



The Hilltop Institute

analysis to advance the health of vulnerable populations

Medicaid Long-Term Supports and Services in Maryland: Nursing Facilities

A Chart Book

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Prepared for:
Maryland Department of Health and Mental Hygiene



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Introduction

This chart book provides information about Maryland Medicaid beneficiaries aged 19 years and older residing in nursing facilities. It summarizes demographic, service utilization, acuity, expenditure, and length of stay (LOS) data for state fiscal years (FYs) 2001 through 2008. The data are presented through a series of figures that illustrate trends in nursing facility utilization, along with accompanying narrative text. Notable trends in the data are:

- The number of Medicaid nursing facility residents decreased by 8% between FY 2005 and FY 2008.
- While the number of residents under age 65 in nursing facilities increased by 35% from FY 2001 to FY 2005, this population decreased by 6% between FY 2005 and FY 2008.
- Corresponding with the decline in nursing facility residents, the total number of nursing facility days of service also declined.
- The 65 and older population requires a higher level of care in nursing facilities than the under 65 population. In FY 2008, 46% required “heavy” or “heavy special” level of care, compared to 34% of the under 65 population.
- Nursing facility residents under age 65 requiring “light” care peaked at 31% in FY 2006 and then declined to 26% in FY 2008, mirroring the rise and fall in the number of residents under age 65.
- Despite the decrease in the size of the Medicaid nursing facility population and the more than \$63 million decrease in nursing facility resident-related pharmacy costs since the implementation of the Medicare Part D prescription drug benefit, total Medicaid costs for nursing facility residents have been steadily rising. Cost increases over the past three years have been driven almost exclusively by the rise in nursing facility expenditures.

Chart Book Organization

The data presented in this chart book are organized into five sections.

- **Demographics:** This section includes data on numbers of nursing facility residents and shows how the composition of the nursing facility population has changed over time.
- **Nursing Facility Utilization:** This section presents information about the total number of days residents spent in nursing facilities. It examines these data for the state as a whole and also by region.
- **Acuity Levels:** This section presents data on the level of care, diagnoses, and deficits in activities of daily living (ADLs) for nursing facility residents.
- **Medicaid Expenditures:** This section contains information about Medicaid expenditures for Medicaid-eligible nursing facility residents. It examines costs for nursing facility services, as well as other Medicaid services that an individual may receive while residing in a nursing facility, such as pharmacy and physician services.
- **Admissions and Length of Stay:** This section considers average LOS for nursing facility residents. It also examines the settings from which residents have been admitted to the nursing facility.

Each section includes data for the nursing facility population as a whole, residents who are under age 65, and residents who are age 65 and older.

Data Sources

The information in this chart book was derived from four data sources.

- **Maryland Department of Health and Mental Hygiene, Medicaid Management Information System (MMIS₂):** This system contains person-level data for all individuals eligible for Medicaid services in Maryland during the relevant fiscal year, including Medicaid eligibility category and fee-for-service claims.
- **Maryland Department of Health and Mental Hygiene, Decision Support System (DSS):** This system, available to DHMH and accessible at <http://ehealth.chpdm.org/>, provides summary reports based on MMIS₂ files and functions as a data book for figures in this chart book derived from the DSS.
- **Maryland Office of Health Care Quality, Minimum Data Set (MDS):** The MDS is a federally mandated assessment instrument that is conducted for each nursing facility resident upon admission and at least quarterly thereafter. Hilltop collects and refines MDS data for Maryland nursing facilities on a routine basis. Hilltop's refined data set was used in this chart book.
- **U.S. Census Bureau, Population Division:** Annual Estimates of the Resident Population for the United States, Regions, States, and Puerto Rico: April 1, 2000, to July 1, 2008.

Demographics

Figure 1. Number of Unduplicated Medicaid Nursing Facility Residents, by Age Cohort*

	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	% Change FY 2001- FY 2008
All Ages	23,652	23,456	23,675	24,210	24,643	23,646	23,210	22,614	-4.4%
Under 65	3,565	3,686	4,006	4,520	4,798	4,785	4,678	4,495	26.1%
65 and Older	20,087	19,770	19,669	19,690	19,845	18,861	18,532	18,119	-9.8%

*Number of unduplicated individuals having at least one Medicaid-paid day in a nursing facility in the fiscal year.

