

**The Total Cost of Health Care in Delaware  
(1998 version)**

**prepared for  
the Delaware Health Care Commission**

**by**

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## **Introduction**

The Delaware Health Care Commission has, since its inception, been concerned about access to health care for all Delawareans. While that is not its only focus, since the Commission's mandate is broad, improving access to health care is a primary goal. Access to health care has several dimensions. The aspect covered in this report is the cost of health care in Delaware. Through its Cost Containment Committee, the Commission is pursuing a number of projects to better understand the underlying factors that determine what Delawareans pay for health care. This report is the result of one of those projects. It is intended to provide current estimates of health care expenditures in the state and to describe some of the dynamics that are influencing those expenditures.

The report is divided into three sections. The first section is largely background material and provides information that will give the reader a broad perspective on health care expenditures and the demographic trends that are influencing those expenditures. Some comparative information is provided to show how Delaware stacks up with the US and with neighboring states.

The second section describes each of the nine health accounts. Estimates are provided for each account annually from 1990 through 1997. Where possible, two series of estimates are provided; one by the US Health Care and Finance Administration (HCFA) and the other by the Center for Applied Demography and Survey Research, University of Delaware (CADSR).

The third section presents an overview of the estimates of total personal health care expenditures through 1997. Indicators of the impact of this sector on the Delaware economy are also provided.

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.

# **Background**

## **Introduction**

In this section of the report, several topics are addressed. First, the reader should understand some of the economic and demographic factors that are currently influencing the cost of health care. Second, a selection of national and state indicators of health care costs will be presented. Those data will address expenditures by sector of health care and source of payment.

Changes in total expenditures for health care are influenced by several key factors. 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/decrease in prices for a fixed set of health care products/services. For example, how much has the cost of a typical visit to a primary care physician changed over time?

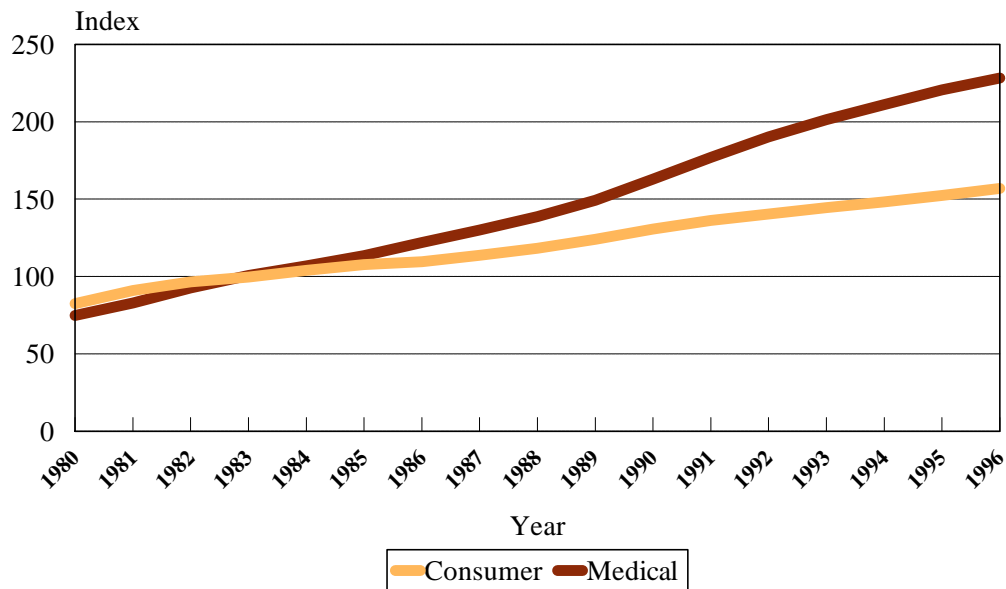
The second factor has two components. First, as the number of people in the State of Delaware increases, the total cost of health care will increase. Since 1990, more than 60,000 people have been added to Delaware's population. Together, they will increase total health expenditures by more than 200 million dollars annually. Even if the total population had remained the same and price levels were constant, total expenditures would have increased.

## **Pricing of Health Care**

Rapidly accelerating health care costs were one of the primary factors that drove the shift of patients from fee for service to managed care. These costs first began to diverge from the overall consumer price index in 1985. (Note: the indexes are based on

comparable baskets of goods and services.) This divergence is shown clearly in Figure 1.1, below.

**Figure 1.1**  
**Consumer and Medical Price Indexes**  
**All US Urban Consumers (1983=100)**



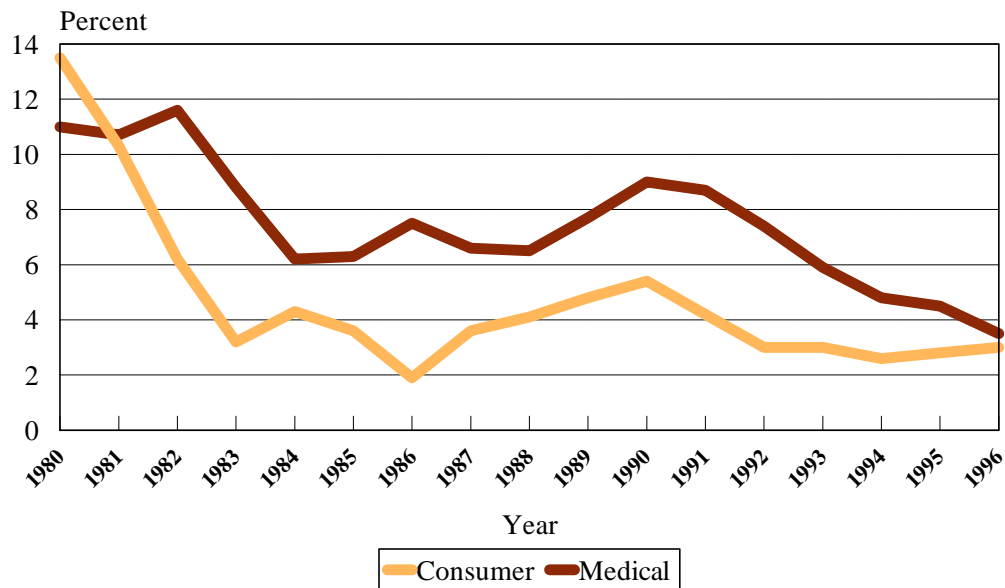
Source: Center for Applied Demography and Survey Research, University of Delaware  
US Bureau of Labor Statistics

In 1984, the consumer price index (CPI) and the Medical Price Index (MPI) were almost identical. In fact, for the first part of the 1980's, the MPI was actually lower than the CPI. The two indexes continued to diverge, although the rate began to slow in the early 1990's. The annual growth rates are more easily seen in Figure 1.2 below. The MPI growth rates exceeded those of the CPI from 1982 forward. In general, the MPI was usually between 2% and 3% higher over the period. It was not until 1991 before the two rates began to converge and, in 1996, only a small difference remained between the two curves in their annual growth rates. However, the 18 years of higher growth rates placed the MPI nearly 50% higher than the CPI.

The health care sector now has a larger share of total resources. In 1980, health care expenditures were 9.1% of the economy. By 1995, that share had risen to 12.1% of gross domestic product (GDP). The typical consumer saw personal expenditures rise

from 4.4% of their income to 5.4% during the same period. The difference between those two sets of numbers is that the 12.1% estimate encompasses both public and private spending. In contrast, the 5.4% figure only considers private expenditures. (Of course, those public expenditures for health care are paid through payroll and income taxes which indirectly and differentially affect consumers of health care.) In both instances, the increased shares include increases in prices as well as increases in the quantities of health care products and services obtained by consumers.

**Figure 1.2**  
**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

Not all parts of the Medical Price Index grew at the same rate. This fact is shown in Figure 1.3 below. The top line represents the index for *hospital room charges*. The second line marked with a “dot” represents the index for all *medical services*. The next line, which is marked with an “asterisk”, represents prices for *physician services*. The final line represents *medical commodities*.

