

**Delawareans without Health Insurance:
A Demographic Overview**

**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 availability of health insurance coverage. Those with health insurance typically enjoy greater access to health care providers than those who are without it.

Those persons who do not have health insurance are still likely to require medical care at some point in time. When they do require such services, their condition may be significantly worse than had it been detected and confronted at an earlier stage. In addition, the uninsured will tend to use one of the most expensive providers, the emergency room. Ultimately, hospitals must cover all of their costs. Services delivered to the insured and the uninsured alike figure into that cost. As a result, some of the cost of services to the uninsured are shifted to the insured population and more importantly, raise the cost of fringe benefits to employers.

To better understand the nature of the uninsured population, the Delaware Health Care Commission has been monitoring its status for a number of years. This year, for the first time, it has decided to more broadly distribute this information using this report as one vehicle.

The report has three major sections. In the first section, the current status of the uninsured in Delaware and the region are discussed. A time series, beginning in 1982 and ending in 1995 is used to show any trends. The second section focuses on the labor market in Delaware and existing and future trends which might affect employer provided health coverage. The third section contains information on health insurance coverage for a variety of demographic variables. The implications of current demographic trends are also considered in this section.

The Uninsured

Background

Two primary sources of data are available for measuring access to health insurance in Delaware. The first source is the March Current Population Survey (CPS), conducted annually by the U.S. Bureau of Census. The second source is the Behavioral Risk Factor Surveillance System, conducted monthly for the U.S. Centers for Disease Control by the Center for Applied Demography and Survey Research at the University of Delaware, through the Delaware Division of Public Health. Both sources are valuable in their own right, but each has associated advantages and disadvantages.

The CPS is conducted monthly throughout the nation and is designed to measure the unemployment rate and other employment related statistics for the 50 states and the nation. More than 60,000 households are included in the sample and data is gathered on approximately 108,000 persons in those households. Each month, the basic employment information is gathered along with alternative information which change from month to month. The March CPS is usually referred to as the annual demographic file, since it captures a broad array of demographic information along with basic employment data. Part of that demographic information deals with health insurance.

In Delaware, the CPS involves about 700 households monthly, usually containing more than 1,400 persons. This sample size is sufficient for producing statewide estimates on a wide variety of demographic indicators. When measuring the percentage of the population without health insurance, for example, the accuracy is approximately +/- 1.7%. However, that sample size is insufficient to produce accurate county level estimates.

Health insurance related questions were added to the CPS in 1982. There were modifications to the questions in 1989 and again in 1995. However, a consistent data series can be built in spite of the changes. One aspect of the health insurance questions, time frame, is important to understand, since it differs between the two primary sources of data. The questions on the CPS are asked with reference to the previous year. Thus, in March 1995, respondents were asked about health insurance coverage in 1994. However, there is considerable evidence to suggest that the responses given are highly correlated with their current health insurance status or at least to the

current quarter. The U.S. Bureau of Census conducted significant parallel testing between the Survey of Income and Program Participation (SIPP) and the Current Population Survey. The SIPP sample of households is part of a panel which are re-interviewed quarterly for more than two years. Thus, the survey is able to more accurately follow the respondent's health insurance status over time. The comparisons of health insurance coverage with the CPS showed a strong relationship between the SIPP responses and the CPS responses at the time the questions were asked. Thus, for purposes of this report, the year in the tables and text always refers to the year in which the question was asked.

The second source of health insurance information is the Behavioral Risk Factor Surveillance System (BRFSS). The survey has been carried out by the Center for Applied Demography and Survey Research since 1990. The sample consists of residents of the state who are 18 years old or older. Each month approximately 190 households are contacted statewide and then a random, adult respondent is chosen from within each household to be interviewed. The survey is wide-ranging but does ask whether or not the person currently has health coverage and if not, how much time has elapsed since they were covered. The shortcoming of BRFSS is that it only represents adults. However, the sample size is sufficient to obtain reliable county level estimates, a feature which is not possible when using the CPS. Together the BRFSS and the CPS provide a powerful set of data for understanding the health insurance problems in Delaware today.

