9%	19.0%	16.7%	21.1%
Western Regional Office - Rochester				
Medicaid	65.1%	69.4%	76.2%	68.0%
Medicare	12.4%	14.6%	12.6%	13.0%
Other	22.5%	16.0%	11.2%	19.0%

Data Source: MDS 2.0, 2010

Table A5: Staff hours and skill mix

Region	NFP	FP	Public	All
Overall New York State				
Number of RN hours per resident per day	0.71	0.56	0.67	0.63
Number of LPN/LVN hours per resident per day	0.82	0.77	0.86	0.80
Number of CNA hours per resident per day	2.39	2.18	2.62	2.30
Total staff hours (RN+LPN/LVN+CNA) per resident per day	3.93	3.52	4.15	3.73
Staff mix (RN/Total staff hours*100)	17.8%	16.0%	15.7%	16.7%
Capital District Regional Office				
Number of RN hours per resident per day	0.74	0.53	0.59	0.63
Number of LPN/LVN hours per resident per day	0.84	0.94	0.94	0.90
Number of CNA hours per resident per day	2.45	2.17	2.57	2.36
Total staff hours (RN+LPN/LVN+CNA) per resident per day	4.03	3.64	4.10	3.89
Staff mix (RN/Total staff hours)	18.1%	14.8%	14.2%	16.2%
Central New York Regional Office				
Number of RN hours per resident per day	0.58	0.50	0.57	0.55
Number of LPN/LVN hours per resident per day	0.95	0.94	1.03	0.95
Number of CNA hours per resident per day	2.41	2.12	2.71	2.31
Total staff hours (RN+LPN/LVN+CNA) per resident per day	3.95	3.56	4.31	3.82
Staff mix (RN/Total staff hours)	14.7%	14.3%	12.9%	14.5%
Metropolitan Area Regional Office - Long Island				
Number of RN hours per resident per day	0.89	0.63	0.67	0.68
Number of LPN/LVN hours per resident per day	0.89	0.72	0.67	0.75
Number of CNA hours per resident per day	2.50	2.26	2.45	2.32
Total staff hours (RN+LPN/LVN+CNA) per resident per day	4.28	3.62	3.79	3.75
Staff mix (RN/Total staff hours)	20.4%	17.2%	16.9%	17.8%
Metropolitan Area Regional Office - New Rochelle				
Number of RN hours per resident per day	0.77	0.61	1.02	0.71
Number of LPN/LVN hours per resident per day	0.72	0.79	0.59	0.75
Number of CNA hours per resident per day	2.35	2.16	2.64	2.28
Total staff hours (RN+LPN/LVN+CNA) per resident per day	3.84	3.56	4.25	3.73
Staff mix (RN/Total staff hours)	19.3%	17.3%	22.3%	18.6%
Metropolitan Area Regional Office - New York City				
Number of RN hours per resident per day	0.77	0.52	0.65	0.62
Number of LPN/LVN hours per resident per day	0.60	0.57	0.62	0.58
Number of CNA hours per resident per day	2.36	2.11	2.54	2.22
Total staff hours (RN+LPN/LVN+CNA) per resident per day	3.72	3.20	3.81	3.43
Staff mix (RN/Total staff hours)	20.2%	15.9%	17.4%	17.7%

Table A5: Staff hours and skill mix (continued)

Region	NFP	FP	Public	
Western Regional Office – Buffalo				
Number of RN hours per resident per day	0.61	0.57	0.66	0.59
Number of LPN/LVN hours per resident per day	1.02	0.96	1.03	0.99
Number of CNA hours per resident per day	2.34	2.20	2.69	2.30
Total staff hours (RN+LPN/LVN+CNA) per resident per day	3.97	3.73	4.38	3.89
Staff mix (RN/Total staff hours)	15.3%	15.5%	14.8%	15.3%
Western Regional Office – Rochester				
Number of RN hours per resident per day	0.65	0.62	0.57	0.63
Number of LPN/LVN hours per resident per day	1.05	0.99	0.96	1.02
Number of CNA hours per resident per day	2.48	2.39	2.67	2.46
Total staff hours (RN+LPN/LVN+CNA) per resident per day	4.19	4.00	4.21	4.11
Staff mix (RN/Total staff hours)	15.6%	15.4%	13.7%	15.3%

