

**A REVIEW OF NURSING HOME
RESIDENT CHARACTERISTICS IN OHIO:
TRACKING CHANGES FROM 1994-2004**

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March 2005

This report was funded in part by the Ohio Long-Term Care Project through the Ohio Board of Regents and in part from a grant from the Ohio Health Care Association, the Ohio Academy of Nursing Homes and the Association of Ohio Philanthropic Homes for the Aged.

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FAST FACTS

Fewer residents are cared for in certified nursing homes in 2004 than in 1994. During that period the number of residents dropped by 9.2% from 81,400 to 73,900.

On average nursing home residents are younger today than they were ten years earlier. The proportion of nursing home residents under the age of 65 has doubled from 7 to 14% and the average age has dropped from 83 to 79.

Nursing home residents are more disabled in 2004 than they were ten years earlier. Residents have more activity of daily living impairments and are more likely to be cognitively impaired.

Almost 4.5% of nursing home residents (3293) do not meet the Medicaid intermediate level of care criteria. This represents a major drop from 1994 when 8.2% of residents (6696) did not meet level of care.

Residents who do not meet level of care eligibility are significantly younger than the overall resident population (33% compared to 11%).

About two-thirds of those not meeting level of care have a mental health disorder among other conditions, with depression being the most prevalent diagnosis.

Just under 3% of nursing home residents are classified as having lower care needs and could possibly be served more appropriately in assisted living or in-home care settings. These residents are much more likely to have good cognitive ability and are much less likely to be incontinent.

More than one-half of this lower care needs group is over age 85 and one-half have three or more activity limitations.

Background

Most citizens are aware of the considerable changes that have occurred in the health care arena over the past two decades. From shorter hospital stays, to the ever increasing popularity of outpatient surgeries, the world of acute care services is barely recognizable in comparison to earlier times. Less noticeable to the general public are the dramatic changes to the world of long-term care. Major shifts in the Medicare hospital reimbursement system increased the number of short-term nursing home residents, and home care services and assisted living residential options have expanded significantly: as a result, the role of the nursing home in the United States is being re-defined. This briefing paper presents the profile of Ohio nursing home residents in both 2004 and 1994, and describes trends over the past decade. This work also examines the complex question of whether there are nursing home residents who could be served in alternative settings.

METHODS

Data for this analysis comes from the Nursing Home Minimum Data Set (MDS), Resident Assessment Instrument. Assessments, which are conducted on each resident of Medicaid and/or Medicare certified facilities in Ohio, provide detailed information on the demographic, health, and functional characteristics of nursing home residents. The assessments for residents are compiled quarterly. We used Ohio's Medicaid Assessment Selection Criteria for Rate Setting to select the assessment of each resident. MDS information for those short stay residents who left a facility up to two weeks after the end of the quarter is also included in the analysis.

In order to examine who met the level of care eligibility criteria (LOC)¹, we

¹ "Level of care" (LOC) is the designation describing a person's functional levels and nursing needs pursuant to the criteria set forth in rules 5101:3-3-06, 5101:3-3-07 and 5101:3-3-08 Ohio Administrative Code.

applied the Medicaid intermediate level of care criteria to those residents who were in Ohio nursing homes in December 1994 and June 2004. Entry criteria require an applicant to have severe functional or cognitive impairments, or a combination of functional and health impairments. Although all prospective nursing home residents receive a pre-admission review either in-person or via a paper review, this analysis is based on the MDS, which is more systematic and comprehensive data source than the pre-admission review data. It should be emphasized that about 90% of the individuals in this sample had been residents for 90 days or longer. In this study we did not compare pre-admission review level of care findings to the MDS assessments.

RESULTS

Resident Characteristics

The changes in hospital discharge practices have resulted in a dramatic increase in the number of short-term residents funded by the Medicare program. A 2001 study of Ohio nursing homes found that 27,000 newly admitted residents stayed two weeks or less and slightly more than one-half of all new admissions were discharged within three months. Between 1992 and 2001 the number of Medicare funded admissions in Ohio increased from just over 30,000 to over 90,000 and the total number of admissions increased from 71,000 to 150,000. During the same time period the number of discharges increased from 68,000 to 142,000 (Mehdizadeh and Applebaum, 2003). The majority of discharged residents (80%) went back into the community. Other system changes such as the increased supply of public and private home care services, and the rapid expansion of assisted living options have combined to create a dynamic long-term care system.

