

**The Total Cost of Health Care in Delaware
2008**

**prepared for
the Delaware Health Care Commission**

**by
Amirah Ellis
and
Edward C. Ratledge**

Summer 2009

**Center for Applied Demography and Survey Research
College of Human Services, Education and Public Policy
University of Delaware
www.cadsr.udel.edu**

The University of Delaware is committed to assuring equal opportunity to all persons and does not discriminate on the basis of race, color, gender, religion, ancestry, national origin, sexual preference, veteran status, age, or disability in its educational programs, activities, admissions, or employment practices as required by Title IX of the Educational Amendments of 1972, Title VI of the Civil Rights Act of 1964, the Rehabilitation Act of 1973, the Americans with Disabilities Act, other applicable statutes, and University policy. Inquiries concerning these statutes and information regarding campus accessibility and Title VI should be referred to the Affirmative Action Officer, 305 Hullihen Hall, 302/831-2835 (voice), 302/831-4552(TDD).

TABLE OF CONTENTS

	Page
List of Figures	4
Introduction	6
Executive Summary	7
Background	10
Estimates by Sector	34
Total Cost of Health Care	48
Prescription Drugs	57
The American Recovery and Reinvestment Act of 2009	67
Cost Shift	71
Community Health Statistics	77
Observations	86

LIST OF FIGURES

Figure	Page
1.1 US Health Care Industry Employment 1991-2008, % Change Year Ago	12
1.2 The Baby Boomers Live Births.....	13
1.3 Consumer and Medical Price Indexes All US Urban Consumers	14
1.4 Annual Growth Rates for the Consumer and Medical Price Indexes All US Urban Consumers	15
1.5 Medical Price Indexes All US Urban Consumers	16
1.6 Share of US Personal Health Care Expenditures by Source of Payment and Sector in 2008	17
1.7 Share of US Personal Health Care Expenditures by Sector	18
1.8 Per Capita Personal Health Care Expenditures by Sector and Area in 2004	19
1.9 Delaware Hospital Industry Utilization, % Change	20
1.10 Delaware Population Net Change by Age Group, 2010-2030	21
1.11 U.S. Consumer Health Expenditures by Age as a Share of Total Expenditures, 2007	23
1.12 U.S. Share of Average Annual Consumer Expenditures by Age, 2007	24
1.13 U.S. Average Annual Consumer Expenditures by Age, 2007.....	25
1.14 U.S. Share of Average Annual Consumer Expenditures by Income, 2007	26
1.15 U.S. Average Annual Consumer Expenditures on Health Care, All Ages.....	27
1.16 U.S. Average Annual Consumer Expenditures on Health Care, Aged 65-74	28
1.17 Delaware and U.S. Average Insurance Premiums, 2006.....	29
1.18 Select U.S. Consumer Expenditures by Age, 2007	30
1.19 U.S. Average Annual Expenditures by Age, 2007	31
1.20 Average Monthly Employee Premium Contributions by Coverage Type, 1999-2007	32
1.21 Percent of Total Premium Paid by Employees by Coverage Type, 1999-2007	33
2.1 Delaware Personal Health Care Expenditures in 1998 by Sector and Basis	34
2.2 Delaware Personal Health Care Expenditures: Hospital Services by Source of Estimate	36
2.3 Delaware Personal Health Care Expenditures: Physician Services by Source of Estimate	38
2.4 Delaware Personal Health Care Expenditures: Dental Services by Source of Estimate ..	39
2.5 Delaware Personal Health Care Expenditures: Home Health Services by Source of Estimate	40
2.6 Delaware Personal Health Care Expenditures: Nursing Home Services by Source of Estimate	41
2.7 Delaware Personal Health Care Expenditures: Prescription Drugs.....	42

2.8	U.S. Prescriptions, by Type of Store, 1997-2007	44
2.9	Delaware Personal Health Care Expenditures: Vision Products and Other Medical Durables	45
2.10	Delaware Personal Health Care Expenditures: CSI versus CADSR, 2007	46
2.11	Delaware Personal Health Care Expenditures: Share of Total Expenditures in 2007 by Category	47
3.1	Delaware Personal Health Care Expenditures in Current and Constant Dollars 1980-2008	48
3.2	Personal Health Care Expenditures Per Capita: US and Delaware	50
3.3	Personal Health Care Expenditures: Share of US GDP and Delaware GSP	51
3.4	Delaware Employment in Health Services	52
3.5	Delaware Statewide 2 nd Quarter 2008 Total Wages	53
3.6	Delaware Statewide 2 nd Quarter 2008 Total Employment	54
3.7	Delaware Health Care Provider Salaries	56
4.1	Average Annual Percent Change in Selected National Health Expenditures 1996 -2006	58
4.2	Percent of Total National Prescription Drug Expenditures by Type of Payer, 1992-2007	59
4.3	U.S. Prescription Drug Prices and Brand/Generic Mix, 1990-2007	60
4.4	Percent of Total National Prescription Drug Expenditures by Type of Payer 1990-2006	62
4.5	Concentration of Health Expenditures in the U.S. Population, Selected Years 1977-2002	64
4.6	National Prescription Drug Utilization by Age and Gender, 2005.....	65
5.1	Delaware Distribution by Health Insurance Status 2006-2007	68
5.2	Delaware Distribution of Medicaid Spending by Service FY 2006	69
6.1	National Markup of Charges over Costs for All Patient Care Services, 1995-2006	72
6.2	National Private Payer Payment-to-Cost Ratio 1986-2006.....	73
6.3	Hospital Margins	74
6.4	National Uncompensated Care Based on Cost (percent of cost) 1980 - 2007.....	75
6.5	National Uncompensated Care Based on Cost (billions) 1980 - 2007	76
7.1	Community Health Indicators 2007	77
7.2	Utilization (Admissions per Bed) 2007.....	78
7.3	Expense per Capita 2007	79
7.4	Beds per 1,000 Population 2007.....	80
7.5	Admissions per 1,000 Population 2007.....	81
7.6	Inpatient days per 1,000 Population 2007	82
7.7	Inpatient surgeries per 1,000 Population 2007	83
7.8	Health Care Employment as a Percentage of Total Employment 2008	84
7.9	Full Time Equivalent RNs per 1,000 Population	85

Introduction

Though the Commission's mandate is broad, the Delaware Health Care Commission has, since its inception, been concerned about access to health care for all Delawareans. Improving access to health care is a primary goal. Access to health care has several dimensions. The aspect this report will cover is the cost of health care in Delaware. This report intends to provide current estimates of health care expenditures in the state and to describe some of the dynamics that influence those expenditures.

The report is divided into seven sections. The first section provides information that will give the reader a broad perspective on health care expenditures and the demographic trends that influence those expenditures. Some comparative information is provided to show how Delaware compares with the US and with neighboring states.

The second section describes each of the health accounts. Estimates are provided for each account annually from 1990 through 2008. The third section presents an overview of the estimates of total personal health care expenditures through 2008. Indicators of this sector's impact upon the Delaware economy are also provided. The fourth section discusses the issue of prescription drugs. The fifth reports impact of the American Recovery and Reinvestment Act of 2009 on Delaware that incorporates data on Medicaid and technology in health care in Delaware. The sixth section reports the cost shift evidence for Delaware, and the seventh presents some community health statistics. General observations and summaries conclude the report.

This information is offered as a starting point from which both measurement and methodology can evolve to provide increasingly better estimates and better understanding of the issues addressed in this paper.

Executive Summary

Many states across the nation are attempting to better measure personal health care expenditures. They are doing this for two predominant reasons. First, policymakers need to understand the structure and size of those costs to more fully comprehend the problems of access that can be related to cost. Second, policymakers need to understand the future course of these costs so that appropriate plans and policies can be developed to support their residents. The study's findings are presented below.

- The relaxation of Managed Care restrictions brings increased demand for health care services. Hospitals, physicians, and other specialists are experiencing rising demand after a decade of demand constrained by managed care. This resurgent growth in hospital and physician demand is a major driver in rising health care expenditures.
- Among the drivers of rising expenditures are rising health care prices, increased utilization, and the substitution of newer, more expensive technologies for older, less expensive technologies.
- Overall, about \$6.5 billion annually is spent on personal health care in Delaware. The total health cost of personal health care is increasing at 5% per year. There is evidence that the rate of increase of health care expenditures is slowing. Provider wages continue to grow but at less aggressive rates than recent experience. This mirrors the national trend of continued growth of health care expenditures, albeit at diminished rates.
- Delawareans spend less of Gross State Product (11%) on health care when compared to the US (16%).
- The health care sector of the Delaware economy is an important source of employment with 12% of the total workforce and 11% of the reportable wages.
- Individuals pay out-of-pocket for the majority of costs for drugs, vision products, and dental services. The government pays for the majority of hospital charges, and private insurers are the primary payers for physicians.
- Hospitals' share of total health care expenditures decreased both in the US and in the State of Delaware. Overall the pattern of health care expenditures is very similar to that seen throughout the country. The greatest pressure on expenditures is from the hospital account.

- The prescription drug sector in the United States has begun to decline. Several factors drive this decrease. There was an increase in generic sales of prescription drugs from 2005 to 2006 thus decreasing the amount of dollars spent on prescription drugs. Advertising dollars spent by pharmaceutical companies declined by almost \$2 billion in 2007. Also, the implementation of the Medicare Part D drug program in 2006 led to the increased utilization of generic drugs.
- Between 1997 and 2007, the number of prescriptions purchased increased 52% (from 2.3 billion to 3.5 billion), compared to a U.S. population growth of 13%. The average number of prescriptions per person increased from 7.3 to 11.1. In 2007, the average consumer spent \$481 on both prescription and non prescription drugs, compared with \$457 for alcohol, \$2,698 for entertainment, and \$2,668 on dining out.
- While Delaware is higher than the US in per capita expenditures for health care, it compares favorably with Pennsylvania and is higher than Maryland and New Jersey.
- Nationally, hospital markup of charges over costs is growing rapidly. Private payer payment-to-cost ratios are also increasing. Hospital margins in Delaware are on par with neighboring states and the nation.

When taken together, these data suggest that Delaware is essentially in the mainstream regarding personal health care expenditures. While the costs per capita are slightly higher, Delaware is a relatively high-income state. The managed care revolution has and will undoubtedly continue to change the landscape of health care expenditures. Some of these changes may affect the quantity of services, and some will affect the distribution of the expenditures across the sectors. There will also be alterations in how these payments are allocated between public, private, and individual payers.

Summary At A Glance

- Total Cost in Delaware

Total Cost of Health Care in Delaware in 2007 is estimated to be \$6.5bn. Spending has risen an average of 5% a year since 2001.

- Medical Prices

Medical price inflation is 4% annually. This is higher than the low in 1997. However, overall medical price inflation is not accelerating. Two primary drivers of medical price inflation are hospital services and prescription drugs. Hospital services prices have been growing aggressively since 2000, averaging 6% per year. Prescription drug prices are growing at 5% annually on average.

- Utilization

Delaware hospital admissions have grown 35% between 1993 and 2007 and now stand at 107,037. Inpatient days have grown 20% over the same period, to 671,628.

- Cost Shift

National markup of charges over costs continues to grow and now stands at more than two and a half times costs. Private payer payment-to-cost ratio is also on the rise. In 2005, private payer payment-to-cost ratio was 1.24—the highest it has been in 10 years.

Hospital margins in the nation and neighboring states are 4-10%. The national hospital margin figure is the highest. Delaware's hospital margin measure exhibits some volatility. If averaged, the measure is comparable to the state's peers.

Uncompensated care is one driver of cost shift. Nationally uncompensated care as a percentage of total expenses is 5-6%, and has been since 2000. In dollar terms, however, uncompensated care costs continue to rise and now stand at over \$30bn.

Background

Introduction

This section addresses several topics. First, some of the economic and demographic factors that are currently influencing the cost of health care will be introduced, followed by the presentation of national and state indicators of health care costs. These data address expenditures by sector of health care and source of payment.

Several key factors influence changes in total expenditures for health care. Among these are the current cost of health care services and commodities, the size and structure of the population using health care, and the availability of and demand for new health care products and services.

The first factor is simply the increase or decrease in prices for a fixed set of health care products and services. For example, how much has the cost of a typical visit to a primary care physician changed over time?

The second factor has two components. First, as the number of people in the State of Delaware increases, the total cost of health care will increase. Since 1990, more than 206,000 people have joined Delaware's population (a growth rate of 31%).¹ Collectively, they will increase total health expenditures by more than one billion dollars annually. Even if the total population remained the same and price levels were constant, total expenditures would increase through a greater demand for health care services by the aging population and individuals with increasing numbers of chronic disease.

The Health Care Industry

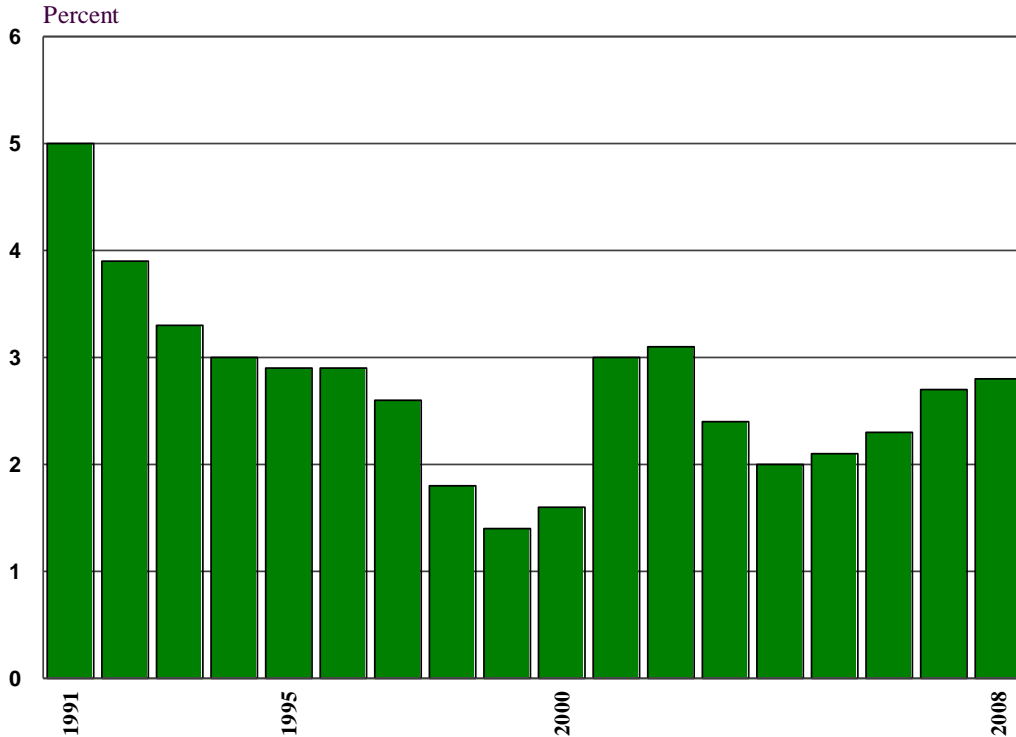
The health care industry is undergoing significant structural change. The swing toward managed care practices in the nineties impacted both healthcare providers and users. Indeed, the emergence of managed care, such as that offered by Health Maintenance Organizations (HMOs) as a means of cost-containment, tempered medical price inflation during this decade while simultaneously altering the manner in which health care services are obtained.

Fewer restrictions on care are leading to higher utilization and taxing the capacity of many hospitals and physicians to meet demand. With broad provider networks and tighter capacity than the norm, health plans lost leverage over providers to negotiate price discounts. Essentially, health plans are effective at keeping costs low when utilization is also low, a key element in lower health cost trends throughout much of the nineties. The result is increasing prices and increasing utilization are contributing to rising health care expenditures. This increasing surge of health care expenditures has led to increasing calls for a nationwide health care plan with access for everyone. One of the goals is to develop a plan that will assist with the huge numbers of uninsured consumers. These uninsured consumers increasingly use emergency rooms for care thus driving up the overall costs for health care.

Although the United States is currently in a recession, the growth of employment in the health services industry is accelerating despite the majority of the rest of industry hemorrhaging jobs. In 2008, medical services employment growth rate is 2.8%. Hospital employment, by far the largest segment of medical services employment, has exceeded 2% annual growth since 2000 (Figure 1.1).

¹ Based on Census estimates. 873,092 statewide population in 2008. 666,168 statewide population in 1990.

Figure 1.1
US Health Care Industry Employment
1991-2008, % Change Year Ago



Source: Center for Applied Demography and Survey Research, University of Delaware
 US Bureau of Labor Statistics

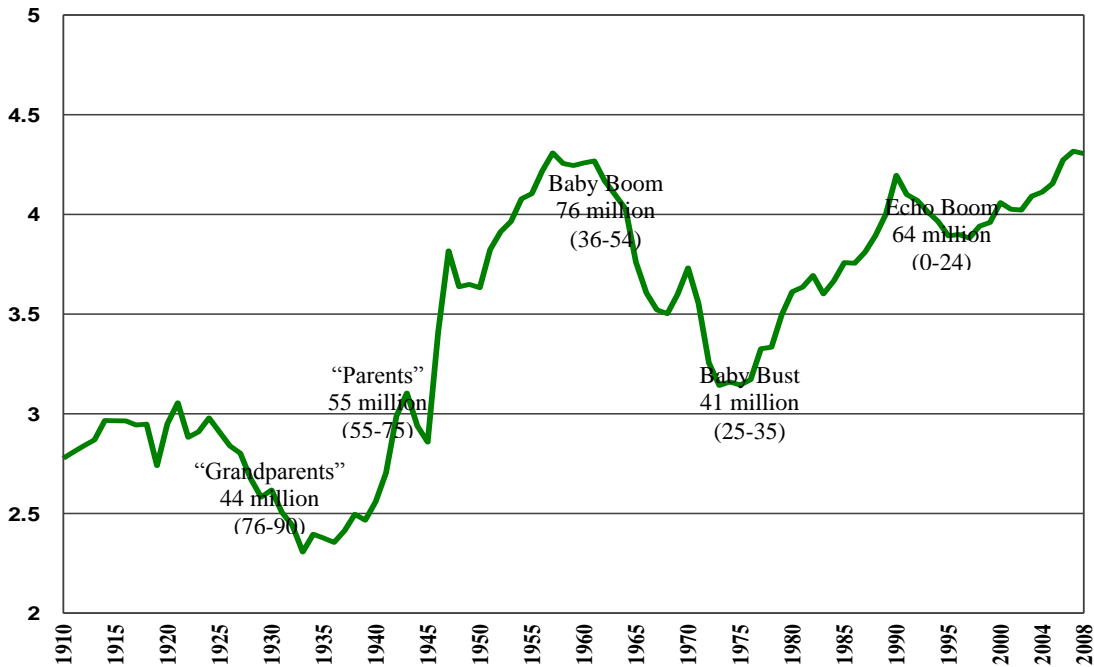
In 1980, health care expenditures composed 9% of the economy. By 2008, that share had risen to approximately 16% of gross domestic product (GDP).

Expenditures on health care services continue to be high, accounting for an ever-increasing share of the nation’s resources. Fueling this demand are the aging baby boomers, a growing population, rising incomes, and new products and services².

The baby boomers are typically defined as that segment of the population born between 1946 and 1964. During this period, 76 million live births occurred, (see Figure 1.2), amounting to a significant spike in the birth rate. It is this segment of the population that will be among the primary drivers of health care expenditures.

² Health care is a ‘normal’ good: as income rises, more health care is ‘consumed’.

**Figure 1.2
The Baby Boomers
Live Births**



Source: Center for Applied Demography and Survey Research, University of Delaware
 Bureau of the Census and National Center for Health Statistics
Note: Figures in parenthesis are the youngest and oldest ages of group members during 2000.

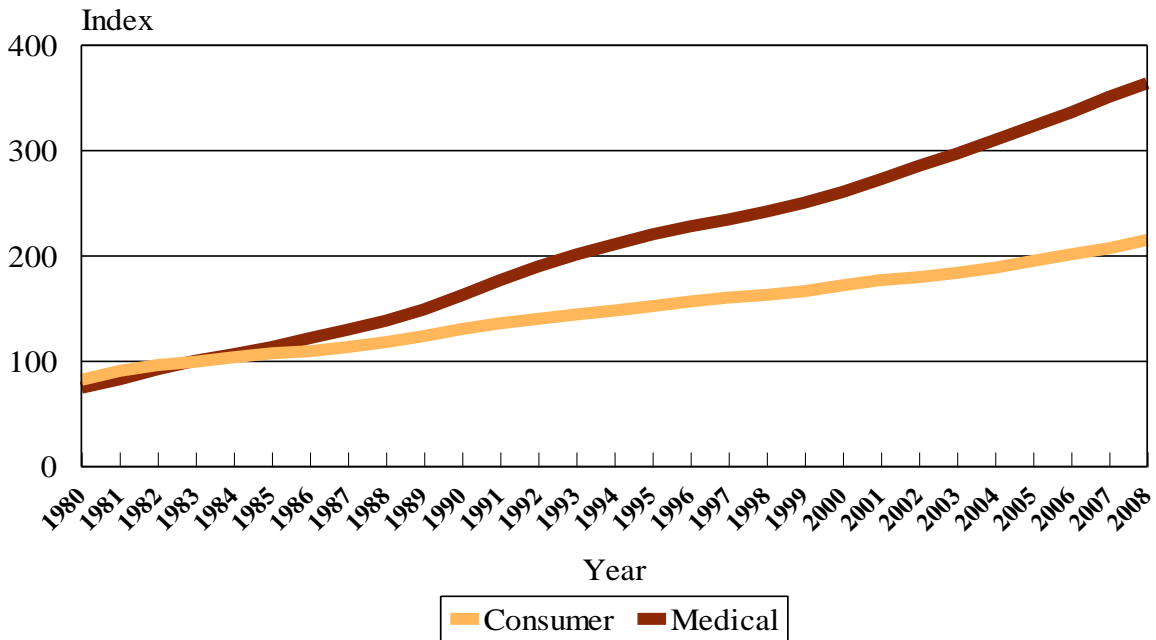
The proportion of the US population aged 65 and over is growing. In 2006, nearly 13% of the population was over 65 years old. This is triple its share at the start of the century. In level terms, the elderly population increased eleven-fold over the past 100 years. This is naturally fostering an ever-growing demand for health care services as the over-65 age cohorts are the heaviest users of medical care. By 2015 the number of Delaware adults 65 and older would be 15% and by 2030 it is projected that 24% of Delaware’s population will be 65 or older.³ The probability of requiring health care services rises significantly with age.

³ AARP Social Security: 2008 Delaware Quick Facts
http://assets.aarp.org/rgcenter/econ/ss_facts_08_de.pdf

Pricing of Health Care

Rapidly accelerating health care costs was one of the primary factors that drove the shift of patients from fee for service to managed care. These costs began to accelerate rapidly during the eighties.

Figure 1.3
Consumer and Medical Price Indexes
All US Urban Consumers (1983=100)



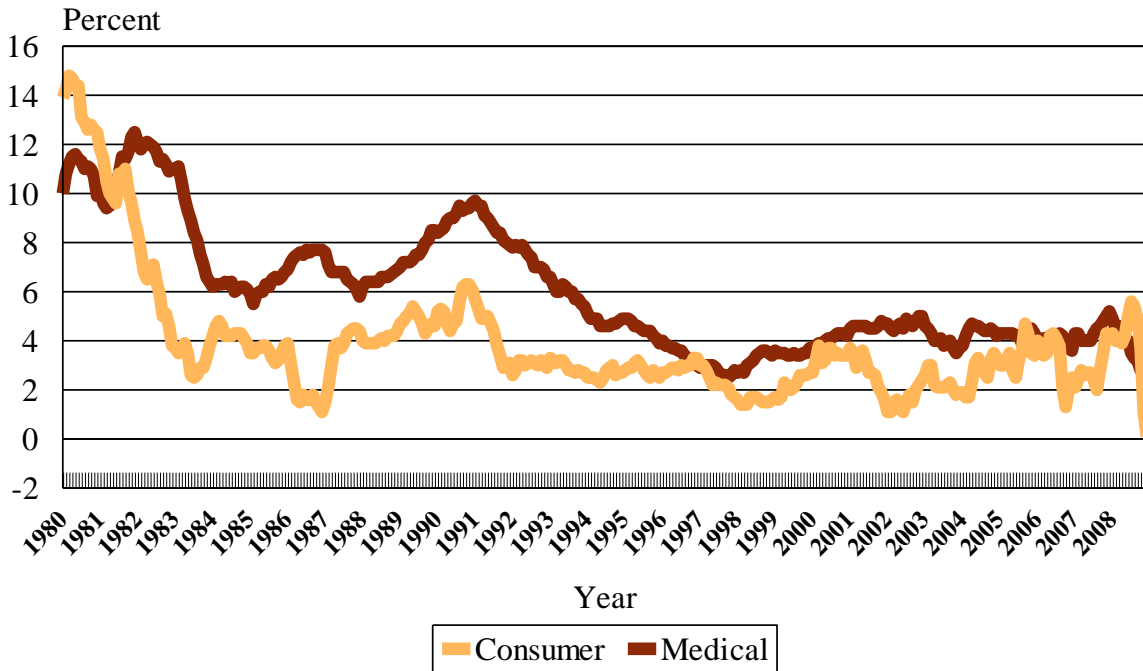
**Source: Center for Applied Demography and Survey Research, University of Delaware
 US Bureau of Labor Statistics.**

Indexing consumer prices (CPI) and medical prices (MPI)⁴ highlights the disparate growth of these two comparable baskets of goods. In the second half of the eighties, medical price inflation outpaced consumer price inflation significantly. The cost of measured medical goods and services increased by more than 200% since 1980. Since that time, consumer prices rose by approximately 100%, or half as much. The annual growth rates are more easily seen in Figure 1.4. The MPI growth rates exceeded those of the CPI from 1982 forward. In general, the MPI was usually between 2 and 3 percentage points higher over the period. It was not until 1991

⁴ Medical items include prescription drugs and medical supplies, physicians' services, eyeglasses and eye care, and hospital services.

that the two rates began to converge and, in 1997, the two measures were equal. However, eighteen years of higher growth rates place the MPI significantly higher than the CPI.

Figure 1.4
Annual Growth Rates for the Consumer and Medical Price Indexes
All US Urban Consumers



Source: Center for Applied Demography and Survey Research, University of Delaware US Bureau of Labor Statistics.

