

The Future of Health Care in Maryland: Nursing and Rehabilitation Centers, a Compelling Value Proposition

Submitted by:

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On behalf of:

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The Economic Contributions of Maryland’s Skilled Nursing Facilities

Executive Summary

Purpose

This Sage Policy Group, Inc. (Sage) paper provides an overview of the skilled nursing facilities that operate in Maryland, the high quality and low cost services they provide, the populations they serve, their substantial economic contributions in the context of generally high unemployment, and the cost savings they generate on behalf of the state’s taxpayers. These facilities are an essential part of a continuum of care that extends from shock trauma and intensive care at one extreme to outpatient care provided by many institutions and at home at the other.

In order to conduct the analysis, Sage relied upon a combination of publicly available data as well as data supplied by the Health Facilities Association of Maryland. Standard econometric modeling techniques were utilized to generate measures of total industry economic and fiscal impacts.

Principal Analytical Findings

- Skilled nursing facilities directly employ approximately 36,000 employees in Maryland with an annual payroll of \$1.5 billion;
- When multiplier effects are considered, the skilled nursing industry supports in total more than 46,000 jobs in Maryland with associated compensation and benefits of \$2 billion;
- Average annual wages and benefits in the industry are approximately \$41,000;
- Total annual revenue for these facilities is more than \$3 billion;
- The skilled nursing industry’s presence supports nearly \$5.6 billion of revenue for Maryland skilled nursing facilities and other businesses;

Exhibit E1. Economic contribution of skilled nursing facilities to Maryland’s economy (2010 dollars)

<i>Type of impact</i>	<i>Direct</i>	<i>Indirect</i>	<i>Induced</i>	<i>Total</i>
Jobs (full- and part-time positions)	36,209	2,366	8,071	46,646
Compensation & benefits (millions)	\$1,474	\$136	\$403	\$2,012
Revenue (millions)	\$3,052	\$614	\$1,884	\$5,550

Sources: DHMH, IMPLAN, Sage

- Industry-associated wage/salary compensation is associated with an estimated \$68 million in annual State income tax revenue and \$46 million in income tax revenue for local governments (i.e. twenty-three Maryland counties and Baltimore City) as well as additional millions in property, sales and use, corporate, and other taxes;

- Economic activity generated by the skilled nursing industry is broadly distributed throughout Maryland, with skilled nursing facilities located in every Maryland county and in Baltimore City;
- The middle class earnings enjoyed by the employees of these facilities in particular benefit workers in less affluent urban and rural areas where middle income producing jobs are in relatively short supply;
- The total volume of service that the industry provided in 2009 is estimated at 9.2 million patient days;
- On a typical day in 2009, skilled nursing facilities were providing services to almost 25,000 patients;
- For the typical patient, skilled nursing facility costs average **\$330** per day, while similar services provided in Maryland's hospitals average **\$846** per patient day;
- An analysis of Medicaid payments made in FY2003 for ventilator care found that Medicaid payments to five chronic hospitals averaged **\$1,110** per patient day. Had these services been purchased from skilled nursing facilities, the average charge would have been approximately **\$550/day**, or almost exactly half of the cost;
- In FY2011 (i.e. July 2010 through June 2011), skilled nursing facilities providing ventilator care services to their patients charged between **\$677** per patient day in the Western Maryland region to **\$752** in the Baltimore region. These charges range from 41 percent to 45 percent of the average charge of **\$1,583** at the state's five chronic hospitals. Thus, over the past 8 years skilled nursing facilities have become even more cost effective in comparison to chronic hospitals at providing ventilator care.
- In 2009, the Maryland Health Care Commission found that nine in 10 surveyed consumers would recommend the skilled nursing facility with which they are associated to others;
- Rapid aging of Maryland's population in conjunction with issues such as elevated and rising levels of obesity, diabetes, and other chronic diseases strongly suggest that demand for skilled nursing facilities will expand among older and younger Marylanders alike going forward; and
- Medicaid payments to nursing facilities in Maryland increased at an average annual rate of 6.6 percent from fiscal year 2000 through fiscal year 2008. This is a lower rate of increase than the rate for overall Medicaid payments in Maryland (8.1 percent) and also lower than payments for hospital inpatient (7.4 percent) and hospital outpatient (12.5 percent) services in the state.

Conclusion

In the current budget environment, Maryland's policymakers will be tempted to shrink the State's Medicaid budget for long-term care. The research reported here, however, demonstrates

that reducing Medicaid investment in Maryland's skilled nursing facilities actually could cost the State and its citizenry dearly in the form of:

- 1) Diminished savings in those categories in which skilled nursing facilities are able to provide high quality care at lower costs than at hospitals;
- 2) Reduced quality of care and access, including for many of Maryland's poorest and most vulnerable patients;
- 3) Reduced employment and payroll among the state's 234 licensed skilled nursing facilities; and
- 4) Diminished capacity to contend with growing demand for efficient and effective skilled nursing care among older and younger Marylanders alike.

The Economic Contributions of Maryland's Skilled Nursing Facilities

Introduction

Purpose of this Report

The enactment of healthcare reform legislation in America is shedding new light upon the healthcare industry, increasing the visibility of different segments and raising questions regarding how each segment fits into the overall picture of the evolving health care industry. This Sage Policy Group, Inc. (Sage) paper provides an overview of the skilled nursing facilities that operate in Maryland, the services they provide, the people they serve, their economic contributions in the context of generally high unemployment, and the cost savings they generate on behalf of the state's taxpayers. Given the state's demographics, demand for skilled nursing facilities will assuredly rise, increasing the industry's economic contributions in the process of responding to that increasing need for services.

Skilled Nursing Facilities are an Essential Aspect of Maryland's Continuum of Care

Skilled nursing facilities are an essential part of a continuum of care that extends from shock trauma and intensive care at one extreme to outpatient care provided by many institutions and occasionally at home at the other. Historically, skilled nursing facilities (e.g. nursing homes) have been viewed as places devoted to the long-term care of older adults requiring moderate levels of ongoing medical care and assistance with the activities of daily living.