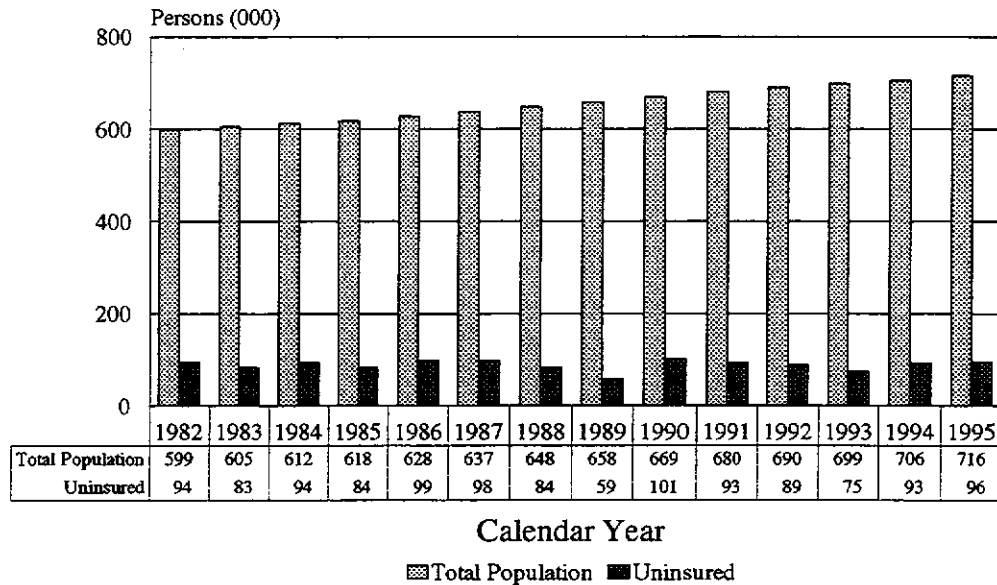
In the balance of this section, current estimates of the uninsured will be presented. In addition, time series information will be used to indicate possible trends contained within those estimates. Finally, county level estimates will be provided along with a comparison of Delaware with the larger region.

The Uninsured 1982-1995

The point estimates for the number of persons without health insurance from 1982 through 1995 are shown in Figure 1-1 below. The term "point estimate" is used here to describe the results obtained from the CPS for a single year. There are several general observations that can be made about the information contained in this figure. First, the number of persons without health insurance in 1995 (96,000) is about the same as there were in 1982 (94,000). In fact, the only

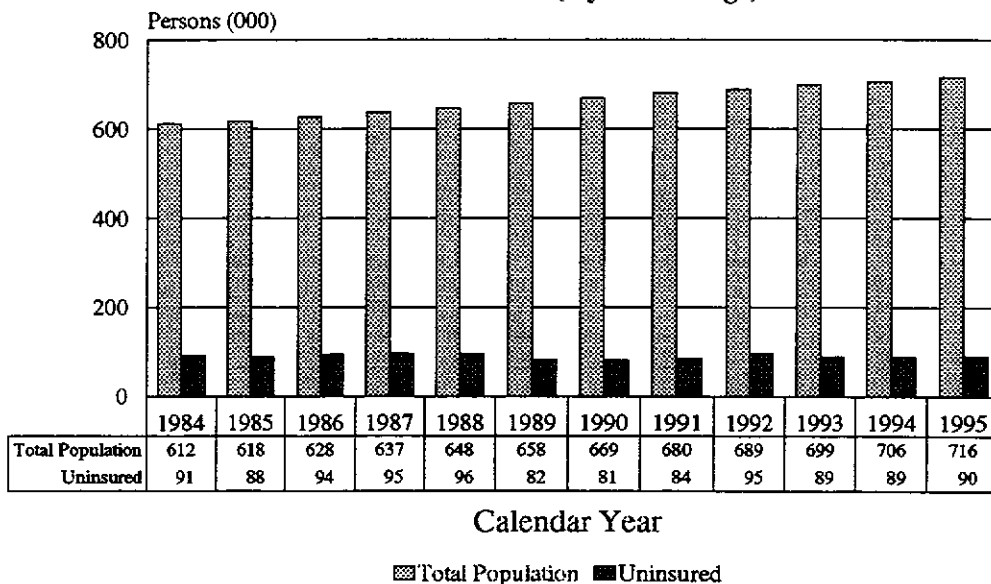
unusual estimate is that for 1989 (59,000). The others are relatively close together, at least in a statistical sense.