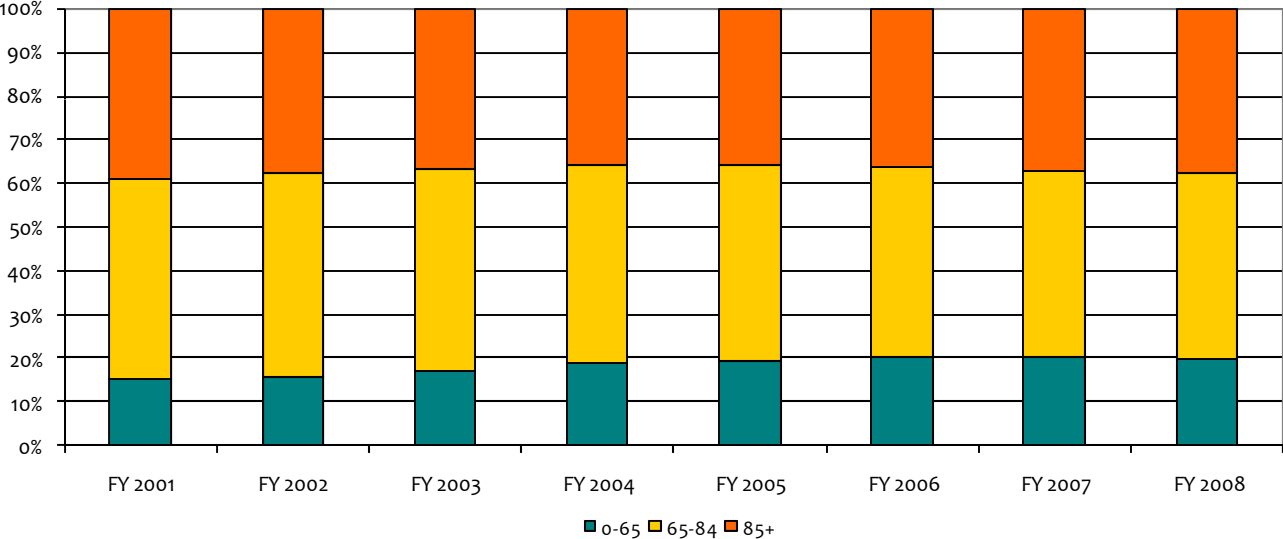
Source: DSS

The total number of nursing facility residents peaked in FY 2005 at 24,643; by FY 2008, it had fallen by 8%.

The under 65 population increased by 35% from FY 2001 to FY 2005 and decreased by 6% from FY 2005 to FY 2008.

The number of individuals aged 65 and older decreased by almost 10% from FY 2001 to FY 2008.

Figure 2. Distribution of Unduplicated Medicaid Nursing Facility Residents, by Age Cohort



Source: DSS

While the under 65 population grew by 26% from FY 2001 to FY 2008, it constituted just under 20% of the total nursing facility population in FY 2008.

Nursing Facility Utilization

Figure 3. Medicaid Nursing Facility Days, by Region

	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	% Change 2001-2008
Baltimore City	1,445,527	1,394,487	1,401,727	1,396,540	1,375,367	1,332,123	1,299,009	1,259,242	-12.9%
Baltimore Suburban	1,502,255	1,454,028	1,458,718	1,481,103	1,507,322	1,505,890	1,492,225	1,443,409	-3.9%
Eastern Shore	609,443	603,634	591,057	576,341	586,298	590,165	591,368	566,996	-7.0%
Southern Maryland	273,004	277,866	279,775	280,671	281,961	278,023	275,396	275,878	1.1%
Washington Suburb	1,583,816	1,581,819	1,583,893	1,589,363	1,609,313	1,598,347	1,591,423	1,579,084	-0.3%
Western Maryland	517,503	531,144	547,357	555,016	537,062	519,062	531,011	535,263	3.4%
Out of State	10,317	8,703	8,482	6,538	7,916	7,428	7,868	5,432	-47.3%

Note: This chart book uses the following region designations for Maryland, based on the individual's county of residence:

Baltimore City: Baltimore City

Baltimore Suburban: Anne Arundel County, Baltimore County, Carroll County, Harford County, Howard County