Medical price inflation is stable at 4% year-over-year. Nineteen-ninety eight marked a turning point: the growth in medical prices declined precipitously over the decade, plummeting seven percentage points in total. However, after 1998 medical price growth accelerated from 2% to 4% per year until 2007. In the past year both the medical price index and the consumer price index have declined, largely due to the current challenges faced in today’s economy. The decrease of the consumer price index of .4% over the past year is the first decrease since August 1955.⁵

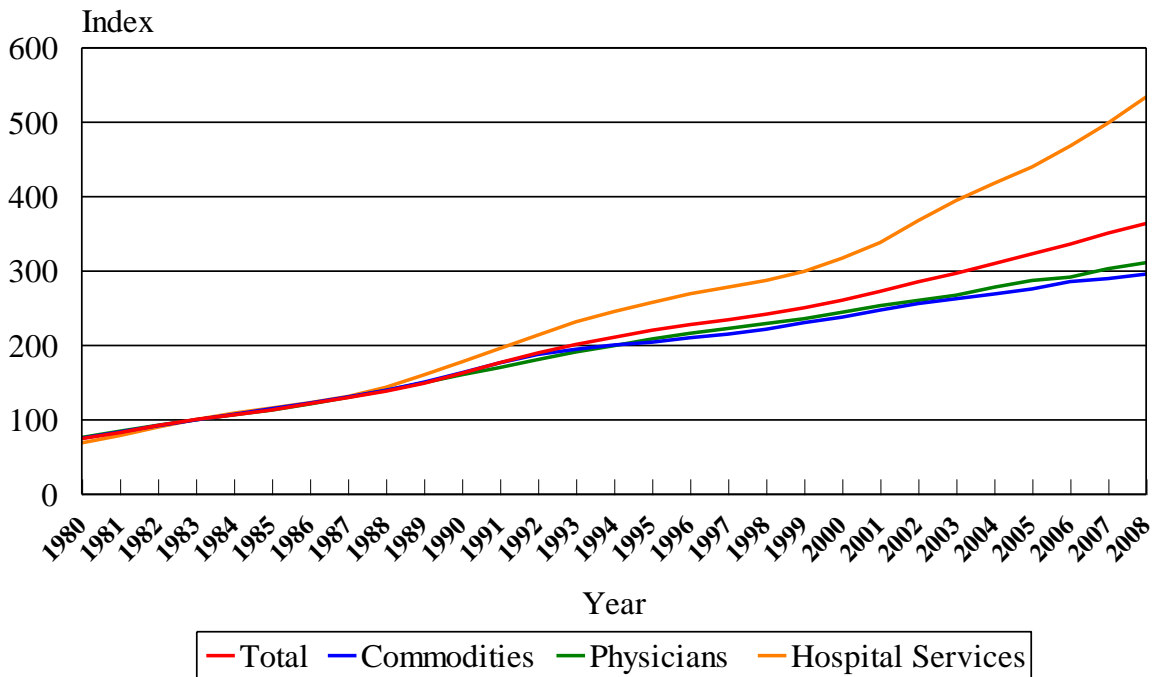
⁵ Consumer Price Index Summary, March 2009 <http://www.bls.gov/news.release/cpi.nr0.htm>

Not all parts of the Medical Price Index grew at the same rate. Figure 1.5 below illustrates this fact. The top (brown) line represents the index for *hospital services*. The second line marked (red) represents the index for all *medical services*. The next line (green) represents prices for *physician services*. The final line (blue) represents *medical commodities*.

Hospital prices clearly out-paced the other indicators. The reason for this difference arises from several sources. The most likely candidates include capacity, qualitative changes in the services offered, and new technology reflected in higher overhead rates. Increases in uncompensated care may influence these changes as well.

The increases in the indexes for medical commodities and physician services are quite similar. Prices for dental services (not shown) were comparable.

Figure 1.5
Medical Price Indexes
All US Urban Consumers (1983=100)



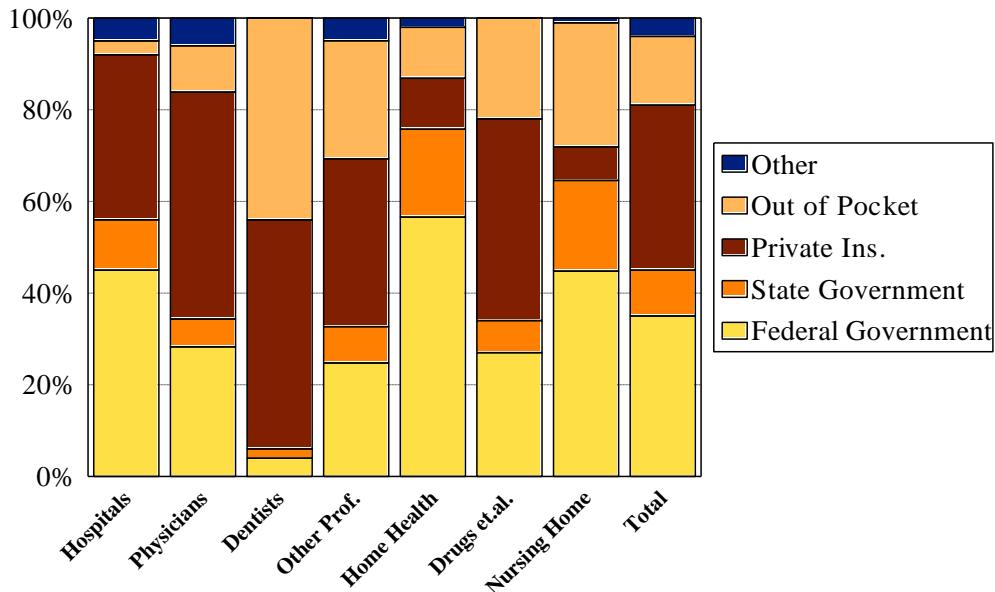
Source: Center for Applied Demography and Survey Research, University of Delaware
 US Bureau of Labor Statistics

Sources of Payment

There are three potential sources of funds for personal health care expenditures. First, an individual can pay the bill out-of-pocket. In this case, the payment does not include payments for insurance premiums; it literally means out-of-pocket. Second, the bill may be paid by private insurance. Third, the funds may come from the government, i.e., Medicare, Medicaid, and several other programs.

The source of payment differs depending on the type of health care sought. Figure 1.6 below clearly shows this point. Expenditures for hospital services are rarely paid for out-of-pocket and are more likely to be paid by the government than by private health insurance. Since older people have a higher likelihood to need these services, Medicare is the most likely source of payment. In contrast, dental expenditures are nearly as likely to be paid out-of-pocket as by private health insurance. The government has little stake in this category.

Figure 1.6
Share of US Personal Health Care Expenditures
By Source of Payment and Sector in 2007



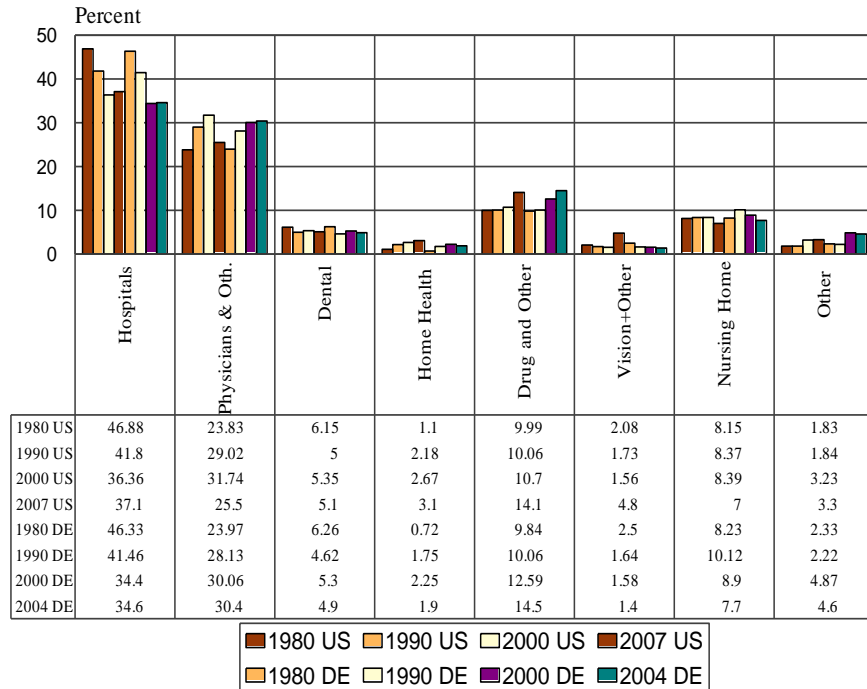
Source: Center for Applied Demography and Survey Research, University of Delaware
 US Centers for Medicare and Medicaid Services

Expenditures by Sector

Personal health care expenditures are usually classified into several distinct categories. Each captures a differential share of the personal health care dollar, and that share changes through time. This is shown in Figure 1.7, below.

For each of the personal health care categories, a time series (1980, 1990, 2007⁶) is provided for the US followed by values for the State of Delaware (1980, 1990, 2004).

Figure 1.7
Share of US Personal Health Care Expenditures
By Sector



Source: Center for Applied Demography and Survey Research, University of Delaware US Centers for Medicare and Medicaid Services. 2004 is latest available data for DE.

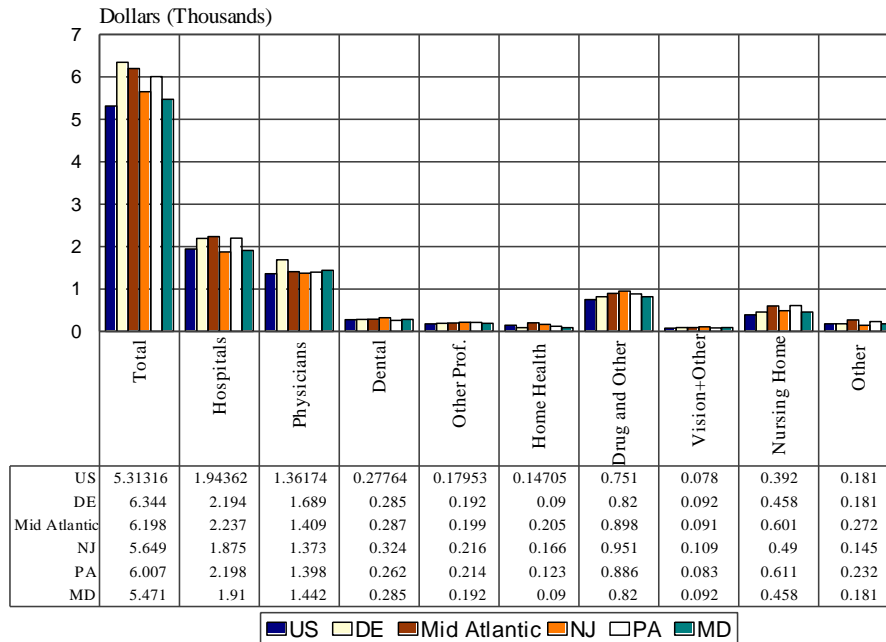
In the US, the share of total health care dollars allocated to *hospitals* declined from 47% in 1980 to 37% in 2007. Delaware echoed this pattern. *Dentists and drugs and other nondurables* appear to receive a smaller share of expenditures now versus 1980. In contrast, *home health* increased its share significantly. Increasing expenditures in home health may hide a larger increase in home services due to low prices. This increase is consistent with changes

taking place in the health care delivery system. It is interesting to note that the structure of these shifts appears to be national in scope and Delaware reflects those larger trends.

Physicians and other professionals account for a growing share of Delaware personal health care expenditures rising from 23% in 1980 to over 30% in 2004. Drugs and other medical nondurables have also grown to command a larger share from 10% in 1980 to 14% in 2004. Simultaneously, vision and medical durables and dental’s share of total expenditures fell 1%. Nursing home expenditures have been relatively constant, but will likely increase with the aging population.

Interstate Comparisons

Figure 1.8
Per Capita Personal Health Care Expenditures
By Sector and Area in 2004



Source: Center for Applied Demography and Survey Research, University of Delaware, US Centers for Medicare and Medicaid Services

One method used to measure relative costs in the local health care system is interstate comparison. However, interstate comparisons are not without their shortcomings. For example, the health care systems in two states could be identical with respect to cost structure, but the

⁶ Latest CMS data for states and U.S. Estimates for Delaware in 2007 are provided later in the document.

populations served are not precisely the same.⁷ Per capita measures for a state where the population is on the average four years older will almost certainly have higher health care costs. Similarly, one state may explicitly pay for charity care through a state grant while another pays for it through cost shifting.

In Figure 1.8, the per capita costs for personal health care are shown for the US, Delaware, and the surrounding states in 2004. For the most part, Delaware tends to be higher than the US as a whole, but only fractionally higher than the region. Hospital costs per capita, for example, are approximately 13% higher. However, this result holds for the region. All four states are above the US per capita figure. Delaware has the highest cost per capita for physician services. Maryland has the lowest cost per capita overall, and the second highest cost for physician services. The differences between the region and the US could simply be a matter of regional price differences, which are compensated through higher wages.

Figure 1.9
Delaware Hospital
Utilization, % Change

	1993	2007	Percent Change
Population	695,000	861,953	22.7
Beds	2,153	2,288	6.3
Admissions	79,345	107,037	34.9
Inpatient Days	561,190	671,628	19.7
Average Length of Stay (days)	7.1	6.3	-11.3

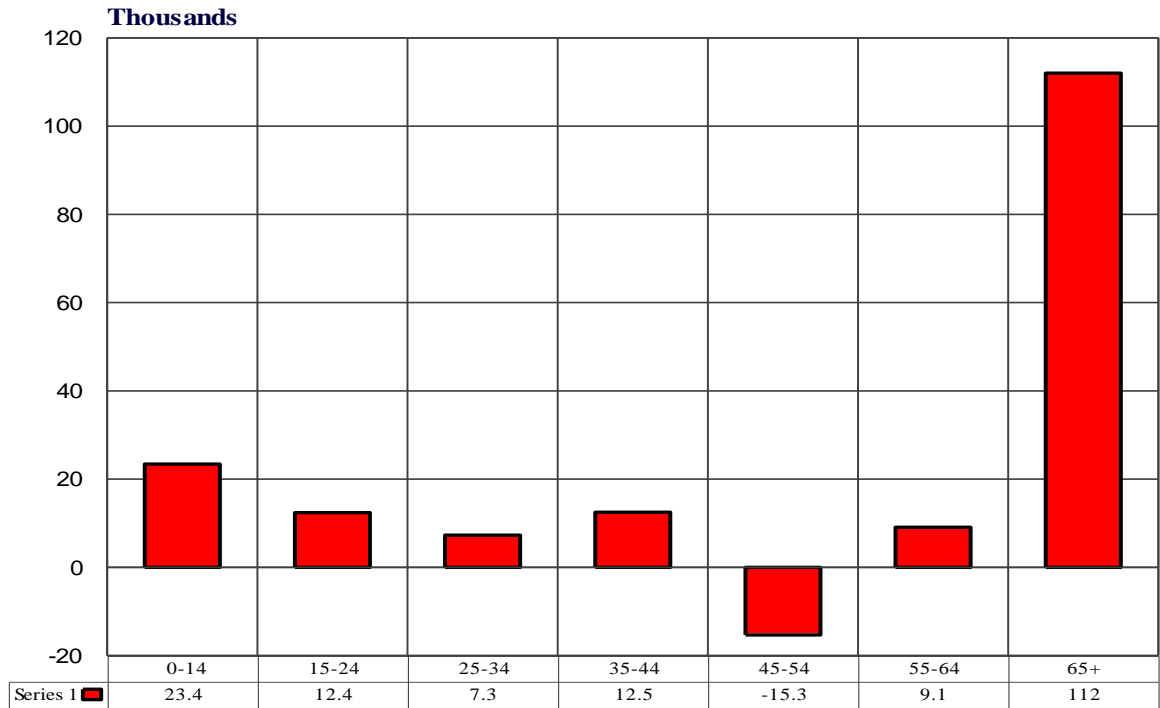
**Source: Center for Applied Demography and Survey Research, University of Delaware
American Hospital Association, Bureau of the Census**

According to the AHA, the number of licensed beds in community hospitals has increased over the period from 1993 to 2007. In absolute terms, the number of beds available increased to 2,288 since 1993 (or from 3.1 to 2.7 beds per 1,000 population). Further, the average length of stay fell from 7.1 days to 6.3 as health care providers increased their turnover.

⁷ For example, Pennsylvania's and New Jersey's populations are proportionately older than Delaware's population; Maryland's population is proportionately younger.

Technological improvements aid the reduction in the length of hospital stays. The limitation of hospital stays does not necessarily imply a reduction in the level or quality of medical services. The rapid diffusion of technology in the health care industry brought patients in contact with cutting edge treatment. As the efficacy of medical care improves, the speed of treatment increases, ideally reducing the length of time between illness and health.

Figure 1.10
Delaware Population
Net Change by Age Group, 2010-2030



Source: Center for Applied Demography and Survey Research, University of Delaware. Population Consortium, 2008.

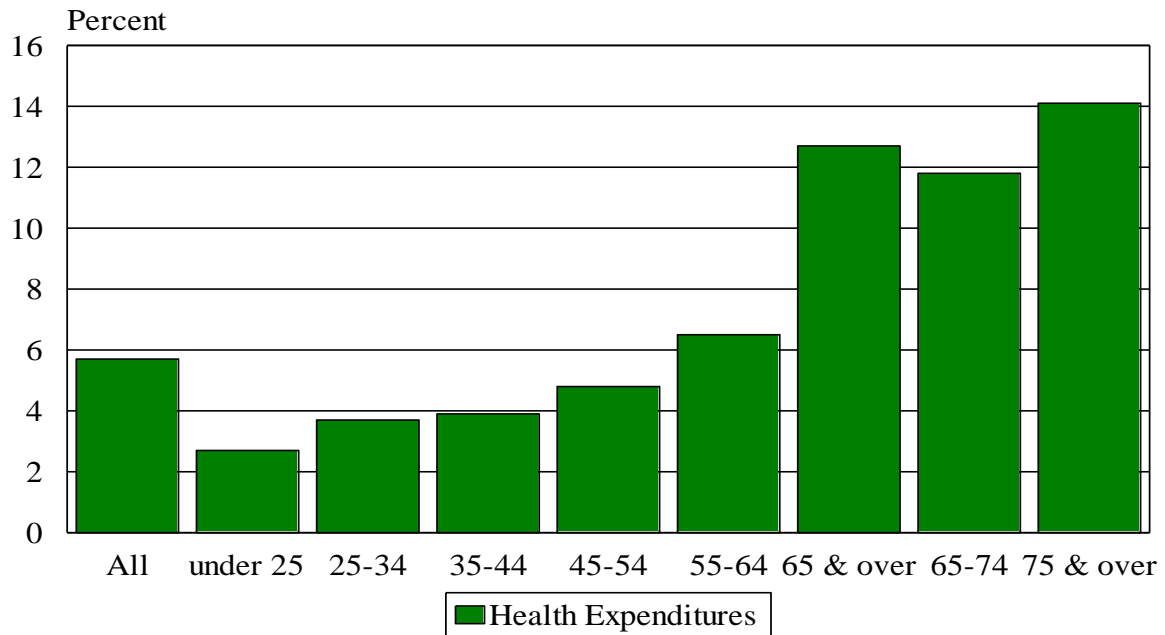
Turning to demographics, Delaware’s age profile is expected to mirror the aging of the nation. Projections for Delaware’s aged population show a rapid increase over the next twenty years as the baby boomers move into retirement. In 2008, 14% of Delawareans were at least 65 years old. By 2020 this figure will rise to 19%, as the aged population rises to more than 180,000. This figure is projected to rise to 24% in 2030, as the aged population reaches 240,000. The trend of Delaware’s population growth is evident in Figure 1.10 above. There is muted growth in the age cohorts less than 65 years of age, save the 45-54 cohort. Between 2010 and

2030 the 45-54 age group will actually decline by approximately 15,000 persons. This will reduce sources of tax revenue while increasing the demand for tax expenditures. The 65+ age group will add over 110,000 persons through aging of current residents and net migration. The aging Delaware population will increase the demand for health care services in the future. This is consistent with rising health care expenditures forecast over the next twenty years. The aging population will also eliminate some of the sources of government revenue as people retire or switch to lower paying part-time jobs.

Evidence from the Consumer Expenditure Survey

The Consumer Expenditure Survey (Bureau of Labor Statistics) provides data on health care related spending at the national and regional level by age and income class. These data help to understand the variation in health care costs across age groups and income.

Figure 1.11
U.S. Consumer Health Expenditures by Age as a Share of Total Expenditures, 2007

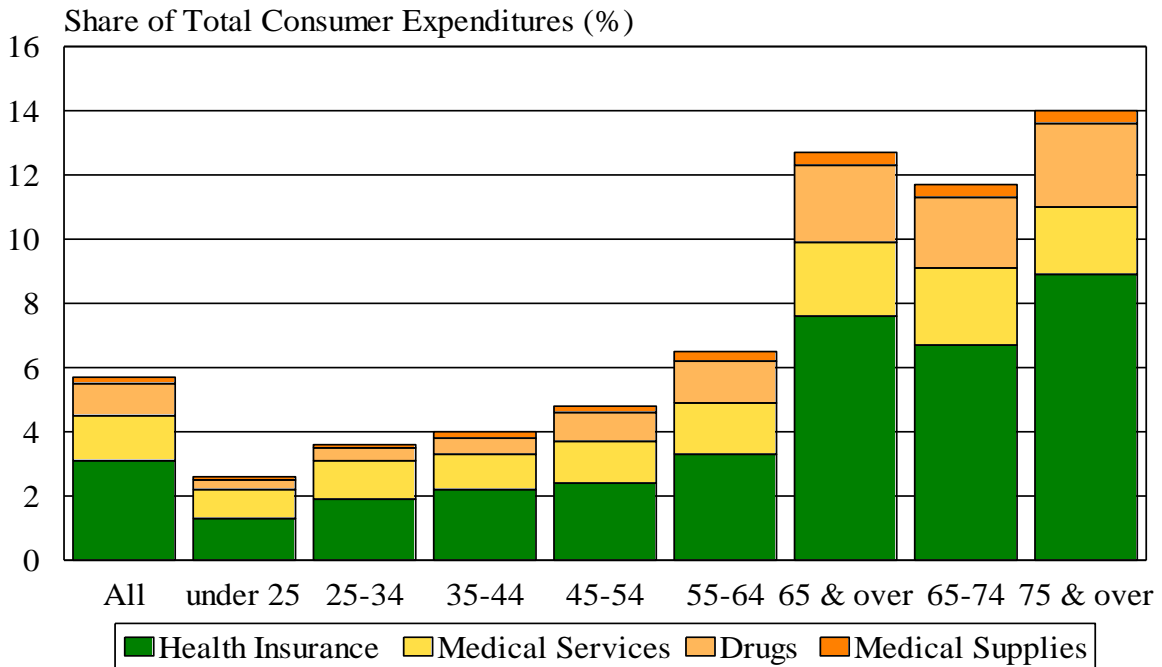


Source: Center for Applied Demography and Survey Research, Consumer Expenditure Survey, Bureau of Labor Statistics

For the average consumer, health expenditures comprise about 6% of total spending. The breakout by age cohort reveals that older age groups spend a far greater proportion of total expenditures on health care than younger age groups. Health expenditures’ share of total expenditures is lowest among the under 25 cohort, where the share is less than 3%. The share rises steadily through the age cohorts until the 65 cohort, where the share increases to over 12% compared to the 55-64 cohort. Thereafter, the share exceeds 11%.

Figure 1.12 below breaks out these data into health insurance, medical services, drugs, and medical supplies. For all age cohorts, medical insurance is the single largest component of health care expenditures. Medical Services and health insurance expenditures are the primary drivers of the rise in health expenditures between the 55-64 and 65-74 age cohorts.