Data Source: Online Survey Certification and Reporting (OSCAR), 2009-10

Table A6: Hospitalization rate: percentage of residents who were hospitalized in the past year or since admission, whichever came first

Region	NFP	FP	Public	All
Length of stay <= 100 days				
Capital District Regional Office	6.5	7.0	6.1	6.6
Central New York Regional Office	3.9	8.4	7.4	5.8
Metropolitan Area Regional Office - Long Island	4.2	8.3	6.6	7.3
Metropolitan Area Regional Office - New Rochelle	8.1	9.1	8.2	8.6
Metropolitan Area Regional Office - New York City	7.2	8.6	4.6	7.8
Western Regional Office - Buffalo	3.7	5.3	7.6	4.7
Western Regional Office - Rochester	5.7	9.7	10.8	7.4
All	6.1	8.2	7.0	7.2
Length of stay > 100 days				
Capital District Regional Office	20.1	27.9	21.9	23.2
Central New York Regional Office	20.9	27.1	17.8	22.7
Metropolitan Area Regional Office - Long Island	26.4	33.0	27.4	31.4
Metropolitan Area Regional Office - New Rochelle	24.7	30.0	28.4	27.6
Metropolitan Area Regional Office - New York City	29.3	36.4	21.6	32.4
Western Regional Office - Buffalo	17.7	17.8	25.2	18.5
Western Regional Office - Rochester	18.6	26.0	22.7	21.2
All	24.5	31.4	23.2	27.7

Data Source: MDS 2.0, 2009-10

Table A7: Hospitalization rate: number of hospitalizations per 10,000 resident days (age-adjusted)

Region	NFP	FP	Public	All
Length of stay <= 100 days				
Capital District Regional Office	21.38	21.81	16.87	20.17
Central New York Regional Office	11.81	26.95	18.00	18.63
Metropolitan Area Regional Office - Long Island	16.22	27.69	17.65	25.12
Metropolitan Area Regional Office - New Rochelle	26.90	30.11	28.45	28.76
Metropolitan Area Regional Office - New York City	23.05	27.48	11.38	24.71
Western Regional Office - Buffalo	12.88	16.89	17.16	15.54
Western Regional Office - Rochester	19.00	29.88	34.66	24.31
All	20.04	26.46	19.72	23.20
Length of stay > 100 days				
Capital District Regional Office	7.38	11.49	8.83	9.12
Central New York Regional Office	8.71	9.68	6.58	8.75
Metropolitan Area Regional Office - Long Island	10.29	14.30	7.79	12.74
Metropolitan Area Regional Office - New Rochelle	10.21	11.79	10.94	11.05
Metropolitan Area Regional Office - New York City	12.22	14.45	8.64	13.04
Western Regional Office - Buffalo	7.12	7.86	9.52	7.78
Western Regional Office - Rochester	7.93	10.88	7.21	8.27
All	10.33	12.91	8.22	11.31

Data Source: MDS 2.0, 2009-10

Table A8: Percentage of residents with length of stay 100 days or less (July 2010)

Region	NFP	FP	Public	All
Capital District Regional Office	16.6	20.7	12.8	17.3
Central New York Regional Office	19.5	18.9	15.0	18.8
Metropolitan Area Regional Office - Long Island	29.6	22.8	13.0	23.3
Metropolitan Area Regional Office - New Rochelle	22.4	21.0	15.2	21.0
Metropolitan Area Regional Office - New York City	21.3	18.8	12.0	19.5
Western Regional Office - Buffalo	22.1	18.7	15.3	19.7
Western Regional Office - Rochester	19.7	22.0	12.3	19.1
All	21.2	20.1	13.4	19.9

Data Source: MDS 2.0, 2009-10

Table A9: Median length of stay (in days) (July 2010)