Eastern Shore: Talbot County, Wicomico County, Worcester County

Southern Maryland: Calvert County, Caroline County, Cecil County, Charles County, Dorchester County, Kent County, Queen Anne's County, St. Mary's County, Somerset County

Washington Suburban: Frederick County, Montgomery County, Prince George's County

Western Maryland: Allegany County, Garrett County, Washington County

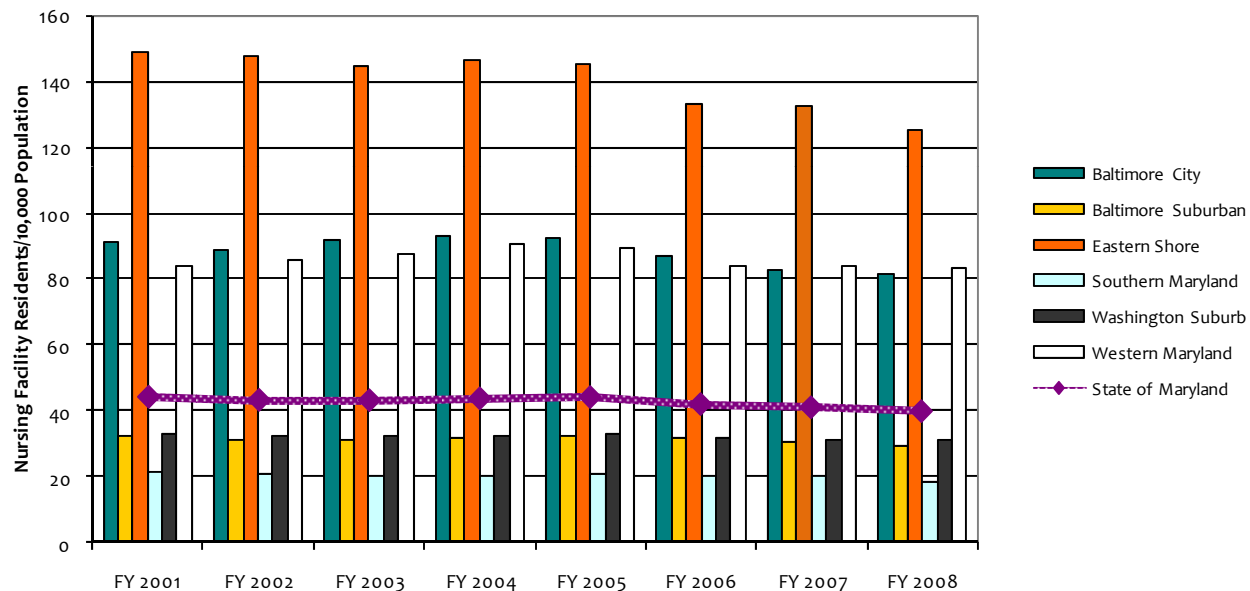
Out of State: Indicates a person residing in Maryland near the state line with an out-of-state postal facility code. Periodically these individuals are manually assigned to the appropriate county.

Source: DSS

In all regions, the number of Medicaid nursing facility days declined from FY 2005 to FY 2008. Baltimore City and the Baltimore Suburbs had noteworthy declines of 8% and 4%, respectively.

Baltimore City showed the largest decline of nearly 13% from FY 2001 to FY 2008.

Figure 4. Unduplicated Medicaid Nursing Facility Residents per 10,000 Population, by Region