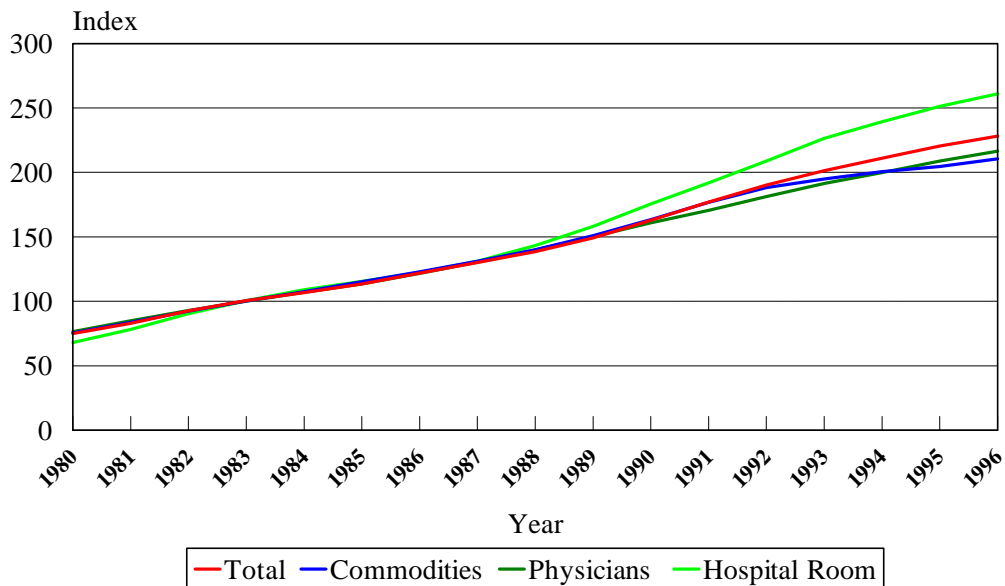
The typical hospital room rate has clearly out-paced the other two indicators. The reason for this difference could arise from many sources. The most likely candidates are



probably excess capacity, qualitative changes in the product represented by a hospital room, and new technology reflected in higher overhead rates. Increases in uncompensated care probably find their way into these charges 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 1.3**  
**Medical Price Indexes**  
**All US Urban Consumers (1983=100)**

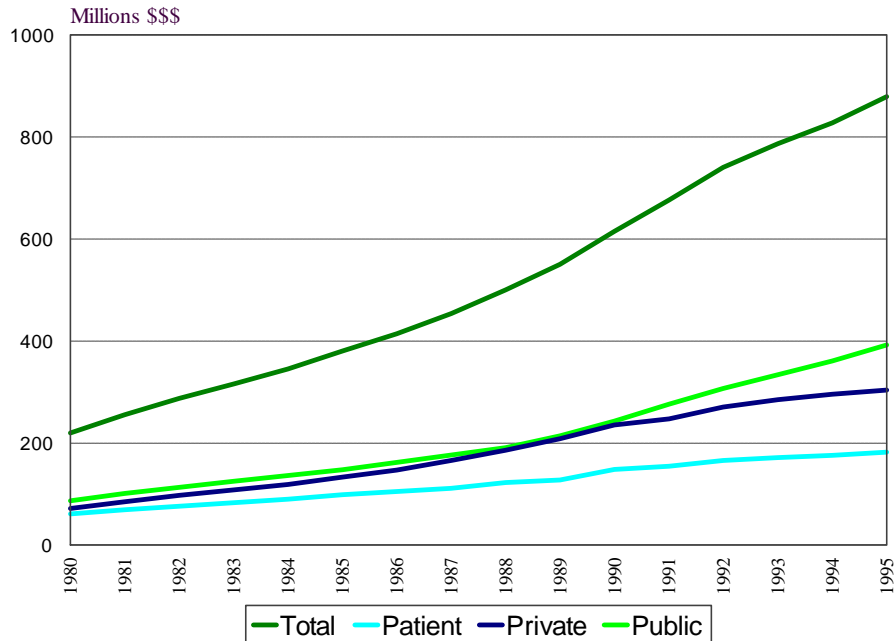


Source: Center for Applied Demography and Survey Research, University of Delaware  
US Bureau of Labor Statistics

### 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, it does not include payments for insurance premiums; it means literally 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.

**Figure 1.4  
Sources of Payment for  
US Personal Health Care Expenditures**

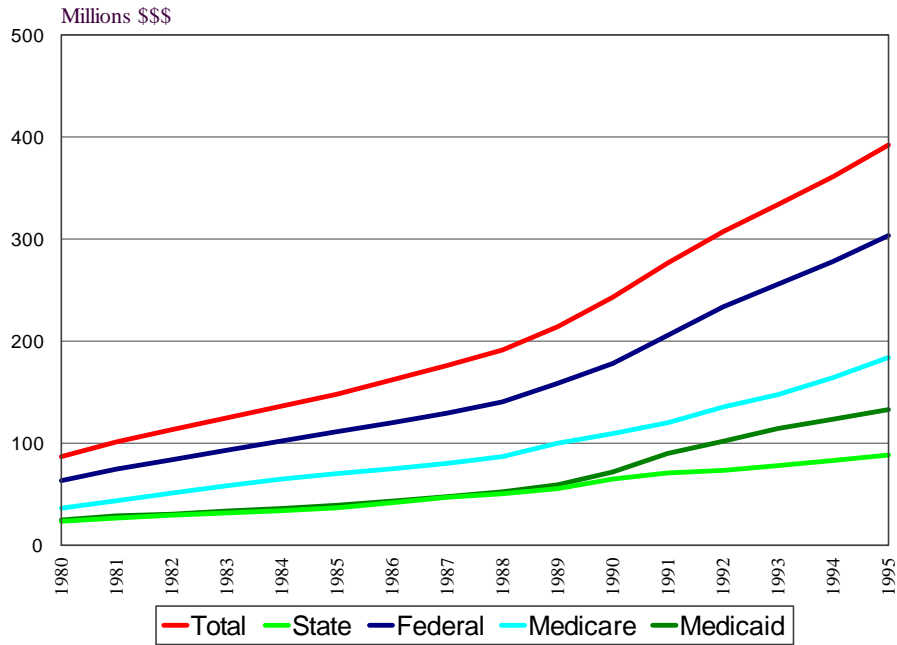


Source: Center for Applied Demography and Survey Research, University of Delaware  
US Health Care Finance Administration

In Figure 1.4 above, the rapid rise in nationwide expenditures for personal health care is evident, particularly in the late 1980's and into the 1990's when the rate of increase began to slow. There were, however, significantly different patterns among the sources. First, public sector expenditures continue to rise rapidly and will continue to do so as Medicaid eligibility grows and Medicare expenditures rise with the aging population. Second, the rate of growth has slowed significantly for expenditures paid for by private insurance. Certainly, managed care and less generous health plans from employers are having an impact by 1991. Finally, out-of-pocket expenses continue to rise at a steady rate.

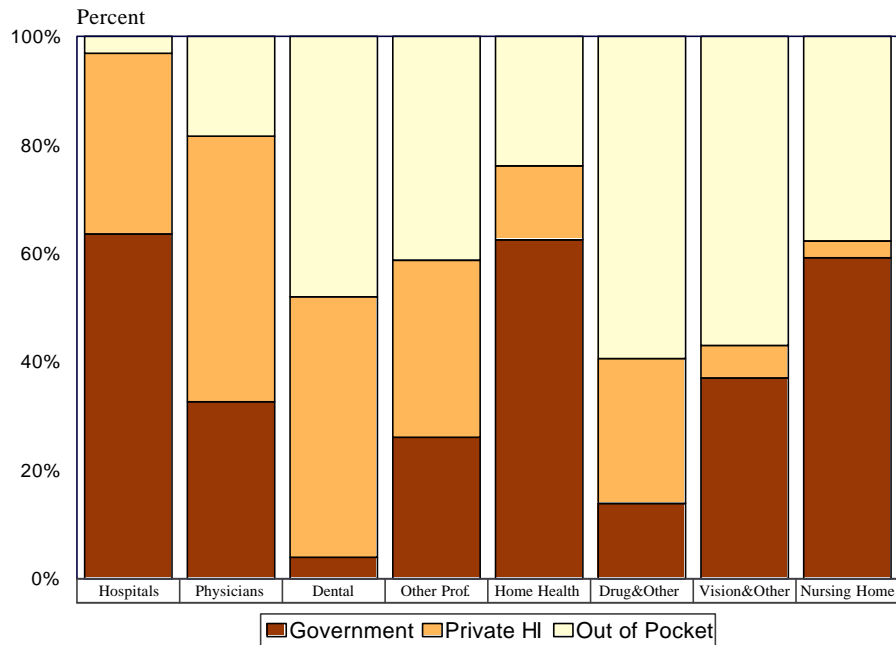
In Figure 1.5 below, the government sector is broken down further. The federal share of the bill for personal health care is accelerating. The state share, which is almost entirely Medicaid, shows a significant increase after 1990 as new parts of the population gained eligibility, most notably young children and women who were pregnant. Understandably, Medicare continues to increase over the entire period and will continue to do so for the foreseeable future, i.e. until the “baby boomers” have left this world.