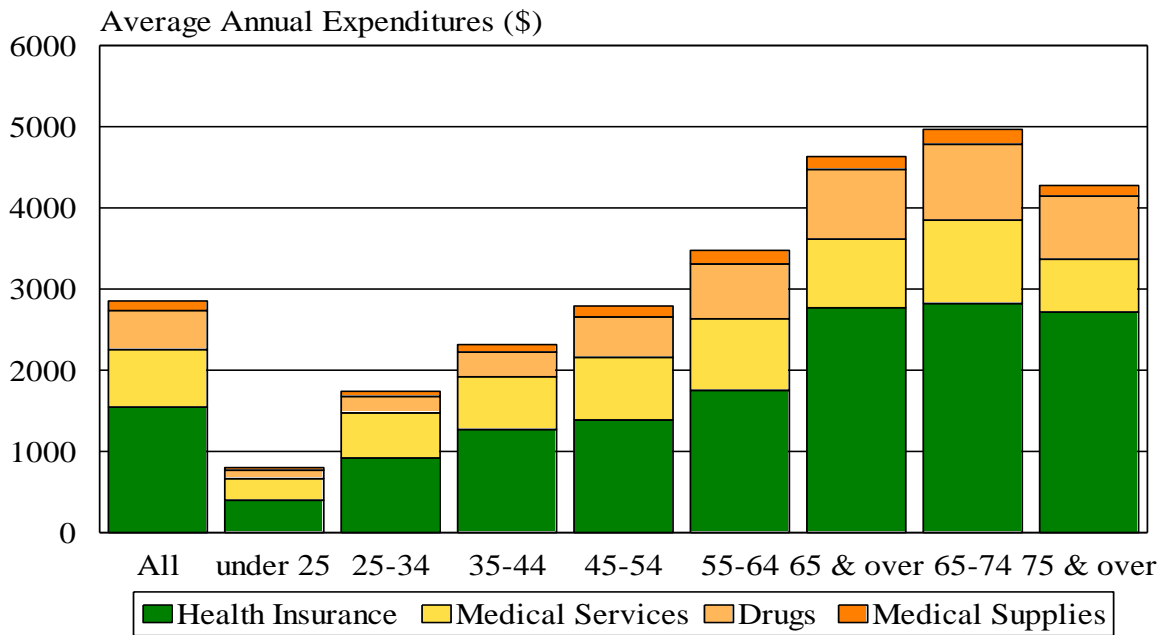
Figure 1.12
U.S. Share of Average Annual Consumer Expenditures by Age, 2007



Source: Center for Applied Demography and Survey Research, Consumer Expenditure Survey, Bureau of Labor Statistics

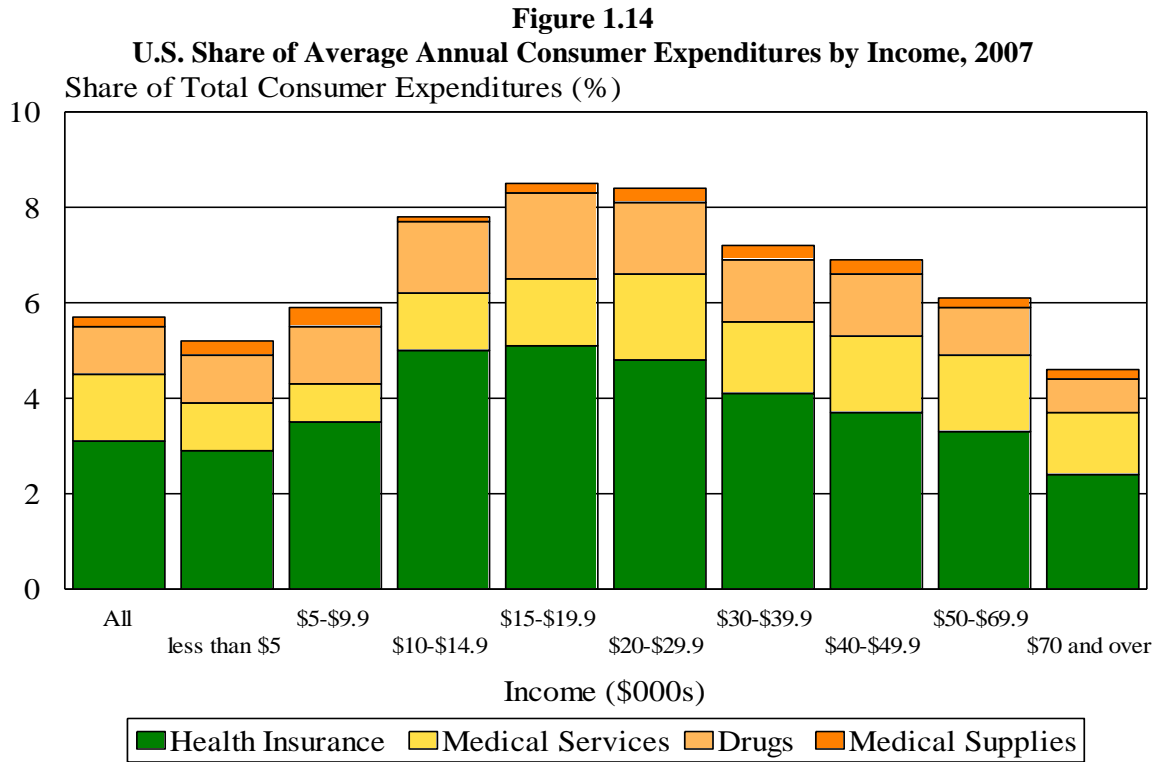
The following chart (Figure 1.13) illustrates the average dollar expenditures by age group, rather than the share of total consumer expenditures. The average consumer spends \$1,545 on health insurance annually. For the under 25 cohort, average health insurance is \$397. Health insurance expenditures rise steadily with age.

Figure 1.13
U.S. Average Annual Consumer Expenditures by Age, 2007



Source: Center for Applied Demography and Survey Research, Consumer Expenditure Survey, Bureau of Labor Statistics

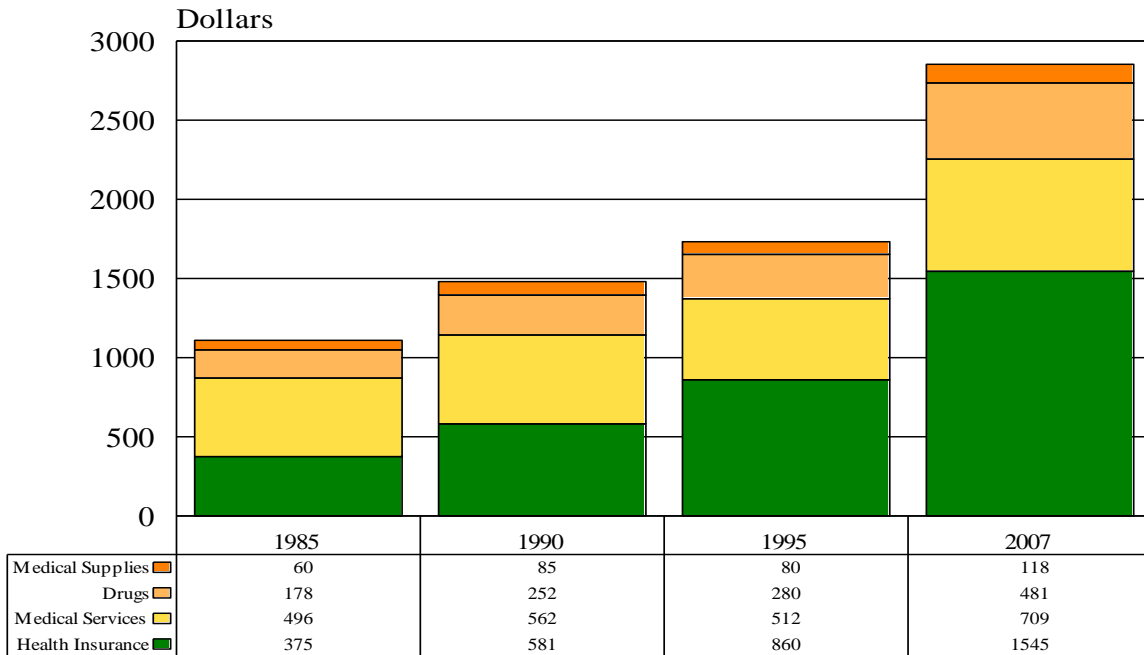
The burden of health costs varies by income in addition to age. Health costs as a share of total expenditures are highest among the \$15,000-\$19,999 earners. The share tapers off as income rises (see Figure 1.14 below).



Source: Center for Applied Demography and Survey Research, Consumer Expenditure Survey, Bureau of Labor Statistics

Figure 1.15 below provides a time series of average consumer expenditures for all ages. In 1985, the average consumer spent \$1,109 per year on health care. By 2007, expenditures had risen to \$2,853. Drugs and health insurance exhibit the fastest growth over this period (170% and 312% respectively).

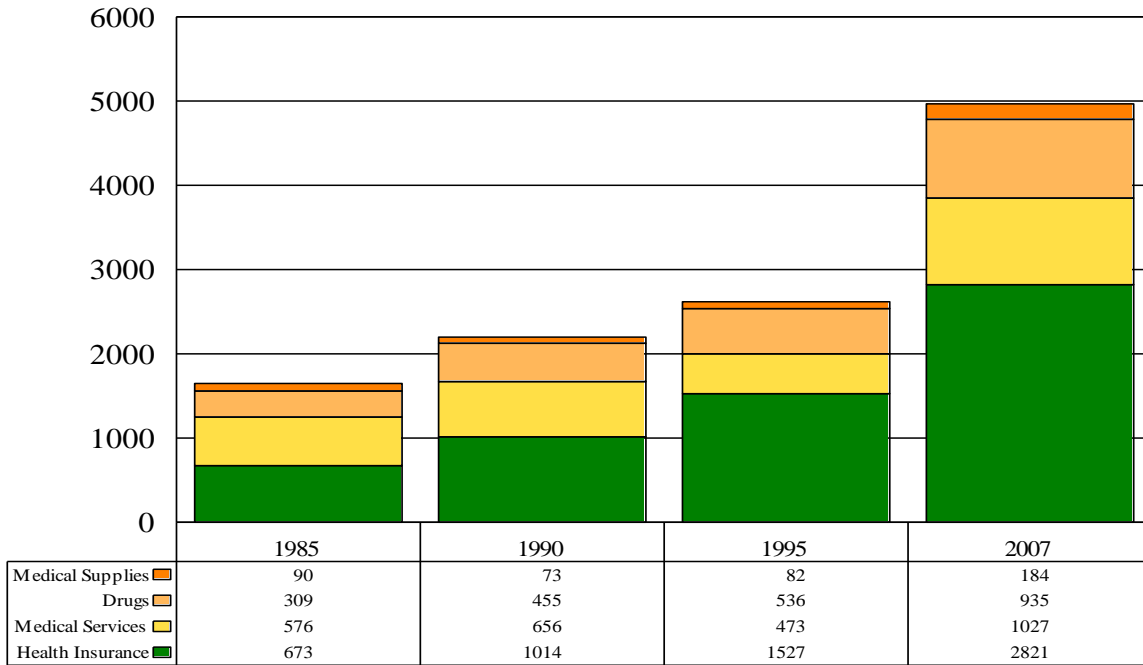
Figure 1.15
U.S. Average Annual Consumer Expenditures on Health Care, All Ages



Source: Center for Applied Demography and Survey Research, Consumer Expenditure Survey, Bureau of Labor Statistics

Figure 1.16 shows average expenditures of the 65-74 cohort for select years. The gap between expenditures of all ages and the 65-74 cohort has widened from \$539 in 1985 to \$2,114 in 2007.

Figure 1.16
U.S. Average Annual Consumer Expenditures on Health Care, Aged 65-74

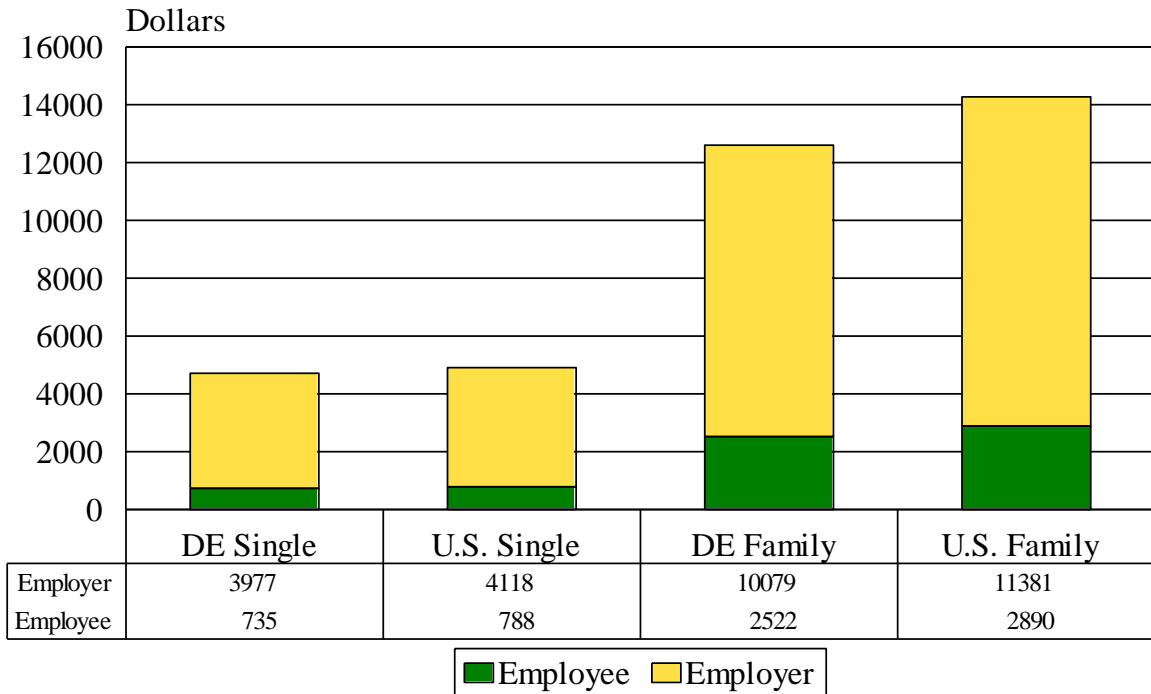


Source: Center for Applied Demography and Survey Research, Consumer Expenditure Survey, Bureau of Labor Statistics

Figure 1.17 shows average single and family insurance premiums for Delaware and the US. Small sample size for Delaware creates large standard errors on the components of insurance premium and their trends over time. However, the following figure is presented as an indicator of the state versus the nation.

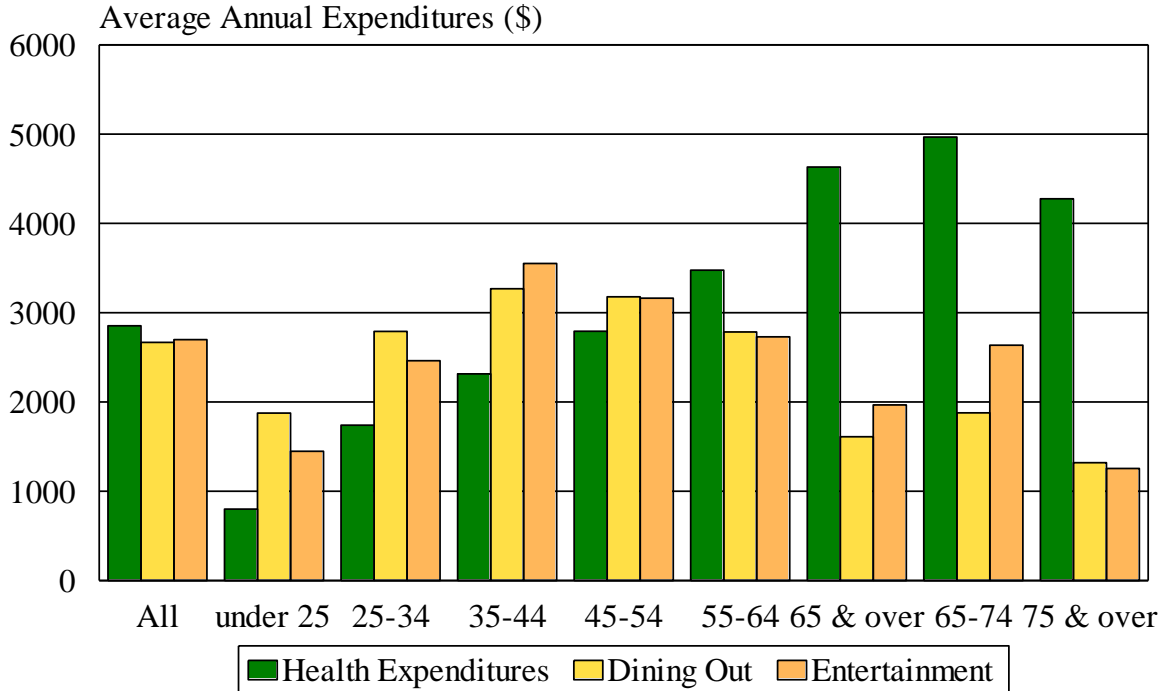
Single insurance premium averages \$735 for Delaware compared to \$788 nationally. Family premiums appear smaller in Delaware than the nation for the employee contribution and for the employer contribution. When comparing the average family size in Delaware the number is 3.04 whereas in the United States it is 3.14.

**Figure 1.17
Delaware and U.S. Average Insurance Premiums, 2006**



Source: Center for Applied Demography and Survey Research, University of Delaware, Census Bureau estimates from the Medical Expenditure Panel Survey Insurance Component. Latest available data.

Figure 1.18
Select U.S. Consumer Expenditures by Age, 2007



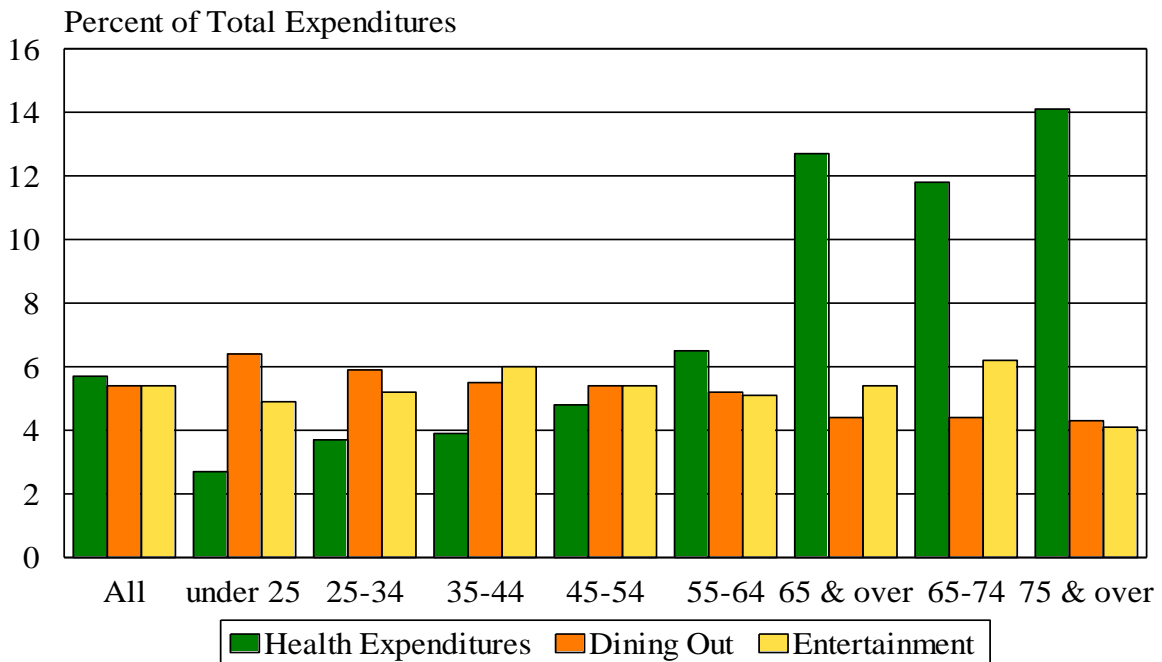
Source: Center for Applied Demography and Survey Research, Consumer Expenditure Survey, Bureau of Labor Statistics

Figure 1.18 expresses consumer expenditures in dollar terms. The average consumer spends \$2,853 on health expenditures per year, which is almost as much as the expenditures on entertainment or dining out. Up to the age cohort of 45-54, expenditures on dining out and entertainment outstrip those on health expenditures. In the 45-54 age cohort, expenditures on health, dining out and entertainment are approximately equal. Over the older age cohorts, health expenditures greatly exceed the other categories.

Figure 1.19 provides consumer expenditures by percent of total expenditures. The average annual percent of total expenditures for the entire US population is less than six percent; however, that number jumps to over 12% for those individuals who are 65 and older and 14% for those individuals who are 75 and older.

The following charts serve to underscore that for the average consumer, the health care expenditures are a manageable budget item. The chart below expresses consumer expenditures on certain items as a share of total expenditures. The average consumer spends almost as much on dining out and entertainment as health expenditures. Consumers under the age of fifty-five spend more on dining out and entertainment than on health care. At the age of fifty-five, health expenditures as a share of total consumer expenditures rise rapidly. At fifty-five the probability of requiring health care rises sharply, as do the corresponding insurance costs.

Figure 1.19
U.S. Average Annual Expenditures by Age, 2007

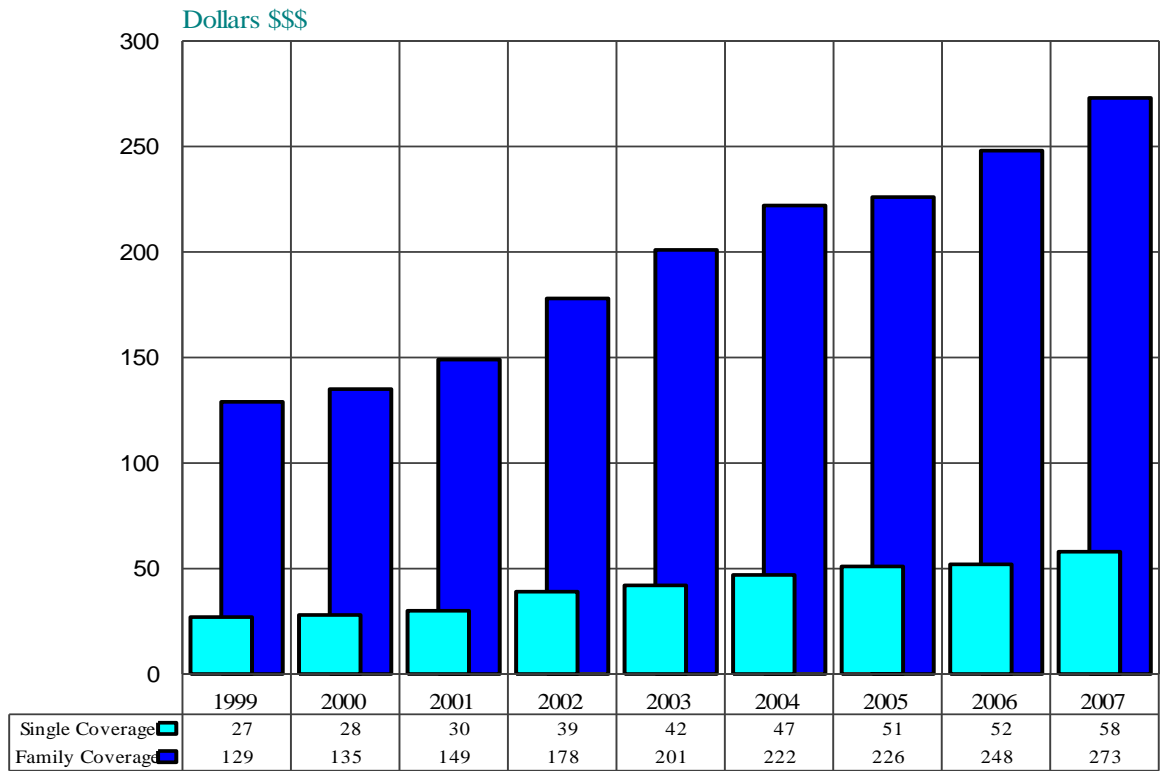


Source: Center for Applied Demography and Survey Research, Consumer Expenditure Survey, Bureau of Labor Statistics

The following charts, (Figures 1.20 and 1.21) present the average national employee premium for single and family coverage over the period 1999 to 2007. The percentage of the total single premium that is met by the employee has begun to rise. In 2007, 16% of the single person premium (\$58) is employee-paid. For family coverage, the employee premium is more than one-quarter of the total premium. In 2007 the average family monthly premium was \$273.

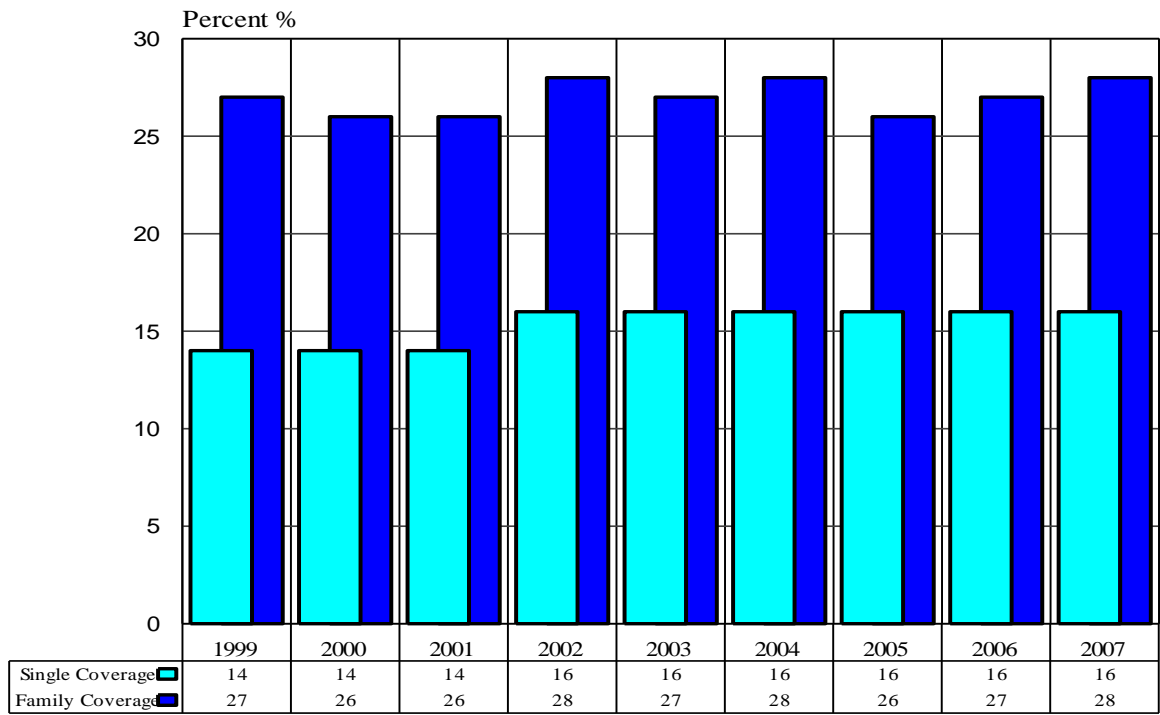
Figure 1.20

Average Monthly Employee Premium Contributions, 1999-2007



Source: Kaiser Family Foundation (Kaiser/HRET Survey of Employer-Sponsored Health Benefits, 1999-2007)

Figure 1.21
Percent of Total Premium Paid by Employees, by Coverage Type, 1999-2007



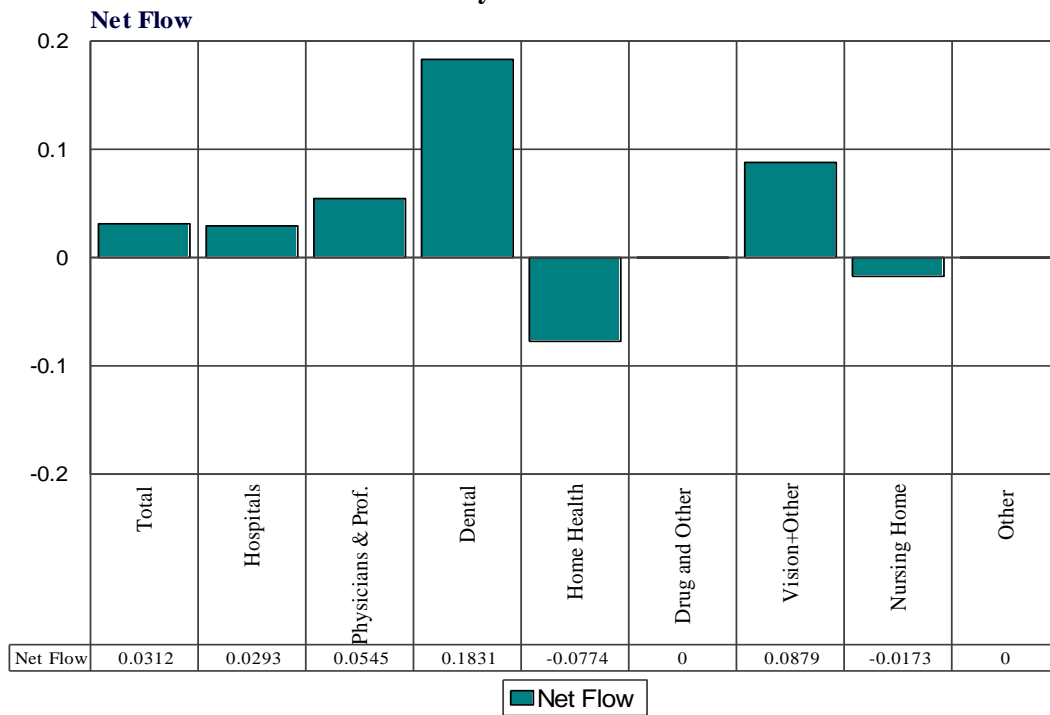
Source: Kaiser Family Foundation (Kaiser/HRET Survey of Employer-Sponsored Health Benefits, 1999-2007)

Estimates by Sector

Basis of Measurement

Personal health care expenditures are usually reported in two ways. The first method measures the size of the health care industry serving the geographic area of interest. For example, this approach focuses on the revenues received by health care providers (hospitals, physicians, dentists, etc.) who provide services in Delaware. These revenues are considered indicative of personal health care expenditures. In this instance the source of payment is of no interest: the revenues could be provided from the individual, a third party payer, or the government.