While long-term care for the elderly continues to represent an important aspect of the work of skilled nursing facilities, today these facilities provide a much wider range of services to a much sicker, increasingly diverse and youthful patient population. For example, the proportion of Medicaid-supported patients under 65 years of age grew by 26 percent in absolute terms from FY2001 to FY2008.¹ This expanded role reflects in part the massive shifts that are occurring in the healthcare industry as well as dramatic changes in Maryland's demography.

Advances in medical care and technology along with growing cost pressures are constantly changing the manner by which the healthcare industry provides medical services. These same forces have transformed many procedures from ones requiring lengthy hospitalization to ones requiring much shorter hospital stays, referrals to skilled nursing facilities, or only outpatient services.

Accordingly, expensive hospital stays have been dramatically reduced, increasing demand for the capabilities of less expensive skilled nursing facilities. For instance, in the past, respiratory therapy requiring the use of a ventilator would necessitate hospitalization. Today, skilled nursing facilities can often provide respiratory therapy and other services much more

¹ The Hilltop Institute, "Medicaid long-term supports and services in Maryland: nursing facilities," December 4, 2009. Prepared for Maryland Department of Health and Mental Hygiene.

inexpensively. Due largely to technology but also to the pressures upon Medicaid and the social mandate to contain healthcare costs, skilled nursing facilities increasingly provide services, such as kidney dialysis, intensive physical and occupational therapy or onsite pharmacy or laboratory services, that traditionally have been the province of hospitals. Rehabilitation services for patients who need inpatient care, but will be discharged after a relatively short stay are also a core competency. These services are among the many contributions made by Maryland's skilled nursing facilities which are increasingly able to provide high quality, lower cost alternatives to traditional hospital-based care.

Quantifying the Economic Contribution of Maryland's Skilled Nursing Facilities

A Suite of Services Provided to an Increasingly Diverse Population

Skilled nursing facilities provide a range of services including sub-acute care, rehabilitation, and long-term care. A distinguishing characteristic of these facilities is the availability of on-site, inpatient skilled nursing services. Importantly, skilled nursing facilities are located in every Maryland county, with the implication being that their economic impacts are diffused across the state. Some are independent, family-owned operations. Others are faith-based and/or nonprofit organizations. Still other facilities are part of large state and national corporations. In other words, skilled nursing facilities are diverse in their operations, their capabilities and their geography.

Skilled nursing facilities are distinct from several other types of facilities in that they provide nursing services to their clients. There exist other types of residential facilities that lack on-site skilled nursing services. For instance, continuing care retirement communities may offer some on-site nursing care, but are primarily concerned with residential and personal care services for persons unable to live independently or those who choose not to live independently. Certain homes for the elderly also offer long-term residential and personal care services, but do not have on-site nursing services. Skilled nursing facilities are then designed to meet a critical community need and to fill a vital role in the continuum of care available to Marylanders.

Reliable data on skilled nursing facilities are available from the Maryland Department of Health and Mental Hygiene (DHMH), which has regulatory authority over these facilities. DHMH through its Office of Health Care Quality licenses skilled nursing facilities in Maryland and routinely collects data on the volume, quality, and cost of care provided. Of particular interest are Nursing Home Uniform Cost Reports under Title 19, which are facility-specific documents that compile detailed information on the number of patient days of service, sources of revenue, types of service provided, wages and salaries, and other information. These reports are a requirement for all but those facilities providing fewer than 1,000 days of Medicaid compensated services. Reports are available for 207 of the total of 234 licensed skilled nursing facilities in Maryland.

The DHMH data are derived from reports that these facilities provide to the state government as part of their licensing requirements. Based on these Uniform Cost Reports provided by 207 individual facilities in the State of Maryland, data encompassing the activities of facilities across Maryland are available.² Since these reports are part of the state's regulation and tracking of Medicaid dollars, they can be assumed to represent an accurate accounting of payroll (including benefits) and facility revenue/business sales data and are a reasonable guide to the activities of the 27 licensed facilities not providing data via the Uniform Cost Reports. Data from the database of these reports is summarized in Exhibit 1. Other data from DHMH provides the total number of licensed skilled nursing facilities (234) and licensed beds (28,191) in those facilities, but does not include the service and cost related data in the Uniform Cost Reports. These data are also presented in the exhibit and are the basis of estimating the payroll and revenue/sales associated with this total universe of skilled nursing facilities in Maryland.

Exhibit 1. Basic information regarding skilled nursing facilities in Maryland (2010 dollars)

<i>Data source</i>	<i>Employees (full- and part-time positions) (1)</i>	<i>Annual payroll (millions) (2)</i>	<i>Facility revenue/business sales (millions) (2)</i>	<i>Estab- lishments</i>	<i>Beds</i>
DHMH Uniform Cost Reports, 2009	34,553	\$1,406	\$2,913	207	26,902
DHMH licenses, 2009	36,209	N.A.	N.A.	234	28,191

Notes. 1. Employment is a mix of full-time and part-time jobs. Employment estimates are based on 1.2 full-time equivalent positions per licensed bed, which have converted to a mix of full-time and part-time jobs using an average hours worked per week of 32.7 and full-time employment at 35 hours per week. Hours worked per week are from Bureau of Labor Statistics data for all skilled nursing facility workers in 2009. The 35-hour full-time work week is from American Health Care Association.
2. To allow for direct comparisons, all values for payroll and business sales have been adjusted to 2010 dollars.
Source: DHMH, Sage

As presented in Exhibit 1, total employment—the number of full-time and part-time jobs—in the total of 234 skilled nursing facilities in Maryland exceeds 36,000 based on the DHMH data on the total number of licensed beds in the state. Payroll for the 34,553 estimated employees in 207 facilities are based on the DHMH data on actual salaries and other compensation included in the Uniform Cost Reports. These payroll estimates include the value of benefits, which on average are worth 32 percent of direct compensation. Like payroll estimates, facility revenue data from DHMH are actual revenues for the 207 facilities providing Uniform Cost Reports.