In this context we examine the demographic and functional characteristics of Ohio

nursing home residents. Data presented in Table 1 provide a snap-shot of residents in both 1994 and 2004. Several noteworthy differences are identified in this comparison. On average, nursing home residents are younger in 2004 than ten years earlier; the average age dropped from just over 83 to 79.4. Of even greater interest is the increasing number of residents who are under age 65. In 2004, over 14% of residents were under age 65; in 1994 the corresponding number was less than 7%. In addition to an increase in younger residents in need of short term care, 2004 residents were also less likely to be women.

Functional characteristics also show changes between the two time periods. As presented in Table 2, the 2004 residents have slightly higher levels of disability in comparison to the 1994 group. On average, residents in 2004 experienced more difficulty in performing activities of daily living (ADL), with an increase from 4.2 to 4.5 ADL impairments. The proportion with four or more activity of daily living limitations increased from 75% to 79%, while the proportion with cognitive impairment increased from 61.5% to 66.5%. Although nursing home residents were quite impaired ten years ago, these data suggest that residents experience even higher levels of disability today.

Level of Care

Because of the high cost of nursing home care, there have been ongoing questions from policy makers about whether there are residents in nursing homes who could be served in other settings. This important question is not easily answered. There are many factors that affect individual and family decisions to choose nursing home placement. Research on predictors of nursing home use show that placement is most likely when there are high levels of disability. However, only one-half of the three million severely

Table 1
Comparison of the Demographic Characteristics of Ohio's Certified
Nursing Facilities Residents: 1994 and 2004

	1994	2004
	(Percentages)*	(Percentages)*
Age		
45 and under	0.2	2.5
46-59	3.8	7.6
60-64	2.8	4.0
65-69	5.1	5.2
70-74	9.0	7.8
75-79	14.0	13.5
80-84	19.4	19.8
85-90	21.6	19.9
91+	24.1	19.7
Average Age	83.1	79.4
Gender		
Female	73.8	70.9
Race		
White	88.5	86.4
Marital Status		
Never Married	14.3	15.7
Widowed/Divorced/Separated	70.6	66.1
Married	15.1	18.2
Population	81,414	73,900

*Percent of valid responses

Source: MDS Plus Oct.-Dec. 1994
MDS 2.0 April-June 2004

Table 2
Comparison of the Functional Characteristics of Ohio's Certified
Nursing Facilities Residents: 1994 and 2004

	1994	2004
	(Percentages)*	(Percentages)*
Needs Assistance in Activities of		
Daily Living (ADLs) ¹		
Bathing	94.0	93.6
Dressing	83.6	85.3
Transferring	68.7	74.6
Toileting	75.1	80.1
Eating	38.5	32.5
Grooming	83.4	84.2
Number of ADL Impairments ²		
0	5.1	5.4
1	7.2	6.1
2	4.9	3.9
3	7.7	5.4
4	75.1	79.2
Average Number of ADL Impairments	4.2	4.5
Incontinence ³	59.4	60.9
Cognitively Impaired ⁴	61.5	66.5
Average Case Mix Score	Not comparable	1.98
Population	81,414	73,900

*Percent of valid responses

¹ "Needs assistance" includes limited assistance, extensive assistance, total dependence, and activity did not occur.

² From list above

³ "Occasionally, frequently, or multiple daily episodes".

⁴ "Moderately" or "severely" impaired

Source: MDS Plus Oct.-Dec. 1994
MDS 2.0 April-June 2004

disabled older people in the United States reside in nursing homes (Rhoades and Krauss, 1999). There are a number of factors such as consumer and family attitudes, family resources and availability, financial resources, geographic location, and service availability that affect decisions about long-term care (Kane, Kane, and Ladd, 1999). Any assessment of appropriate nursing home placement must examine a broad range of factors.

As shown in Table 3, most residents (95.6%) met the intermediate level of care criteria. Despite the fact that the vast majority of residents met level of care, it is reasonable to ask how an individual can reside in a nursing home without meeting level of care. Such an outcome can occur in one of three ways. First the individual could be paying privately and thus is not bound by the pre-admission review results. About 10% of those not meeting level of care fall in this category, but 85% of those not meeting level of care are on Medicaid. Second, a resident may progress above the level of care threshold if the individual's condition improves over time. Third, it is also possible that the pre-admission review did not accurately assess the individual's condition. This study did not compare pre-admission assessments and nursing home MDS data to determine if this did occur. However, in reviewing the length of stay for those not meeting level of care, we find that just under 8% of these individuals had been a resident for less than 90 days.