**Figure 2.1
Delaware Personal Health Care Expenditures in 1998
By Sector and Basis**



Source: Center for Applied Demography and Survey Research, University of Delaware, US Centers for Medicare and Medicaid Services. For Drugs and Other Non-Durables and Other Personal Health Care, no adjustments were made between state-of-provider and state-of-residence (net flow ratios are 0 for all states). Net flow equals expenditures by State of residence divided by expenditures by State of provider, minus 1. Ratios greater than 0 mean that residents consume more health care than the state produces (imports); ratios less than 0 mean that the state produces more health care than its residents consume (exports). Home health and Nursing home include services provided by freestanding facilities only. Additional hospital-based service expenditures of this type are included with hospital services. Based on currently available data.

The second method attempts to measure direct expenditures of individuals within the geographic area of interest by aggregating out-of-pocket expenditures, insurance premiums, and payments by government and business. For most categories, the measures are within a reasonable proximity to each other, at least for the single year for which this data was available. The first approach is used more often, which will be the adopted approach here.

Using the provider basis of measurement, Figure 2.1 shows Delaware net personal health care expenditures in 1998. Net flow equals expenditures by state of residence divided by expenditures by state of provider. Ratios greater than 0 mean that residents consume more health care than the state produces; ratios less than 0 mean that the state produces more health care than its residents consume. The difference arises because more Delaware residents travel outside the state to use hospital and physician services than non-Delaware residents enter the state. The most likely sources of this “importing” of services come from hospitals in Elkton, Salisbury, Philadelphia, and Baltimore.

If third party payers became more aggressive by insisting that the lowest cost provider be used independent of location, the relationship between “imports” and “exports” could change.

This report incorporates revised data from the Census of Service Industries (CSI) and Centers for Medicare and Medicaid Services (CMS). The Census of Service Industries occurs every five years. The most recent CMS state health accounts estimates are for 2004. These two updated products are combined with Delaware Department of Labor information to produce the estimates presented here.

Hospital Services

Estimating expenditures for hospitals is the least hazardous of the categories that this paper examines. The American Hospital Association (AHA) conducts an annual survey of both registered and non-registered hospitals. CMS depends heavily on this information to produce its estimates of personal health care expenditures for states. The AHA survey covers all hospitals but reports revenues only for “community hospitals⁸.” That category excludes federal and state government hospitals, long-term care facilities and specialty. However, there is a reasonably stable relationship between those institutions that directly report revenues and those that do not.

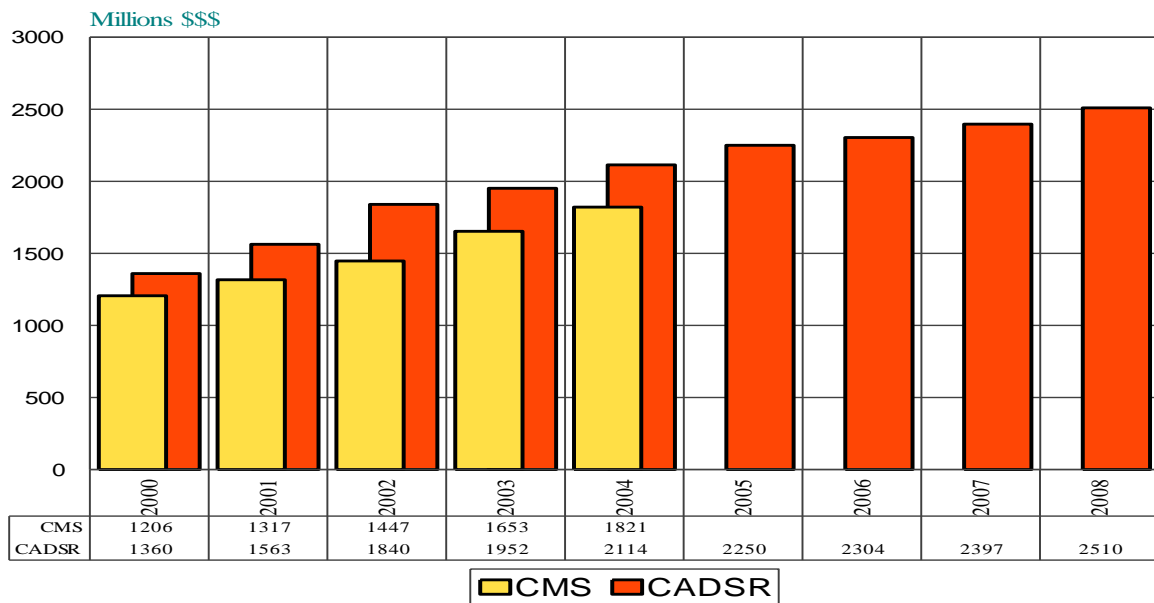
⁸ In Delaware these include Bayhealth, Beebe, Nanticoke, AI DuPont, Christiana Care, and St. Francis.

In addition, expense revenue ratios are available to estimate revenues where only expenses are reported.

The CMS methodology relies heavily on the AHA but makes several technical adjustments. These adjustments do not substantially alter either the trend or the basic structure of the data. The methodology used in this report for producing more current estimates relies on wages paid by hospitals that are reported to the Department of Labor. The DOL data is current through 2008.

Figure 2.2 below includes estimates that are derived from the three sources and provides overlap where data was available. The CMS and CADSR estimates attempt to measure the total revenue received by hospitals. The AHA estimate comprises total gross revenue. The most recent complete AHA data reports that revenue has risen over the past four years.

Figure 2.2
Delaware Personal Health Care Expenditures:
Hospital Services by Source of Estimate



**Source: Center for Applied Demography and Survey Research, University of Delaware
 American Hospital Association
 US Centers for Medicare and Medicaid Services**

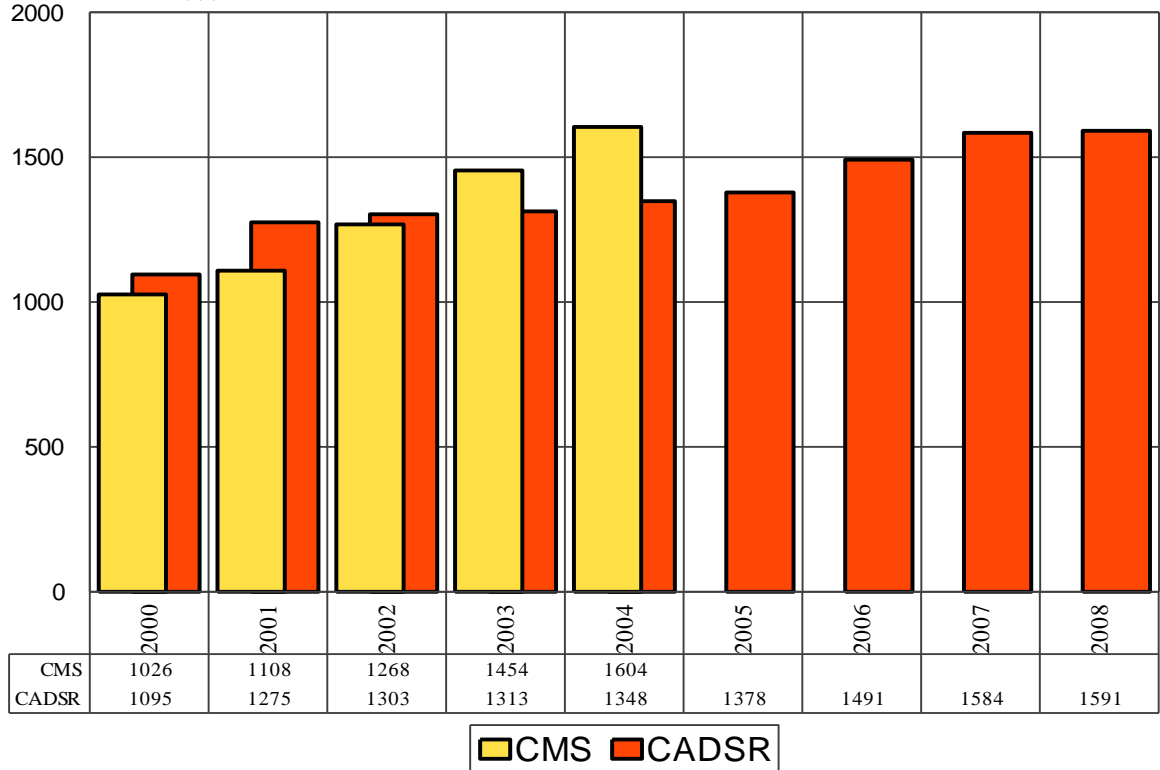
The CADSR estimates track the upward trend in hospital expenditures, albeit at a slightly lower rate in 2003 and 2004, and a slightly higher rate in 2008. As more data become available, the trend may become more apparent.

Physician and Other Professional Services

Estimating personal health care expenditures for physicians and other professionals is made difficult due to the absence of a standardized survey. There is no equivalent survey that covers the approximately 2,700 physicians licensed to practice in the state. To further complicate the task, the organization of physicians is changing. Recently there has been an increase in the number of hospitalists hired which are essentially physicians who are hired as staff by hospitals.

CMS relies on a combination of sources to produce their estimate, including the Census of Service Industries (CSI), the IRS Business Master file (IRSBM), and the Bureau of Labor Statistics (BLS) estimates of wages and salaries paid in physician offices and clinics. Two of these, the CSI and the BLS data are current and available. The Delaware Department of Labor also provides relevant information.

Figure 2.3
Delaware Personal Health Care Expenditures:
Physician and Other Professional Services by Source of Estimate
 Millions \$\$\$



Source: Center for Applied Demography and Survey Research, University of Delaware, US Centers for Medicare and Medicaid Services

The estimates of personal health care expenditures for physician and other professional services are found in Figure 2.3 above. The data are consistent with national figures for physician services. CMS combines estimates for physicians and other professional services. Since 1995 there has been a significant increase in both employment and wages reported to the Delaware Department of Labor.

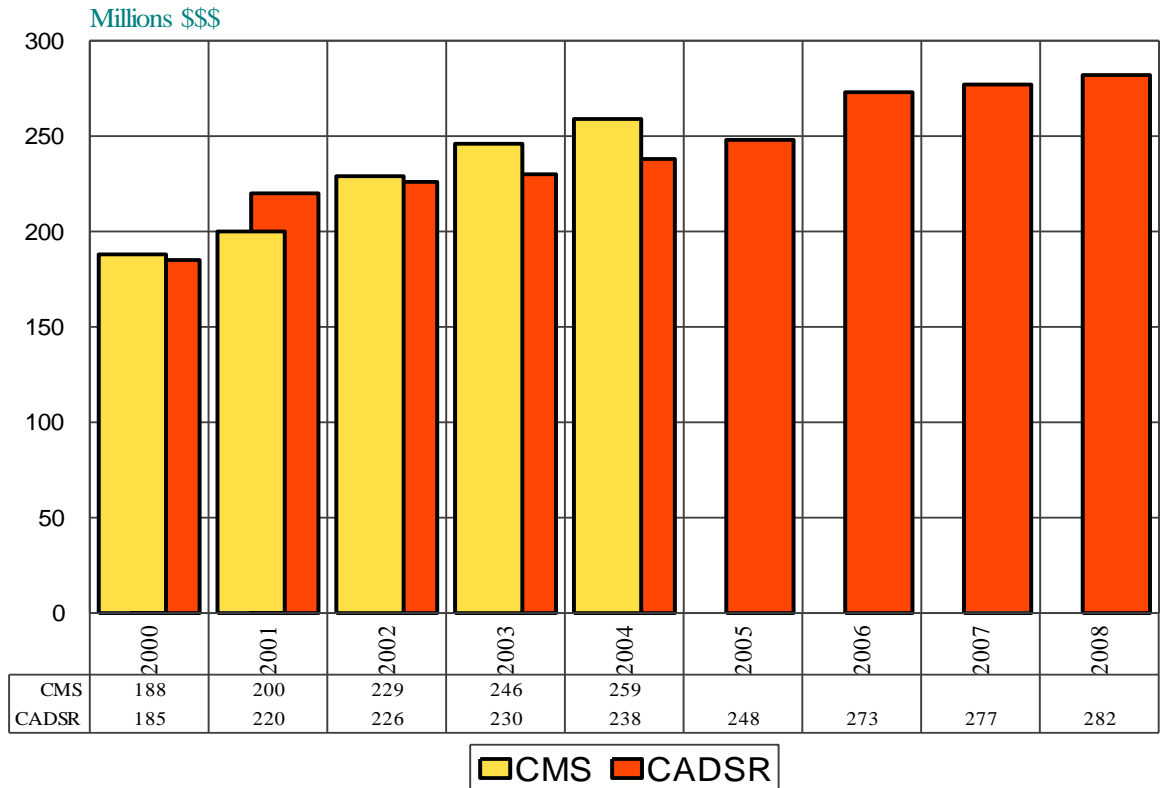
The CMS estimates indicate rapid growth in the *other professional services* account. One explanation may be that there are more facilities to serve drug and alcohol dependent populations, school and child health programs, and other similar programs that use non-physician services outside of the traditional medical setting.

Dental Services

The CMS methodology for estimating revenues for dental organizations is the same as that for physicians. Dental organizations are classified by the NAICS code 6212 to obtain from the Delaware Department of Labor.

The pattern of expenditures shown in Figure 2.4 is similar to that observed with physicians. Solid growth occurred during the past decade. Dental service expenditures grew at 4% per year on average from 2001 to 2008. Since the move to managed care affected physicians much more than dentists, the growth in dental expenditures may not be just an artifact of the data. The growth rate is consistent with the raised consumer spending health services. Technology is another probable cause for the increase in dental services expenditures.

Figure 2.4
Delaware Personal Health Care Expenditures:
Dental Services by Source of Estimate



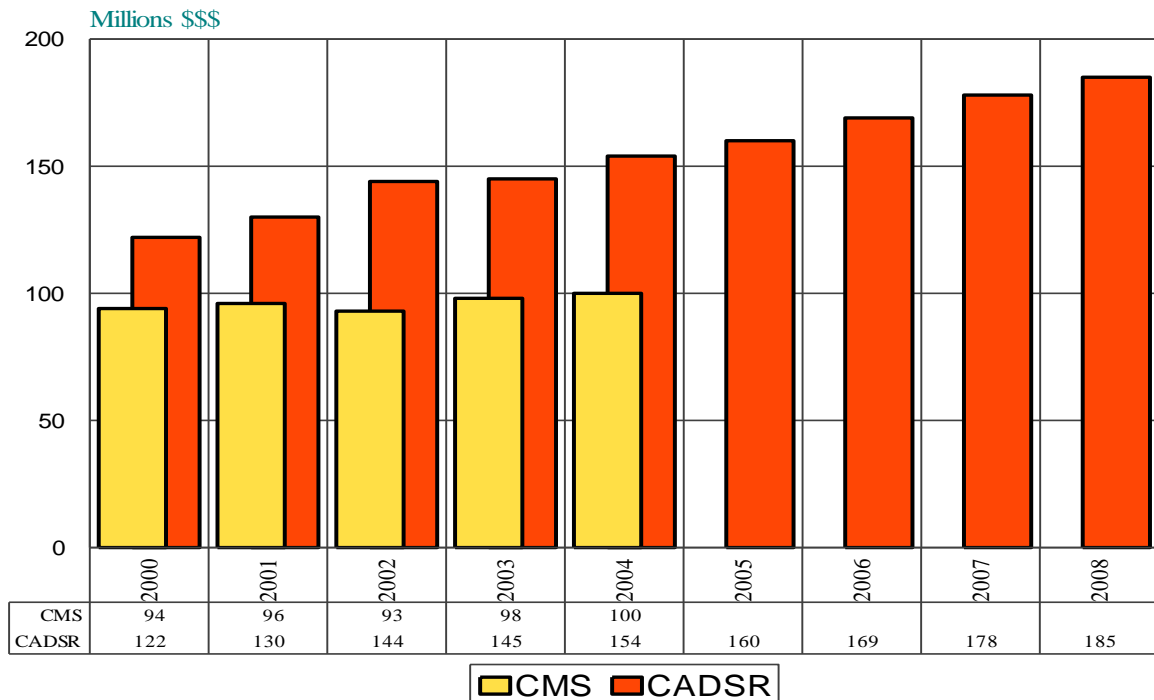
Source: Center for Applied Demography and Survey Research, University of Delaware
 US Centers for Medicare and Medicaid Services

Home Health Care Services

North American Industrial Classification System (NAICS) 6216 represents home health care services. Private and government agencies provide these services. CMS uses the Census of Service Industries (CSI) as its benchmark for private firms, and then adjusts this estimate with Medicare and Medicaid payments for home health care supplied by governmental agencies. The estimates are provided in Figure 2.5 below.

During the nineties, home health services had been among the fastest growing health care sectors, however, the Balanced Budget Act of 1997 (BBA) stymied the growth of these providers. The BBA of 1997 delineated a schedule of reimbursement reductions and visit limitations, which directly impact the revenue of home health care providers. Home health providers responded by paring their payrolls. Total employment in the industry fell 5.5% in 1998 and 1999. Home health expenditures are now rising again, with average growth in excess of 5% over the past four years.

**Figure 2.5
Delaware Personal Health Care Expenditures:
Home Health Services by Source of Estimate**



Source: Center for Applied Demography and Survey Research, University of Delaware
US Centers for Medicare and Medicaid Services

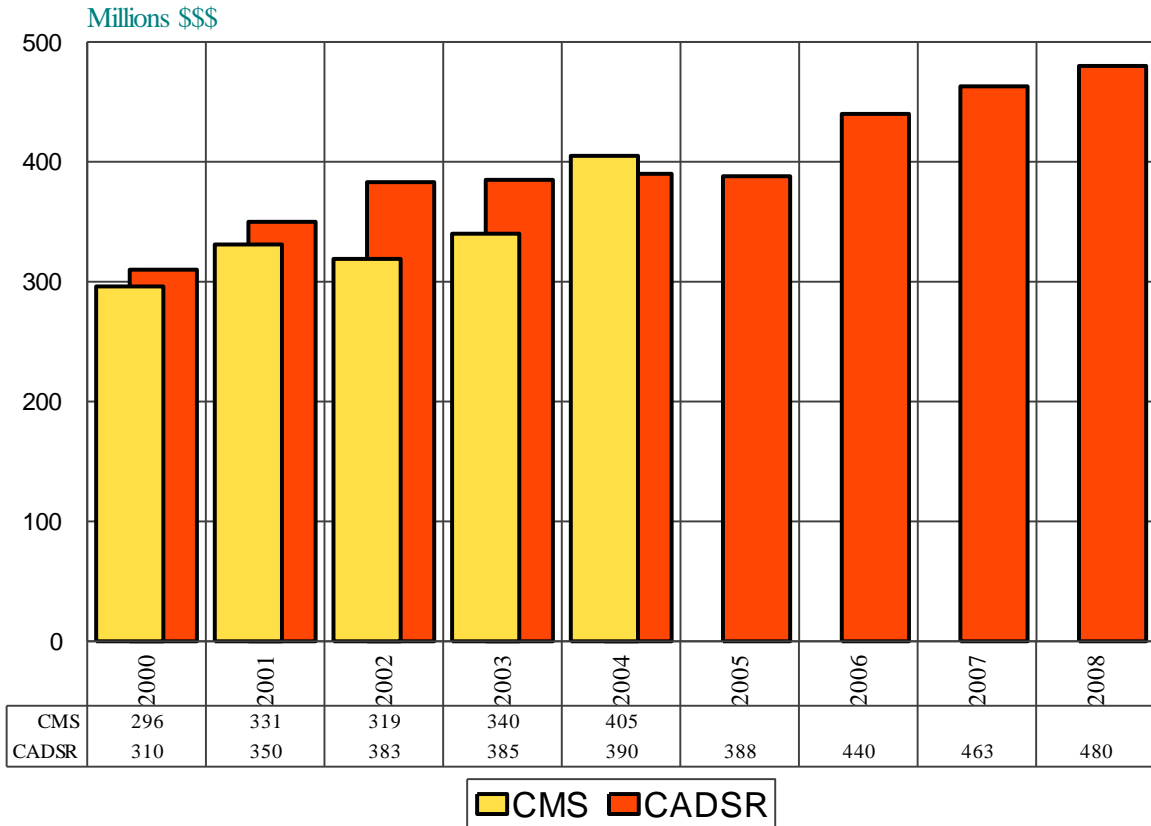
Nursing Home Services

Personal health care expenditures on nursing home services are classified under the NAICS code 623. The estimates produced in this study are found in Figure 2.6 below.

This account exhibits stable to strong growth over the period, with more muted growth emerging in 2003 and 2005, but accelerated growth in 2006, 2007 and 2008.

Figure 2.6

**Delaware Personal Health Care Expenditures:
Nursing Home Services by Source of Estimate**



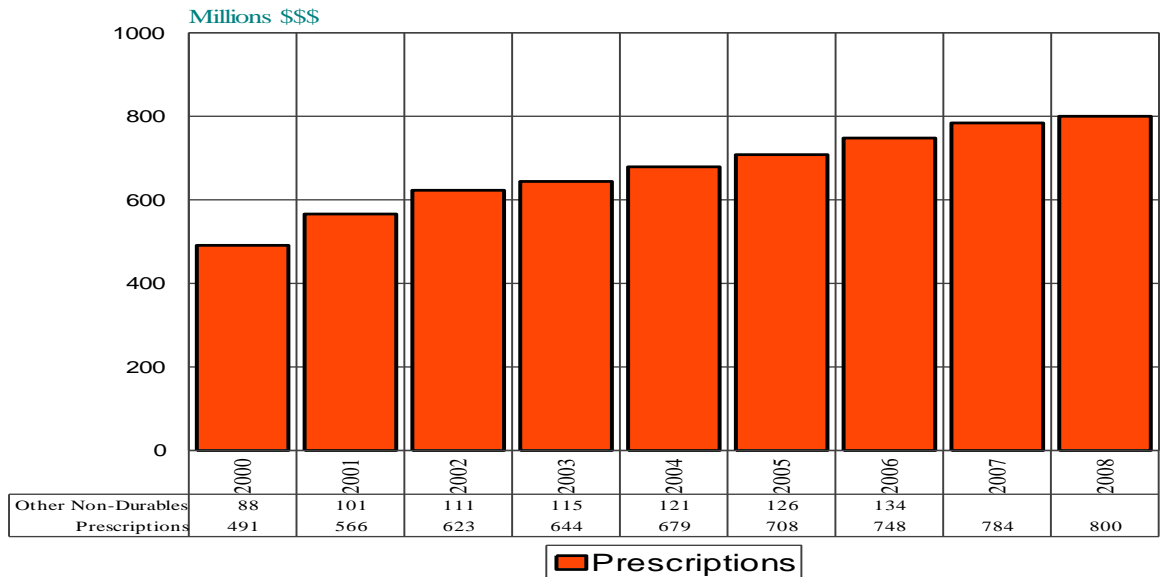
**Source: Center for Applied Demography and Survey Research, University of Delaware
US Centers for Medicare and Medicaid Services**

Other Expenditures

There are three other areas of the health care accounts that have not been addressed. The first area is *drugs and other medical non-durables*. The second is *vision products and other medical durables*. And the final area is *other personal health care*, which includes place-of-work health services. For the first two, CMS utilizes the Census of Service Industries (CSI) data. The estimates for the final account are an amalgamation of indicators from sources that have no Delaware equivalents. The pages that follow present the CADSR estimates for prescription drugs. A separate section dedicated to the subject of prescription drugs appears later in the report, and presents a sample of the current issues related to that health care account.

Figure 2.7, below, shows the estimates for drugs and other nondurables along with an estimate for prescription drugs. Prescription drugs are expected to account for 80% of the prescription drugs and other medical non-durables account, while its share of personal health care expenditures increases from 10% to 15%.

**Figure 2.7
Delaware Personal Health Care Expenditures:
Prescription Drugs**



**Source: Center for Applied Demography and Survey Research, University of Delaware
US Centers for Medicare and Medicaid Services**

Prescription drugs are expected to slow down in growth between 2007 and 2008. The growth of prescription drugs expenditures has ranged between 0-9% annually for the nation for the period 1997-2007 (see Figure 2.8). This high rate of growth during the early part of 2000 reflects a number of factors, not least of which is the slew of new drugs introduced during the period. The spate of new drug offerings can be credited in part to the Food and Drug Administration's (FDA's) move to expedite the approval process for new drug candidates. The more recent deceleration in prescription drug growth is largely attributed to the recession, as income is falling and consumers are more willing to utilize generic drugs in place of the more expensive brand name drugs.⁹ Prescription drug growth spending is expected to rebound in 2010, however the loss of patent protection of some popular brand name drugs is expected to help moderate the growth of spending in 2012 and 2013. Higher growth is expected between 2014 and 2018.¹⁰

The passage of the Medicare Prescription Drug Improvement and Modernization Act of 2003 was designed to provide assistance with prescription drug costs. Medicare recipients pay the first \$250 for prescriptions. After the first \$250, they pay 25% of the cost up to \$2,250. There is a 'gap' over the next \$2,850 where seniors are expected to pay the full cost. After \$5,100 of drug costs in one year, Medicare will cover 95% of any additional costs.