² Nursing Home Uniform Cost Reports under Title 19 are available from the DHMH. A database compiled from these reports was used to develop the descriptive statistics for this analysis. Statistics from this database on compensation and facility revenue/business sales per employee were used to estimate statistics for all licensed skilled nursing facilities in Maryland.

The difference between the 207 facilities for which substantial data are available via the Uniform Cost Reports and the 27 other licensed facilities is size. The average facility providing a Uniform Cost Report had 130 licensed beds in 2009 while each of the other 27 facilities had on average 48 licensed beds.

Based on the discussion above, the DHMH actual data and estimated employment for all 234 licensed facilities are likely to provide reasonably accurate depictions of the statewide industry. Using these data, a detailed and accurate economic picture of Maryland’s entire skilled nursing industry can be generated. Based on the DHMH per employee payroll and business sales ratios from the Uniform Cost Reports and the estimated employment for all licensed facilities, a depiction of the industry emerges as one with over 36,000 employees in Maryland. The annual payroll for these workers is substantial — \$1.5 billion — with average annual wages and benefits in excess of \$40,000. Total annual revenue for these facilities is in excess of \$3 billion. Exhibit 2 summarizes these data.

Exhibit 2. Maryland’s skilled nursing facility industry in statistical brief (compensation & benefits and revenue in 2010 dollars)

<i>Data source</i>	<i>Direct</i>
Jobs (full- and part-time positions)	36,209
Compensation & benefits (millions)	\$1,474
Revenue (millions)	\$3,052
Sources: DHMH, Sage	

Skilled nursing facilities are located in every county in Maryland and in Baltimore City. As shown in Exhibit 3, the average compensation of employees of these facilities compares well to the average worker in Maryland, the most affluent state in the nation. Across the state, the average compensation of \$40,697 is 88 percent of the average compensation for all Maryland workers. In more rural areas of the state where incomes are significantly lower than the state average, the compensation available for skilled nursing facility workers can provide solidly middle income wages, and can even exceed the average compensation for all workers in a county as is the case in Allegany, Garrett, and Wicomico counties. In Baltimore City, which has the highest concentration of poverty in Maryland, the average compensation of skilled nursing facility workers is over \$47,000. This is below the average for Baltimore City which includes the highly paid private sector office workers in downtown Baltimore, but is above the statewide average wage. Skilled nursing facilities are demonstrably able to bring well-paid, middle income jobs to all jurisdictions in Maryland including the poorest.

Exhibit 3. Skilled nursing facility wages versus average wages (2010 dollars)

Jurisdiction	Average wages and benefits for all workers	Average wages and benefits for skilled nursing facility workers	Skilled nursing facility job as share of average job
Maryland	\$46,280	\$40,697	88%
Allegany County	\$29,422	\$31,854	108%
Baltimore City	\$52,397	\$47,027	90%
Garrett County	\$29,395	\$39,014	133%
Somerset County	\$35,499	\$31,796	90%
Wicomico County	\$33,901	\$40,058	118%

Sources: DHMH, Sage

The average wages and benefits of approximately \$41,000 for skilled nursing facility employees can also be compared to an average payroll for hospital workers of well over \$53,000.³ This means that hospitals are paying on average about 30 percent more for staff than skilled nursing facilities. This wage differential helps contribute to the cost-effectiveness of the services provided by the skilled nursing facility industry.

Exhibit 4 presents the multiplier effects associated with skilled nursing industry economic activity. Direct impacts represent the jobs, income, and business sales of the skilled nursing industry itself. Indirect impacts are those related to the businesses that supply goods and services to the industry as well as the chain of suppliers dependent upon the business that this first round of suppliers garners from the skilled nursing industry. Induced impacts occur when the workers included in the directly and indirectly affected businesses spend their dollars upon an extraordinarily wide range of consumer-oriented goods and services. See Appendix for more discussion of multiplier effects and economic impacts.

When multiplier effects are properly considered, the skilled nursing industry supports more than 46,000 jobs in Maryland with associated compensation and benefits of \$2 billion. The skilled nursing industry's presence is associated with almost \$5.6 billion in Maryland facility revenue for skilled nursing facilities as well as revenue from the sales of goods and services by Maryland businesses.

Exhibit 4. Economic contribution of skilled nursing facilities to Maryland's economy (2010 dollars for dollar-denominated categories)

<i>Type of impact</i>	<i>Direct</i>	<i>Indirect</i>	<i>Induced</i>	<i>Total</i>
Jobs (full- and part-time positions)	36,209	2,366	8,071	46,646
Compensation & benefits (millions)	\$1,474	\$136	\$403	\$2,012
Revenue (millions)	\$3,052	\$614	\$1,884	\$5,550

Sources: DHMH, IMPLAN, Sage

³ According to U.S. Census, County Business Patterns, Maryland, 2008, the average annual payroll for general medical and surgical hospitals employees was \$51,686 in 2008 dollars or \$53,589 in 2010 dollars. Wages and benefits for skilled nursing facility workers in 2009 was \$40,697.

The \$2 billion in total wage/salary compensation that is supported by Maryland's skilled nursing industry also contributes to State and local government coffers. This compensation is associated with an estimated \$68 million in annual State income tax revenue and \$46 million in income tax revenue for local governments (i.e. twenty-three Maryland counties and Baltimore City).⁴ The industry also generates additional tens of millions in property, sales and use, corporate, and other taxes from the property owned by facility employees as well as the facilities owned by for-profit operators. Sales and use taxes apply to workers and facilities alike. Corporate taxes are levied against the income of for-profit operators. These types of taxes are also paid by the businesses and employees who depend upon the industry for their livelihoods, including those firms that supply goods and services to the industry and to the many businesses that are patronized by the industry's workers.

Economic activity generated by the skilled nursing industry is broadly distributed throughout Maryland. Skilled nursing facilities are located in every Maryland county and in Baltimore City. The middle class earnings enjoyed by the employees of these facilities (i.e. almost \$41,000 in wages and benefits) are a particular benefit to workers in the less affluent urban and rural areas where middle income producing jobs are in relatively short supply.