**Figure 1.5**  
**Sources of Payment for**  
**Public US Personal Health Care Expenditures**



Source: Center for Applied Demography and Survey Research, University of Delaware  
 US Health Care Finance Administration

**Figure 1.6**  
**Share of US Personal Health Care Expenditures**  
**By Source of Payment and Sector in 1995**



Source: Center for Applied Demography and Survey Research, University of Delaware  
 US Health Care Finance Administration

The source of payment also differs depending on the type of health care sought. This can be seen clearly in Figure 1.6 above. 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 are more likely to need these services, Medicare is the most likely source of payment. In contrast, dental expenditures are just about as likely to be paid out-of-pocket as by private health insurance. The government has little stake in this category. These data suggest those using Medicaid for health services will probably be unable to afford adequate dental care.

Services of physicians are purchased in a much more balanced way than either hospitals or dentists with the dominant source being private health insurance. This distribution is in stark contrast to home health services, drugs (which includes over the counter and prescription drugs), and vision-related services and products. In those three areas, private insurance plays only a small role.

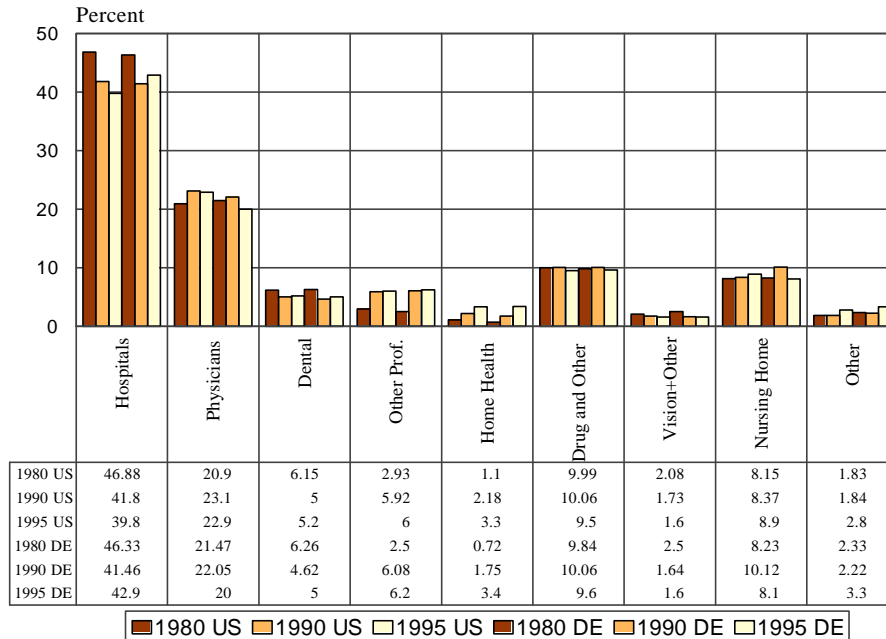
These data serve to remind us of the complexities inherent in the health care system. The involvement of government changes radically from one service to another. Thus, while Medicare is often seen to substantially protect the oldest segment of the population, that protection does not extend to all potential health problems. Similarly, Medicaid solves only part of the health care problem for the poorest segment of the population. If the trends identified in Figure 1.4 continue, out-of-pocket costs will continue to rise as the health care delivery/payment system transforms itself.

### **Expenditures by Sector**

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

For each of the personal health care categories, a time series (1980, 1990, 1995) is provided for the US followed by three values for the State of Delaware.

**Figure 1.7**  
**Share of US Personal Health Care Expenditures**  
**By Sector**



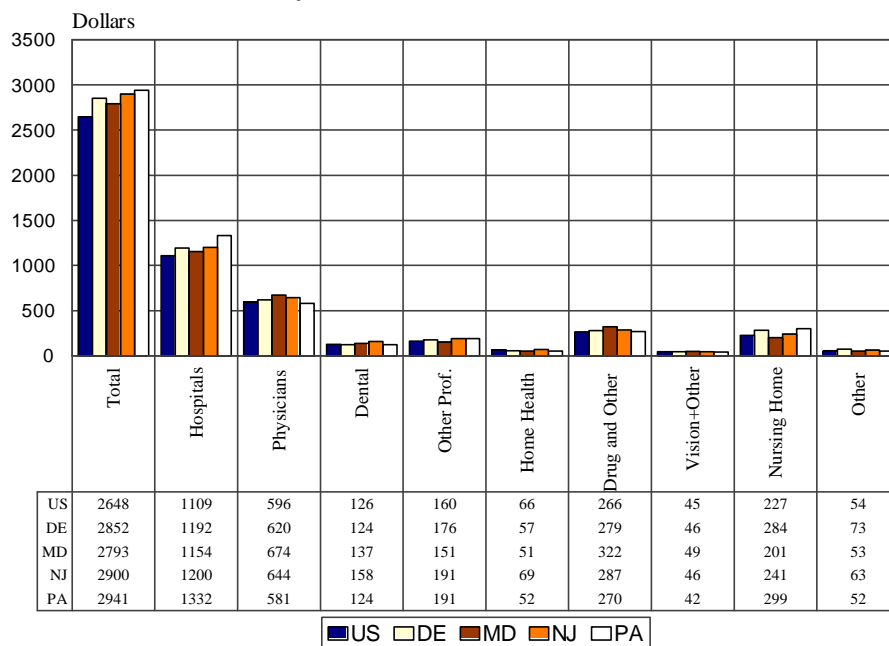
Source: Center for Applied Demography and Survey Research, University of Delaware  
 US Health Care Finance Administration

The share of total health care dollars allocated to *hospitals* has fallen from almost 47% in 1980 to less than 40% in 1995 in the US. That pattern has been echoed in Delaware, although the latest estimates are somewhat higher. The other categories are more stable, although *dentists* appear to be getting a smaller share. In contrast, *other professionals* and *home health* have increased their shares significantly. Both of these increases are consistent with changes taking place in the health care delivery system. The movement to decrease the length of hospital stays coupled with government funding for *home health* care in many cases would promote increased growth in this area. The growth in the *other professionals* category probably reflects outsourcing by hospitals and the growing diagnostic industry over time. The interesting point is that the structure of these shifts appears to be national in scope and Delaware is simply reflecting those larger trends.

## Interstate Comparisons

One method used to measure relative costs in the local health care system is the interstate comparison. This can be useful, but it also can be misleading. For example, the health care systems in two states could be identical with respect to cost structure, but the populations served are not precisely the same. 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.

**Figure 1.8**  
**Per Capita Personal Health Care Expenditures**  
**By Sector and Area in 1994**



Source: Center for Applied Demography and Survey Research, University of Delaware  
 US Health Care Finance Administration

In Figure 1.8, above, the per capita costs for personal health care are shown for the US, Delaware, and the surrounding states. For the most part, Delaware tends to be a bit higher (8%) than the US as a whole. Hospital costs per capita, for example, are about 10% higher. This difference is, however, a regional result. All four states are above the

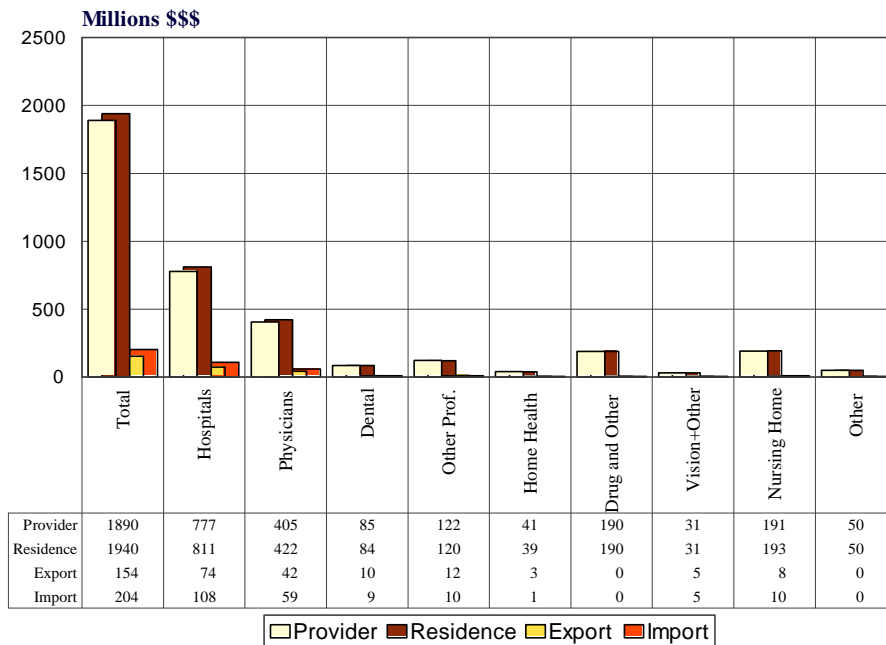
US per capita figure. Delaware, in fact, has neither the highest, nor the lowest cost per capita in any of the health care sectors displayed. Maryland has the lowest cost per capita overall, but has the highest cost for *physician services* and *drugs*. The low cost of nursing home care could reflect an underlying difference in the age structure of the Maryland population or it could be an indicator of greater efficiency among many other possibilities. In general, the differences between the four states are probably not significant given the methodology and data used to develop the estimates. The differences between the region and the US could be simply a matter of regional price differences that are compensated for by higher wages.