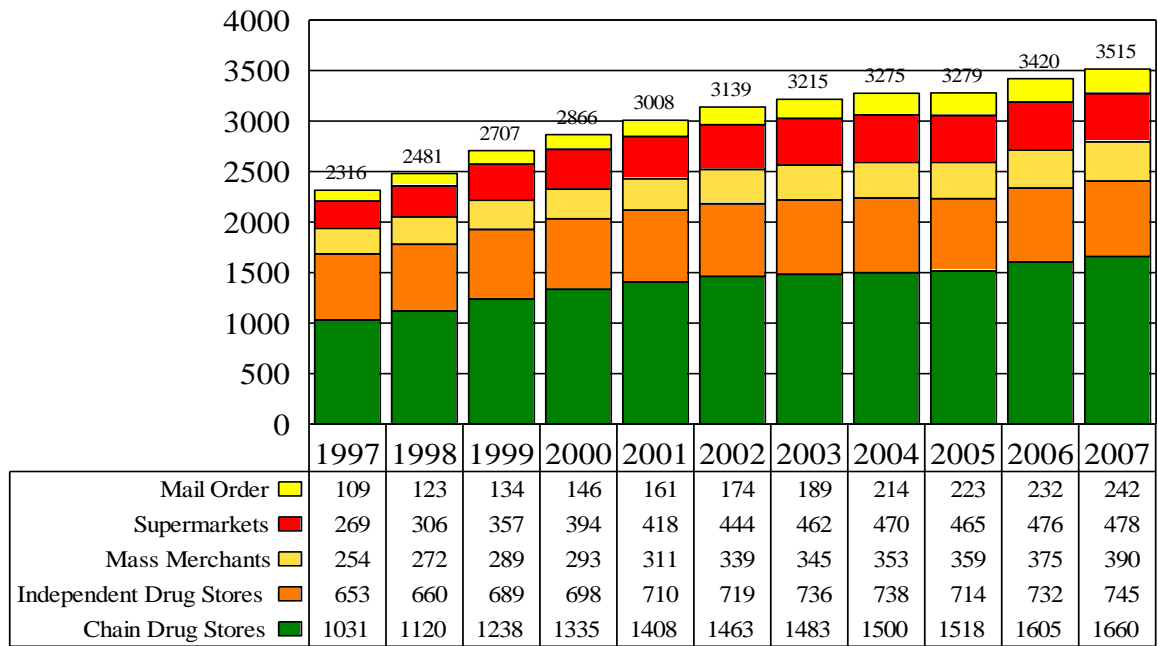
Prescription drug costs are one aspect of health care that managed care has struggled to control. While managed care does lower co-pays to consumers who opt for generic alternatives to brand name drugs, consumers often find that no generic equivalent is available. The drug companies have been able to extend the patents on their best sellers through a process called 'evergreening.' Evergreening refers to a process where the producer patents new inventions in connection with a popular drug that is already on the market. Under current law, each of those patents can serve as a deterrent to generic entry to the market. This forces consumers to purchase the patented drug, until the time when a generic alternative comes to the market.

⁹ Health Affairs Feb 24, 2009 "Health Spending Projections Through 2018: Recession Effects Add Uncertainty to the Outlook".

Another factor affecting prescription expenditures is the rise in popularity of mail order prescriptions. In 1997 they comprised just 5% of total prescription sales; however, now they comprise 7% of total prescription sales volume (see Figure 2.8 below).

The consumer’s incentive is to lower the out-of-pocket expenditure by purchasing drugs at a significant discount versus pharmacy prices. Online prescriptions are also sold in bulk, which can also help lower the cost to consumers.

Figure 2.8
U.S. Prescriptions, by Type of Store, 1997-2007
 (in millions)



Source: Center for Applied Demography and Survey Research, University of Delaware, National Association of Chain Drug Stores. 2008-2009.

Nevertheless, demand for prescription drugs will only be enhanced by this trend of purchasing prescriptions-by-mail. The prescriptions-by-mail program does present a data collection issue. Should these drugs be supplied by an out of state company, these expenditures will not be reported in Delaware. However, the estimates presented here are consistent with the

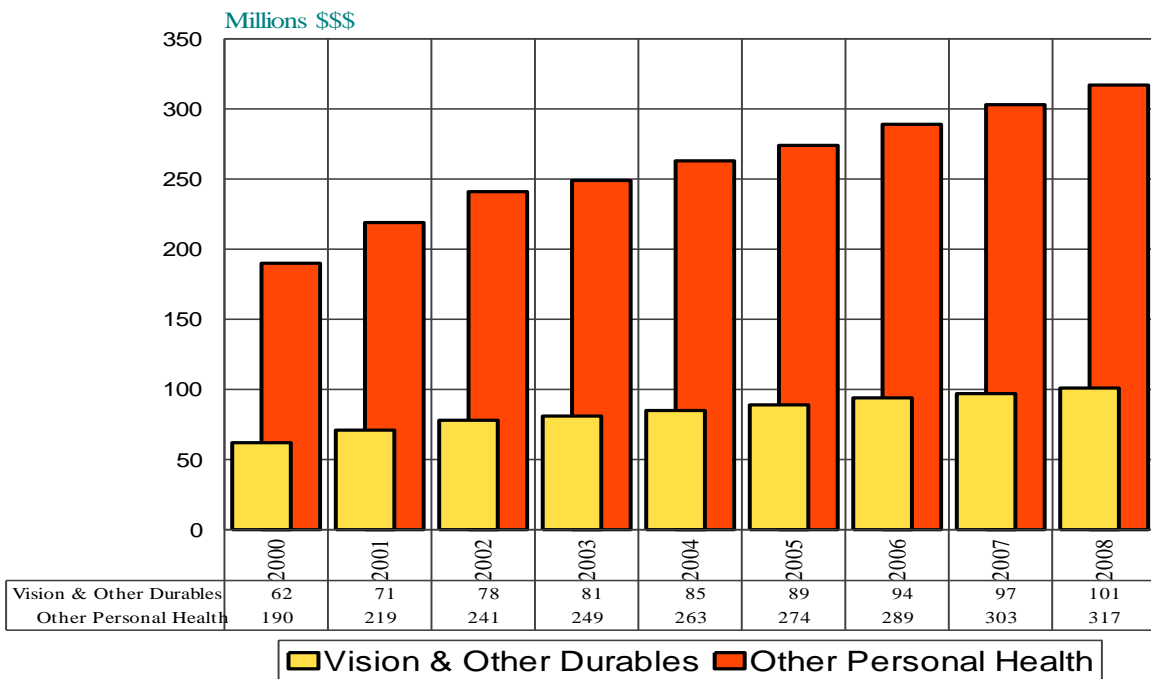
¹⁰ Ibid

national trend of drug prescriptions and are therefore assumed to be the prescription drug expenditures of the state.

Vision and Other Medical Durables

Figure 2.9 reports the estimates for the last two accounts. Vision products are allowed to grow sufficiently to keep the share around 1.6% of personal health care expenditures.

**Figure 2.9
Delaware Personal Health Care Expenditures:
Vision Products and Other Medical Durables, and
Other Personal Health Care**

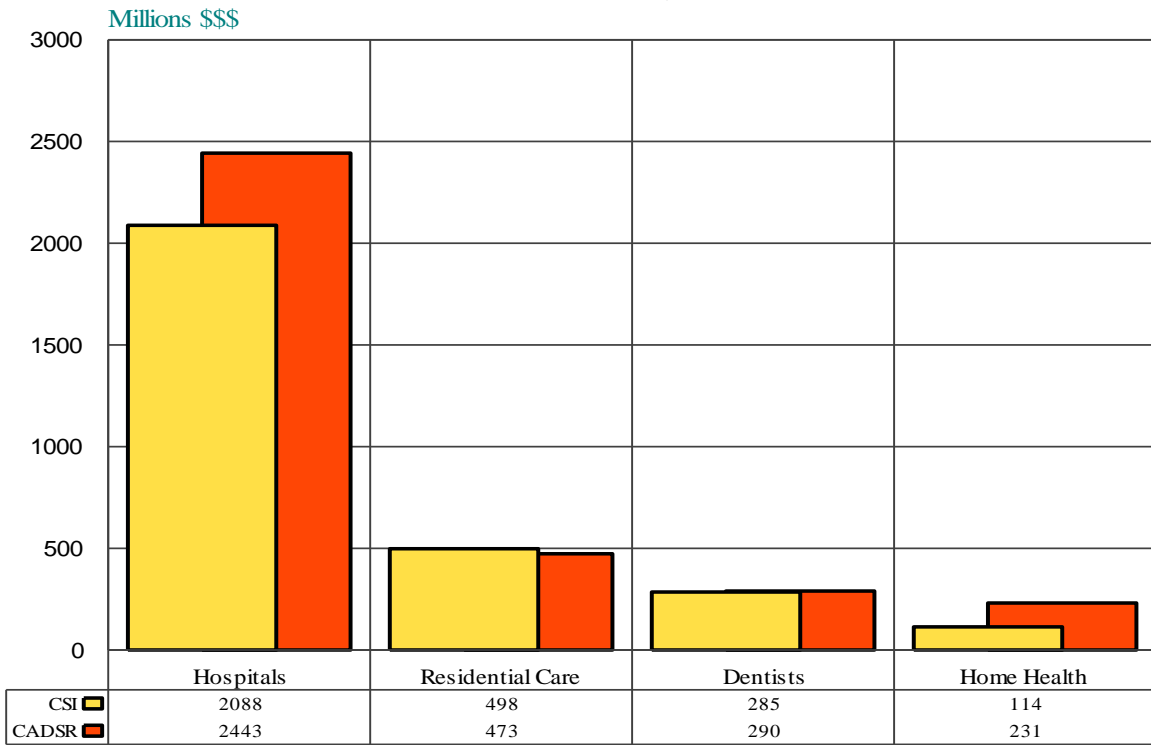


**Source: Center for Applied Demography and Survey Research, University of Delaware
US Centers for Medicare and Medicaid Services**

The timeliness of the BLS wage and employment data makes it a valuable resource for estimating the more recent trends in the industry. The infrequent release of the Economic Census discounts the report’s usefulness for yearly comparisons. Nevertheless, using the two reports in conjunction with each other serves to verify the industry’s trends.

Using the CSI estimates for 2007 as a benchmark, the accuracy of the CADSR estimates for 2007 can be assessed. In most cases where CSI has comparable data to the sectors considered, the CADSR estimates fall within a reasonable range of the CSI data (see Figure 2.10). The CADSR estimate for home health is consistent with the latest CMS estimate. However, there is a relatively large difference between the CSI and the CADSR/CMS estimates for home health. Future updates will provide an opportunity to assess the data further.

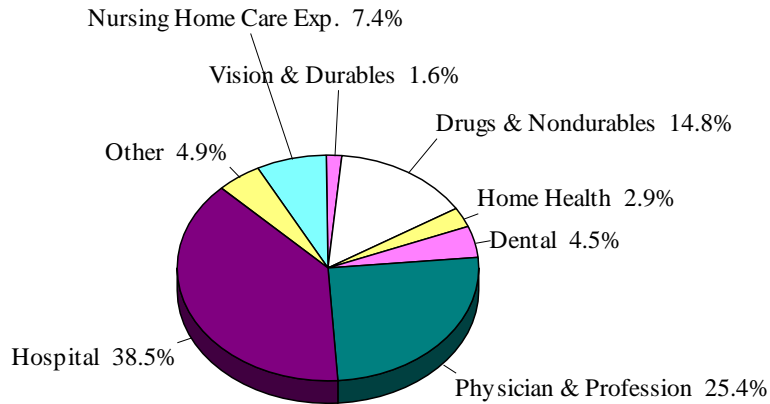
Figure 2.10
Delaware Personal Health Care Expenditures:
CSI versus CADSR, 2007



Source: Center for Applied Demography and Survey Research, University of Delaware
 Census of Service Industries, 2007

The composition of total personal health care expenditures in Delaware continues to evolve. Hospital services command an impressive 39% of total personal health care expenditures in the state (see Figure 2.11). All other accounts except hospitals are increasing their share of health care expenditures. This reflects the trend of health care provision away from traditional hospital care and toward alternative providers, the effect of managed care on limiting the provision of costly hospital care, and the greater efficacy of health care that requires shorter hospitalization or outpatient treatments.

Figure 2.11
Delaware Personal Health Care Expenditures:
Share of Total Expenditures in 2007 by Category



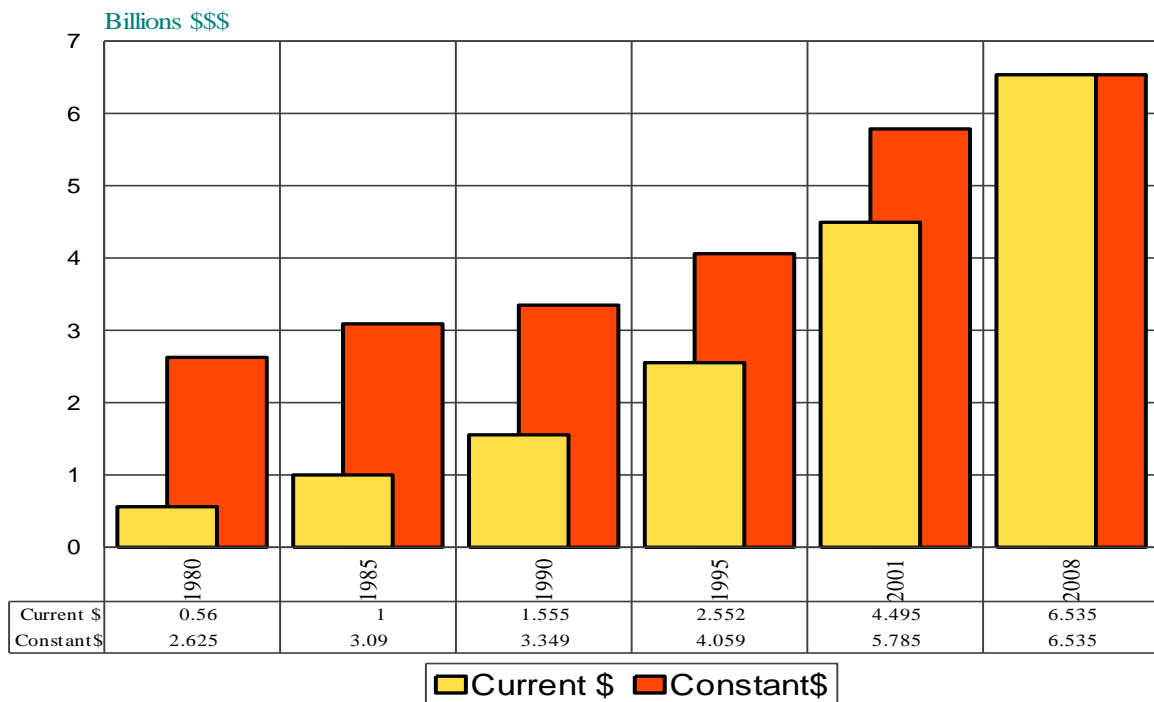
**Source: Center for Applied Demography and Survey Research, University of Delaware
 US Centers for Medicare and Medicaid Services**

Total Cost of Health Care

Total Costs

After compiling all of the estimates for the various services and products, an estimate can be offered for the total cost of personal health care in Delaware. Figure 3.1 presents that estimate.

**Figure 3.1
Delaware Personal Health Care Expenditures
In Current and Constant Dollars 1980-2008**



**Source: Center for Applied Demography and Survey Research, University of Delaware
US Centers for Medicare and Medicaid Services**

In 2008, the estimated total cost of personal health care in Delaware is approximately 6.5 billion dollars. The figure shows estimates both in *Current* dollars and in *Constant* 2008 dollars. From 1980 to 1990, the personal health care sector grew at 12% per year in current dollar terms (6% in constant dollars using revised inflation data). During that same period, the population increased by about 1% per year. Between 1991 and 1995, the rate of growth slowed to 8.7%. Between 1996-2000, growth slowed again, this time to 5.8%. Rising wages of health care

providers contributed to increased expenditures on health care services and expanded the industry. The Census of Service Industries of 2007 reports that revenue/receipts of hospitals, physicians' offices and dentists' offices are on the rise. Revenue for emergency and other relief services decreased from 13.2 percent to \$6.9 billion in 2007. The US Census Bureau estimates that revenue in the area of emergency and other relief services is now roughly equivalent to that of 2004.¹¹ Moreover, the CSI estimate of total revenue/receipts falls within an acceptable range of the CADSR estimate. The greatest pressure on expenditures stems from the hospitals account.

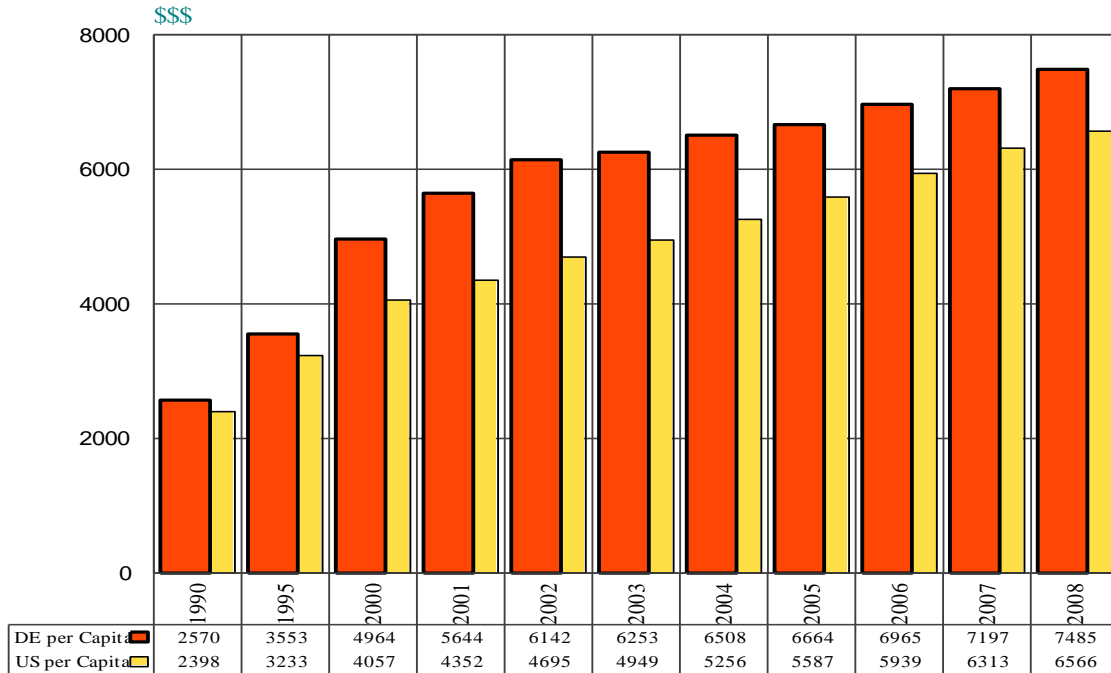
Per Capita Costs

Another useful way to examine the total cost of personal health care expenditures is by using the per capita measure: a calculation that removes from the analysis the effect of increases in the population. Those results are shown in Figure 3.2.

Per capita health expenditures continue to rise in the state and nation. Because these data control for population growth, a rise in per capita health expenditures reflects increased use of health care (from an aging population, increasing consumption of health care services, and increasing costs of these services).

¹¹ Edwards, Tom. Medicaid tops Funding for Nursing and Residential Care Facilities. US Census Bureau News January 2009.

Figure 3.2
Personal Health Care Expenditures Per Capita:
US and Delaware



Source: Center for Applied Demography and Survey Research, University of Delaware US Centers for Medicare and Medicaid Services. US figure estimates using growth in National Health Expenditures applied to Personal Health Expenditures.

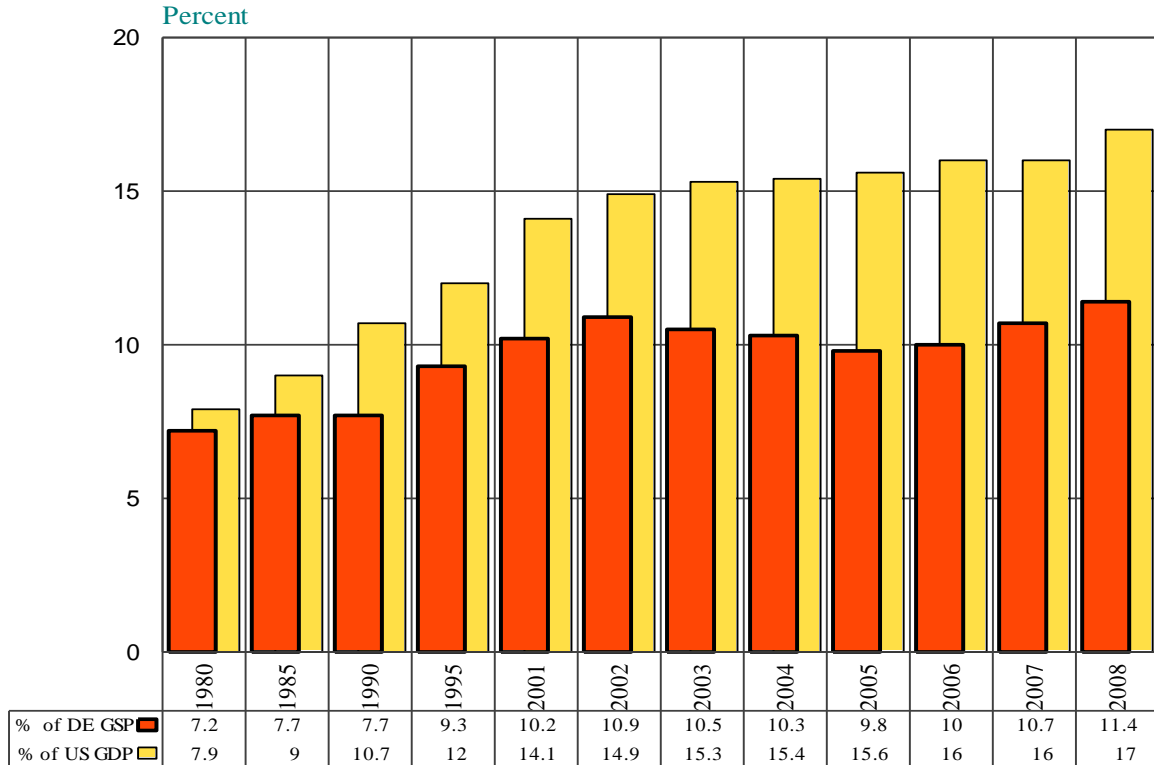
Economic Importance

Two provided measures of economic impact show the importance of personal health care expenditures in the Delaware economy. First, Figure 3.3 displays the ratio of these expenditures to gross state product (the total value of goods and services produced in Delaware). Also shown for comparison is the ratio of personal health care expenditures in the US to gross domestic product (the total value of goods and services produced in US).

This chart illustrates a number of points. First, the health care sector has been growing as a proportion of total output in both the US and Delaware. Second, Delawareans dedicate less GDP than the US as a whole on health care; 11% compared to 16%. A portion of this difference can be allocated to the fact that Delawareans purchase more health care services outside of the state than non-Delawareans purchase inside the state. The balance must be attributed to

differences in income, preferences, and needs. Delaware is well above average in income and gross state product, and below average in poverty¹². However, Delaware lies slightly above average in age, which tends to increase the share of GSP devoted to health care.

Figure 3.3
Personal Health Care Expenditures:
Share of US GDP and Delaware GSP



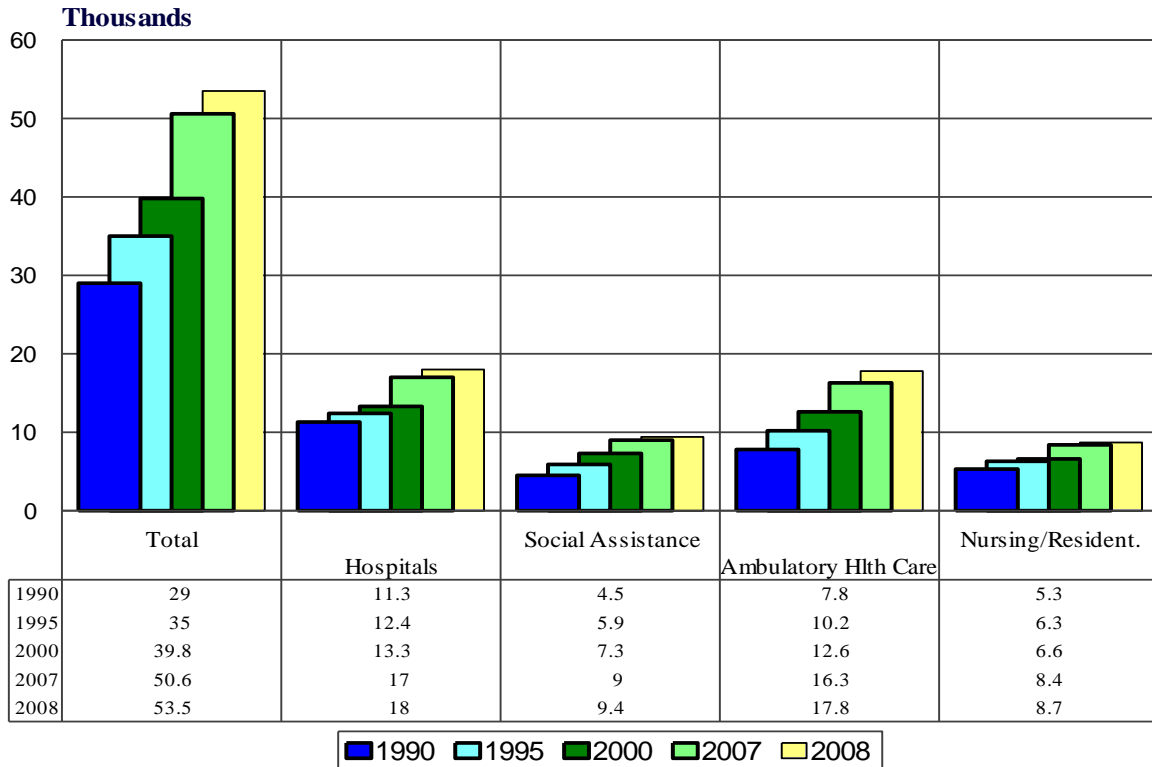
Source: Center for Applied Demography and Survey Research, University of Delaware US Centers for Medicare and Medicaid Services. Delaware 2005-2008 GSP estimated. U.S. and Delaware are based on National Expenditures growth rate.