Region	NFP	FP	Public	All
Length of stay <= 100 days				
Capital District Regional Office	33	33	43	34
Central New York Regional Office	28	33	44	30
Metropolitan Area Regional Office - Long Island	19	28	42	26
Metropolitan Area Regional Office - New Rochelle	28	29	36	29
Metropolitan Area Regional Office - New York City	33	33	43	33
Western Regional Office - Buffalo	21	27	30	26
Western Regional Office - Rochester	29	35	33	30
All	28	30	40	29
Length of stay > 100 days				
Capital District Regional Office	846	784	903	832
Central New York Regional Office	744	778	852	772
Metropolitan Area Regional Office - Long Island	868	870	1034	879
Metropolitan Area Regional Office - New Rochelle	827	904	920	873
Metropolitan Area Regional Office - New York City	958	1000	1056	985
Western Regional Office - Buffalo	746	790	856	776
Western Regional Office - Rochester	804	767	926	810
All	854	887	932	876

Data Source: MDS 2.0, 2009-10

Table A10: Average rates of CMS quality measures by region

Quality Measure	NFP	FP	Public	All
Prevalence of falls				
All	10.63 H	9.61	11.04 H	10.14
Capital District Regional Office	12.53	14.34	12.35	13.16
Central New York Regional Office	15.03	13.90	16.04	14.66
Metropolitan Area Regional Office - Long Island	8.16	9.05	7.93	8.83
Metropolitan Area Regional Office - New Rochelle	9.75	8.76	8.13	9.18
Metropolitan Area Regional Office - New York City	6.16 H	5.33	5.03	5.66
Western Regional Office - Buffalo	10.22 L	11.82	12.04	11.18
Western Regional Office - Rochester	15.54	15.46	12.07 L	15.16
Residents who have become more depressed or anxious				
All	14.14 H	12.79	13.58	13.42
Capital District Regional Office	15.87 H	11.91	14.05	14.10
Central New York Regional Office	17.62 H	14.90	20.72 H	16.77
Metropolitan Area Regional Office - Long Island	12.24	13.37	7.43 L	12.92
Metropolitan Area Regional Office - New Rochelle	12.29	12.57	13.77	12.51
Metropolitan Area Regional Office - New York City	12.49	11.34	7.48 L	11.71
Western Regional Office - Buffalo	12.23	13.08	12.89	12.71
Western Regional Office - Rochester	16.27	15.23	15.47	15.75
Risk-Adjusted Indwelling Catheter				
All	4.37	4.20	6.01 H	4.39
Capital District Regional Office	5.18 L	7.16	6.80	6.19
Central New York Regional Office	6.80	6.02	8.01 H	6.58
Metropolitan Area Regional Office - Long Island	4.98	4.33	4.55	4.47
Metropolitan Area Regional Office - New Rochelle	3.76	3.76	5.80 H	3.88
Metropolitan Area Regional Office - New York City	2.13 L	2.76	1.99 L	2.48
Western Regional Office - Buffalo	5.55	5.36	7.13 H	5.60
Western Regional Office - Rochester	4.39 H	3.25	5.68 H	4.03
Residents with a urinary tract infection				
All	6.91 L	7.76	6.98	7.35
Capital District Regional Office	8.04 L	9.76	6.46 L	8.39
Central New York Regional Office	6.86 L	8.90	8.81	7.75
Metropolitan Area Regional Office - Long Island	7.43	8.70	4.06 L	8.27
Metropolitan Area Regional Office - New Rochelle	7.31	8.03	4.65 L	7.50
Metropolitan Area Regional Office - New York City	5.50	6.08	2.67 L	5.75
Western Regional Office - Buffalo	7.52	6.36	10.06 H	7.17
Western Regional Office - Rochester	7.85 L	10.29	9.88	9.09
Prevalence of antipsychotic use, in the absence of psychotic or related conditions: High risk				
All	41.38 L	45.86	43.77	43.85
Capital District Regional Office	41.38	47.22	43.63	43.91
Central New York Regional Office	44.51	45.16	34.73	44.17
Metropolitan Area Regional Office - Long Island	47.44	49.70	50.97	49.37
Metropolitan Area Regional Office - New Rochelle	42.79	48.67	32.07 L	45.04
Metropolitan Area Regional Office - New York City	43.45	48.59	50.59	46.60
Western Regional Office - Buffalo	28.08	29.12	46.41 H	30.29
Western Regional Office - Rochester	41.31	46.71	48.94	44.35