Figure 1-1
Estimated Persons without Health Insurance
in the State of Delaware



Source: Center for Applied Demography and Survey Research, University of Delaware
US Bureau of Census Current Population Survey, March 1982-1995

Figure 1-2
Estimated Persons without Health Insurance
in the State of Delaware (3 year average)

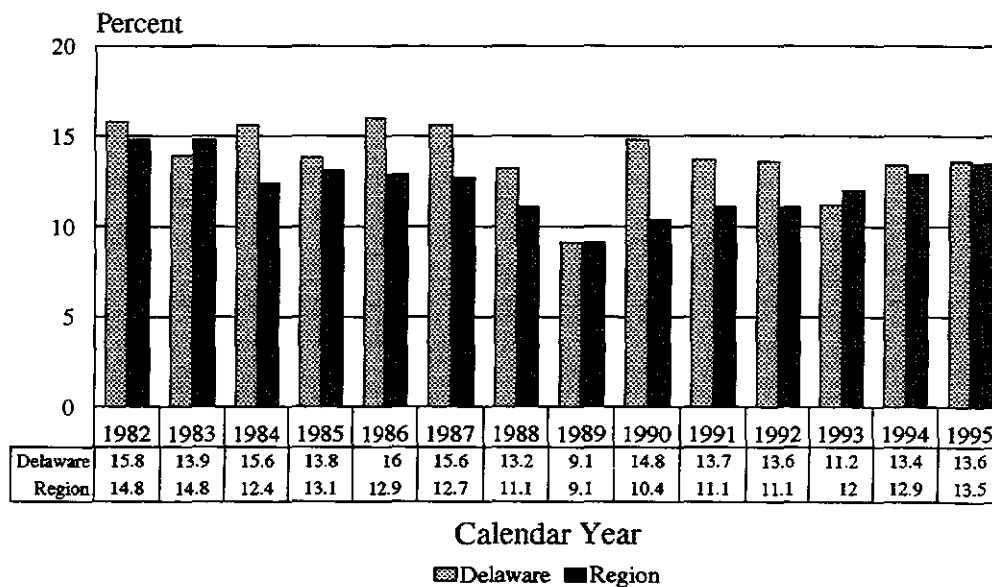


Source: Center for Applied Demography and Survey Research, University of Delaware
US Bureau of Census Current Population Survey, March 1982-1995

Second, while the number of uninsured has remained reasonably stable, the population of Delaware has increased by nearly 120,000 since 1982. Had the number of uninsured kept pace with population growth, there would have been more than 15,000 additional persons without health insurance in 1995. Clearly, there are other factors operating that impact the number of uninsured apart from population growth.

Figure 1-2 shows the same information as a three year moving average. This tends to remove some of the year-to-year fluctuation which is due to random variation associated with sample surveys. The number of insured varies between 81,000 and 96,000 over the entire period, which is a relatively small range. For the last three years, the estimate has remained around 90,000 which is down somewhat from its peak during the recession years.

Figure 1-3
Percent of Persons without Health Insurance
for Delaware and the Region

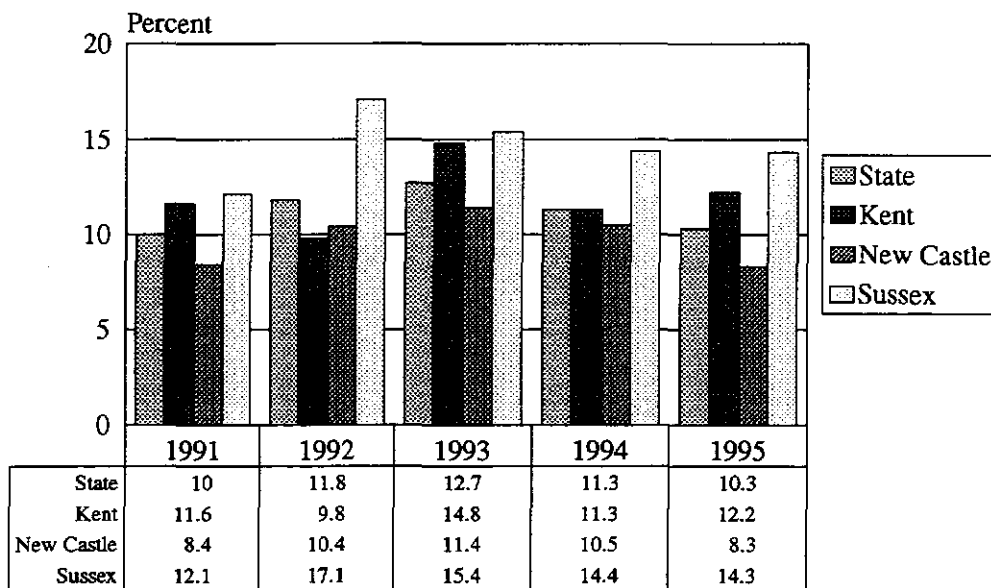


Source: Center for Applied Demography and Survey Research, University of Delaware
US Bureau of Census Current Population Survey, March 1982-1995

