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**A REVIEW OF NURSING HOME
RESIDENT CHARACTERISTICS IN OHIO:
Tracking Changes from 1994-2004**

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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.

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

FAST FACTS

Nursing home residents are younger today than 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 higher numbers of activity of daily living impairments and are more likely to be cognitively impaired.

Four and one half percent 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.

A review of those residents not meeting level of care showed these individuals to be significantly younger than the overall resident population, with one-third under the age of 65, compared to 11% for the general population.

About 70% of those not meeting level of care have a mental health disorder, with depression being the most prevalent diagnosis.

Just under 3% of nursing home residents are classified as having lower level of care needs and could possibly be served 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, making them good candidates for assisted living or in-home services.

More than half of this lower level of care group is over age 85 and half have three or more activity limitations. A very small proportion of these individuals have been short-term residents, making opportunities to leave the nursing home limited.

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, but also changing dramatically is the world of long-term care. With major shifts in the Medicare hospital reimbursement system increasing the number of short-term nursing home residents, and a dramatic expansion of in home care services and assisted living residential options, the role of the nursing home in the United States is being re-defined. This briefing paper examines the profile of Ohio nursing home residents in both 2004 and 1994 in an attempt to paint a portrait of today's nursing home resident and to examine change over the past decade. This work also examines the complex question of whether there are nursing home residents that could be served in alternative settings.

METHODS

Data for this analysis comes from the Nursing Home Minimum Data Set (MDS) , Resident Assessment Instrument. Assessments are conducted on each resident of Medicaid and/or Medicare certified facilities in Ohio. The data set provides detailed information on the demographic, health, and functional characteristics of nursing home residents. The assessments for residents are compiled quarterly. Ohio's Medicaid Assessment Selection Criteria for Rate Setting was used to select the assessment of each resident at the end of the quarter. MDS information for those 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 level of care we applied the Medicaid intermediate

level of care criteria to those residents who were in Ohio nursing homes in June 2004. Although all nursing home residents receive a pre-admission review either in-person or via a paper review, this analysis is based on the Nursing Home Minimum Data Set, 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 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. 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 have combined to create a dynamic system of long-term care.

In this context we examine the demographic and health characteristics of Ohio nursing home residents. Data presented in Table 1 provide a snap-shot of residents in

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

both 1994 and 2004. Several noteworthy differences are identified in this comparison. Nursing home residents on average are younger in 2004 than they were ten years earlier, with the average age dropping from just over 83 to 79.4. Of 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%. Reflecting an increase in younger residents in need of short term care, 2004 residents were also less likely to be women.

Functional characteristics also suggest changes between the two time periods. As presented in Table 2 the 2004 residents show 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%. 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. Although an important question, it is one not easily answered. There are many factors that affect individual and family decisions to seek 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 half of the three million severely disabled older people in the United States reside in nursing homes. Research

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

indicates that 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. Any assessment of appropriate nursing home placement must examine a broad range of factors.

As presented in Table 3 most residents met the intermediate level of care criteria (95.5% vs. 4.5%). 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 are placed in this category. About 85% of those not meeting level of care are on Medicaid. A resident can also be above the level of care threshold if the individual's condition improves over time. 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 the 4.5% not meeting the level of care criteria, 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 level of care were younger, more likely to be men, and much more likely to have never married. The average age for those not meeting level of care was 71, compared to almost 80 for the group meeting level of care. The differences were particularly large at the younger age

Table 3
Demographic 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)*
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

groups. For example, one in three of the group not meeting level of care was under age 65, compared to just over 13% for those meeting level of care. Gender was also quite different with more than 71% of those meeting level of care being female, compared to 59% for the group not meeting level of care. Three in ten of those not meeting level of care have never been married, compared to 15% for those meeting level of care.

Given the eligibility criteria, those not meeting level of care had limited impairment in ADL's, incontinence, and in cognitive functioning (See Table 4). Almost six of ten had no ADL impairments and few were incontinent (7.3%), or cognitively impaired (15.4%). Finally, we found that those not meeting level of care had less daily contact with family members (See Table 5). Additionally, over two-thirds of those not meeting level of care had no family involvement with their assessment, while about one half of those meeting level of care did not have a family member involved in their resident assessment.

To get a better idea of the conditions of those not meeting level of care we examined the major diagnosis category and other conditions of residents as reported on the MDS. As shown in Figure 1 mental health diagnoses dominate the resident conditions. The depression diagnosis is most prevalent within the mental health disorders category. The dementia category included Alzheimer's disease, and other related disorders. The health related conditions group included cancer, renal failure, and HIV. The large proportion of those with mental health disorders raises important policy questions about what setting is most appropriate for this population.

To examine whether level of care has changed over time, we conducted a similar analysis for residents in 1994. As shown in Table 6 the proportion of residents not

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

Needing Assistance in Activities of Daily Living (ADLs) (5)	Meet level of Care (Percentages)*	Did not meet Level of Care (Percentages)*
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 (6)		
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 (7)	68.9	15.4
Average Case Mix Score	2.0	1.3
Population	70,607	3,293