## Estimates by Sector

### Basis of Measurement

Personal health care expenditures are usually reported in one of 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.) providing services in Delaware. These revenues are considered to be 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 1991**  
**By Sector and Basis**



Source: Center for Applied Demography and Survey Research, University of Delaware  
 US Health Care Finance Administration



The second method attempts to measure direct expenditures of individuals within the geographic area of interest. Here, measurements are made of out-of-pocket expenditures, insurance premiums, and payments by government and business. The first approach tends to be used more often, although some states have attempted to measure expenditures in both ways, and it will be used here.

The difference between the two methods is illustrated in Figure 2.1, above. The graph shows Delaware personal health care expenditures in 1991 by provider and by residence. The residence method produces an estimate 50 million dollars higher than the provider method. The difference arises because more Delaware residents leave the state to use hospital and physician services than come into Delaware from outside. The most likely sources of this “importing” of services comes from hospitals in Elkton, Salisbury, Philadelphia, and Baltimore. Still, about 10% of Delaware hospital services are provided to non-residents. In that case hospitals are said to export services.

Fortunately, the two estimates are within a reasonable proximity of each other, at least for the single year for which this data was available. If third party payers were to become more aggressive insisting that the lowest cost provider be used independent of location, then the relationship between “imports” and “exports” could change. In any event, the provider basis of measurement is used in the balance of this report.

## **Hospital Services**

Estimating expenditures for hospitals is somewhat less hazardous than for the other categories that will follow. Fortunately, the American Hospital Association (AHA) conducts an annual survey of both registered and non-registered hospitals. HCFA depends heavily on this information to produce its estimates of personal health care expenditures for states, but are currently available only through 1993. The AHA survey covers all hospitals but reports revenues only for “community hospitals”. That category excludes federal and state government hospitals, long-term care facilities and specialty hospitals such as Rockford and Meadowood. However, there is a reasonably stable relationship between those who directly report revenues and those who don’t. In addition,

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

The HCFA methodology relies heavily on the AHA survey and does make several technical adjustments. These adjustments, while technically correct, do not substantially alter either the trend or the basic structure of the data. The methodology used by this report for producing more current estimates relies on wages paid by hospitals that are reported to the Department of Labor. That data is current through 1997. In contrast, the recently released report by AHA covers 1996. However, the 1996 data do not include data for the A.I. duPont Children's Hospital and the report no longer includes expense information for all hospitals. These estimates are derived from organizations in Standard Industrial Classification (SIC) code 806 with the exception of state nursing homes.

In Figure 2.2 below, estimates are included for three sources and overlap is provided where data was available. The HCFA and CADSR estimates attempt to measure the total revenue received by hospitals. The AHA estimate includes only expenditures and excludes any return over and above expenses. For the most recent complete AHA data, that return is reported to be between 5% and 7% above expenses. In the earlier years of the decade, that return averaged 2%. This reflects both increased revenues and lower unit costs according to the survey.

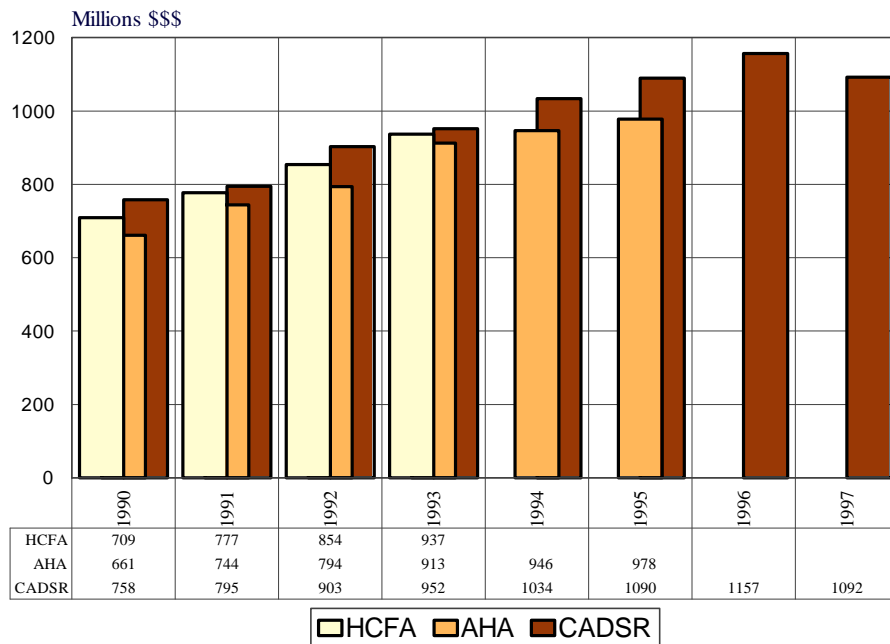
Overall, the three estimates appear to track fairly well. The CADSR estimate tends to be somewhat higher than HCFA during the period that they overlap. On the average, this difference is about 4%. This difference is clearly within the accuracy of the data and the methods used to produce the estimates.

The AHA expenditure estimate will always track below the other two simply because it omits one part of revenue. In general, the AHA estimate varies between 2% and 7% below the HCFA data.

While the early part of the decade produced steady increases in personal health care expenditures for hospitals, both the AHA data and the estimates produced by

CADSR show some slowing and then an absolute drop in 1997. This reduction was coupled with a decrease in hospital-based employment in more than a decade. Part of this is certainly linked to restructuring, e.g. the acquisition of Riverside by Christiana Care. It also probably reflects the shift to managed care and the accompanying reduction in relative hospital days.

**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 Health Care Finance Administration**

The average annual increase in expenditures for hospital services was 5.4%. This is equivalent to the overall increase in the medical care price index and slightly below the hospital component through 1996.

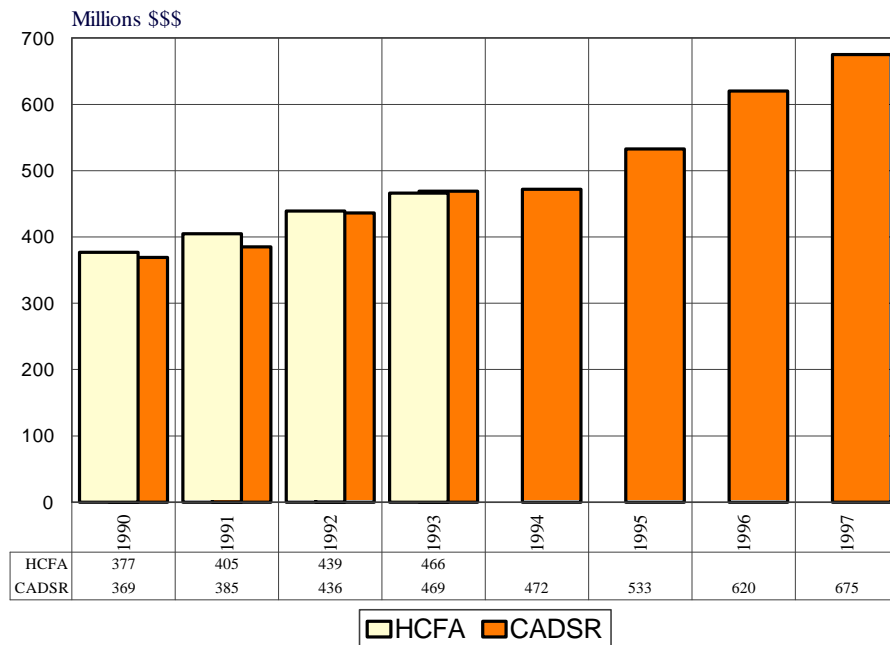
### **Physician Services**

Estimating personal health care expenditures for physicians is more difficult in the absence of a survey of the type used for hospitals. There is no equivalent survey that

covers the 2,300 physicians licensed to practice in the state. To make the task even more difficult, the organization of physicians is changing. There are far more physicians working at salaried positions for managed care organizations. Hospitals are more likely now to acquire physician services through outsourcing as opposed to having them on staff. As a result, some of the indicators may represent this structural shift than any real change in expenditures.

HCFA relies on a combination of sources to produce their estimate, including the Census of Service Industries (1992), the IRS Business Master file, and Bureau of Labor Statistics estimates of wages and salaries paid in physician offices and clinics. Two of these, the CSI and the BLS data were available for this work, as well as information from the Delaware Department of Labor. Since the CSI is now more than five years old, it had limited value for estimating 1996 and 1997. The physician organizations in SIC code 801 and 803 are included in these estimates.