Finally, the health care sector is an important part of the employment in the state. Information reported to the Delaware Department of Labor shows that the health care sector provides employment for 12% of statewide employment (423,455) and earns 11% of the reportable wages.

¹² According to the Kaiser Family Foundation, poverty among Delaware adults is 13% versus 15% for the nation in 2007. Among children, the Delaware poverty rate is 21% versus 23% for the nation. Among the elderly, the Delaware poverty rate is 11% versus 13% for the nation.

In Figure 3.4 below, employment by sector over time is shown.

**Figure 3.4
Delaware Employment in Health Services**



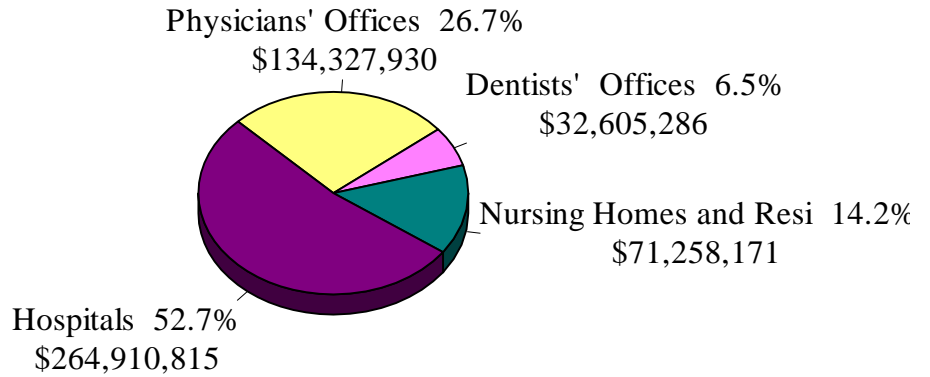
Source: Center for Applied Demography and Survey Research, University of Delaware, Delaware Department of Labor. Employment is reported by NAICS category. Components may not sum to totals due to rounding. Ambulatory Health Care Services includes offices of physicians, dentists, other health practitioners, outpatient care centers, medical and diagnostic laboratories, home health services, and other ambulatory health care services.

Hospitals command a declining share of Delaware’s health care industry. In 1990, hospital employment accounted for 39% of the state’s health care industry. By 2008, the latest year of complete data, this number had fallen to 33.3%.

Hospital employment growth is accelerating in Delaware despite a large portion of the economy losing jobs. Annual hospital employment grew by 960 between 2007 and 2008. Contributing to this growth is expansion at the state’s health care facilities.

Figure 3.5 highlights Delaware’s statewide total wages for the 2nd quarter in health care. Hospitals by far command the largest percentage of total wages in the state with regards to health care.

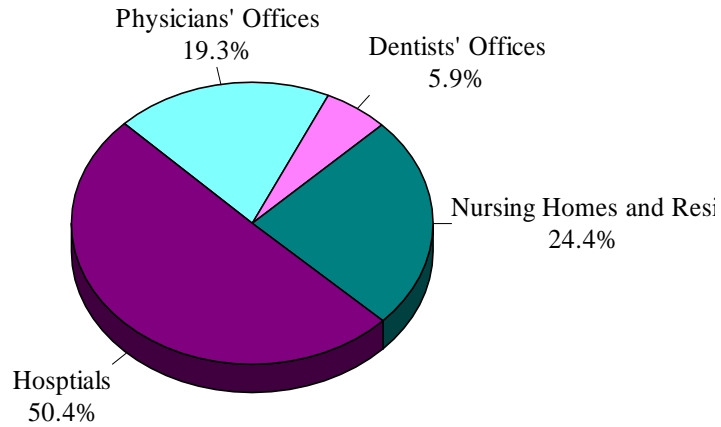
Figure 3.5
Delaware Statewide 2nd Quarter 2008 Total Wages



Source: Center for Applied Demography and Survey Research, University of Delaware, Delaware Department of Labor

In addition to being the source of the largest number of wages in Delaware, hospitals are the largest provider of health care employment in the state with 50.4% of the health care in the state (Figure 3.6).

Figure 3.6
Delaware Statewide 2nd Quarter 2008 Total Employment



Source: Center for Applied Demography and Survey Research, University of Delaware, Delaware Department of Labor

Christiana Care Health System's Wilmington site is scheduled to undertake a \$205m expansion with the expected completion date sometime in 2013. This expansion includes adding additional square footage to the campus as well as expanding its ER, operating rooms, patient bed count and adding a new office building.

Beebe Medical Center has undertaken a \$35m expansion to meet the growing demand for services in Sussex County.

In 2004, Bayhealth Medical Center underwent a \$50m expansion including a new cardiac survey program at Kent General Hospital. In 2003, Nanticoke Memorial Hospital in Seaford added a \$6m cancer center and in 2004 it doubled the size of its emergency department.

The expansion of health care providers in the state will place further demands on an already undersupplied work force. The Delaware Department of Labor forecasts that health and social services will account for close to one out of every five new jobs in Delaware between 2001 and 2016. The 9,000 new jobs that are to be created in this industry by 2016 will make it the largest industry in Delaware bypassing the Retail Trade industry as the current largest industry.¹³ Twenty-one of the 50 fastest growing occupations in Delaware 2006-2016 are health related. Home health aides and pharmacy technicians are expected to see 42% and 38% growth respectively.

Wage pressures will develop as competition for health care workers intensifies in the state, region, and nation. The national vacancy rate for registered nurses is 8.1%.¹⁴ And by 2020, the nurse shortage is expected to be 800,000.¹⁵

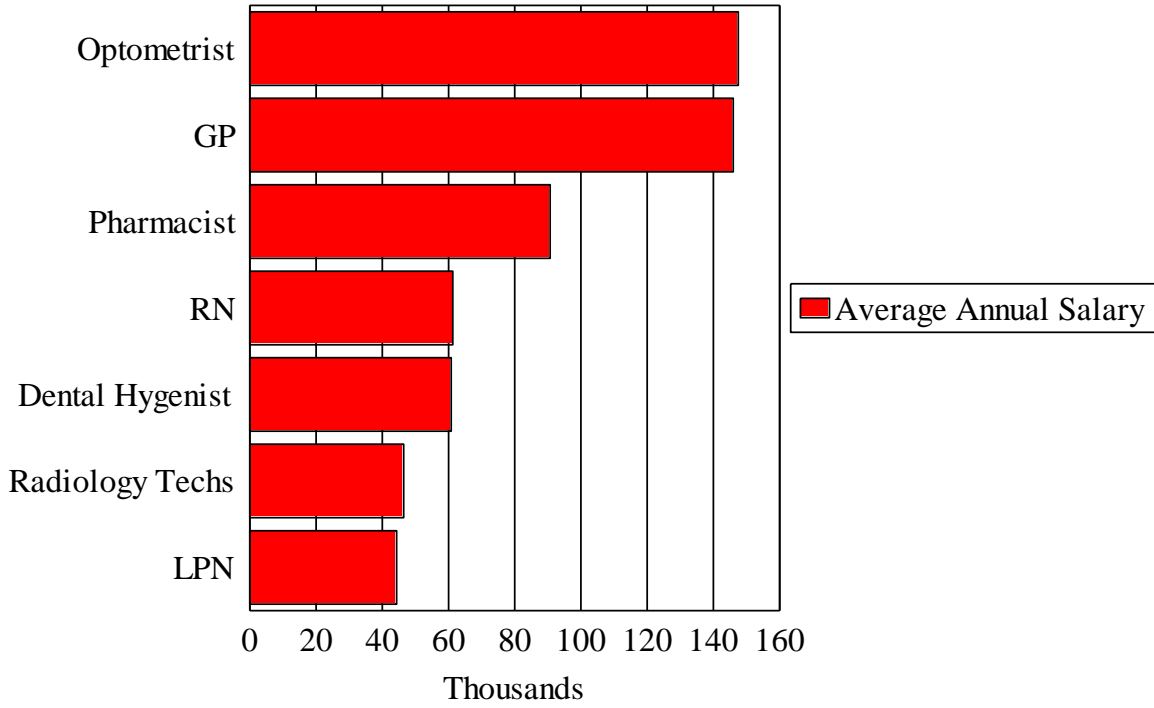
¹³ Source: Delaware 2016 Occupation & Industry Projections, Office of Occupational & Labor Market Information, June 2008

¹⁴ Source: 2007 AHA Survey of Hospital Leaders.

¹⁵ Source: Bureau of Health Professions, National Center for Health Workforce Analysis, Projected Supply, Demand, and Shortages of Registered Nurses: 2000-2020, July 2002.

The table below (Figure 3.7.) provides the average annual salary of selected Delaware health providers.

Figure 3.7
Delaware Health Care Provider Salaries



Source: Delaware 2016 Occupation and Industry Projections 2006 Average Wages, Office of Occupational and Labor Market Information, Delaware Department of Labor.

Prescription Drugs

Prescription drug coverage, expenditures, and prices garner considerable attention across the nation. Medicines are increasingly relied upon to maintain or improve health. However, concerns have been raised about the rising cost of prescription drugs and its impact on health plans, employers, and uninsured individuals. Other issues include the lack of outpatient prescription drug coverage under Medicare, the methods for determining the price of drugs and the development and the approval and pricing of new drugs.

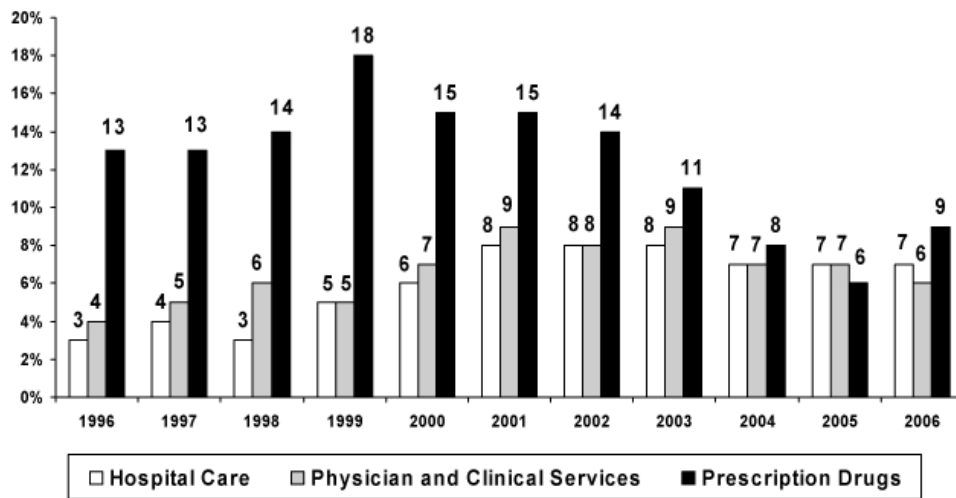
This section reviews the current research on prescription drugs. The CMS provides data on aggregate prescription drug expenditures for Delaware, albeit with a time lag of several years. *Delawareans Without Health Insurance 2007*¹⁶ provides estimates of the number and profile of the state's uninsured. However, there is no specific information available on prescription drug coverage or expenditures by Delaware's households. Research indicates that those with any type of health insurance typically enjoy some form of prescription drug benefit. It is reasonable, therefore, to infer that Delawareans with health insurance also have some form of coverage for prescription drug expenditures.

Historically, Delaware's uninsured population figures followed closely with those of the region and nation. With this in mind, national research on the subject of prescription drugs will not only offer insight into this industry in aggregate, but will be highly applicable to the State.

The annual increase in prescription spending in 2006 was nine percent as compared to seven percent for hospital care and six percent for physician and clinical services. Nationally, increases in prescription drug expenditures were responsible for almost half (44%) of total health care expenditure increases in 1999 and 27% in 2000.

Figure 4.1

Figure 1: Average Annual Percentage Change in Selected National Health Expenditures, 1996-2006



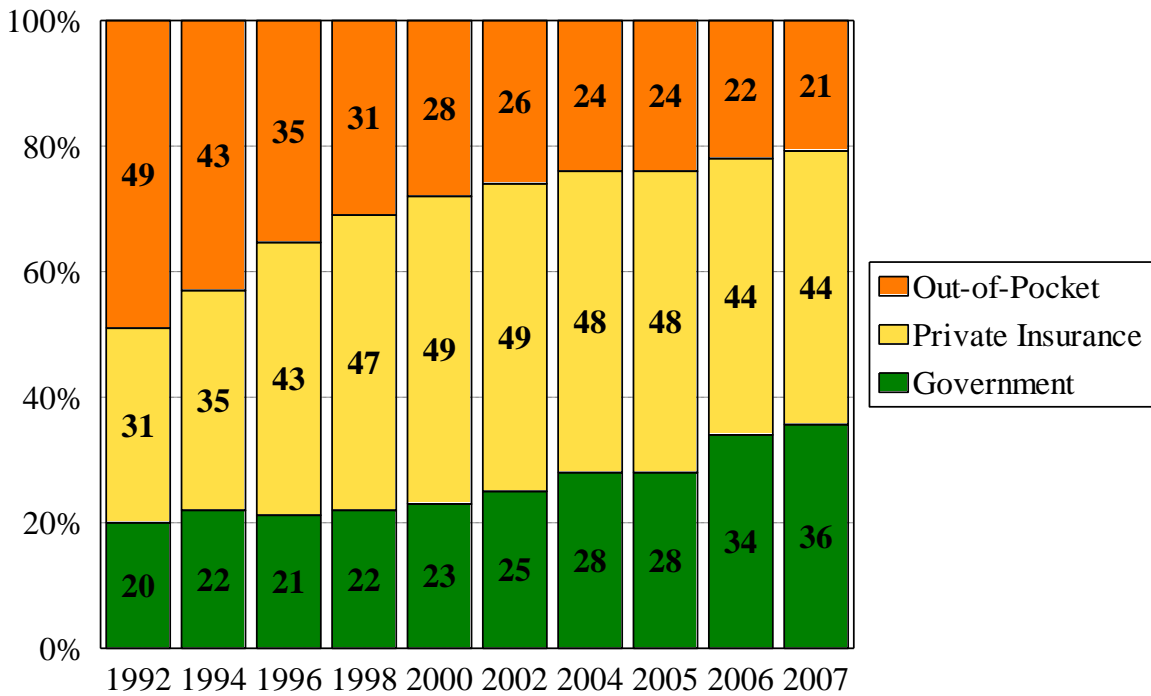
Source: Kaiser Family Foundation calculations using National Health Expenditure historical data from Centers for Medicare & Medicaid Services, <http://www.cms.hhs.gov/NationalHealthExpendData/>.

Despite being only a small component of total health care expenditures, the rise in prescription drug prices has a marked effect on employer-based insurance. Prescription drug costs are the most rapidly increasing expense for employer-based insurance, representing 40% of the premium increase from 1998-1999.

¹⁶ <http://www.cadsr.udel.edu/DOWNLOADABLE/DOCUMENTS/Hi0713.pdf>

Two factors are at play. First, health insurance coverage for prescriptions greatly expanded over the previous decade. In 1990 approximately one-quarter of all prescription drugs were still paid for by private insurance (see Figure 4.2 below). However, by 2007 private insurance comprised almost fifty percent of prescription drug expenditures. Second, the greater availability of new products, especially antihistamines, antidepressants, cholesterol reducers, and anti-ulcerants, increased expenditures as consumers switch to newer and more expensive drugs. Moreover, pharmaceutical companies use aggressive direct-to-consumer marketing to maximize the demand for their products.

Figure 4.2
Percent of Total National Prescription Drug Expenditures by Type of Payer
1992-2007



Source: Source: Center for Applied Demography and Survey Research, University of Delaware
 US Centers for Medicare and Medicaid Services.

Retail prescription prices (which reflect both manufacturer price changes for existing drugs and the introduction of newer, more expensive drugs) increased an average of 7.7% a year since 1991, more than double the inflation rate of 2.7%. Manufacturer prices (which reflect only price increases for existing drugs) grew less rapidly, at an average of 4% a year since 1991.

Most of the top selling prescriptions are newer, higher-price brand name drugs, whose availability directly relates to the research and development (R&D) activities of pharmaceutical manufacturers and government supported research. Manufacturer R&D spending increased from \$10 billion in 1991, to \$30 billion in 2001 and to \$58.8 billion in 2007. In the past seven years, pharmaceutical research companies have invested almost 19% of their domestic sales on R&D activity (PhRMA) compared to 17% in 1991. The investment in R&D has decreased slightly in recent years. The number of new drugs approved by the US Food and Drug Administration also affects new drug use. The FDA typically approved 30 drugs a year on average over the past 10 years. In 2007, the total number of new drugs approved by the FDA totaled 23 while the number of generic drugs approved during that same year was 495.

Figure 4.3
U.S. Prescription Drug Prices and Brand/Generic Mix, 1990-2007

Year	Brand	All Rx's	Generic	Percent Brand	Percent Generic
1990	\$27.16	\$22.06	\$10.29	69.80%	30.20%
1991	\$30.11	\$23.87	\$10.85	67.60%	32.40%
1992	\$33.68	\$26.33	\$11.78	66.40%	33.60%
1993	\$35.28	\$26.99	\$12.82	63.10%	36.90%
1994	\$37.37	\$28.37	\$14.18	61.20%	38.80%
1995	\$40.22	\$30.01	\$14.84	59.80%	40.20%
1996	\$45.11	\$32.86	\$15.71	58.30%	41.70%
1997	\$49.55	\$35.72	\$16.95	57.60%	42.40%
1998	\$53.51	\$38.43	\$17.33	58.30%	41.70%
1999	\$60.66	\$42.42	\$18.16	57.10%	42.90%
2000	\$65.29	\$45.79	\$19.33	57.60%	42.40%
2001	\$69.75	\$50.06	\$21.72	59.00%	41.00%
2002	\$77.49	\$55.37	\$24.89	57.90%	42.10%
2003	\$85.57	\$59.52	\$27.69	55.00%	45.00%
2004	\$91.80	\$62.64	\$28.23	54.10%	47.50%
2005	\$97.65	\$63.87	\$29.21	50.60%	51.30%
2006	\$107.48	\$66.97	\$31.39	46.80%	53.20%
2007	\$119.51	\$69.91	\$34.34	41.80%	58.20%

NACDS, Table 39 "The Chain Pharmacy Industry Profile 2008-2009".

The rate of inflation in prescription drug prices at the manufacturers' level continues at its lowest level since the mid-1970's. However, pharmaceutical manufacturer prices still outpace general inflation, and the retail market continues to observe price increases greater than reported at the manufacturer level.¹⁷ Expenditure growth is much larger than price growth - as consumers continue to increase their utilization of existing products and consume new products.

The average sale price per prescription continues to climb. Differences in average prices for third party and cash prescriptions are due in part to cash patients substituting generic prescriptions for brand prescriptions. Figure 4.3 shows average prices for brand and generic prescriptions over time. Generic prescription drugs represented almost 60% of prescription drugs filled in the US in 2007.

It is important to note that an additional dollar spent on prescription drugs is not necessarily an additional dollar spent on total health care. For many ailments, prescription drugs are a substitute for more costly physician or hospital treatment. Depression is one example where treatment by prescription drug replaces the more costly traditional treatment methods. Rather than costly outpatient treatment and counseling, which incur lost work time as well as high provider costs, patients are treated via drugs such as Zoloft and Prozac.

With breakthroughs in drug therapy leading to more efficient treatment, rising prescription drug expenditures do not necessarily mark a pure increase in total health care costs. Rather, they reflect the switch away from traditional treatment techniques.

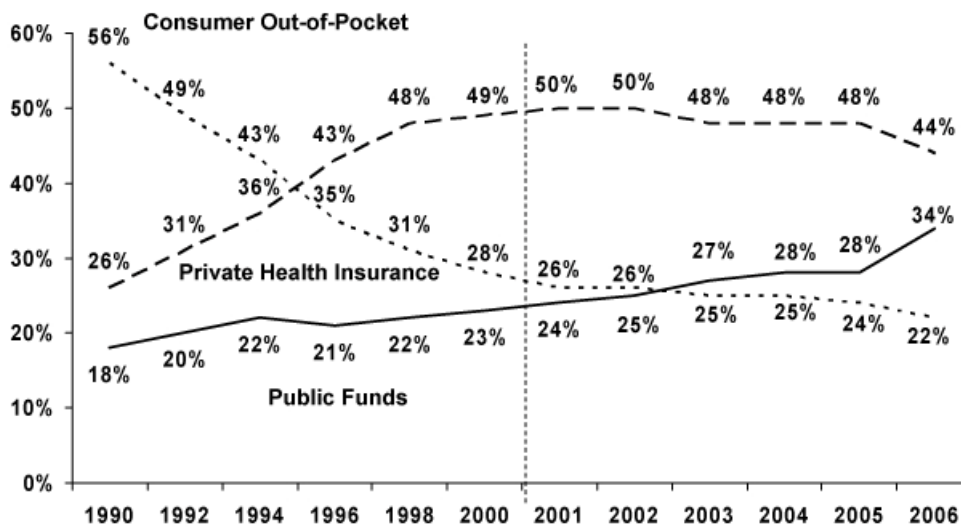
Prescription drug growth significantly declined from 8.6% in 2006 to 4.9% in 2007. This decline in prescription drug spending is attributed to an increase in the generic dispensing rate, slower growth in prescription drug prices and greater consumer concern about the safety of the drugs.¹⁸ Three primary factors drive changes in prescription drugs: utilization, price changes and the composite of drugs that are used. Generic prescription drug sales grew at 8% from 2005 to 2006. Advertising dollars by the pharmaceutical companies also declined by almost \$2 billion in 2007 from \$12 billion in 2006 and \$10.4 billion in 2007. A significant change that occurred in the prescription drug industry was the implementation of the Medicare Part D drug program in 2006 which increased utilization of generic drugs and significantly changed the funding sources

¹⁷ 2008-2009 Chain Pharmacy Industry Profile

for prescription drugs (see Figure 2 below).¹⁹ Delaware had the highest average cash price (\$83.09) of prescriptions and the highest average price paid by a third party program (\$89.82) among all 50 states in 2007.

Figure 4.4

Figure 2: Percent of Total National Prescription Drug Expenditures by Type of Payer, 1990-2006



Notes: Consumer Out-of-Pocket includes direct spending by consumers for health care goods and services not covered by a health plan and cost-sharing amounts (coinsurance, copayments, deductibles) required by public and private health plans. It does not include consumer premium payments and cost sharing paid by supplementary Medicare policies, which are included in the Private Health Insurance category. May not add to 100% due to rounding.
 Source: Kaiser Family Foundation calculations using National Health Expenditure historical data from Centers for Medicare & Medicaid Services, <http://www.cms.hhs.gov/NationalHealthExpendData/>.

Describing prescription drug expenditures as a percentage of GDP provides a measure of a nation’s resources that are devoted to these items. Using OECD data, the United States compares favorably with other nations in terms of its prescription drug expenditures per capita. In 1997, 1.4 percent of GDP was spent on prescription drugs, which gave the country an average ranking for prescription drug spending relative to GDP. Prescription drug spending growth was 3.5% in 2008, which was a significant decline from the 4.9% that was attributed to growth in

¹⁸ CMS National Health Expenditures 2007 Highlights, <http://www.cms.hhs.gov/NationalHealthExpendData/downloads/highlights.pdf>

¹⁹ Kaiser Family Foundation: Prescription Drug Trends, September 2008

2007. Prescription drug spending is expected to rebound to 4.0% in 2009.²⁰ The percentage of GDP devoted to prescription drugs is poised to rise as the baby boomers move into retirement. Persons aged 65-74 use four times as many prescriptions as those aged 25-34. Mitigating this rise are factors like an expanding economy, which will lessen its burden on the economy.

However, the aggregate picture gives an artificially sanguine view of the market for prescription drugs. Consider prescription drug spending at the household level. For many families, average outlays on prescription drugs are a manageable budget item, whether or not that family has insurance coverage for drugs. In 2007, for example, the average consumer spent \$481 on prescription and non prescription drugs, compared with \$457 for alcohol, \$2,698 for entertainment, and \$2,668 on dining out²¹. However, subjecting the national averages to closer scrutiny reveals that some households do face exorbitant costs.

Studies by Express Scripts and Kaiser Family Foundation find that the top two percent of their most costly patients accounted for thirty-three percent of annual drug spending. And the highest spending five percent of households accounted for almost fifty percent of total expenditures.

However, the profile of high expenditure households is not as clear-cut as one would imagine. Research suggests that high expenditure households are not just the elderly or those in poor health. In fact, of those with high expenditures (in the top 1% of households for prescription drug expenditures), less than half are elderly. Furthermore, the top 1% of spenders do not consider themselves to be in poor health (based on self-reported health status). These statistics point to some of the complexities of providing affordable prescription drugs to the high-cost users. Approximately 75% of health care costs are attributable to chronic diseases.

²⁰ Health Affairs Feb 24, 2009 “Health Spending Projections Through 2018: Recession Effects Add Uncertainty to the Outlook”.

²¹ Consumer Expenditure Survey, Bureau of Labor Statistics, 2007

A similar skewing of expenditures holds for personal health care expenditures in general. For example, health care spending varies greatly across groups and is highly skewed even within age groups. Research reveals a considerably skewed distribution, with a relatively small proportion of the population accounting for a large share of health care expenditures (see Figure 4.5 below).