An Array of Services Supplied by Maryland's Skilled Nursing Facilities

In addition to an on-site nursing staff, skilled nursing facilities offer a layered mix of physicians and other medical professionals providing medical and health related services to patients. Physical, occupational, and speech therapy are common services and respiratory and IV therapy are also available. These facilities almost universally provide pharmacy, laboratory, and radiology services. Patient needs for oxygen, vaccines, psycho-social services, and recreational activities are also met.

This mix of services is provided by staff with a wide array of qualifications and skill sets. These range from physicians to nurse practitioners and physician assistants to nurses and allied medical professions to the mix of personnel required to maintain any health care residential facility. By careful utilization of on-site staff such as nurse practitioners, skilled nursing facilities can maintain both high levels of service and effective cost controls.

These services are primarily, but certainly not exclusively delivered to the elderly. The proportion of Medicaid-supported patients aged 65 years or older has constituted 80 percent or more of the total patient population since FY2001. Nevertheless, as a reflection of the changing mix of services that skilled nursing facilities can provide and the rapidly changing nature of

⁴ Tax estimates are based on personal income reported on state tax returns and actual state and local income taxes collected by Maryland governments according to the State Comptroller. Effective tax rates (i.e. taxes collected divided by income reported) are 3.4 percent for the state and 2.3 percent for the average local jurisdiction.

clientele, the proportion of Medicaid-supported patients under 65 years of age grew by 26 percent in absolute terms from FY2001 to FY2008 to almost 20 percent of all patients.⁵

A common measure of service delivery is patient days or the number of days that patients are served by skilled nursing facilities. Using the DHMH database, the over 34,000 employees tracked by DHMH provided over 8.8 million patient days of service in 2009. This database, however, as noted above, does not include all skilled nursing facilities in Maryland. Based on the estimated total employment in the industry of over 36,000 employees, the total volume of service that the industry provided in 2009 can more properly be estimated at 9.2 million patient days. This estimate is based on the average number of patient days per employee for the facilities included in the DHMH database of Uniform Cost Reports. Exhibit 5 includes details of this estimate of total patient days in 2009. It should be noted that some skilled nursing facilities provide uncompensated care to patients (e.g., while waiting for all Medicaid eligibility documentation to be completed) and that the figure of 9.2 million patient days only includes compensated patients days.

Exhibit 5. Estimated patient days of service, 2009

	<i>Employees</i>	<i>Total patient days</i>	<i>Patient days per employee</i>
DHMH database	34,553	8,812,344	339
Total industry	36,209	9,240,315	339

Sources : DHMH, Sage

On a typical day in 2009, skilled nursing facilities were providing services to over 25,000 of Maryland’s most in need. Put another way, on an average day, skilled nursing facilities provide services to the equivalent of virtually every resident of Somerset County (current population of approximately 25,900).

Evidence of Cost Effectiveness and Cost Savings at Maryland’s Skilled Nursing Facilities

Skilled nursing facilities constitute an important part of the continuum of medical care available to Marylanders. In general, these facilities can be seen as providing services for those needing less intensive care than is available in hospitals, but more intensive care than is available in home-based settings or other less technology-rich environments. Further, because Maryland is associated with a high cost of living given local income levels and its East Coast location, the cost of doing business in the state is correspondingly high. Therefore, even at maximum efficiency, significant cost is associated with the provision of high-quality skilled nursing in Maryland.

In theory, there might be clear lines between care provided by hospitals and that provided by skilled nursing facilities. In practice, there is substantial overlap. This overlap has become more

⁵ *Op. cit.*, The Hilltop Institute.

common as opportunities arise for skilled nursing facilities to expand their range of services and offer care that was previously restricted to hospitals. For example, care for those who need dialysis or are dependent on ventilators is routinely provided by hospitals, but equivalent care can and is often provided at skilled nursing facilities.

The ability of skilled nursing facilities to provide increasingly sophisticated care is important because this care can frequently be provided at lower costs than hospital care. For the skilled nursing facilities in the DHMH database, total revenues in 2009 were \$2.9 billion (see Exhibit 1) while total patient days for that group of facilities were 8.8 million (see Exhibit 5). On average the cost of a patient day at a Maryland skilled nursing facility in 2009 was \$330 in today's dollars.

This average cost can be compared to the cost of services at Maryland hospitals. Exhibit 6 summarizes the cost of services at 59 hospitals that are regulated by the Maryland Health Services Cost Review Commission. The listed services are among the less intensive services provided by Maryland hospitals and can also be provided by the state's skilled nursing facilities. In general these services are measured in terms of patient days and this allows for direct comparison with patient days of service provided by skilled nursing facilities. For the services listed, costs per patient day of service at Maryland hospitals range from \$734 to \$972. On average this mix of hospital-based services costs \$846 per patient day. This is 156 percent higher than the \$330 average cost per patient day of service provided by Maryland's skilled nursing facilities.

Exhibit 6. Cost of services provided by Maryland hospitals, 2009 (values in 2010 dollars)

<i>Service</i>	<i>Volume unit</i>	<i>Volume</i>	<i>Revenue (millions)</i>	<i>Revenue/Volume</i>
Rehabilitation	Patient day	124,008	\$120.2	\$970
Chronic Care	Patient day	113,739	\$76.3	\$671
Adult psychiatric	Patient day	57,406	\$55.8	\$972
Geriatric psychiatric	Patient day	10,136	\$9.1	\$899
Respiratory	Patient day	29,661	\$21.8	\$734
Total	Patient day	334,950	\$283.3	\$846

Sources: Maryland Health Services Cost Review Commission, Sage

A particularly revealing example of the relative cost effectiveness of skilled nursing facilities in comparison to hospital-based care is the provision of care to ventilator dependent inpatients. An analysis of Medicaid payments made in FY2003 for this patient service found that Medicaid payments to five chronic hospitals averaged \$1,110 per patient day. Had these services been purchased from skilled nursing facilities, the average charge in 2003 would have been approximately \$550, or almost exactly half of the cost.⁶

⁶ "An analysis of Maryland Medicaid payments for hospital ventilator dependent patients," Department of Health and Mental Health, undated.