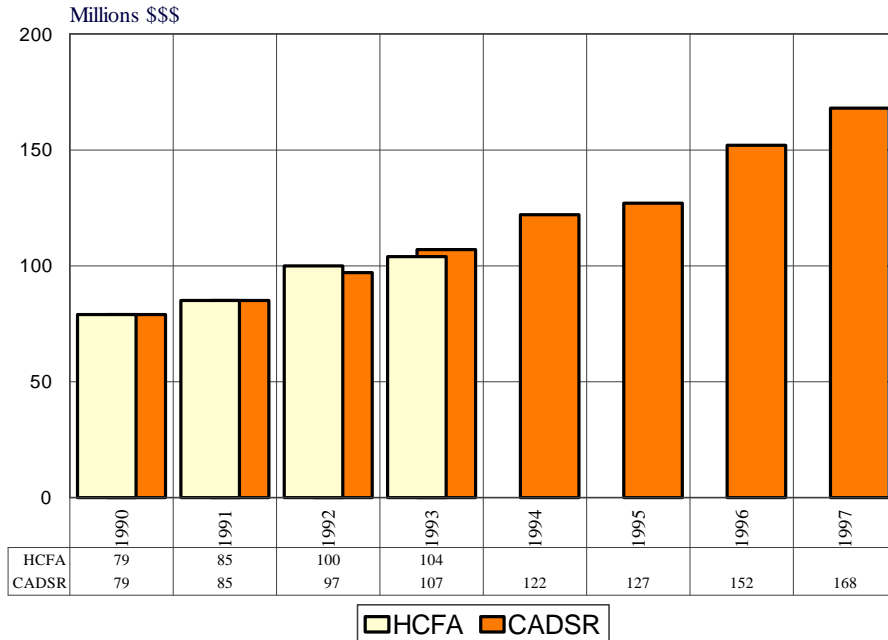
**Figure 2.3  
Delaware Personal Health Care Expenditures:  
Physician Services by Source of Estimate**



**Source: Center for Applied Demography and Survey Research, University of Delaware  
US Health Care Finance Administration**

The estimates of personal health care expenditures for physician services are found in Figure 2.3, above. The data through 1995 is consistent with national data for physician services. There is no published data after that point to benchmark the estimates. Between 1995 and 1996, there was a significant increase in both employment and wages reported to the Delaware Department of Labor. That behavior continued into 1997, although at a substantially reduced rate. An analysis of the underlying data suggests that new physician organizations are being formed. It is also important to note that there was a significant drop in the hospital sector in 1997. It is possible that this restructuring is resulting in changes in the method of reporting and the categories under which employment is categorized. Additional benchmark information will be required to see if this information is real or is a statistical artifact. That information should be available in 1998.

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



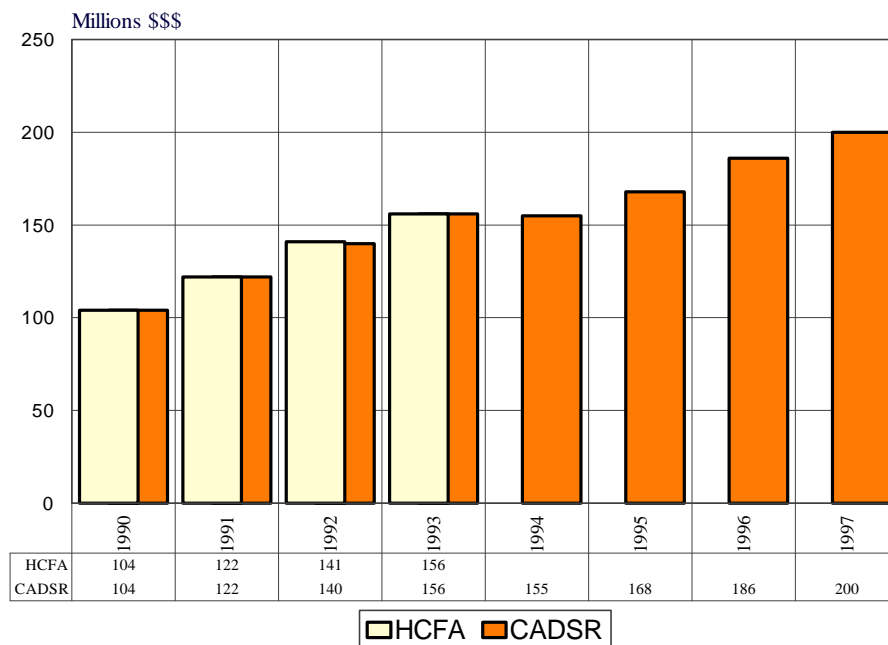
**Source: Center for Applied Demography and Survey Research, University of Delaware  
US Health Care Finance Administration**

## Dental Services

The HCFA methodology for estimating revenues for dental organizations is the same as that for physicians. They fall into SIC code 802 for estimates produced from the data provided by the Delaware Department of Labor.

The pattern of expenditures shown in Figure 2.4, above, is similar to what was observed with physicians. The same pause between 1994 and 1995 occurred, but then growth resumed although at a pace slower than that exhibited by physician expenditures. While total physician expenditures grew at almost 13%, dental services grew by 11 % annually. Since dentists have not been as strongly impacted as physicians by the move to managed care, these data suggest that the rapid increase observed for physicians may not be an artifact. It also is consistent with the fact that people buy more health services as their incomes rise. Incomes began to rise after the 1994 pause.

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



Source: Center for Applied Demography and Survey Research, University of Delaware  
 US Health Care Finance Administration

## **Other Professional Services**

Expenditures for *other professional services* include those organizations in SIC codes 804 and 809. It includes services rendered by chiropractors, optometrists, podiatrists, and nurses in private practice, among others. HCFA estimates these expenditures in the same manner as for physicians and dentists, i.e. using the CSI, IRS records, and information from the Bureau of Labor Statistics. The estimates produced by this study are shown in Figure 2.5, above.

The growth profile is similar but not as pronounced as that observed for physicians. There is a slow down in the middle of the 1990's followed by a resumption of growth, although at rates below those identified within physician and dental services.

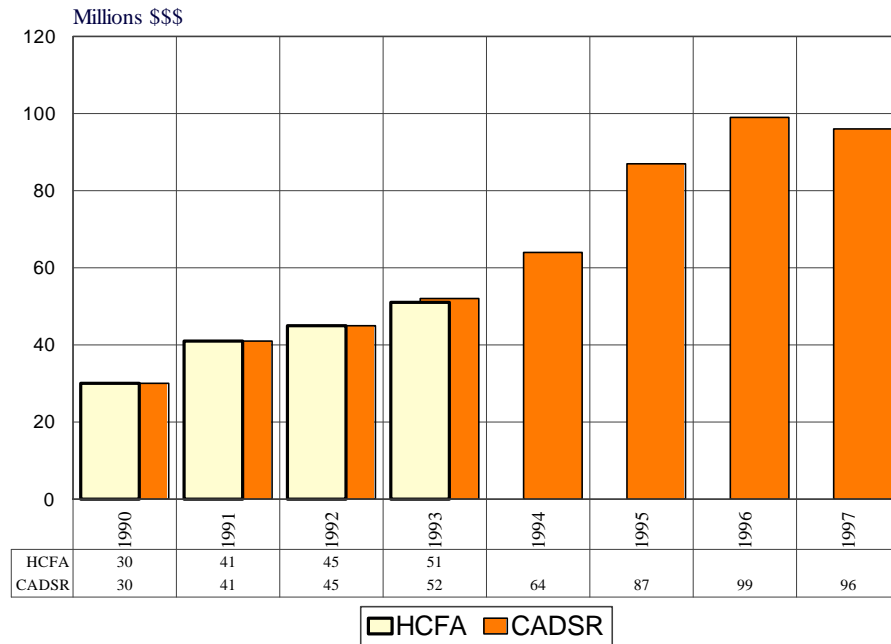
## **Home Health Care Services**

Home health care services are represented by SIC code 808. These can be provided by private and governmental agencies. HCFA uses the Census of Service Industries (CSI) in 1992 as its benchmark for private firms, and then adjusts this estimate with Medicare and Medicaid payments for home health care supplied by governmental agencies. In Delaware, the difference between the HCFA final estimate and the CSI estimate for 1992 is less than 10% suggesting that government expenditures for direct provision of services (i.e. not by contract to a private firm) in this area are small. The estimates are provided in Figure 2.6, below.