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

6 From the list above.

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

*Percent of valid responses

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

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

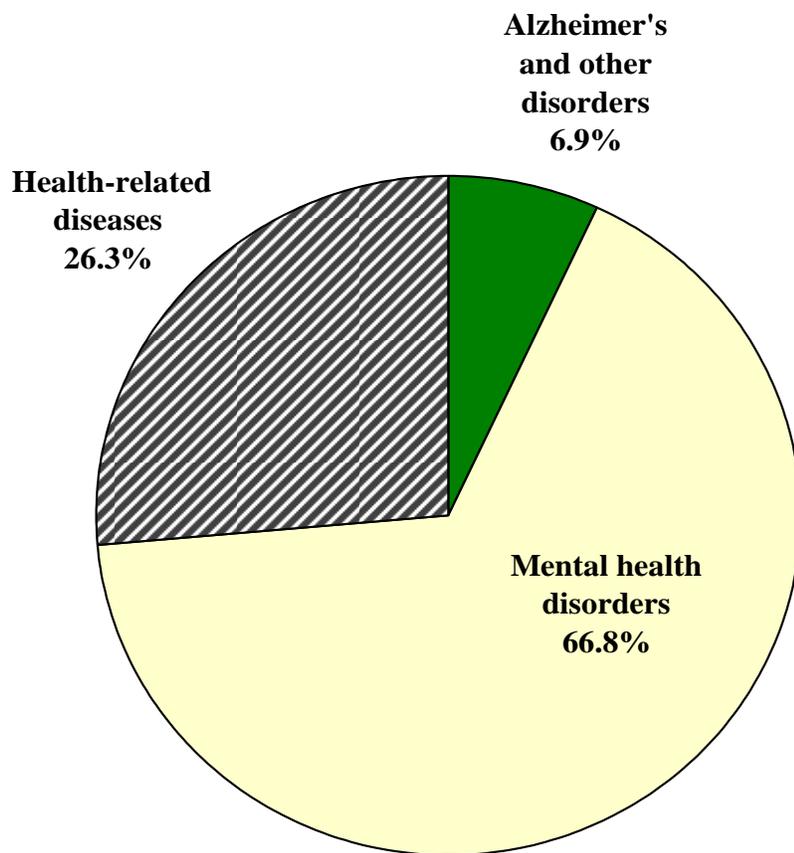
	Met Level Of Care (Percentages)*	Did not meet Level of Care (Percentages)*
Last 90 days		
Hospitalized	20.6	11.0
Visited emergency room	15.8	7.3
Wished to return to community	19.0	22.9
Support person positive toward discharge	6.8	8.8
Assessor's Projected stay		
30 days or less	3.1	3.1
31-90 days	2.1	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

Figure 1

**Major Diagnoses for
Nursing Home Residents Who did
not Meet Level of Care Criteria**



Source: MDS 2.0 April-June 2004

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

	1994	2004
	(Percentages)*	(Percentages)*
Proportion of Residents	8.2	4.5
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

meeting level of care in 1994 was 8.2%, compared with 4.5% 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. One-third of the 2004 group was under age 65 compared to a little more than 11% ten years earlier. More than three-quarters of those under 65 have mental health diseases as their primary diagnosis. The 2004 group members were less likely to be women and more likely to be Caucasian. Functioning data showed the 2004 group to be less impaired in bathing, but to be experiencing more cognitive impairment (See Table 7).

These data indicate that a higher proportion of residents met level of care in 2004 when compared to ten years earlier. There also appears to be a shift in the types of clients who do not meet level of care. Today's clients not meeting level of care are significantly younger and have a high prevalence of mental health conditions.

Case mix 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 case mix scores for those residents meeting level of care. The average case mix score of a facility is one of the factors used to determine facility reimbursement rates under Medicaid. Residents who were in the case mix categories (PA1, PB1), defined as limited physical functioning, were grouped into a *low case mix category*. Residents that needed restorative care were excluded from the low case mix group. Findings presented in Table 8 show that 2.9% of all nursing home residents were classified into the *low case mix score category*.

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

	1994	2004
	(Percentages)*	(Percentages)*
Needs Assistance in Activities of		
Daily Living (ADLs) (8)		
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 (9)		
0	44.6	58.3
1	55.4	41.7
2		
3		
4		
Average Number of ADL impairments	0.5	0.4
Incontinence (10)	7.2	7.3
Cognitively impaired (11)	9.5	15.4
Average Case Mix Score	Not comparable	1.3
Population	6,696	3,293

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

9 From the list above.

10 "occasionally, frequently, or multiple daily episodes".

11 "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 Case Mix Score	Did Not Meet Level of Care	All other residents
	(Percentages)*	(Percentages)*	(Percentages)*
Proportion of residents	2.9	4.5	92.6
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

A review of the low case mix score group presents a group different than those residents with higher case mix scores. The low score group is actually older than the rest of the resident group meeting level of care, with almost half of the group over age 85 compared to 40% for the other resident category. The low case mix group was less impaired in ADL's, 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 of ten for other residents. Finally, the low score group was much less likely to experience incontinence, almost 14% compared to about two-thirds (See Table 9).

With more than one quarter of the residents in the low case mix group being above age 90, and one quarter of this group having four or more ADL impairments, even this category contains some individuals with considerable 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 case mix category have been residents for more than 90 days. Taken together these findings indicate that a 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 Case Mix Score	Did not meet level of care	All other residents
	(Percentages)*	(Percentages)*	(Percentages)*
Needs Assistance in Activities of Daily			
Living (ADLs) (12)			
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 (13)			
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 (14)	13.8	7.3	64.8
Cognitively impaired (15)	4.6	15.4	70.9
Average Case Mix Score	1.03	1.3	2.04
Population	2,159	3,293	68,448

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

13 From the list above.

14 "occasionally, frequently, or multiple daily episodes".

15 "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 case mix score (Percentages)*	Did not meet level of care (Percentages)*	All other residents (Percentages)*
Last 90 days			
Hospitalized	3.1	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	1.1
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 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 (95.5%) but 4.5% 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%. Those residents not meeting level of care are most likely to have a mental health diagnosis, most often depression. We recommend that further research into the circumstances and conditions of these residents be undertaken.

A review of resident case mix scores for those meeting level of care found 2.9% of residents had an average case mix score of 1.03 which we classified into a low case mix grouping. Half of these residents were over age 85 and 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 been 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.