It should be noted that the provision of ventilator services involves patients with a range of needs. While in many cases these needs can be capably met by skilled nursing facilities, in other cases care would be more appropriately provided in chronic hospital settings. As indicated by the report on ventilator dependent inpatients in FY2003, a significant number of patients in chronic hospitals could also be well served by skilled nursing facilities.⁷

A current comparison of the costs for ventilator patient services shows that the disparity in costs between chronic hospitals and skilled nursing facilities is even more pronounced now than it was in 2003. According to data maintained by DHMH, charges for ventilator dependent patients at five chronic hospitals in Maryland averaged \$1,658 per patient day in October 2010.⁸ In fiscal year 2011 (i.e. July 2010 through June 2011), skilled nursing facilities providing the same service to their patients charge between \$677 per patient day in the Western Maryland region to \$752 in the Baltimore region. These charges range from 41 percent to 45 percent of the average charge at the state's five chronic hospitals. In other words, skilled nursing facilities today can provide services to ventilator dependent patients for at least 55 percent less than Maryland's chronic hospitals. See Exhibit 7.

Exhibit 7. Cost of ventilator care in chronic hospitals versus skilled nursing facilities

<i>Provider</i>	<i>Cost per patient day</i>	<i>Cost relative to chronic hospital cost</i>
Chronic hospital	\$1,658	N.A.
Skilled nursing facility, low	\$677	40.8%
Skilled nursing facility, high	\$752	45.4%
Skilled nursing facility, typical (1)	\$733	44.2%
Note. (1) Typical cost is for Central Maryland and Washington regions. Source: DHMH, Sage		

In October 2010, DHMH data indicate that almost \$1.6 million was spent for ventilator dependent patients over the month at five chronic hospitals in Maryland. Exhibit 8 examines the cost savings if all that care had been provided at skilled nursing facilities. Those savings would have approached \$900,000 for typical skilled nursing facilities. If the October costs were representative the potential savings by having care provided by skilled nursing facilities would have exceeded \$10 million.

⁷ *Ibid.*

⁸ Personal communication, Neal Karkhanis, Health Facilities of Maryland, to John Duberg, Sage Policy Group, January 6, 2011. Data on chronic hospital charges for ventilator dependent patients was provided by Susan Panek, Deputy Director of DHMH.

Exhibit 8. Potential savings for ventilator care provided by skilled nursing facilities (*thousands of 2010 dollars*)

<i>Provider</i>	<i>Cost for ventilator inpatients, October 2010</i>	<i>Savings if provided by skilled nursing facilities</i>	<i>Annualized savings</i>
Chronic hospital	\$1,583	\$0	\$0
Skilled nursing facility, low	\$646	\$937	\$11,242
Skilled nursing facility, high	\$718	\$865	\$10,377
Skilled nursing Maryland, typical (1)	\$700	\$883	\$10,595
Note. (1) Typical cost is for Central Maryland and Washington regions. Source: DHMH, Sage			

The cost-effectiveness of skilled nursing facilities relative to hospitals in terms of delivering services like ventilator care is of primary importance because these costs represent the vast majority of all costs incurred by these facilities. Still, the potential savings for and cost-effectiveness of skilled nursing facilities also extend to capital costs. For the services that skilled nursing facilities and hospitals both provide, skilled nursing facilities represent a more reasonable cost alternative compared to hospitals. A direct measure of this cost-effectiveness is cost of new construction. According to RS Means, recent new construction costs for typical nursing homes range from \$114 to \$140 per square foot while analogous costs for hospitals range from \$203 to \$228 per square foot. Comparing the midpoints of these cost ranges, new construction costs for nursing facilities are 59 percent of those for hospitals.⁹

Whether the issue is operating costs or capital costs, the clear finding is that Maryland's skilled nursing facilities can and do generate substantial cost savings for the state's taxpayers. These savings are in addition to the positive fiscal impacts described above in the economic impacts section of this report.

Skilled Nursing Facilities Receive a Diminishing Share of Medicaid Payments

Medicaid is a major source of revenue for skilled nursing facilities, accounting for not quite three of every five dollars of total revenue. The Centers for Medicare & Medicaid Services (CMS) tracks payments made by the Medicaid program for services and providers. Data on payments in Maryland are available for fiscal years 2000 through 2008.

Over time, while Medicaid spending in Maryland has grown steadily, the share of all Medicaid dollars provided to nursing facilities has declined significantly. In 2000, over 20 percent of all Medicaid dollars in Maryland were allocated to nursing facilities. By 2008, just 8 years later,

⁹ RS Means, "Construction Cost Estimating, Nursing Home Construction Costs" and "Construction Cost Estimating, Hospital (2-3 Story) Home Construction Costs\," www.reedconstructiondata.com. Construction costs for are 2008. The nursing home costs apply to a 25,000 square foot facility while the hospital costs apply to a 55,000 square foot facility. Costs vary by type of construction (e.g., brick versus concrete block versus precast concrete panels) and whether or not union labor was employed.

approximately 18 percent of Medicaid dollars were devoted to nursing facilities. This reduction in the share of Medicaid payments directed to nursing facilities is a reflection of the fact that payments to skilled nursing facilities grew much slower than overall Medicaid payments (6.6 percent on average per year from 2000 to 2008 versus 8.1 percent). Payments for combined inpatient and outpatient hospital services grew at a faster rate than other Medicaid payments, an annual rate of 8.4 percent. Outpatient hospital services grew much faster than inpatient hospital services (12.5 percent versus 7.4 percent). The fastest growing payments were those to physicians, other care, home health, clinics, and outpatient hospitals, each growing at double-digit annual rates.

Exhibit 9 summarizes total payments made in Maryland by type of service provided for fiscal years 2000 and 2008. The share of total payments for each service is also provided as is the annual growth rate. The growth rate is the average annual increase or decrease in payments over the 9-year period from fiscal year 2000 through fiscal year 2008.