This category of personal health expenditures exhibits a different pattern of growth than what was shown in the earlier figures. Expenditures grew at an annual rate of more than 22%, which is the highest growth rate exhibited by any of the sectors and is well above the rate for all sectors combined. However, in 1997 growth ceased, and in fact, total expenditures for home health services declined. This may be a temporary respite before resuming a growth path that has existed not only in the state, but also nationally since 1980. It also may represent a period of consolidation, review, and perhaps regulation of this booming business. To the extent that these services continue to

be used to reduce costs, it would be reasonable to forecast a continuation in the growth of these expenditures.

**Figure 2.6  
Delaware Personal Health Care Expenditures:  
Home Health Services by Source of Estimate**



**Source: Center for Applied Demography and Survey Research, University of Delaware  
US Health Care Finance Administration**

### **Nursing Home Services**

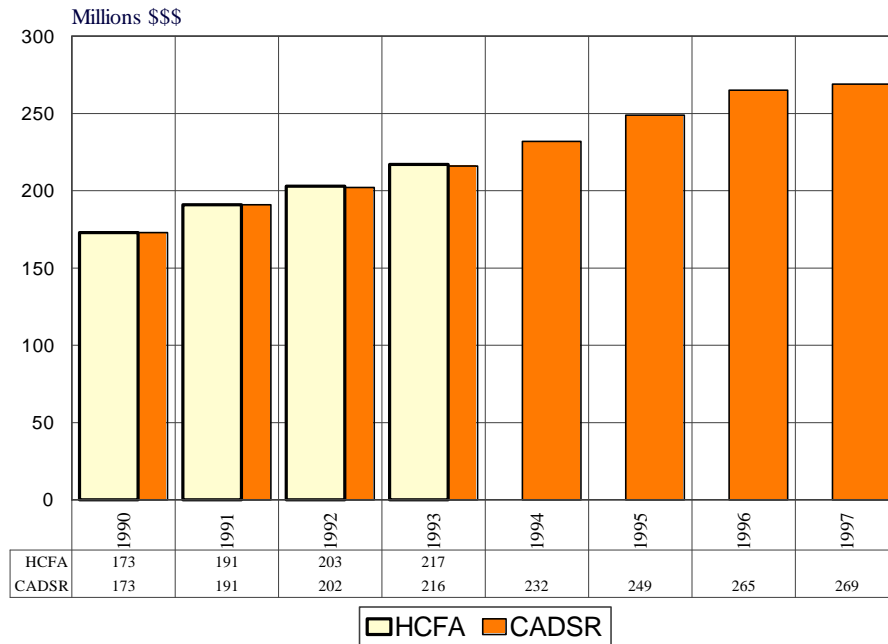
The final area of personal health care expenditure services concerns nursing homes, which is covered by SIC code 805 and state facilities found in SIC code 806. Since there is a private and public component, HCFA used two different methodologies similar to that employed for home health care. The estimates produced in this study are found in Figure 2.7 below.

This category exhibits the most stable growth pattern of any provided here today. These expenditures grew by more than 7% annually through 1994 and then at 6% for the next three years. The population served is growing steadily but not rapidly. In addition,



the costs are probably more related to housing and nursing care as opposed to new technology, medical procedures, and drugs.

**Figure 2.7**  
**Delaware Personal Health Care Expenditures:**  
**Nursing Home Services by Source of Estimate**



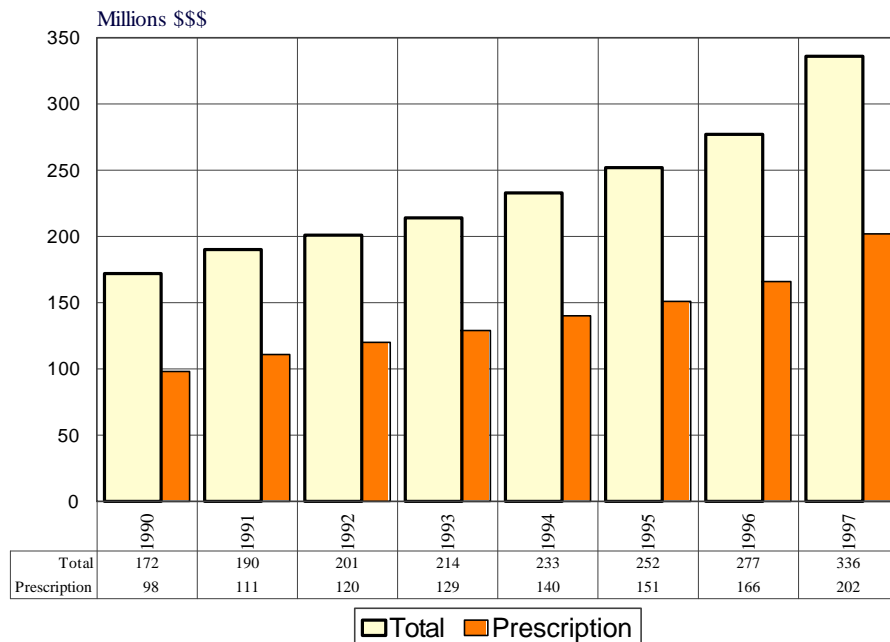
Source: Center for Applied Demography and Survey Research, University of Delaware  
 US Health Care Finance Administration

### Other Expenditures

There are three other areas of the health care accounts that have not, as yet, been addressed. The first area is *drugs and other medical non-durables*. The second is *vision products and other medical durables*. The final segment is *other personal health care*, which includes place-of-work health services. For the first two, HCFA utilizes the Census of Service Industries, the CSI. The estimates for the third are an amalgamation of indicators from sources that have no Delaware equivalents. With the CSI almost six years old, the estimates supplied here are based on these segments maintaining a similar share of the total sector. This assumption seems plausible based on the information provided earlier in Figure 1.7.

The drug sector has accounted for approximately 10% of the market since 1980. In Figure 2.8, below, the estimates for the entire sector along with an estimate for prescription drugs. The estimates from 1990 to 1993 are identical to those produced by HCFA. All estimates after that time are provided by CADSR. Prescription drugs are expected to increase their share of this sector from 56% to 59% while the entire sector increases by its share from 10% to 11%. That increase allows for the expanding number of drug products and the aging population.

**Figure 2.8  
Delaware Personal Health Care Expenditures:  
Drugs and Other Medical Non-Durables**

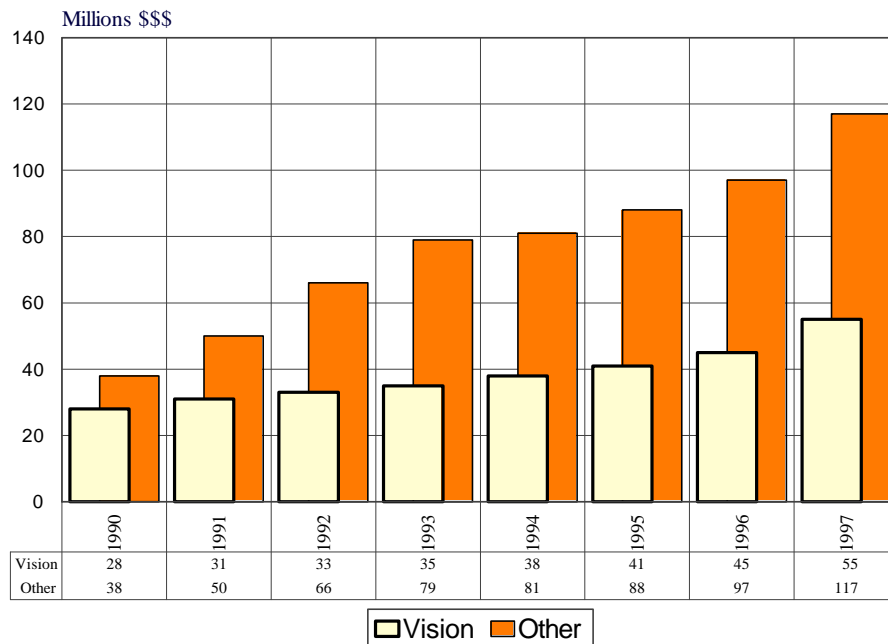


Source: Center for Applied Demography and Survey Research, University of Delaware  
US Health Care Finance Administration

Finally, estimates for the last two sectors are reported in Figure 2.9, below. Vision products are allowed to grow sufficiently to keep the share around 1.6%. The annual average growth rate is about 10%. This includes a slight increase after 1994. This would be consistent with the pattern found in many of the other charts.

The HCFA estimates provided from 1990 to 1993 show rapid growth in this sector. There is no apparent explanation other than the fact that there may be more facilities to serve drug and alcohol dependent populations, school and child health programs, and other like programs which use non-physician services outside of a traditional medical setting. That growth rate was attenuated and the share was permitted to increase slightly from 1993 to 1997.