To understand more about those who do not meet the LOC (4.4%), we compare them to those residents meeting level of care along a series of demographic, functional, and social characteristics. As expected, there are some major differences between these two groups. The group of residents who did not meet LOC were younger, more likely to be men, and much more likely to have never married. For example, the average age for

Table 3
Demographic Characteristics of Ohio's Certified
Nursing Facilities Residents by Level of Care Status: June 2004

	Met Level of Care (Percentages)*	Did not Meet Level of Care (Percentages)*
Proportion of residents	95.6	4.4
Age		
45 and under	2.3	6.6
46-59	7.0	20.0
60-64	3.8	7.3
65-69	5.1	8.2
70-74	7.7	9.3
75-79	13.6	11.8
80-84	20.1	13.2
85-90	20.2	12.2
91+	20.2	11.4
Average Age	79.8	71.3
Gender		
Female	71.4	59.2
Race		
White	86.5	83.8
Marital Status		
Never Married	15.0	30.1
Widowed/Divorced/Separated	66.4	60.4
Married	18.6	9.5
Population	70,607	3,293

* Percent of valid responses

Source: MDS Plus Oct.-Dec. 1994
MDS 2.0 April-June 2004

those not meeting level of care was 71, compared to almost 80 for the group meeting level of care. One in three of the LOC-ineligible group was under age 65, compared to just over 13% for those meeting level of care. The gender distribution was also quite different; more than 71% of those meeting level of care are female, compared to 59% for the LOC-ineligible group. Three in ten of those not meeting level of care have never been married, compared to 15% for those meeting level of care.

Those not meeting level of care had limited impairment in ADLs, incontinence, and in cognitive functioning (See Table 4). Almost six in ten had no ADL impairments and few were incontinent (7.3%), or cognitively impaired (15.4%). Finally, LOC-ineligible residents had less daily contact with family members (See Table 5). Over two-thirds of those not meeting level of care had no family involvement with their admission assessment, compared to half of those who did meet LOC.

The MDS also records diagnoses of the resident's physical and mental health conditions. The most prevalent diagnosis category was mental health disorders, which had been reported for more than two-thirds of residents in this group. Mental health disorders are a common condition for the overall nursing home population. However, the large proportion of those with mental health disorders who do not have physical disabilities raises important policy questions about what setting is most appropriate for this population.

Table 4
Functional Characteristics of Ohio's Certified
Nursing Facilities Residents by Level of Care Status: June 2004

	Met Level of Care (Percentages)*	Did not Meet Level of Care (Percentages)*
Needing Assistance in Activities of Daily Living (ADLs) ¹		
Bathing	96.2	37.4
Dressing	89.2	1.5
Transferring	78.0	0.4
Toileting	83.8	0.6
Eating	34.0	0.4
Grooming	88.0	1.1
Number of ADL Impairments ²		
0	2.9	58.3
1	4.4	41.7
2	4.1	
3	5.7	
4 or more	82.9	
Average Number of ADL Impairments	4.7	0.4
Incontinence	63.4	7.3
Cognitively Impaired ³	68.9	15.4
Average Casemix Score	2.0	1.3
Population	70,607	3,293

¹ "Needs assistance" includes limited assistance, extensive assistance, total dependence, and activity did not occur.

² From the list above.

³ "Moderately" or "severely" impaired in cognitive skills.

*Percent of valid responses

Source: MDS 2.0 April-June 2004

Table 5
Other Characteristics of Ohio's Certified Nursing
Facilities Residents by Level of Care Status: June 2004

	Met Level Of Care	Did not Meet Level of Care
	(Percentages)*	(Percentages)*
Last 90 days		
Hospitalized	20.6	11.0
Visited emergency room	15.8	7.3
Wished to Return to Community	19.0	22.9
Support Person Positive Toward Discharge	6.8	8.8
Assessor's Projected Stay		
30 days or less	3.1	3.1
31-90 days	2.1	1.6
Uncertain	9.1	11.5
Long stay	85.7	83.7
Family Participated in Assessment		
Yes	39.0	28.4
No	49.2	67.6
No family	1.2	1.6
Daily Contact with Family	23.4	19.3
Population	70,607	3,293

* Percent of valid responses

Source: MDS 2.0 April-June 2004

To examine whether LOC-ineligibility has changed over time, we conducted a similar analysis for residents in 1994. As shown in Table 6, the proportion of residents not meeting level of care in 1994 was 8.2%, compared with 4.4% in 2004. This drop is consistent with previous results indicating that the 2004 resident population experienced higher levels of disability. There are some noticeable changes in the characteristics of those not meeting level of care over this ten-year time period. Those not meeting level of care were considerably older in 1994, with an average age of 80 compared to 71 in 2004. One-third of the 2004 group was under age 65 compared to a little more than 11% ten years earlier. The members of 2004 group were less likely to be women and more likely to be Caucasian than the 1994 group. Functioning data showed the 2004 group to be less impaired in bathing, but to be more cognitively impaired (See Table 7).