Exhibit 9. Maryland Medicaid payments by service, 2000 - 2008 (millions of dollars)

<i>Type of service</i>	<i>Medicaid payments</i>		<i>Share of total payments</i>		<i>Annual growth rate</i>
	2000	2008	2000	2008	
Capitated care	\$912	\$1,911	30.4%	34.2%	9.7%
Clinic	\$6	\$15	0.2%	0.3%	12.7%
Home health	\$224	\$661	7.5%	11.9%	14.5%
ICF/MR (1)	\$58	\$55	1.9%	1.0%	-0.6%
Inpatient hospital	\$392	\$694	13.1%	12.4%	7.4%
Mental health facility	\$94	\$100	3.1%	1.8%	0.8%
Nursing facility	\$609	\$1,017	20.3%	18.2%	6.6%
Other care	\$43	\$154	1.4%	2.8%	17.2%
Outpatient hospital	\$78	\$200	2.6%	3.6%	12.5%
Personal support	\$304	\$320	10.1%	5.7%	0.6%
Physician	\$45	\$203	1.5%	3.6%	20.8%
Prescribed drugs	\$222	\$242	7.4%	4.3%	1.1%
Miscellaneous (2)	\$12	\$4	0%	0%	-14.3%
Total payments	\$3,003	\$5,578	100.0%	100.0%	8.1%

Note. 1. ICF/MR = intermediate care facility for the mentally retarded
2. Includes other practitioners, sterilization, dental, and unknown services.
Source: CMS

Maryland's Skilled Nursing Facilities Provide Quality Care

Since 2005, the Maryland Health Care Commission (MHCC) has conducted surveys of nursing homes to evaluate the quality of care provided. Surveys were conducted in 2005 (a pilot test), 2007, 2008, and 2009 and encompassed more than 220 facilities that had at least one resident with a stay of 90 days or more. Each survey sought assessments of services delivered to residents of these facilities by responsible parties, usually family members, but sometimes friends or other non-relatives. In 2007, 2008, and 2009, surveys were mailed to more than

17,000 responsible parties. Each year almost 60 percent of these surveys were returned and tabulated. The surveys concentrated on the facilities' performance in the five areas listed below. For each of these areas, respondents were asked to rate performance on a scale of 1 (never), 2 (sometimes), 3 (usually), or 4 (always) with higher numbers indicating higher quality of care.¹⁰

1. Staff and administration of the nursing home
2. Care provided to residents
3. Food and meals
4. Autonomy and resident rights
5. Physical aspects of the facility

Results of the surveys are presented in Exhibit 10, which summarizes results from the last three surveys. With the exception of autonomy and resident rights, these results have been quite consistent over time, showing only incremental change from year to year. That change has uniformly been positive, showing small performance improvements in all areas except food and meals, which has been consistently rated each year. Scores fall between a rating of 3 and 4. The overall picture is one of reliably high quality service provision to residents.

Exhibit 10. Performance of Maryland nursing homes

<i>Criteria</i>	<i>2007 score</i>	<i>2008 score</i>	<i>2009 score</i>
Staff and administration of the nursing home	3.5	3.6	3.7
Care provided to residents	3.4	3.5	3.5
Food and meals	3.5	3.5	3.5
Autonomy and resident rights	3.1	3.5	3.5
Physical aspects of the facility	3.3	3.4	3.4

Source: Maryland Health Care Commission

Given the high quality of services provided, it follows that the overall assessment of Maryland's nursing facilities has been quite high. Exhibit 11 summarizes overall satisfaction with the state's skilled nursing industry. The overall rating was based on a scale from 1 to 10 with 10 being the highest rating. The other general assessment was whether responsible parties would recommend the nursing home to others. As is true of the performance criteria, these overall assessments have been consistent from year to year since 2007 with a slight tendency for satisfaction to improve over time. By 2009, fully 9 in 10 stakeholders would rate the facility with which they are associated to others.

¹⁰ Maryland Health Care Commission, "2009 Maryland nursing facility family survey: Statewide report," February 2010.

Exhibit 11. Overall satisfaction with Maryland nursing homes

<i>Criteria</i>	<i>2007 score</i>	<i>2008 score</i>	<i>2009 score</i>
Overall rating of care received at nursing homes	8.2	8.2	8.3
Percent who would recommend nursing home to others	88%	89%	90%
Source: Maryland Health Care Commission			

Part of the quality of care is the social environment available at skilled nursing facilities. This is particularly true for patients who might otherwise need to be hospitalized where isolation and the relative lack of interaction with staff or other patients can contribute to a less appealing ambience.

Demand for Maryland’s Skilled Nursing Facilities Will Increase

Over the past several years, there has been an increase in the number of patients under the age of 65. While the traditional view of nursing homes as facilities serving the elderly still has some validity, the proportion of younger patients is on the rise. Many of these patients are victims of violence, HIV positive, or have suffered some form of trauma that severely limits their independence.

The aging of the population is a well-known phenomenon. Between 2000 and 2030, the number of Marylanders 65 years and older is expected to grow more than three times faster than the growth for the total population. In 2000, one Marylander in nine was at least 65 years old. By 2030, it is projected that more than one in six state residents will be at least 65 years old. At five times the rate of overall statewide population growth, expansion in the Maryland population aged 85 and older will be even faster. The implication is that demand for skilled nursing facilities is on the rise among both younger and older Marylanders. Exhibit 12 presents demographic expectations for Maryland between the year 2000 and the year 2030. Note that the population aged 65 and older is expected to grow from fewer than 600,000 to well over 1.2 million over this period, while the population aged 85 and above is anticipated to expand from less than 67,000 to nearly 177,000. Over the next 20 years, over 80 Marylanders will turn 65 each day; on average, a state resident will turn 65 every 17 minutes from 2010 to 2030.¹¹

¹¹ According to Maryland Department of Planning projections, the state population aged 65 years or older will increase by 609,890 persons between 2010 and 2030. This averages to 83 persons per day over that period or one person every 17.25 minutes.