**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 Health Care Finance Administration**

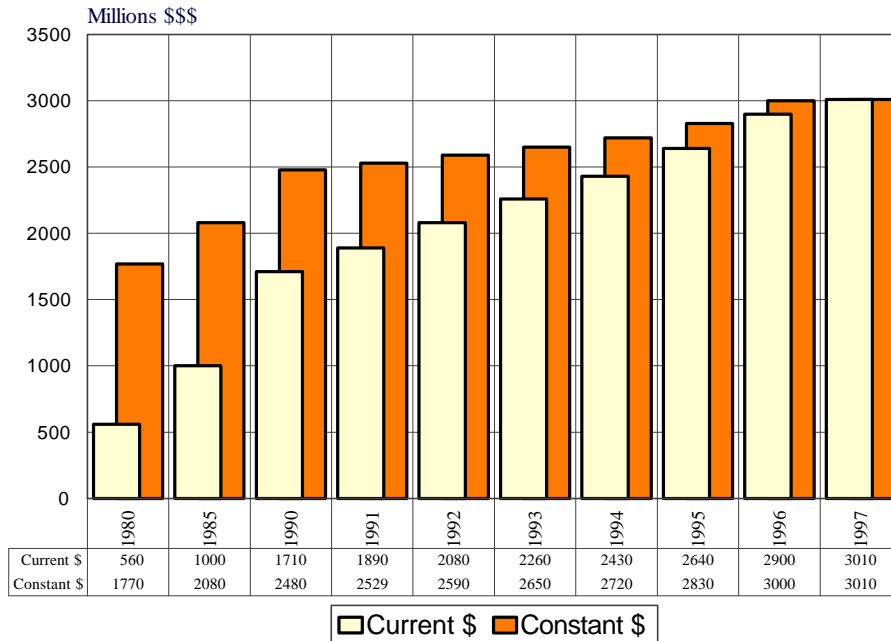
The estimates in these three areas will benefit significantly when data is available from the 1997 CSI that should be released in late 1998 or early 1999. Those data will permit the benchmarking of all three indicators which will produce a more accurate estimate of personal health care expenditures for all three.

# The 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. That estimate is found in Figure 3.1, below.

**Figure 3.1  
Delaware Personal Health Care Expenditures  
Current and Constant Dollars (1980-1997)**



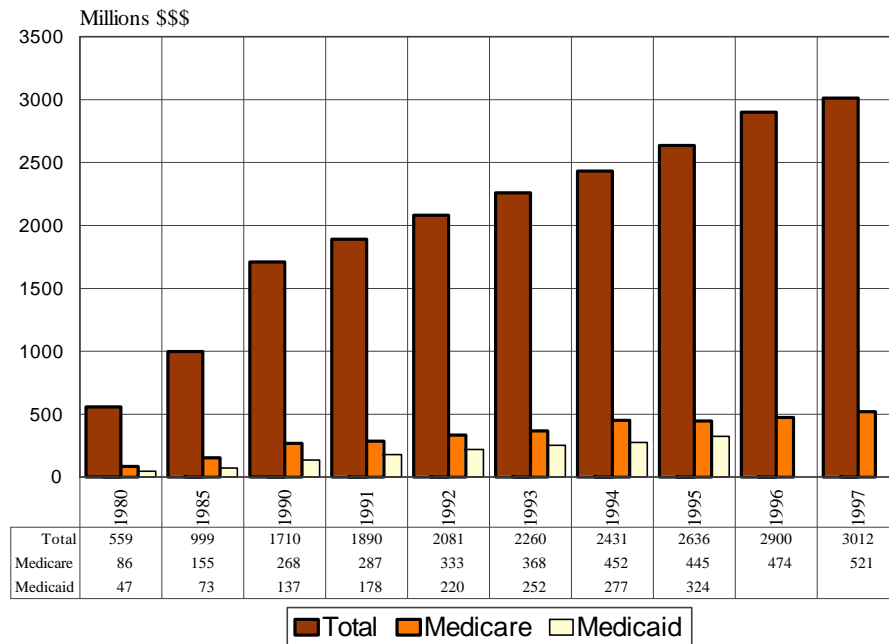
Source: Center for Applied Demography and Survey Research, University of Delaware  
US Health Care Finance Administration

The total cost of personal health care in Delaware is estimated to be approximately three billion dollars in 1997. The figure shows estimates both in *Current* dollars and in *Constant* 1997 dollars. From 1980 to 1990, the personal health care sector grew at 3.5% per year after eliminating price changes. During that same period, the population increased by about 1% per year. Since 1990, the real growth rate has slowed from 3.5% annually to 2.8%. It was even lower in the first half of the decade (2.3%), but

may have started to increase again in the last two years. This shift has yet to be confirmed, and still may be an artifact brought about by the change in the way physicians are organized in the shift to managed care.

In current dollars the annual increase has been 8.4% per year since 1990. Approximately 71% of that annual increase is directly attributable to changes in prices, i.e. not quality or quantity of services. An additional 15% of the increase can be assigned to population growth. The remaining 14% result from demographic change (aging of the population, increases in income,...), availability of new services and products, and changes in the preferences for personal health care over other goods and services.

**Figure 3.2  
Delaware Personal Health Care Expenditures:  
Medicare and Medicaid**



Source: Center for Applied Demography and Survey Research, University of Delaware  
US Health Care Finance Administration

These annual increases may seem high. However, Medicare has increased at an annual rate of 10% this decade. The population that is age 65 or over comprised 12.6% of the total in 1990 and will rise gradually to 15.3% in 2020. By that time only about half of

the “baby boomers” will have retired. Since health care services are used intensively by that age group, annual increases well above inflation and population growth are already built in. Today, Medicare represents 16.2% of personal health care expenditures compared to 15.4% in 1980.

Medicaid is increasing at nearly 20% per year and has increased from 8.4% of total personal health care expenditures to 12.7% since 1980. This increase, however, is predominantly due to policy change. There have been significant efforts to increase access to health care for the poor, and in particular, young children. Unless there is a dramatic increase in the poverty rate, which has been declining, these annual increases should decline as the proportion of the needy population covered increases.

If the 8.4% annual increase is disaggregated into three components, Medicare causes 1.6% of the increase, Medicaid is responsible for 2.4%, and everything else is 4.4% annually. Given that the medical care price index has risen 5.5% annually over the same time period, in constant dollars the real cost has either declined or there have been significant shifts in quantity and quality of services used by the non-old and the non-poor.

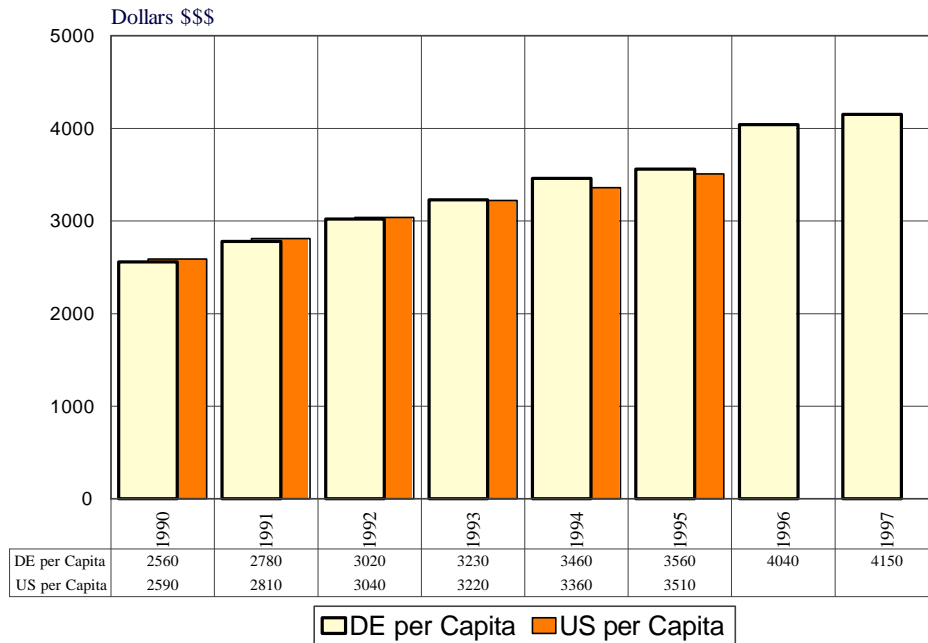
### **Per Capita Costs**

Another useful way of looking at the total cost of personal health care expenditures is using the per capita measure. That calculation removes the affect of increases in the population from the analysis. Those results are shown in Figure 3.3, below.