Source: DSS, U.S. Census

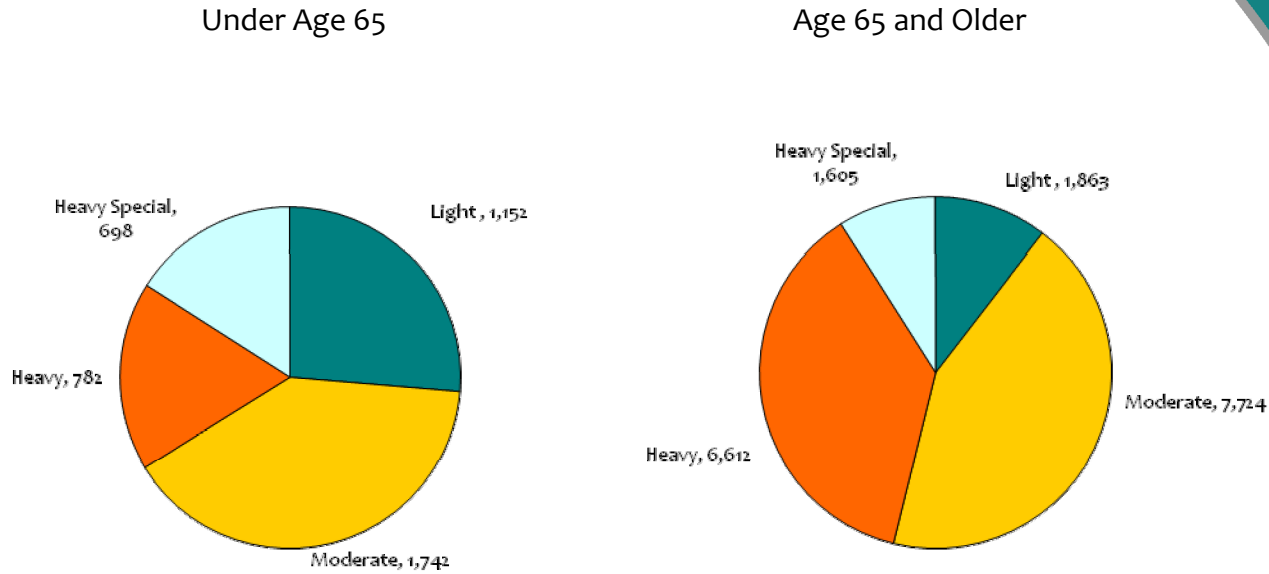
The Eastern Shore, Baltimore City, and Western Maryland had the highest concentrations of residents in nursing facilities.

Throughout the study period, the Eastern Shore had more than three times the number of residents (per 10,000 population) in nursing facilities than the state overall. However, the numbers declined from 149 residents per 10,000 people in FY 2001 to 125 in FY 2008.

In FY 2008, Baltimore City and Western Maryland each had approximately twice the number of residents (per 10,000 population) in nursing facilities than the state overall.

Acuity Levels

Figure 5. Unduplicated Medicaid Nursing Facility Residents, by Age Cohort and Level of Care*



*Levels of Care: Light – Dependent in 0, 1, or 2 ADLs; Moderate – Dependent in 3 or 4 ADLs; Heavy – Dependent in all 5 ADLs; Heavy Special – Dependent in all 5 ADLs and requires and receives one or more of the following: Communicable Disease Care, Central Intravenous Line, Peripheral Intravenous Care, Decubitus Ulcer Care, Tube Feeding, Ventilator Care, or Support Surface A or B during the majority of the month.

Source: MMIS2

The 65 and older population requires a higher level of care in nursing facilities.

In FY 2008, 46% of the population aged 65 and older required “heavy” or “heavy special” care, compared to 34% of the under 65 population.

The number of nursing facility residents under age 65 requiring “light” care peaked at 31% in FY 2006 and then declined to 26% in FY 2008.

Figure 6. Top Ten Diagnoses, by Age Cohort, FY 2008

Under 65		
Diagnosis	Number with Diagnosis	Percent of Residents
Hypertension	2,423	55%
Depression	1,797	41%
Diabetes mellitus	1,630	37%
Anemia	1,355	31%
Seizure disorder	1,101	25%
Cerebrovascular accident (stroke)	1,022	23%
Allergies	822	19%
Dementia other than Alzheimer's disease	684	16%
Hemiplegia/ Hemiparesis	634	14%
Renal failure	511	12%
65 and Older		
Diagnosis	Number with Diagnosis	Percent of Residents
Hypertension	13,293	74%
Dementia other than Alzheimer's disease	8,246	46%
Depression	7,892	44%
Diabetes mellitus	6,486	36%
Anemia	6,136	34%
Arthritis	5,379	30%
Allergies	4,491	25%
Cerebrovascular accident (stroke)	4,165	23%
Congestive heart failure	3,798	21%
Osteoporosis	3,581	20%
All Ages		
Diagnosis	Number with Diagnosis	Percent of Residents
Hypertension	15,719	70%
Depression	9,692	43%
Dementia other than Alzheimer's disease	8,931	40%
Diabetes mellitus	8,119	36%
Anemia	7,494	34%
Arthritis	5,756	26%
Allergies	5,314	24%
Cerebrovascular accident (stroke)	5,188	23%
Congestive heart failure	4,181	19%
Other cardiovascular disease	3,916	18%

Hypertension, depression, diabetes, and anemia were the most common diagnoses among all nursing facility residents.