Exhibit 12. Demographic trends 2000 - 2030

Age Group	2000		2030		2000 - 2030 Change	
	Number	Percent	Number	Percent	Number	Percent
Total	5,296,486	100.0	7,022,251	100.0	1,725,765	32.6
Under 18	1,356,172	25.6	1,718,368	24.5	362,196	26.7
18-24	450,922	8.5	633,888	9.0	182,966	40.6
25-44	1,664,677	31.4	1,918,638	27.3	253,961	15.3
45-64	1,225,408	23.1	1,515,662	21.6	290,254	23.7
65+	599,307	11.3	1,235,695	17.6	636,388	106.2
85+	66,902	1.3	176,713	2.5	109,811	164.1

Source: Maryland Department of Planning

Growing demand for Maryland’s skilled nursing facilities will be motivated by much more than an aging population. Obesity in both children and adults is a serious problem that drives demand for skilled nursing facilities because it is linked to coronary heart disease, diabetes, certain cancers, high blood pressure, stroke and other diseases from which patients in nursing facilities suffer. The percentage of Maryland residents who are either overweight or obese is startling. As shown in Exhibit 13, a majority of adult men and women in the state are either overweight or obese and over a quarter of children in Maryland also fall into these categories.¹² It is small comfort that these rates for adult men and children in Maryland are slightly lower than corresponding national rates.

Exhibit 13. Marylanders who are overweight or obese

Age group	Share of population that is overweight or obese (1)	
	Maryland	United States
Adult men	67.7%	69.3%
Adult women	53.1%	52.7%
Children	28.8%	31.6%

Note. A body mass index of 25 or more is the definition of being overweight. Obesity is defined as a body mass index of 30 or more.
Source: Centers for Disease Control and Prevention

Not only is a substantial proportion of the state's population overweight or obese, but there are additional data to indicate that the trends are moving in the wrong direction. In fact, obesity data indicate an alarming increase in the number of Marylanders who are seriously overweight. Exhibit 14 presents data on obesity trends in Maryland. These data indicate that the number of obese residents increased by 180,523 or 19 percent in only 4 years (2004-2008). Moreover the increase in the number of obese state residents actually exceeded, by a wide margin, the total

¹² The Centers for Disease Control and Prevention provides the following example to demonstrate how an individual 5 feet 9 inches tall would be classified.

Weight Range	BMI	Considered
124 lbs or less	Below 18.5	Underweight
125 lbs to 168 lbs	18.5 to 24.9	Healthy weight
169 lbs to 202 lbs	25.0 to 29.9	Overweight
203 lbs or more	30 or higher	Obese

increase in the state's population over the same period. In other words, the population of non-obese Marylanders actually declined over that four-year period.

Exhibit 14. Trends in obesity in Marylanders, 2004 - 2008

	2004	2008	Change
Total population	5,542,659	5,658,655	115,996
Population that is not obese	4,598,348	4,533,821	(64,527)
Population that is obese	944,311	1,124,834	180,523
Share of total population	17.0%	19.9%	N.A.
Note. Obesity is defined as a body mass index of 30 or more.			
Sources: Centers for Disease Control and Prevention, Maryland Department of Planning			

Diabetes is yet another condition that often presages the need for chronic care. It is therefore alarming that the percentage of Marylanders who have been diagnosed with diabetes (9.3 percent) is above the national average (8.3 percent).¹³ Diabetes is often linked with obesity, which implies that the continuing upward trend in obesity will produce expanded incidence of diabetes.

These basic demographic and medical trends strongly suggest that the need for skilled nursing facilities will increase in the foreseeable future among both younger and older Marylanders. A rapidly aging population coupled with greater incidences of overweight and obese residents will produce an unrelenting surge in the conditions and diagnoses that typify skilled nursing facility patients — e.g. hypertension, diabetes, stroke, renal failure, congestive heart failure and other cardiovascular disease.

In response to these inevitable circumstances, skilled nursing facilities offer a statewide resource that provides high quality care in cost effective ways. By supplying quality care efficiently, the skilled nursing industry will continue to be a vital part of the state's continuum of care, and a major economic force in Maryland, providing quality jobs in every jurisdiction and returning a substantial stream of fiscal benefits to the State of Maryland and to local governments.

¹³ Centers for Disease Control and Prevention, "Diabetes Data & Trends"

Conclusion

Maryland's Skilled Nursing Facilities: Significant Economic Impacts in Conjunction with Efficient, High-Quality Care to an Increasingly Diverse Population

Maryland's skilled nursing facilities produce significant economic impacts in the form of support for employment, compensation and benefits, and business revenue. When multiplier effects are properly considered, the skilled nursing industry supports more than 46,000 jobs in Maryland with associated compensation and benefits of \$2 billion. The skilled nursing industry's presence is also associated with more than \$5.5 billion in Maryland business sales.

These economic impacts translate neatly into fiscal impacts. For instance, the \$2 billion in wage/salary compensation is associated with an estimated \$68 million in annual State income tax revenue and \$46 million in income tax revenue for local governments (i.e. twenty-three Maryland counties and Baltimore City).

This is hardly where the positive fiscal impacts end. Skilled nursing facilities are able to provide care with relative efficiency. A particularly revealing example of the relative cost effectiveness of skilled nursing facilities in comparison to hospital-based care is the provision of care to ventilator dependent inpatients. An analysis of Medicaid payments made in FY2003 for this patient service in chronic hospitals found that Medicaid payments to five chronic hospitals averaged \$1,110 per patient day. Had these services been purchased from skilled nursing facilities that year, the average charge would have been almost exactly half of the cost.

A 2010 comparison of the costs for ventilator patient services shows that the cost disparity between chronic hospitals and skilled nursing facilities is even more pronounced now than it was in 2003. Charges for ventilator dependent patients at five chronic hospitals in Maryland averaged \$1,658 per patient day in October 2010.¹⁴ Skilled nursing facilities providing the same service to their patients charge between \$677 and \$752 per patient day. That is, skilled nursing facilities today can provide services to ventilator dependent patients for at least 55 percent less than Maryland's chronic hospitals.

Skilled nursing facilities are able to produce lower costs because relative to hospitals, they are not required to maintain the level of capital and staffing required in more acute care settings. Correspondingly, to the extent that skilled nursing facilities can be substituted for hospitals, costs will be reduced without compromising quality of care (fully nine out of ten stakeholders would recommend the skilled nursing facility with which they are associated to others), thereby helping to reduce the State's Medicaid expenditures.