Figure 4.5
Concentration of Health Expenditures in the U.S. Population,
Selected Years 1977-2002

Percent of U.S. population ranked by expenditures	1977	1980	1987	1996	2002
Top 1 percent	27	29	28	28	22
Top 5 percent	55	55	56	56	49
Bottom 50 percent	3	4	3	3	3

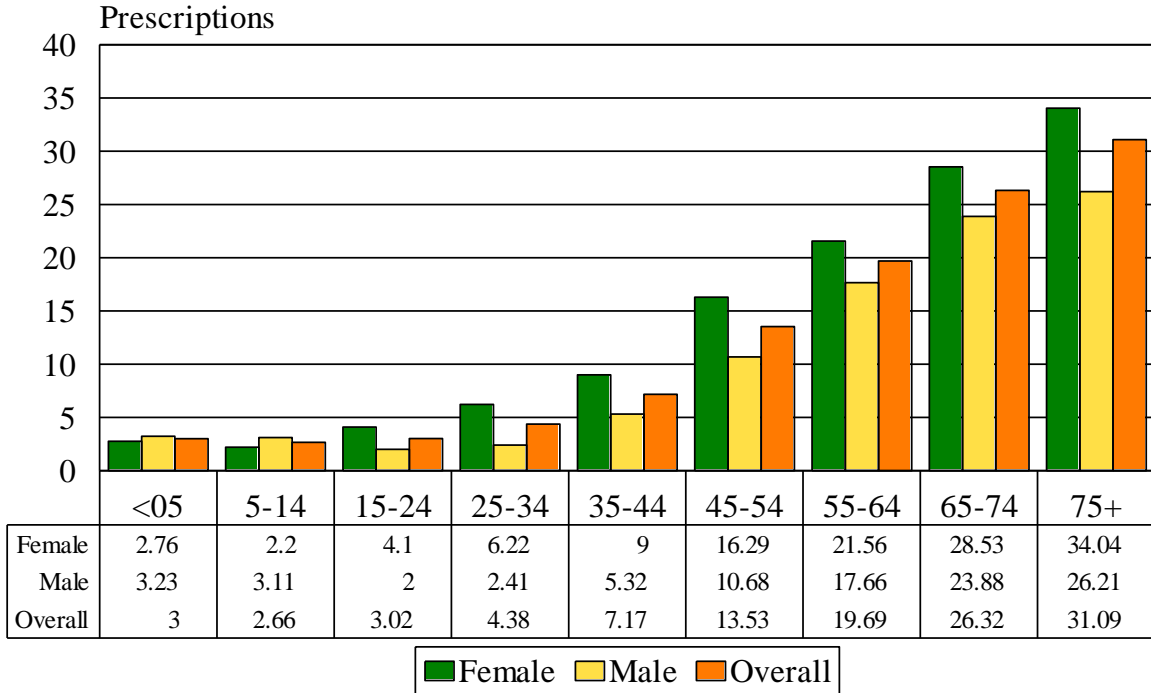
Source: The High Concentration of U.S. Health Care Expenditures, Research In Action, June 2006 Agency for Healthcare Research and Quality

The top five percent of health care spenders account for almost half of total health spending. The top fifty percent of households account for ninety-seven percent of total health spending. It is clear that the majority of Americans collectively are responsible for only a very small proportion of what is spent (or paid for) on health care, and a relatively small proportion of the population spends exorbitant sums of money.

Industry watchers forecast deterioration in health care affordability in the near future. The introduction of new drugs will continue unabated. Without low cost generic alternatives during their early years, coupled with the rise in average co-payments and three-tier cost sharing, consumer protection from prescription drug costs will erode.

Figure 4.6 further highlights the age discrepancies with regards to national prescription utilization by gender. From age 15 and up women tend to utilize more prescription drugs than men.

Figure 4.6
National Prescription Drug Utilization by Age and Gender, 2005



Source: Center for Applied Demography and Survey Research, University of Delaware, National Association of Chain Drug Stores. 2008-2009. (Medical Expenditure Panel Survey 2005, NACDS Economics Department.) Prescriptions filled at retail pharmacies.

Health plan organizations and employers already feel the added pressure from rising drug costs. Inevitably, consumers will be asked to meet this additional cost, which impacts households in direct proportion to their prescription drug usage. For many households, the increase will be manageable, for others it will represent a financial hardship.

The purpose of this section is to present research on the prescription drugs. Possible future research includes gathering information on prescription drug health coverage and expenditures in Delaware.

- Many households are shielded from the full cost of prescription drugs through insurance.
- For the majority of households, the cost of prescription drugs is a manageable budget item.
- Household prescription drug expenditures are heavily skewed: a small proportion of households account for a sizeable proportion of total expenditures.
- Seniors are the heaviest users of prescription drugs, yet Medicare recipients have proportionately lower prescription drug coverage than their non-Medicare counterparts.
- Rising prescription drug costs are exerting pressure on employers and health plan providers alike. These costs are leading health plan providers to limit their drug coverage, demand higher premiums from employers, or both.
- Employers, in turn, pass on the costs to employees by asking for greater health care enrollment fees, or by opting for higher co-payment plans. In either case, consumer spending on health care increases.

**American Recovery and Reinvestment Act of 2009:
The Financial Impact**

Medicaid and the State Budget

In 2006 and 2007, the majority of Delaware residents received health insurance coverage from their employer although a significant number of residents (11%) received health care through Medicaid services (See Figure 5.1). In 1996 the Diamond State Health Plan implemented a mandatory Medicaid managed care program to expand coverage to low income adults and family planning care to women. Approximately 75% of the people on Medicaid in Delaware are in one of the three existing managed care programs. Currently Medicaid covers approximately 155,000 people, and by 2010 about 166,000 people in Delaware will be eligible for Medicaid. With the new funding provided by the ARRA of 2009, the Medicaid program in Delaware will be able to provide care to the growing numbers of individuals needing health care.

The goal of the newly passed American Recovery and Reinvestment Act of 2009 (ARRA) in February 2009 was to infuse the economy and states with resources to jumpstart the sluggish economy. The recession of 2009, and added budget constraints have resulted in employers cutting jobs which in turn raises the burden of medical insurance. Overall the stimulus package spending includes \$149 billion in health care spending. A portion of the spending includes \$87 billion for Medicaid and \$24.7 billion to subsidize private health insurance for the jobless.²² The subsidy will cover 65% of COBRA premiums for up to nine months.

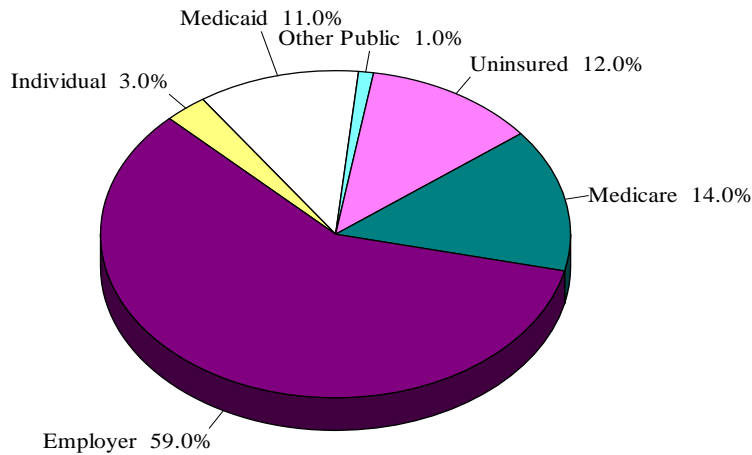
As the current recession deepens, use of Medicaid as a safety net will increase for those who can no longer afford private health insurance. Traditionally, both the state and the federal government contribute a portion of the funding needed to cover Medicaid expenses. The stimulus package allows the federal government to contribute a larger percentage of Medicaid costs to assist in the growing numbers of individuals applying for Medicaid.

Delaware has a number of medical assistance programs in place to meet the needs of low income individuals. Medicaid ensures that all qualifying individuals receive healthcare. ARRA gave Delaware \$60 million, which eliminated the \$56 million operating budget deficit for the current

²² Kaiser Family Foundation (American Recovery and Reinvestment Act (ARRA): Medicaid and Health Care Provisions), March 2009

year. The ARRA funding also ensures that the state will not have to cut any Medicaid services immediately. However that prospect is likely to happen by next year without additional funding. This additional funding increases the percentage of federal dollars that covers the state Medicaid budget. The only cost containment action taken in fiscal year 2009 for Medicaid was pharmacy controls. Two other notable policies were taken by Delaware in fiscal year 2009 including: provider payment increases and eligibility expansions. Delaware will get an additional \$4.5 million for the provision of child care vouchers and/or access to care through direct contracts with child care providers. In addition \$664,808 will be given to the State of Delaware for vaccines and grants.

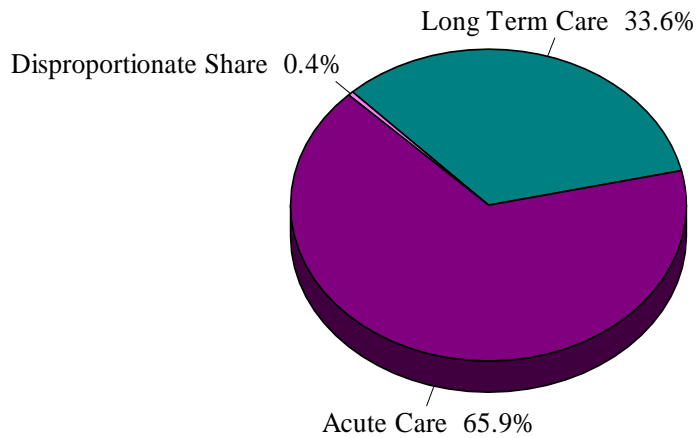
Figure 5.1
Delaware Distribution by Health Insurance Status 2006-2007



Source: Center for Applied Demography and Survey Research, University of Delaware, Kaiser Family Foundation, State Medicaid Fact Sheet.

Figure 5.2 below shows Delaware's Medicaid Spending by type of service in 2006. The majority of funds was spent on acute care at (\$624,197,953). While the remaining funds (\$4,175,063) went towards hospital payments.

Figure 5.2
Delaware Distribution of Medicaid Spending by Service FY 2006



Source: Center for Applied Demography and Survey Research, University of Delaware, Kaiser Family Foundation, State Medicaid Fact Sheet.

Healthcare Technology in Delaware

The American Recovery and Reinvestment Act of 2009 also provided an additional \$19.2 billion for health information technology. Healthcare technology, while costly to initiate can significantly reduce the cost of storing medical records and prevent unnecessary repeat testing. Repeat testing for a health condition is time consuming, costly, and contributes to rapidly escalating health care costs. The prevalent belief is that instituting a comprehensive system of electronic medical record keeping will facilitate treatment and aid in the reduction of medical errors. Currently, only about 17% of US physicians and 8 to 10% of US hospitals have a basic electronic health record system in place.²³ The ARRA, contributed \$19 billion to increase the usage of electronic medical records. This funding will provide financial incentives to providers and hospitals to actively use health information technology.

The State of Delaware currently has an organization which is one of the first in the nation to provide electronic medical record access to improve the health care of individuals. The Delaware Health Information Network (DHIN) was formed to provide a means of communication for healthcare providers throughout Delaware. Using a combination of updated technology as well as highly efficient security systems, this network was created to enable physicians, hospitals and labs to access electronic medical records on patients. Allowing multiple health care providers to access patient records will ideally allow for better coordination of care.

Although a small percentage of physicians in the US are using electronic medical records, there is a commonly held belief that utilizing electronic medical records reduces costs' and allows better care for chronic conditions.²⁴ When physicians utilize electronic medical records, they are able to easily obtain patient records and better manage chronic conditions.

²³ Steinbrook, MD, Robert The New England Journal of Medicine, Health Care and the American Recovery and Reinvestment Act, 2009

²⁴ Gill, GM, Ewen, E, and Nsereko, M. Impact of an Electronic Medical Record on Quality of Care in a Primary Care Office, Christiana Care Health Systems 2001 May;73(5):187-94

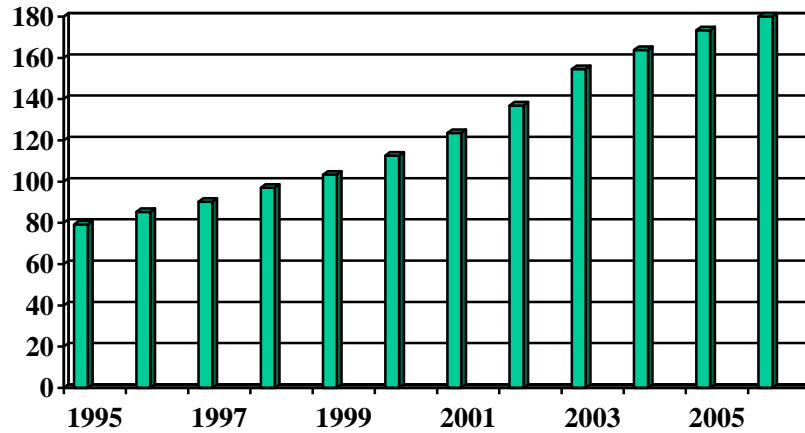
Cost Shift In Delaware

In 1999, the Health Care Commission released a report prepared by the Lewin Group on the subject of Cost Shift. As cost shifting could ultimately impact the financial stability of Delaware's hospital and insurance markets, continued monitoring of cost shifting is important. This section updates some of the findings from that initial report.

Cost shifting is defined as the process by which health care providers recover the unpaid or underpaid costs of care delivered to one patient population by collecting above cost revenues from another patient population. The process is a common dynamic in the health care marketplace and occurs in different contexts and settings.

In the case of hospitals and physicians, cost shifting has been attributed to two factors: below-cost reimbursement rates paid by public programs such as Medicare and Medicaid, and uncompensated care losses due to bad debt or charity care.

The original analysis²⁵ uses data from the Public 1991-99 Medicare Payment Advisory Commission (MedPAC) analysis of American Hospital Association (AHA) annual survey data, and the American Hospital Association (AHA) Hospital Statistics. **Citing data integrity issues, MedPAC and the AHA ceased to publish state level hospital cost shift data.** However, national data is still published, providing an indicator of the trend in the cost shifting in the nations. The prior findings are available in the Appendix.

Figure 6.1**National Markup of Charges over Costs for All Patient Care Services, 1995-2006**

Source: Center for Applied Demography and Survey Research, University of Delaware and MedPac data derived from AHA Annual Survey of Hospitals.

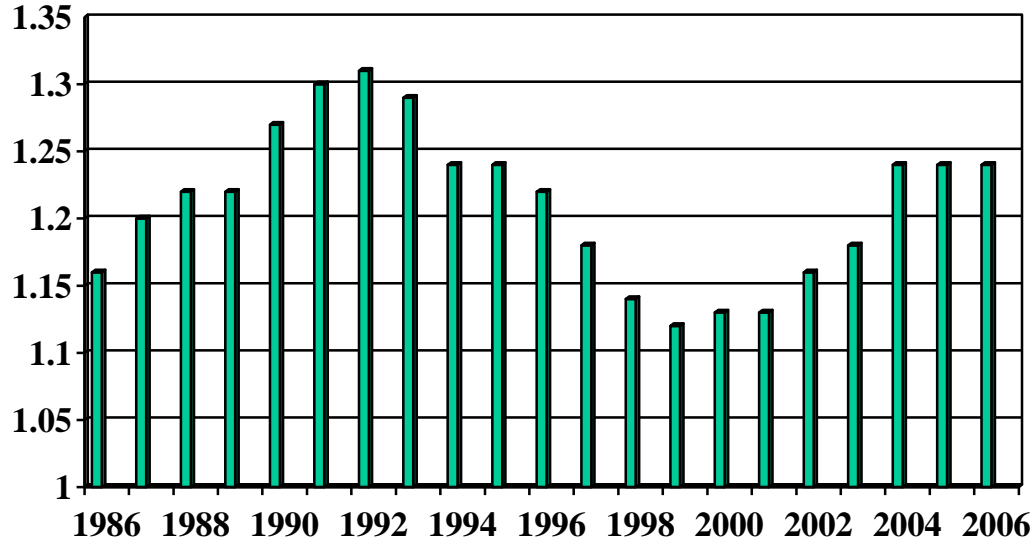
Over the past 11 years, hospital charges increased by nearly twice their costs (MedPac). Consequently, the markup of charges over costs rose from 85 percent in 1996 to 180 percent in 2006.

Since few patients pay full charges, hospitals increasing their charges more than their costs may not have had much impact on their performance. Some are concerned, however, that uninsured individuals may be asked to pay full charge. Faster growth rates for charges in recent years may have resulted from hospitals attempting to maximize revenue from private payers (who often structure their payments as a discount off charges).²⁶

²⁵ The original analysis covered the period 1991 to 1996. This analysis will, where possible, update the analysis to 1999. MedPAC and AHA have ceased publication of state level hospital financial data. Where available, U.S. data for 2000 and 2001 are included to provide the nation trend.

²⁶ MedPac, A Data Book, Healthcare Spending and the Medicare Program, June 2008.

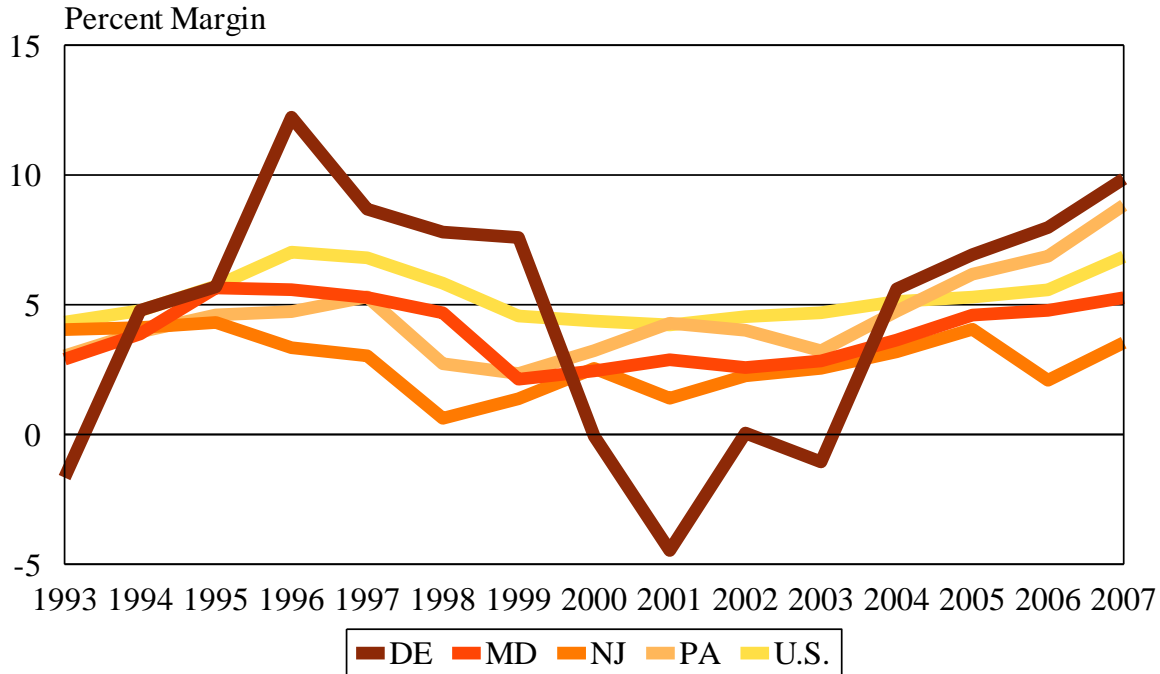
Figure 6.2
National Private Payer Payment-to-Cost Ratio, 1986-2006



Source: Center for Applied Demography and Survey Research, University of Delaware and MedPac data derived from AHA Annual Survey of Hospitals.

During the period 1986 through 1992, private payers’ payments rose much faster than the cost of treatment (as seen above in the steep increase in the payment-to-cost ratio). Between 1993 and 1999, the private payer payment-to-cost ratio dropped substantially. The rate of cost growth plummeted to just 0.8%. Since 1999, as pressure from private payers waned, the private payer payment-to-cost ratio has again risen sharply, and hospital cost growth has exceeded growth in the market basket by two percentage points a year.

Figure 6.3
Hospital Margins

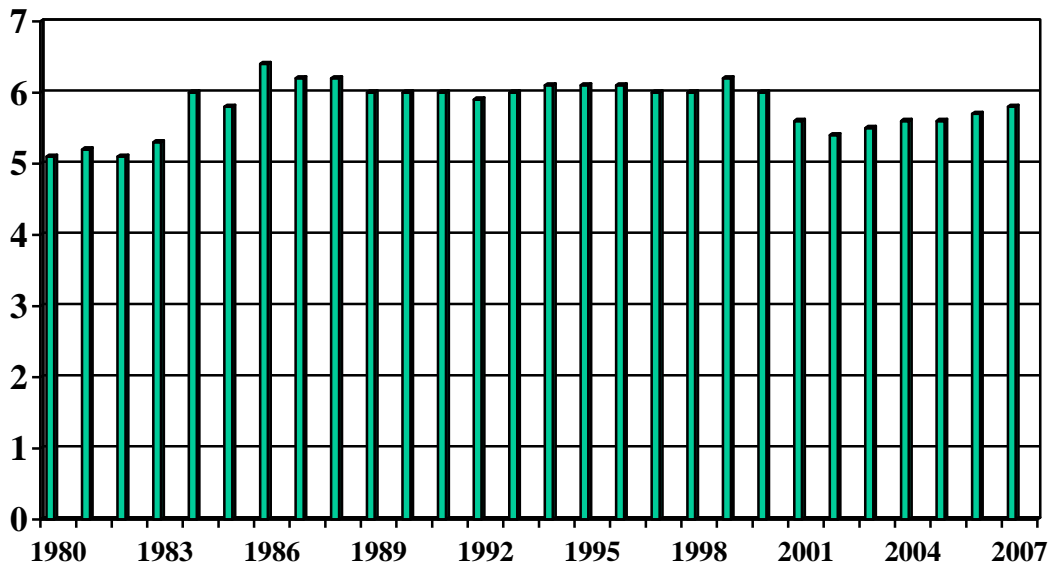


Source: AHA Hospital Statistics 2009. Total Net Revenue/Total Expenses of Hospital Unit (excludes separate nursing home units).

Hospital margins in Delaware are more volatile than neighboring states’ and the nation. Variation in survey responses may be the cause. If the data were smoothed, Delaware’s margins would fall in the 0-5% range along with its peers. If Delaware’s margins were consistently higher (lower) than surrounding states, this would suggest that margins were contributing (detracting) from cost shifts in the state. However, averaging the series reveals a pattern more similar to other states.

Nationally, uncompensated care as a percentage of total expenses is relatively stable. According to AHA statistics, uncompensated care²⁷ is 5-6% of cost and has been since 2000 (see Figure 6.4).

Figure 6.4
National Uncompensated Care Based on Cost: 1980-2007 (percent of cost)
Registered Community Hospitals

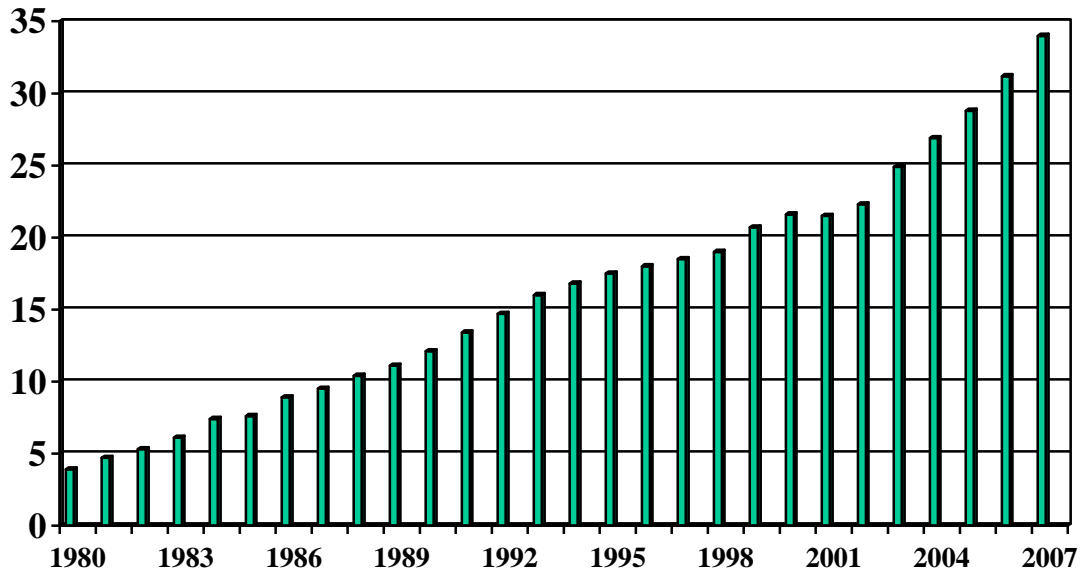


Source: AHA Uncompensated Hospital Care Cost Fact Sheet November 2008.

²⁷ AHA defines uncompensated care as charity care and bad debt.

In dollar terms, however, uncompensated care costs continue to rise. In 2007 uncompensated care reached almost \$35bn. (see Figure 6.5).

Figure 6.5
National Uncompensated Care Based on Cost: 1980-2007 (in Billions)
Registered Community Hospitals



Source: AHA Uncompensated Hospital Care Cost Fact Sheet November 2008.²⁸

²⁸ Bad Debt charges + charity care charges = uncompensated care charges
 (Total expenses exclusive of bad debt/ Gross patient revenue + other operating revenue) = cost-to-charge ratio
 Uncompensated care charges x cost-to-charge ratio = uncompensated care costs

Community Health Statistics

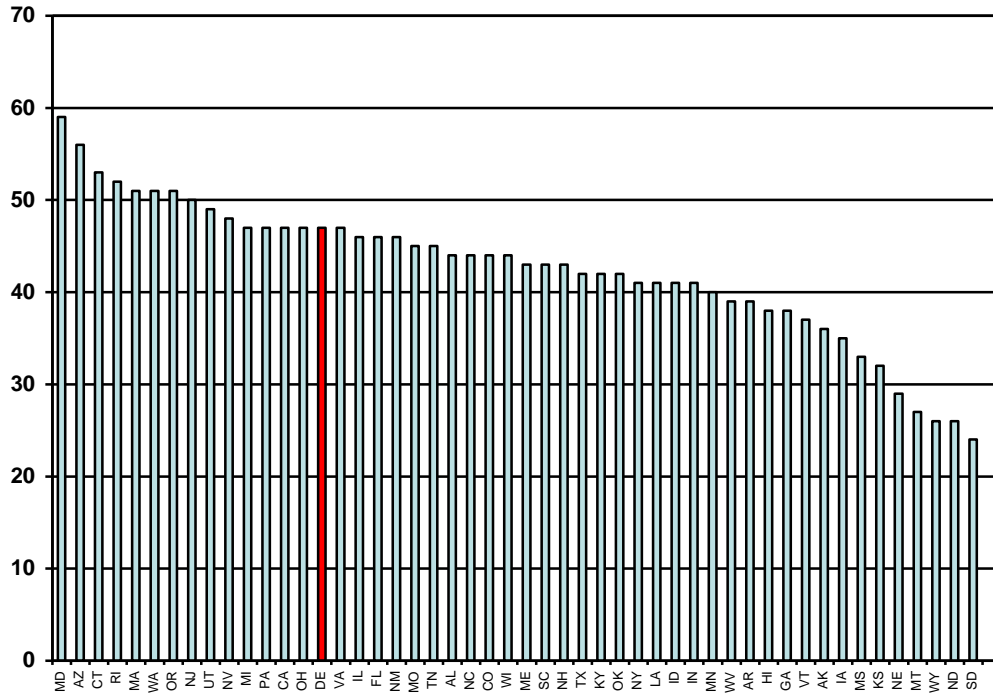
The following charts place Delaware's health indicators in national perspective. Using AHA data, Delaware is ranked against other states.