Casemix and level of care

To further address the question of whether there are nursing home residents who could be served in other settings, we also examined the Casemix scores for those residents meeting level of care.¹ The average Casemix score of a facility is one of the factors used to determine facility reimbursement rates under Medicaid (Weiner and Stevenson, 1999). Residents who were in the Casemix categories (PA1, PB1), defined as including residents with moderate or limited physical functioning, were grouped into a *low Casemix category*. Residents who needed restorative care were excluded from the low Casemix group. Findings presented in Table 8 show that 2.9% of all nursing home residents were classified into the *low Casemix score category*.

A review of the “low Casemix score” group reveals differences from those

¹The term “Casemix” refers to the type or mix of patients/residents cared for in a nursing home. Residents are grouped, based on their resource consumption, to different categories.

Table 6
Comparison of the Demographic Characteristics of Ohio's Certified
Nursing Facilities Residents Who Did Not Meet Level of Care: 1994 and 2004

	1994	2004
	(Percentages)*	(Percentages)*
Proportion of Residents	8.2	4.4
Age		
45 and under	0.3	6.6
46-59	5.9	20.0
60-64	5.2	7.3
65-69	7.6	8.2
70-74	11.6	9.3
75-79	14.3	11.8
80-84	18.9	13.2
85-90	19.2	12.2
91+	17.1	11.4
Average Age	80.4	71.3
Gender		
Female	70.6	59.2
Race		
White	90.7	83.8
Marital Status		
Never Married	22.3	30.1
Widowed/Divorced/Separated	69.2	60.4
Married	8.5	9.5
Population	6,696	3,293

*Percent of valid responses

Source: MDS Plus Oct.-Dec. 1994
MDS 2.0 April-June 2004

Table 7
Comparison of the Functional Characteristics of Ohio's Certified
Nursing Facilities Residents Who Did Not Meet Level of Care: 1994 and 2004

	1994	2004
	(Percentages)*	(Percentages)*
Needs Assistance in Activities of		
Daily Living (ADLs) ¹		
Bathing	51.0	37.2
Dressing	1.5	1.5
Transferring	0.6	0.8
Toileting	0.5	0.6
Eating	0.2	0.4
Grooming	1.5	1.1
Number of ADL Impairments ²		
0	44.6	58.3
1	55.4	41.7
2		
3		
4		
Average Number of ADL Impairments	0.5	0.4
Incontinence ³	7.2	7.3
Cognitively Impaired ⁴	9.5	15.4
Average Casemix Score	Not comparable	1.3
Population	6,696	3,293

¹ "Needs assistance" includes limited assistance, extensive assistance, total dependence, and activity did not occur.

² From the list above.

³ "Occasionally, frequently, or multiple daily episodes".

⁴ "Moderately" or "severely" impaired

Source: MDS Plus Oct.-Dec. 1994
MDS 2.0 April-June 2004

Table 8
Comparison of the Demographic Characteristics of Ohio's
Certified Nursing Facilities Residents

	Low Casemix Score (Percentages)*	Did Not Meet Level of Care (Percentages)*	All other residents (Percentages)*
Proportion of Residents	2.9	4.4	92.7
Age			
45 and under	1.5	6.6	2.4
46-59	5.2	20.0	7.1
60-64	4.0	7.3	3.9
65-69	5.3	8.2	5.1
70-74	7.2	9.3	7.8
75-79	11.9	11.8	13.6
80-84	17.1	13.2	20.2
85-90	22.4	12.2	20.1
91+	25.4	11.4	19.8
Average Age	81.5	71.3	79.7
Gender			
Female	72.9	59.2	71.4
Race			
White	90.2	83.8	86.3
Marital Status			
Never Married	19.4	30.1	14.8
Widowed/Divorced/Separated	69.1	60.4	66.3
Married	11.5	9.5	18.9
Population	2,159	3,293	68,448

*Percent of valid responses

Source: MDS 2.0 April-June 2004

residents with higher Casemix scores. The low score group is actually older than the rest of the resident group meeting level of care; almost half of the group are over age 85 compared to 40% for the other resident category. The low Casemix group was less impaired in ADLs, averaging between two and three impairments, compared to almost five for the other residents. This low score group had considerably lower cognitive impairments, 4.6%, compared to more than seven in ten for other residents. Finally, the low score group was much less likely to experience incontinence, almost 14% compared to about 66% (See Table 9).