Source: Hilltop Refined MDS Data, Section I. 1.

Figure 7. ADL Deficits for Medicaid Nursing Facility Residents, by Age Cohort, FY 2008

No. of ADLs	Age Group					
	Under 65		65 and Older		Total	
	Number	Percent	Number	Percent	Number	Percent
0	229	5%	109	1%	338	2%
1	234	5%	326	2%	560	2%
2	223	5%	529	3%	752	3%
3	254	6%	761	4%	1,015	5%
4	1,209	28%	4,738	26%	5,947	27%
5	2,224	51%	11,466	64%	13,690	61%

The majority (88%) of nursing facility residents had deficits in 4 or more ADLs.

Of all nursing facility residents, 7% had deficits in 0-2 ADLs. These individuals may have medical or behavioral diagnoses that qualify them for nursing facility services but do not significantly impact their ability to perform ADLs.

Of nursing facility residents aged 65 and older, 90% had deficits in 4 or 5 ADLs; of those younger than 65, 79% had deficits.

Note: The five ADLs are transfer, dressing, eating, toilet use, and bathing. A deficit in an ADL is recorded in the MDS when ADL self-performance requires supervision, limited assistance, extensive assistance, or total dependence.

This analysis is based on ADL deficits reported in the MDS using the latest admission or annual assessment for each resident.

ADL counts from MDS data differ from ADL counts tied to level of care categories in the MMIS2 due to variations in the time of assessment and the definition of ADL dependency.

Source: Hilltop Refined MDS Data, Section G. 1. b, g-i and 2.

Figure 8. Medicaid Nursing Facility Residents, by Number of Diagnoses and ADL Deficits, FY 2008

Number of Nursing Facility Residents						
Number of Diagnoses	Number of ADL Deficiencies					
	0	1	2	3	4	5
0	9	13	9	6	37	92
1-3	151	185	224	286	1,282	2,954
4-6	136	224	328	458	2,634	6,194
7-9	29	107	147	219	1,468	3,422
10-12	11	30	38	43	435	852
13+	2	1	6	4	93	177
Percentage of Nursing Facility Residents						
Number of Diagnoses	Number of ADL Deficiencies					
	0	1	2	3	4	5
0	<1%	<1%	<1%	<1%	<1%	<1%
1-3	<1%	<1%	1%	1%	6%	13%
4-6	<1%	1%	1%	2%	12%	28%
7-9	<1%	<1%	<1%	<1%	7%	15%
10-12	<1%	<1%	<1%	<1%	2%	4%
13+	<1%	<1%	<1%	<1%	<1%	<1%

Source: Hilltop Refined MDS Data, Section I. 1. and Section G. 1. b, g-i and 2.

The most prevalent combination of diagnoses and ADL deficits for nursing facility residents was 4-6 diagnoses with 5 ADL deficits (28% of residents), followed by 7-9 diagnoses with 5 ADL deficits (15% of residents).

Medicaid Expenditures

Figure 9. Total Medicaid Expenditures for Nursing Facility Residents, by Type of Expenditure (in Millions)

Category	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	% Change 2001-2008
Nursing Facility	\$666.2	\$736.1	\$783.5	\$821.9	\$862.7	\$929.7	\$957.1	\$1,005.5	50.9%
Pharmacy	\$57.3	\$65.5	\$71.9	\$81.1	\$83.4	\$53.0	\$19.3	\$20.7	-63.8%
Crossover/Non-NF	\$13.0	\$13.6	\$13.6	\$15.5	\$17.2	\$17.7	\$19.0	\$18.5	42.9%
Crossover/SNF	\$10.0	\$13.0	\$15.4	\$18.8	\$19.5	\$3.8	\$3.9	\$3.2	-67.4%
Inpatient	\$12.5	\$13.9	\$17.5	\$20.5	\$21.9	\$23.7	\$25.1	\$23.0	83.8%
Outpatient	\$2.0	\$2.4	\$2.7	\$3.0	\$4.0	\$4.3	\$4.5	\$4.7	136.6%
Physician	\$2.0	\$2.4	\$5.0	\$6.4	\$7.7	\$7.9	\$7.9	\$8.2	306.9%
Special Services	\$0.7	\$0.7	\$1.0	\$1.3	\$1.8	\$1.6	\$1.7	\$2.0	194.3%
Total	\$763.7	\$847.5	\$910.6	\$968.5	\$1,018.2	\$1,041.7	\$1,038.6	\$1,085.9	42.2%