¹⁴ Personal communication, Neal Karkhanis, Health Facilities of Maryland, to John Duberg, Sage Policy Group, January 6, 2011. Data on chronic hospital charges for ventilator dependent patients was provided by Susan Panek, Deputy Director of DHMH.

Moreover, reduced Medicaid support would entail diminished investment in upgrading and maintaining current facilities, which would cost the state construction and related jobs and would also relegate Maryland's large and growing skilled nursing facility population to lower quality facilities and amenities. This could actually serve to increase demand for healthcare over the longer-term.

Finally, data regarding various trends indicate that demand for skilled nursing facilities in Maryland will expand rapidly in the years ahead. Rapid aging of the population in conjunction with issues such as obesity, diabetes, and other chronic diseases strongly suggest that demand for skilled nursing facilities will expand among older and younger Marylanders alike. Many of these Marylanders rely upon Medicaid for healthcare financing. Without these resources, these Marylanders, many of them medically indigent, would lose all access to skilled care.

IMPLAN Appendix

IMPLAN is an economic impact assessment software system. The system was originally developed and is now maintained by the Minnesota IMPLAN Group (MIG). It combines a set of extensive databases of economic factors, multipliers and demographic statistics with a highly refined and detailed system of modeling software. IMPLAN allows the user to develop local-level input-output models that can estimate the economic impact of new firms moving into an area as well as the impacts of professional sports teams, tourism, and residential development. The model accomplishes this by identifying direct impacts by sector, then developing a set of indirect and induced impacts by sector through the use of industry-specific multipliers, local purchase coefficients, income-to-output ratios, and other factors and relationships.

There are two major components to IMPLAN: data files and software. An impact analysis using IMPLAN starts by identifying expenditures in terms of the sectoring scheme for the model. Each spending category becomes a "group" of "events" in IMPLAN, where each event specifies the portion of activity allocated to a specific IMPLAN sector. Groups of events can then be used to run impact analysis individually or can be combined into a project consisting of several groups. Once the direct economic impacts have been identified, IMPLAN can calculate the indirect and induced impacts based on a set of multipliers and additional factors.

Economic benefits principally take the form of new employment opportunities, associated compensation and benefits, and augmented business revenues. These economic benefits include direct benefits, which are closely associated with activities that would potentially take place, and secondary benefits that are associated with foreseeable and calculable multiplier effects.

Secondary benefits can be segmented into two types of impacts, indirect and induced. Indirect benefits are related to the business-to-business transactions that take place due to increased demand for goods and services that accompanies augmented investment and business operations. Impacted businesses sell everything from office furniture and copiers to computer and graphic design services. Induced benefits are created when workers directly or indirectly supported by increased economic activity spend their earnings in the local economy. Indirect and induced benefits together comprise total multiplier effects.

The hallmark of IMPLAN is the specificity of its economic datasets. The database includes information for over 400 different industries (generally at the three or four digit Standard Industrial Classification level), and twenty-one different economic variables. Along with these data files, national input-output structural matrices detail the interrelationships between and among these sectors. The database also contains a full schedule of Social Accounting Matrix (SAM) data. All of this data is available at the national, state, and county level.

Another strength of the IMPLAN system is its flexibility. It allows the user to augment any of the data or algorithmic relationships within each model in order to more precisely account for

regional relationships. This includes inputting different output-to-income/compensation ratios for a given industry, different wage rates, and different multipliers where appropriate. IMPLAN also provides the user with a choice of trade-flow assumptions, including the modification of regional purchase coefficients, which determine the mix of goods and services purchased locally with each dollar in each sector. Moreover, the system also allows the user to create custom impact analyses by entering changes in final demand. This flexibility is a critically important feature in terms of the Sage proposed approach. Sage is uniquely qualified to develop data and factors tailored to this project, and, where appropriate, overwrite the default data contained in the IMPLAN database.

A final advantage of IMPLAN is its credibility and acceptance within the profession. There are over five hundred active users of IMPLAN databases and software within the federal and state governments, universities, and among private sector consultants. The following list provides a sampling of IMPLAN users.

Sample of IMPLAN Users:

Academic Institutions

Alabama A&M University
 Albany State University
 Auburn University
 Cornell University
 Duke University
 Iowa State University
 Michigan Tech University
 Ohio State
 Penn State University
 Portland State University
 Purdue University
 Stanford University
 Texas A&M University
 University of California – Berkeley
 University of Wisconsin
 University of Minnesota
 Virginia Tech
 West Virginia University
 Marshall University/College of Business

Federal Government Agencies

Argonne National Lab
 Fed. Emergency Man. Agency (FEMA)
 US Dep't of Agriculture, Forest Service
 US Dep't of Ag., Econ Research Service
 US Dep't of Int., Bureau of Land Mgmt.
 US Dep't of Int., Fish and Wildlife Serv.
 US Dep't of Int., National Parks Service
 US Army Corps of Engineers

State Government Agencies

MD Dep't of Natural Resources
 Missouri Department of Economic Development
 California Energy Commission
 Florida Division of Forestry
 Illinois Dep't of Natural Resources
 New Mexico Department of Tourism
 South Carolina Employment Security
 Utah Department of Natural Resources
 Wisconsin Department of Transportation

Private Consulting Firms

Coopers & Lybrand
 Batelle Pacific NW Laboratories
 Boise Cascade Corporation
 Charles River Associates
 CIC Research
 BTG/Delta Research Division
 Crestar Bank
 Deloitte & Touche
 Ernst & Young
 Jack Faucett Associates
 KPMG Peat Marwick
 Price Waterhouse LLP
 SMS Research
 Economic Research Associates
 American Economics Group, Inc.
 L.E. Peabody Associates, Inc.
 The Kalorama Consulting Group
 West Virginia Research League

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- U.S. Department of Labor, Bureau of Labor Statistics, "Employment, hours, and earnings from the Current Employment Statistics survey (national)," <http://data.bls.gov>