More than one-quarter of the residents in the low Casemix group are above age 90, and one-quarter of this group have four or more ADL impairments; so, even this category contains some individuals with considerably high levels of disability. This group does appear to have good cognitive functioning compared to the typical resident and one in five are reported to have daily contact with family (See Table 10). Our length of stay analysis showed that almost 95% of those in the low Casemix category have been residents for more than 90 days. Taken together these findings indicate that some portion of this group could possibly be served in an assisted living option. However, a home care option seems less likely for the most aged and disabled half of this group. The other half of this group could be possible candidates for either in-home services or assisted living. However, it is very difficult to transition older residents out of nursing homes once they have given up their homes and other support systems in the community.

Table 9
Comparison of the Functional Characteristics of
Ohio's Certified Nursing Facilities Residents: June 2004

	Low Casemix Score	Did not Meet Level of care	All Other Residents
	(Percentages)*	(Percentages)*	(Percentages)*
Needs Assistance in Activities of Daily			
Living (ADLs) ¹			
Bathing	94.9	37.4	96.3
Dressing	59.4	1.5	90.1
Transferring	15.7	0.4	80.0
Toileting	31.3	0.6	85.4
Eating	0.6	0.4	35.3
Grooming	54.1	1.1	89.1
Number of ADL Impairments ²			
0	2.3	58.3	2.9
1	22.5	41.7	3.9
2	24.7		3.4
3	25.5		5.0
4	25.0		84.8
Average Number of ADL Impairments	2.6	0.4	4.8
Incontinence ³	13.8	7.3	64.8
Cognitively Impaired ⁴	4.6	15.4	70.9
Average Casemix Score	1.03	1.3	2.04
Population	2,159	3,293	68,448

¹ "Needs assistance" includes limited assistance, extensive assistance, total dependence, and activity did not occur.

² From the list above.

³ "Occasionally, frequently, or multiple daily episodes".

⁴ "Moderately" or "severely" impaired

Source: MDS 2.0 April-June 2004

Table 10
Other Characteristics of Ohio's Certified
Nursing Facilities Residents: June 2004

	Low Casemix Score (Percentages)*	Did not Meet Level of Care (Percentages)*	All Other Residents (Percentages)*
Last 90 days			
Hospitalized	3.0	11.0	11.5
Visited emergency room	3.0	7.3	5.9
Wished to Return to Community	11.6	22.9	19.3
Support Person Positive Toward Discharge	4.1	8.8	6.9
Assessor's Projected Stay			
30 days or less	0.5	3.1	3.3
31-90 days	0.5	1.6	2.2
Uncertain	4.7	11.5	9.2
Long stay	94.3	83.7	85.3
Family Participated in Assessment			
Yes	41.1	28.4	38.8
No	57.1	67.6	49.0
No family	1.4	1.6	1.2
Daily Contact with Family	22.0	19.3	23.4
Population	2,159	3,293	68,448

* Percent of valid responses
Source: MDS 2.0 April-June 2004

SUMMARY AND CONCLUSION

Findings from this analysis show that Ohio nursing home residents are quite disabled and facilities are increasingly serving residents with higher levels of disability. Almost all residents meet the level of care criteria (95.6%) but 4.4% of the current resident population did not meet level of care based on their current MDS assessment. The 1994 rate for those not meeting level of care was almost twice as high at 8.2%. Two-thirds of the residents not meeting level of care had a mental health diagnosis, without physical disabilities. We recommend further research into the circumstances and conditions of these residents.

A review of resident Casemix scores for those meeting level of care found 2.9% of residents had an average Casemix score of 1.03 which we classified into a low Casemix grouping. One-half of these residents were over age 85 and one-half had three or more ADL impairments. Because of good cognitive functioning, some residents in this group could be candidates for assisted living or in-home services. However, given the age, disability level, available social support, and length of time that they have lived in the nursing home, transitioning these residents back into the community seems unlikely. A continued emphasis on creating a long-term care system that will provide consumers with the appropriate options at the appropriate times is a much better way to ensure the right setting for consumers.

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