Note: Total Medicaid expenditures include a) Medicaid nursing facility expenditures, b) other Medicaid expenditures with dates of service concurrent to a resident’s nursing facility claims, and c) Medicaid expenditures for an intervening hospital stay (i.e., the beginning day of the hospital claim coincides with the last day of a nursing facility claim, and the last day of the hospital claim coincides with the beginning day of a nursing facility claim).

Nursing Facility – Skilled nursing care and relate services in a nursing facility.

Pharmacy – Prescription medications and certain “over the counter” medications.

Crossover/Non-NF (Nursing Facility) – Medicare cost sharing (premiums, copayments, etc.) for non-nursing home services that are paid by Medicaid.

Crossover/SNF (Skilled Nursing Facility) – Medicare cost sharing (premiums, copayments, etc.) for skilled nursing facilities that are paid by Medicaid.

Inpatient – Services provided to patients who are admitted to a hospital, including bed and board, nursing services, diagnostic, therapeutic, or rehabilitation services, and medical or surgical services.

Outpatient – Medical or surgical care that does not require an overnight hospital stay, such as ambulatory care, therapeutic care, rehabilitation services, clinic services, medical supplies, and laboratory tests.

Physician – Services provided by a licensed physician.

Miscellaneous – Services that do not fall into any of the categories listed above (e.g., transportation services; occupational, physical, and speech therapy; and oxygen services).

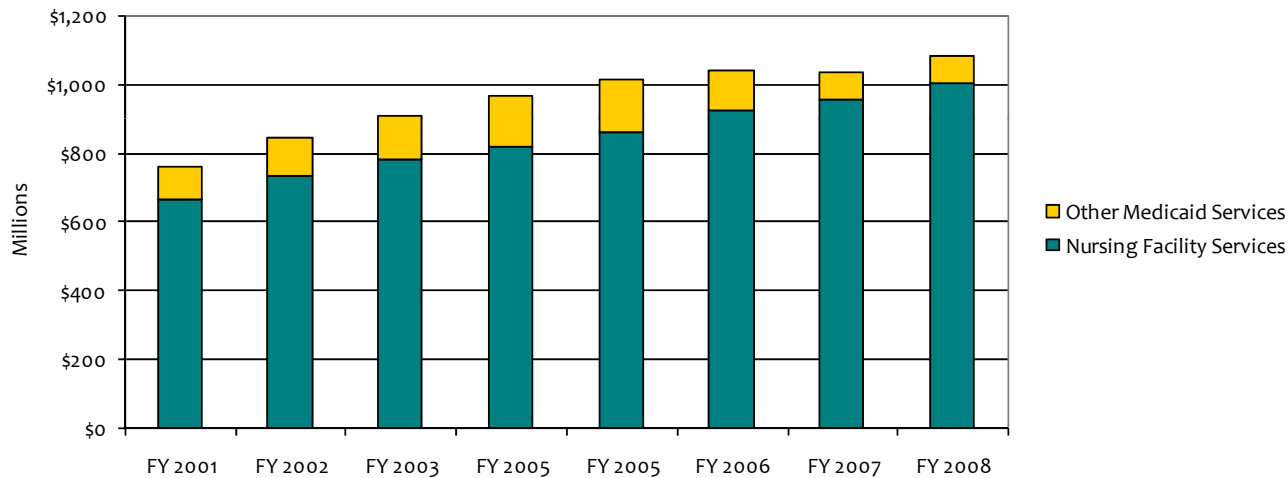
Source: MMIS2

Total Medicaid expenditures for nursing facility residents increased by \$322 million (42%) from FY 2001 to FY 2008, even after a \$64.1 million reduction (from FY 2005 to FY 2007) in pharmacy expenditures with the implementation of Medicare Part D in January 2006.