The proportion of the population without health insurance, shown in Figure 1-3 above, has also shown distinct improvement. The rate has fallen over the years from about 16% in the early 1980s to approximately 13% in the mid 1990s. Some of this is undoubtedly due to legislative and policy initiatives, but at least some of the shift may be attributed to favorable demographics. In either case, Delaware is better off.

Also found in Figure 1-3 are comparative rates for the region which includes Maryland, Pennsylvania, New Jersey, and New York. From 1982 through 1992 Delaware's percentage of uninsured tended to be about 2% higher than that calculated for the entire region. However, as the graph shows, the percentage in the region began to rise after 1989 and has been flat or higher in each subsequent year. Delaware's rates, although more variable, tended to fall during the same period. At least part of this has to do with Delaware's economy, a job creation machine that was even able to absorb the impact of major job cuts by some of the state's larger employers.

Figure 1-4
Percent of Adults without Health Insurance
by County

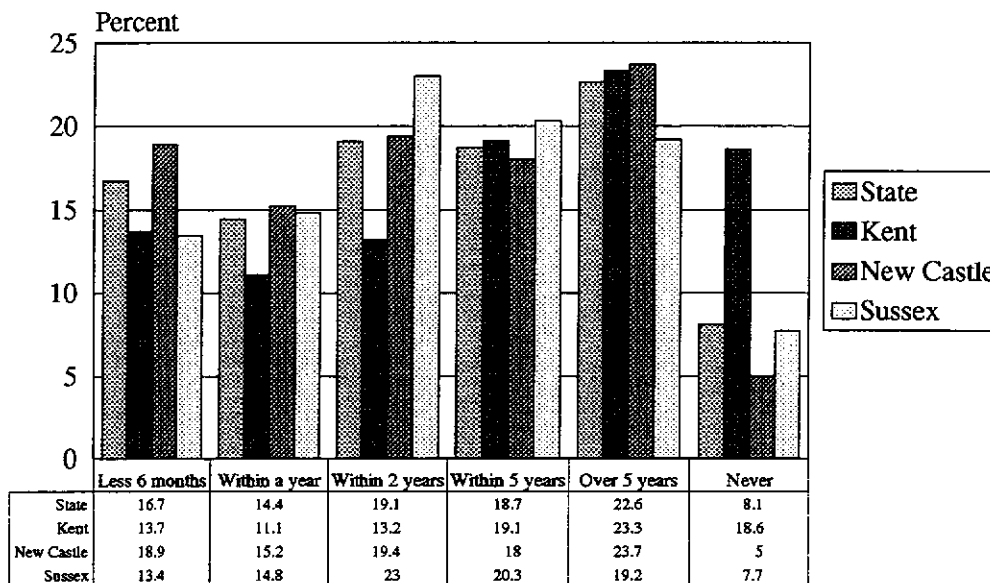


Source: Center for Applied Demography and Survey Research, University of Delaware
Delaware Health and Social Services, 1994 Behavioral Risk Factor Survey

The information shown in Figure 1-4 above, is derived from the 1991-1995 Behavioral Risk Factor Surveys. There are several notable features about these data. The estimated proportion of adults is consistently lower than the estimates from the CPS data, though one would have expected them to be slightly higher. This probably occurs because of the omission of households without telephones in the BRFSS. The CPS attempts to interview those households, in person, at their homes. In addition, there is also a difference between the two surveys in the way the question is asked. Fortunately, comparable questions will be included on the CPS this year, and it will then be possible to more accurately assess the source of the differences.

The BRFSS estimates are consistent and show a clear pattern between the counties over the five year period. In general, the percentage of adults without health coverage in New Castle County is 2% lower than the rate in Kent County, and 5% lower than the uninsured rate in Sussex County. The difference is probably explained, at least in part, by the variance in the economic base between the counties.