Data Source: MDS 2.0, 2009-2010

Table A10: Average rates of CMS quality measures by region (continued)

Prevalence of antipsychotic use, in the absence of psychotic or related conditions: Low risk				
All	14.52 L	16.95	14.92 L	15.78
Capital District Regional Office	14.67	16.82	15.41	15.59
Central New York Regional Office	16.54	16.15	11.76 L	16.11
Metropolitan Area Regional Office - Long Island	16.11	16.95	15.51	16.73
Metropolitan Area Regional Office - New Rochelle	11.80 L	17.41	10.77 L	14.45
Metropolitan Area Regional Office - New York City	15.96 L	19.47	13.56 L	17.86
Western Regional Office - Buffalo	9.72	10.60	17.28 H	10.85
Western Regional Office - Rochester	15.39	16.97	18.10	16.33
Residents who were physically restrained				
All	3.06	2.45	3.32 H	2.77
Capital District Regional Office	7.09 H	2.49	5.69 H	5.16
Central New York Regional Office	3.58	3.83	4.41	3.72
Metropolitan Area Regional Office - Long Island	1.70 L	3.34	3.25	3.02
Metropolitan Area Regional Office - New Rochelle	2.37	2.98	0.99 L	2.58
Metropolitan Area Regional Office - New York City	2.58	1.82	0.48 L	2.10
Western Regional Office - Buffalo	2.39	1.96	3.06	2.24
Western Regional Office - Rochester	1.43	0.99	2.32 H	1.33
High-risk residents with pressure ulcers				
All	11.45 L	13.09	9.51 L	12.15
Capital District Regional Office	9.22	9.89	7.60 L	9.18
Central New York Regional Office	9.54 L	11.82	7.98 L	10.31
Metropolitan Area Regional Office - Long Island	13.04	14.91	12.14	14.43
Metropolitan Area Regional Office - New Rochelle	11.37	12.63	12.64	12.05
Metropolitan Area Regional Office - New York City	14.56	15.29	11.15 L	14.88
Western Regional Office - Buffalo	10.66	10.16	8.11 L	10.17
Western Regional Office - Rochester	9.55	10.23	10.98	9.98
Low-risk residents with pressure ulcers				
All	1.85	2.10	2.41	2.02
Capital District Regional Office	2.29	3.20	1.56	2.50
Central New York Regional Office	1.99	2.08	3.40	2.11
Metropolitan Area Regional Office - Long Island	4.19	2.52	1.67	2.81
Metropolitan Area Regional Office - New Rochelle	1.15	1.69	2.70	1.50
Metropolitan Area Regional Office - New York City	1.32	1.74	1.03 L	1.55
Western Regional Office - Buffalo	1.62	2.24	1.96	1.96
Western Regional Office - Rochester	2.43	1.97	5.12 H	2.51
Risk-Adjusted Short-Stay Residents with Pressure Ulcers				
All	18.70	19.52	19.37	19.17
Capital District Regional Office	19.71	15.43	16.54	17.54
Central New York Regional Office	16.61	17.25	15.10	16.76
Metropolitan Area Regional Office - Long Island	21.28	22.13	21.40	21.93
Metropolitan Area Regional Office - New Rochelle	19.31	20.37	17.42	19.69
Metropolitan Area Regional Office - New York City	20.25	21.96	25.51	21.39
Western Regional Office - Buffalo	16.68	16.25	19.65	16.74
Western Regional Office - Rochester	17.49	14.58	23.97 H	16.90

Data Source: MDS 2.0, 2009-10

For more information, or to speak with a member of LeadingAge New York call 518.867.8383.

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