The increase in expenditures is largely the result of a dramatic increase in nursing facility expenditures, which rose by \$339 million (51%) from FY 2001 to FY 2008.

Crossover/SNF expenditures dropped dramatically after FY 2005 as a result of new limits on Medicare copayments by Maryland. Beginning in July 2005, the state only covers per-diem SNF payments up to the state’s average Medicaid rate for the same service.

Figure 10. Total Medicaid Expenditures for Nursing Facility Residents

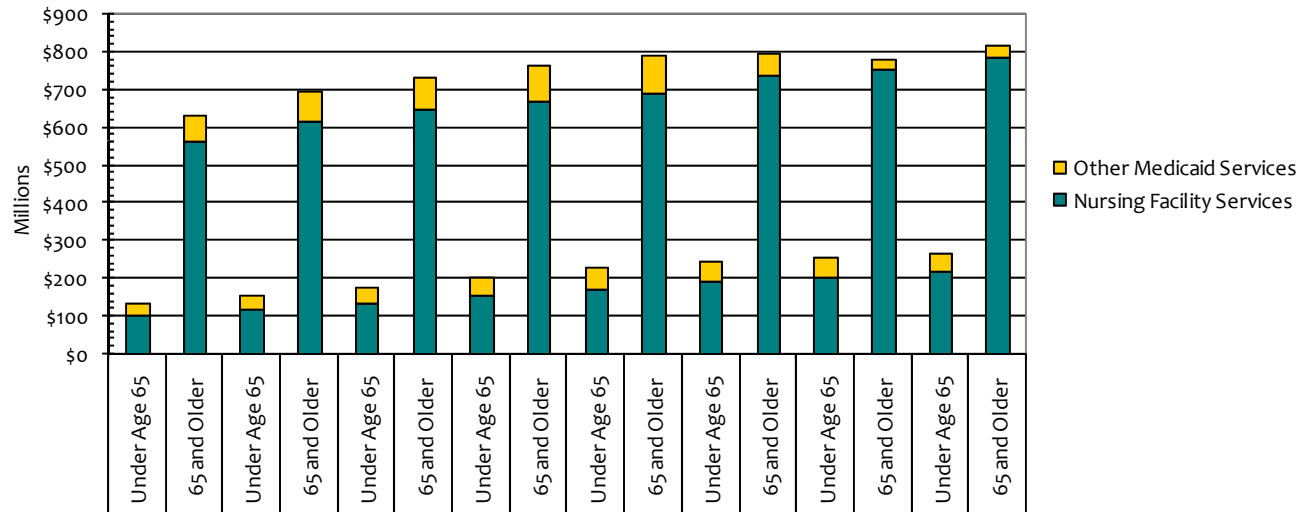


Source: MMIS2

While the number of Medicaid nursing facility residents and days declined by 4% and 7%, respectively, from FY 2001 to FY 2008, total Medicaid expenditures for nursing facility residents rose steadily, increasing by 42%. This increase was largely driven by cost increases in nursing facility services.

In FY 2008, other Medicaid services comprised only about 8% of total costs after a large drop beginning in FY 2006 due to the introduction of Medicare Part D and the policy change related to crossover/SNF payments.

Figure 11. Total Medicaid Expenditures for Nursing Facility Residents, by Age Cohort