Figure 7.1 Community Health Indicators 2007

Community Health Indicator	Rank (1=first or highest)
Beds	31st
Admissions	20th
Inpatient Days	13th
Inpatient Surgeries	16th
Births	13th
Emergency Outpatient Visits	27th
Other Outpatient Visits	26th
Total Outpatient Visits	26th
Outpatient Surgeries	11th
Expense per Capita	12th
Utilization	15th

Source: AHA Hospital Statistics 2009. Center for Applied Demography and Survey Research. University of Delaware.

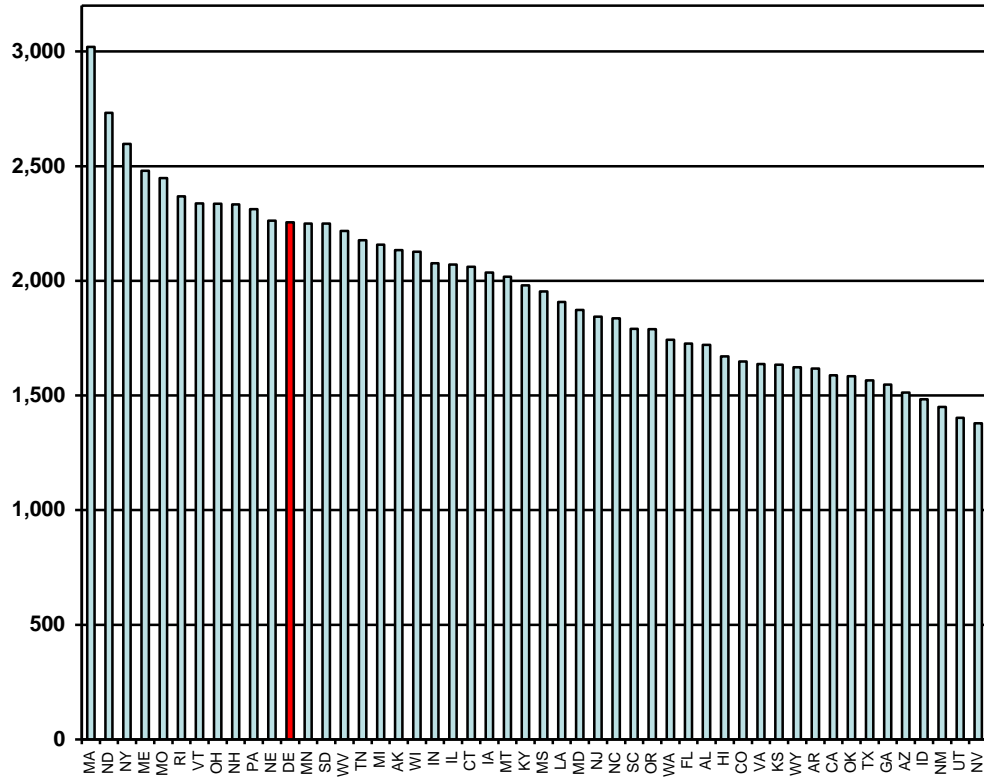
Figure 7.2 Utilization (Admissions per Bed) 2007



Source: AHA Hospital Statistics 2009. Center for Applied Demography and Survey Research, University of Delaware.

Delaware ranks fifteenth in the nation for admission per licensed bed.²⁹ This is a measure of how many unique persons use a hospital bed. It is analogous to a utilization rate. Delaware ranks close to the median on this scale.

Figure 7.3 Expense Per Capita 2007

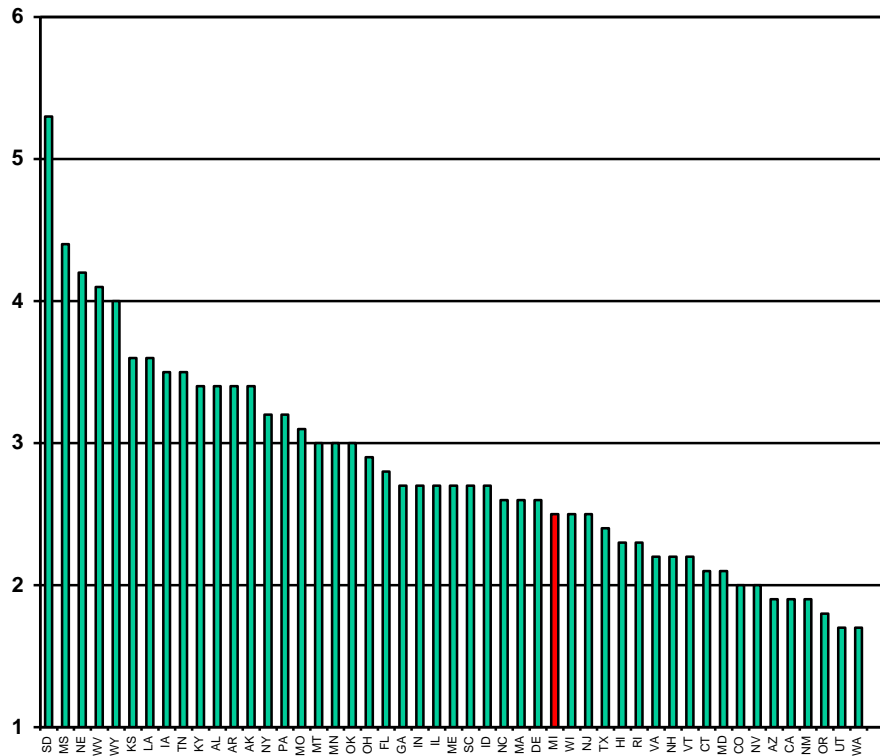


Source: AHA Hospital Statistics 2009. Hospital expenses per person.

Delaware has a relatively high expense per capita rate. Interestingly, six of the top ten highest are Northeastern states. One possible explanation for this is that the higher costs Northeast is filtering into higher expenses. Southern states are mainly clustered in the lower half of this ranking.

²⁹ The AHA defines beds as "number of beds regularly maintained (set up and staffed for use) for inpatients as of the close of the reporting period. Excludes newborn bassinets".

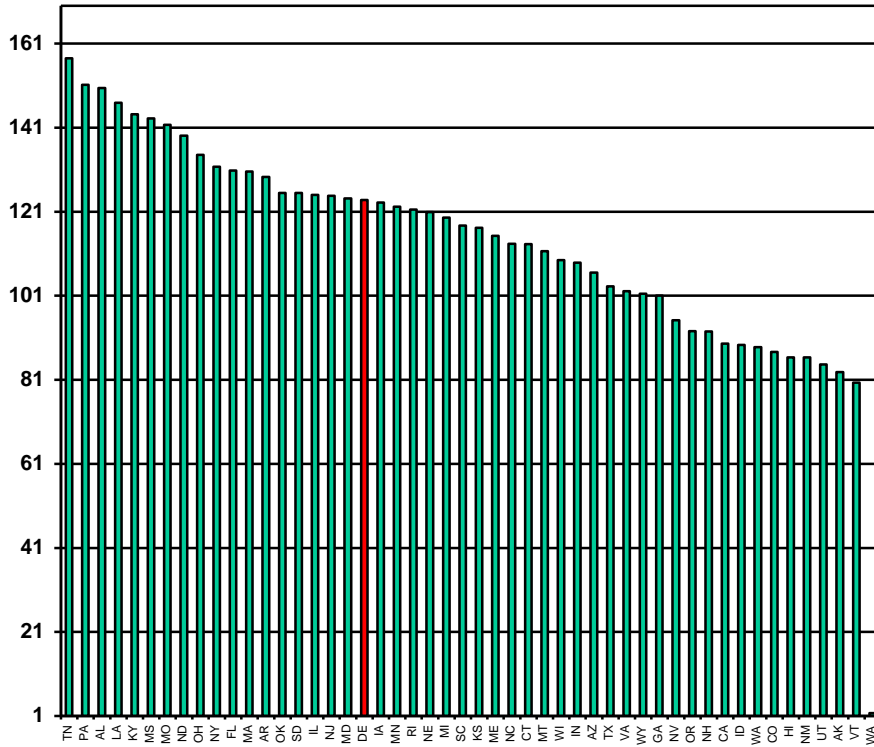
Figure 7.4 Beds Per 1,000 Population 2007



Source: AHA Hospital Statistics 2009. Center for Applied Demography and Survey Research, University of Delaware.

Delaware ranks a little below the median for beds-per-population in the country.³⁰ One possible explanation is the high population density in the state enables the population to be served by a smaller number of beds.

Figure 7.5 Admissions Per 1,000 Population 2007

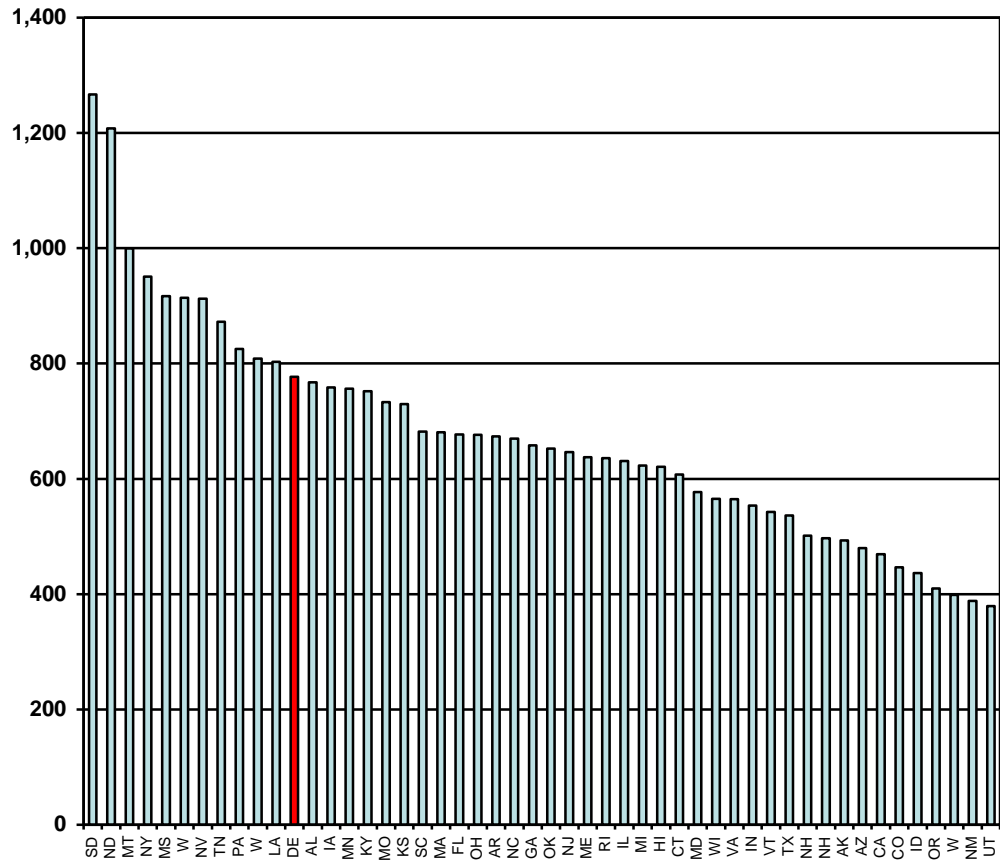


Source: AHA Hospital Statistics 2009. Center for Applied Demography and Survey Research, University of Delaware.

Delaware’s rank for admissions per 1,000 population is near the median. Admission per 1,000 population exceeds 120. This is about 35 admissions per 1,000 population lower than West Virginia.

³⁰ The AHA defines beds as "number of beds regularly maintained (set up and staffed for use) for

Figure 7.6 Inpatient Days Per 1,000 Population 2007

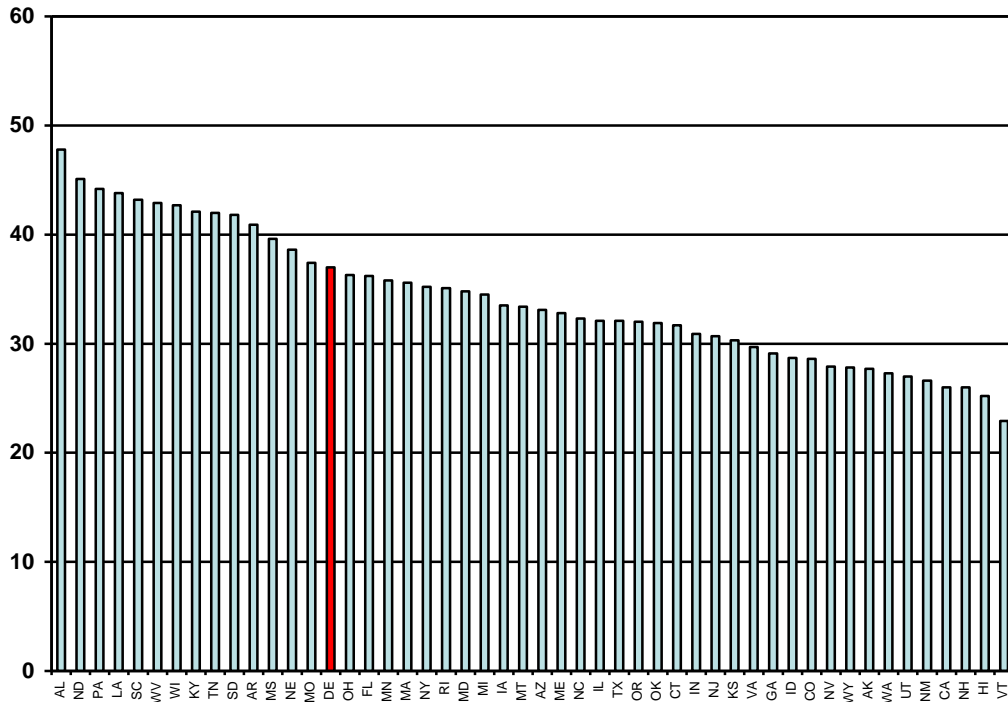


Source: AHA Hospital Statistics 2009. Center for Applied Demography and Survey Research, University of Delaware.

Inpatient days per 1,000 people in Delaware (777) are much higher than the average (645).

inpatients as of the close of the reporting period. Excludes newborn bassinets".

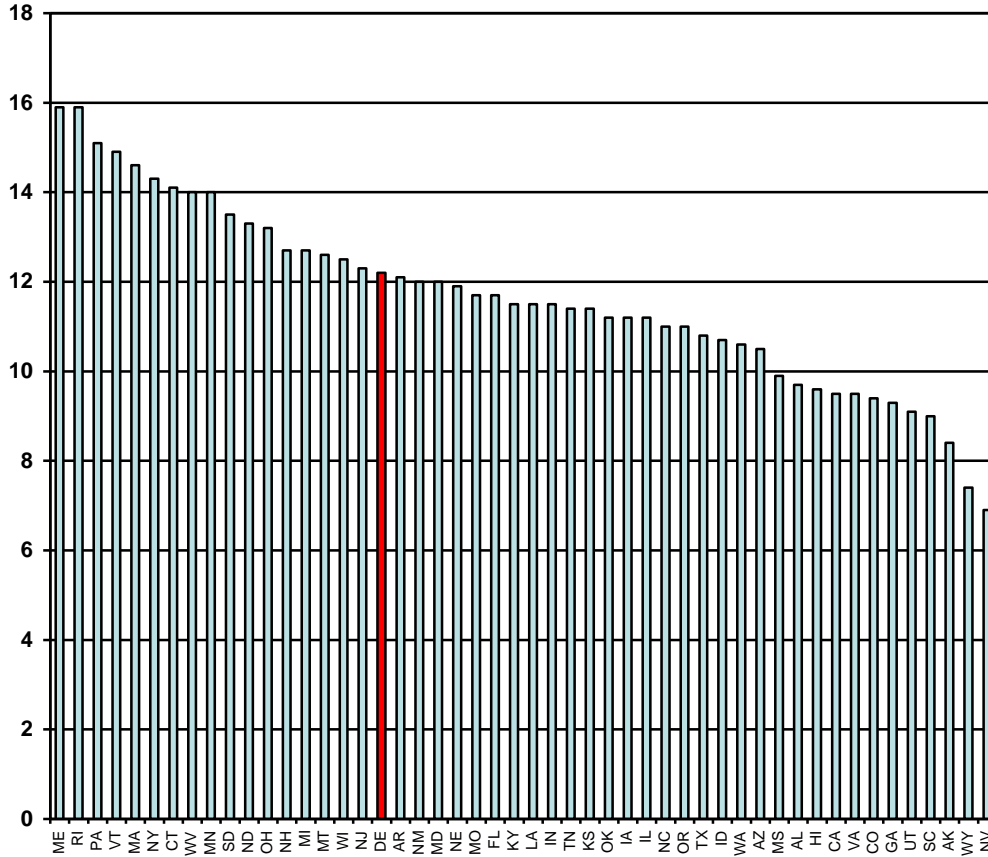
Figure 7.7 Inpatient Surgeries Per 1,000 Population 2007



Source: AHA Hospital Statistics 2009. Center for Applied Demography and Survey Research, University of Delaware.

Inpatient surgeries per 1,000 population are higher in Delaware (37) versus the national average (34).

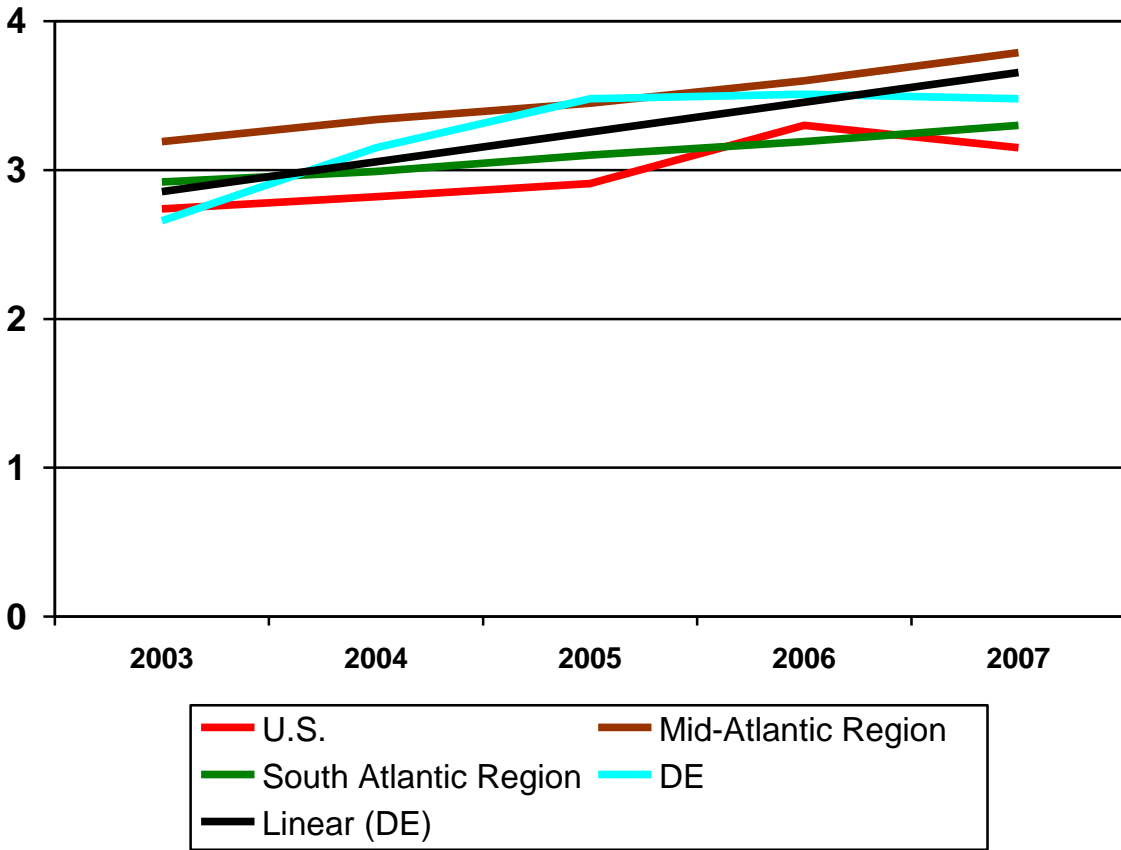
Figure 7.8 Health Care Employment as a Percentage of Total Employment 2008



Source: BLS, 2009. Health care and social assistance as a percentage of total employment. Current employment situation survey.

All states are experiencing rising employment in health care and social assistance as a percentage of total employment. Health care employment is 12% of total employment in the state. This is 3% larger than the ratio in 1990.

Figure 7.9 Full Time RNs per 1,000 Population



Source: AHA Hospital Statistics 2009. Center for Applied Demography and Survey Research, University of Delaware.

The number of full registered nurses at community hospitals per 1,000 population followed an upwards trend in the US through 2003 to 2005 with a decline beginning in 2006. In Delaware, for example, this number has increased from 2.70 in 2003 to 3.51 in 2006 with a decline to 3.48 in 2007. There appears to be growth in the number of full time RNs in Delaware with the numbers gradually increasing over time. However, there is variability in the Delaware data, which could reflect some bias in reporting.

Observations

Many states across the nation are attempting to better measure personal health care expenditures. They are doing this for two predominant reasons. First, policymakers need to understand the structure and size of those costs to more fully comprehend the problems of access that can be related to cost. Second, policymakers need to understand the future course of these costs so that appropriate plans and policies can be developed to support their citizens.

This project is a step toward measuring the size and structure of personal health care costs in Delaware. It is pursued with a number of constraints; these include using Delaware data wherever possible, keeping comparability with CMS where possible to allow interstate comparisons, utilizing secondary data sources where Delaware data was not available, and using the provider as the basis of measurement.

There are a number of findings that are worth reiterating from the study.

- Individuals pay out-of-pocket for the majority of costs for drugs, vision products, and dental services. The government pays for the majority of hospital charges, and private insurers are the primary payers for physicians.
- Hospitals' share of total health care expenditures decreased both in the US and in the State of Delaware. While traditionally the share earned by hospitals was higher in Delaware than in the US, that is no longer the case. Overall the pattern of health care expenditures is very similar to that seen throughout the nation.
- The prescription drug sector is beginning to decline. Several factors foster this decline. There was an increase in generic sales of prescription drugs from 2005 to 2006 thus decreasing the amount of dollars spent on prescription drugs. Advertising dollars spent by pharmaceutical companies declined by almost \$2 billion in 2007. Also, the implementation of the Medicare Part D drug program in 2006 led to the increased utilization of generic drugs. The outlook for drug expenditures is for growth to rebound in 2009.
- While Delaware is higher than the US in per capita expenditures for health care, it compares favorably with Pennsylvania and is higher than Maryland and New Jersey.
- Overall, about \$6.5 billion annually is spent on personal health care in Delaware. The average rate of increase is 5% per year.

- Delawareans spend less of Gross State Product (11%) when compared to the US in general (16%).
- The health care sector of the Delaware economy is an important source of employment with 12% of the total workforce and 11% of the reportable wages.
- Nationally, cost shift is rising. The private payer payment-to-cost ratio is at its highest point for 10 years. Hospitals' markup of charges over costs are growing also. Uncompensated care is growing in dollar terms, but as a percentage of total costs, is relatively stable. Hospital margins are relatively stable between 4 and 10 percent.

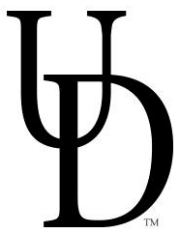
When taken together, these data suggest that Delaware is essentially in the mainstream regarding personal health care expenditures. While the costs per capita are slightly higher, as a high-income state Delaware can afford to consume more of these services. There will also be alterations in how these payments are allocated between public, private, and individual payers.

Center for Applied Demography & Survey Research
College of Human Services, Education & Public Policy
University of Delaware
287 Graham Hall
Newark, DE 19716

phone: **302-831-8406** fax: **302-831-6434**

www.cadsr.udel.edu

Center for Applied Demography & Survey Research (CADSR) is a project - oriented, policy analysis and survey research center. The Center's primary mission is to ensure that the best possible data and information on important public issues are developed and made available to members of the College, its clients, and, most importantly, to the policy-makers who affect the way we all live and work in Delaware. This mission is accomplished in four different ways: by acting as a clearinghouse for large data sets supplied by local, state, regional, and federal agencies; by maintaining an active survey research capability; by developing and designing custom databases of text, graphical information (including both raster and vector data), drawn from client files; and by using an array of information system technologies.



An Equal Opportunity/Affirmative Action Employer

The University of Delaware is committed to assuring equal opportunity to all persons and does not discriminate on the basis of race, color, gender, religion, ancestry, national origin, sexual preference, veteran status, age, or disability in its educational programs, activities, admissions, or employment practices as required by Title IX of the Educational Amendments of 1972, Title VI of the Civil Rights Act of 1964, the Rehabilitation Act of 1973, the Americans with Disabilities Act, other applicable statutes, and University policy. Inquiries concerning these statutes and information regarding campus accessibility and Title VI should be referred to the Affirmative Action Officer, 305 Hullihen Hall, 302/831-2835 (voice), 302/831-4552(TDD).

xx-xx-xx/xx/xx/xx