Delaware expenditures per capita were tracking those for the US for much of the decade. They are very close through 1995, when a significant increase took place. In earlier figures, it was pointed out that the estimates for total expenditures flattened out in 1994 and 1995, but then accelerated rapidly in 1996. If the pattern that is shown in the early part of the decade had continued without pause, the graph would have approached the estimate given for 1996. During that period the per capita estimates increased approximately 200 dollars per year. The interesting question that remains unanswered is

whether the slowdown was followed by a period of “catch-up” or the pause is the result of the changing structure of the marketplace. The 1997 estimate suggests both factors may be operating.

**Figure 3.3**  
**Personal Health Care Expenditures Per Capita:**  
**US and Delaware**



Source: Center for Applied Demography and Survey Research, University of Delaware  
 US Health Care Finance Administration

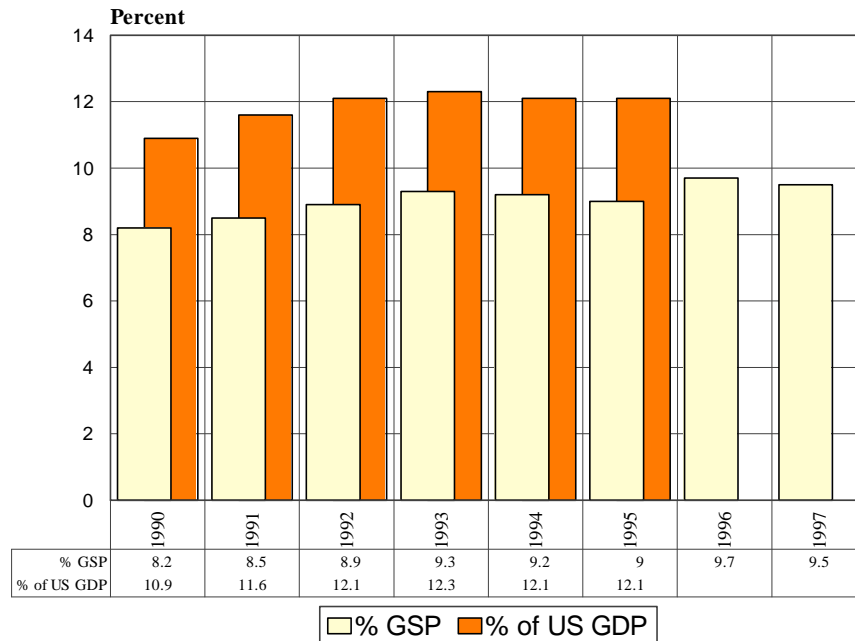
### Economic Importance

Two measures of economic impact are provided to show the importance of personal health care expenditures in the Delaware economy. First, in Figure 3.4 below, the ratio of these expenditures to gross state product (the total value of goods and services produced in Delaware) is displayed. 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.

There are a number of points illustrated by this chart. First, the health care sector has been growing as a proportion of total output in both the US and Delaware. Second

the rate of growth has slowed, although in Delaware there has been more variation in the last few years. Third, Delawareans spend significantly less than the US as a whole on health care; 9% compared to 12%. Perhaps 0.3% 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 well below average in poverty. However, Delaware is somewhat above average in age; that should tend to increase the share of GSP devoted to health care.

**Figure 3.4**  
**Personal Health Care Expenditures:**  
**Share of US GDP and Delaware GSP**

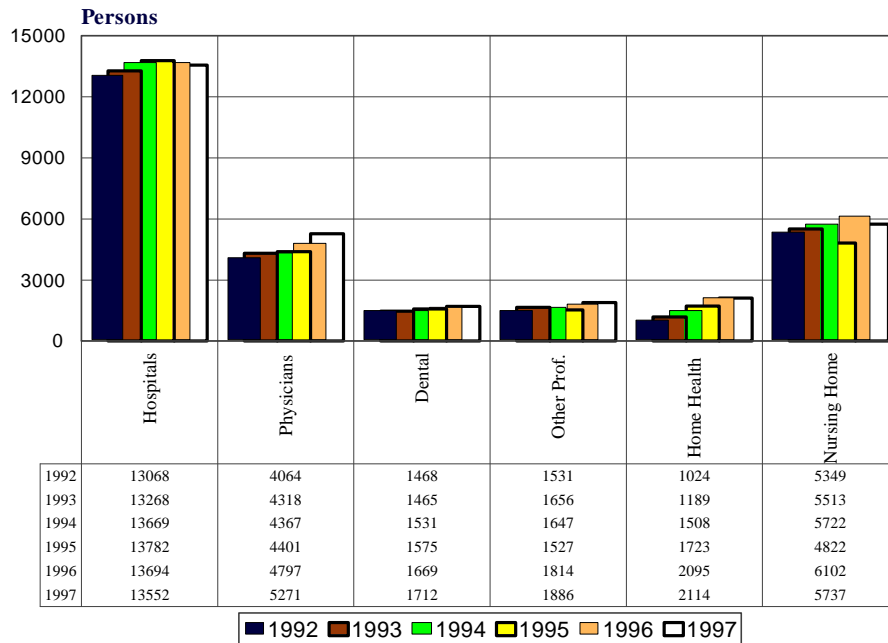


**Source: Center for Applied Demography and Survey Research, University of Delaware  
 US Health Care Finance Administration**

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 8% of the current labor force of 380,000. Those workers earn 9% of the reportable wages. In Figure 3.5, below, employment by sector over time is shown.



**Figure 3.5  
Delaware Employment in  
Selected Personal Health Care Sectors**



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

There are several interesting features in this chart. First, the hospital services segment, which was growing in the early part of the decade, is now stable and may even be declining. Second, the physicians sector is growing rapidly, and has increased in size by almost 30% since 1992. Similarly, the home health segment has grown the fastest and has doubled in employment over the period. While dental services and other professional services grew, the rates of increase were significantly less. Finally, nursing home employment has been reasonably stable (with the exception of 1995 which probably involves a reporting anomaly) since 1992.

## Conclusion

Many states across the nation are attempting to better measure personal health care expenditures. They are doing this for a number of reasons, but two are predominant. First, policy-makers need to understand the structure and size of those costs to better understand the problems of access that can be related to cost. Second, they need to understand the future path of these costs so that appropriate plans and policies can be developed to support their citizens.

This project was a first step in measuring the size and structure of personal health care costs in Delaware. It was pursued with a number of constraints; use Delaware data wherever possible, keep comparability with HCFA where possible to allow interstate comparisons, use secondary data sources where Delaware data was not available, and use the provider as the basis of measurement.

Even though this effort is only the beginning, there are a number of findings that are worth reiterating.

- The rate of increase in the price of medical services has decreased in this decade to the point it is no longer significantly above the general rate of inflation. There is some evidence, however, that the rate of increase may begin accelerating again shortly.
- In recent years, payments for health care by private insurers and those by individuals have shown some restraint. The payments by the government for Medicare and Medicaid have continued to rise at a faster rate. Demographics are the major factor.
- 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 has decreased both across the US and in the State of Delaware. While the share earned by hospitals has

traditionally been 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 US.

- While Delaware is higher than the US in per capita expenditures for health care, it compares favorably with Pennsylvania and New Jersey and is only slightly higher than Maryland.
- Expenditures for home health care and for other professional services have risen much more rapidly than the other categories. They probably reflect the reduction in hospital expenditures as the length of stay declined and the provision of services outside of the hospital environment.
- Overall, about 3 billion dollars is spent on personal health care in Delaware. The real rate of increase is now 2.8% annually and that represents a significant reduction. In the last two years, the rate has begun to increase again.
- About half of the annual increase in health care expenditures is attributable to Medicare and Medicaid. The balance is divided between price increases, population growth and demographic change.
- Delawareans spend significantly less of Gross State Product (9%) when compared to the US in general (12%).
- The health care sector of the Delaware economy is an important source of employment with 8% of the total workforce and 9% of the reportable wages.

These data when taken together suggest that Delaware is essentially in the mainstream with respect to personal health care expenditures. The costs per capita are perhaps a bit higher, however Delaware is a high income state and can afford to consume more of these services. The managed care revolution has and will undoubtedly continue to change the landscape of health care expenditures. Some of those changes may affect the level, but the distribution of the expenditures across the sectors will also be changed. There will also be changes in the way these payments are allocated between public, private, and individual payers. While changes will occur in all of these areas, the data suggest that the changes will be gradual.

Improvements can be made in the estimates presented here. First, a new Census of Service Industries will be available shortly. Second, HCFA should be ready to release

new benchmark data soon. Third, new releases of Delaware Department of Labor Information will serve to confirm or rebut several phenomenon observed in the data. All of these inputs should help improve on the information presented here. Currently, we assess the accuracy of the estimates as +/- 7%. As more data is collected and the methodologies are refined, the accuracy will also improve.

Additional geographic detail and refinement of the sectors will require much more data collection. Maryland, for example, collects claims data from insurance and HMOs operating in the state. It also receives Medicare and Medicaid data files from the federal government and participating state agencies.