Source: MMIS2

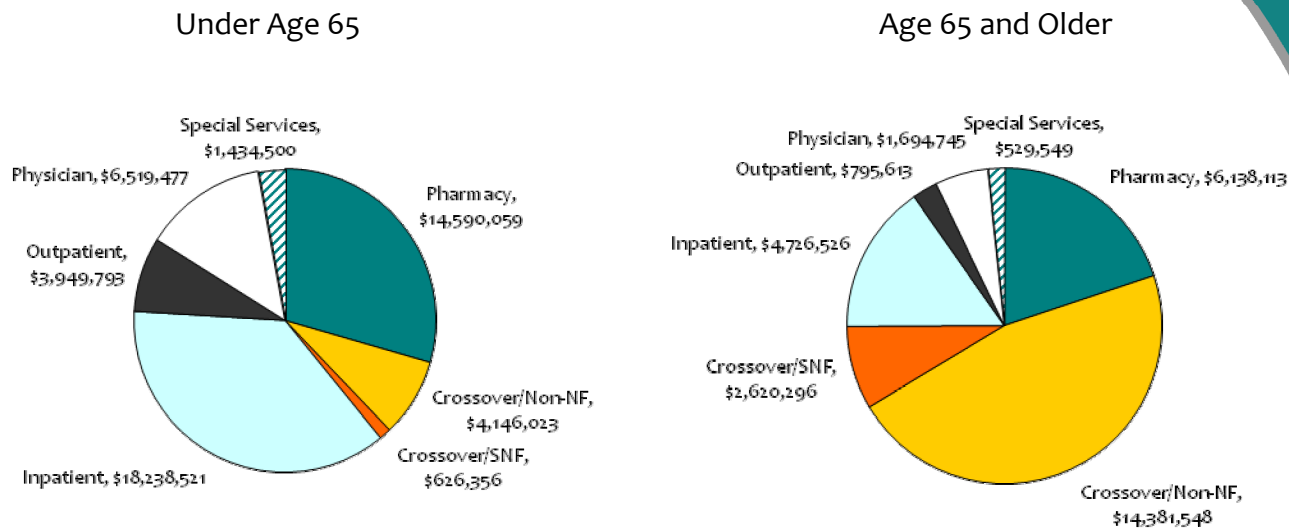
Nursing facility expenditures for residents under age 65 doubled from FY 2001 to FY 2008.

For residents aged 65 and older, nursing facility expenditures increased by 30%.

Nursing facility expenditures drove the increase in total Medicaid expenditures for both age groups.

Other Medicaid service expenditures for those aged 65 and older decreased by 69% from FY 2005 to FY 2007. This decrease was largely a result of implementation of the Medicare Part D pharmacy benefit in January 2006.

Figure 12. Other Medicaid Service Expenditures for Nursing Facility Residents, by Age Cohort, FY 2008



In FY 2008, inpatient costs represented over one-third (37%) of other Medicaid expenditures for nursing facility residents under age 65.

Medicare Crossover payments made up 55% of other Medicaid expenditures for the 65 and older age cohort.

Source: MMIS2

Admissions and Average Length of Stay

Figure 13. Medicaid Nursing Facility Admissions, by Prior Setting, FY 2008

Admitted From	Number of Admissions	Percent
Acute Hospital	13,679	68%
Psychiatric Hospital or MR/DD Facility	279	1%
Rehabilitation Hospital	204	1%
Nursing Home	2,401	12%
Board and Care/Assisted Living/Group Home	1,041	5%
Private Home or Apartment with Home Health Services	508	3%
Private Home or Apartment without Home Health Services	1,737	9%
Other	293	1%
Total	20,142	100%

In FY 2008, the majority (68%) of admissions to nursing facilities were from acute hospital settings.

Source: Hilltop Refined MDS Data, Section AB.2.

Figure 14. Average Length of Extended Stay at a Point in Time for Individuals with a Medicaid Nursing Facility Claim, by Age Cohort, FY 2008

Age Group	<90 Day Stay		≥90 Day Stay		Total	
	# Stays	Avg LOS	# Stays	Avg LOS	# Stays	Avg LOS
Under 65	341	43	2,766	1,164	3,107	1,030
65 and Older	928	44	12,722	1,190	13,650	1,112
Total	1,269	44	15,488	1,183	16,756	1,097

Note: An *extended stay* includes one or more discrete stays (a discrete stay includes contiguous days from first evidence of admission to discharge in a single facility) but allows for short periods of discharge (up to 30 days), such as a hospital stay, and changes in nursing facility.

For this figure, the population was limited to Medicaid recipients with at least one full Medicaid-paid day in a nursing facility in FY 2008. Stays that were only covered as a Medicare benefit were excluded.

Measures in this table are weighted averages based on four points in time during FY 2008 (August 15, 2007, November 15, 2007, February 15, 2008, and May 15, 2008). The number and length of extended stays reflect active residents in nursing facilities as of those dates.

Source: Hilltop Refined MDS Data

On an average day in FY 2008, the length of extended stay for nursing facility residents with at least one Medicaid nursing facility claim during the fiscal year averaged 1,097 days. This included a total of 16,756 extended stays.



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