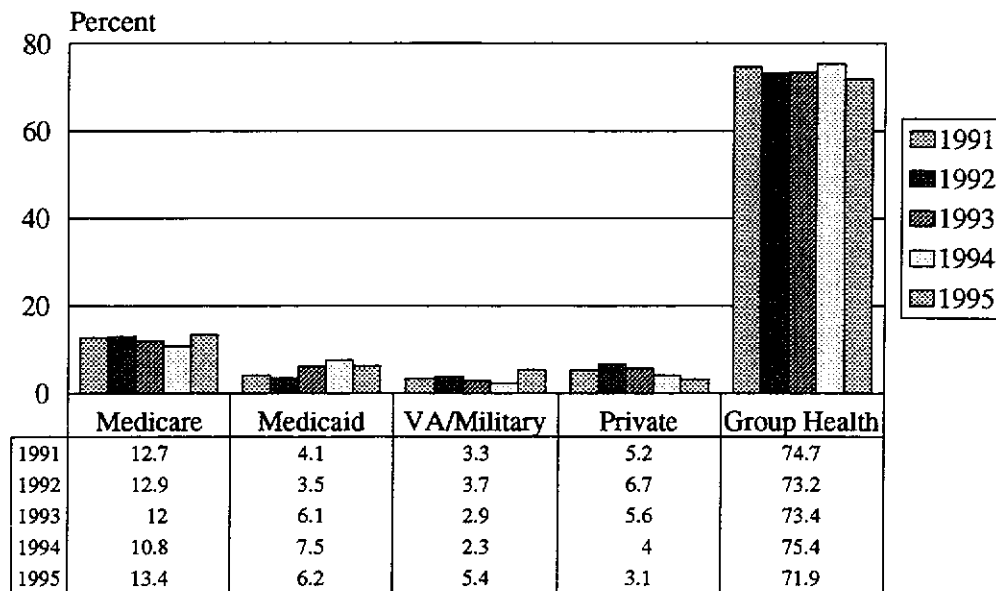
Figure 1-5
Length of Time without Health Insurance
in Delaware by County in 1994



Source: Center for Applied Demography and Survey Research, University of Delaware
 Delaware Health and Social Services, 1994 Behavioral Risk Factor Survey

One of the other interesting questions addressed by the Behavioral Risk Factor Survey applies to those who are without health insurance. Those respondents were asked “About how long has it been since you had health coverage?” Their answers are displayed in Figure 1-5 above. There is, of course, a great deal of variability in the responses because the sample size is constrained to the number of persons currently without health insurance. Even with that constraint, the results are quite consistent. Somewhat more than 16% of the uninsured reported being without insurance for six months or less. Roughly 30% said they had been without coverage for less than one year. These data suggest that the majority of Delaware’s uninsured have remained uninsured for a significant amount of time. The longer the period without coverage, the higher the likelihood that a need for medical services will develop. This is an issue which needs to be examined in greater detail.

Figure 1-6
Percent of Persons with Health Insurance
by Primary Type of Insurance



Source: Center for Applied Demography and Survey Research, University of Delaware
 US Bureau of Census Current Population Survey, March 1991-1995

Finally, it is useful to understand something about how people obtain their health coverage. Not surprisingly, Figure 1-6 above shows that more than 70% have group health insurance which is the type generally supplied by employers. Only about 5% reported being covered as individuals through private sources. The balance report being covered through one of three government programs, Medicare, Medicaid, or one of several military sources. While the sample sizes are relatively small for some of the programs, the estimates seem reasonably consistent over time. The only potential pattern appears to be an increase in Medicaid and a corresponding decrease in private insurance. The recent legislative initiatives with respect to Medicaid should show a significant increase in this population next year.

One interesting feature of this information, not found in Figure 1-6, is that many people report having multiple sources of health insurance over the year. For example in 1995, 13.4% of the population reported receiving Medicare, but only 3.9% say that Medicare was the only source of insurance that they had during the year. Similarly, 6.2% reported Medicaid as their source of coverage, but only 1.7% said that it was their only means of coverage. These two situations probably represent two different dynamics. Medicare recipients are quite often carrying additional insurance to cover any medical services not handled by that program. Medicaid recipients, on the

other hand, seem to be more likely to move from some type of group coverage to Medicaid and back again as their life situation changes.

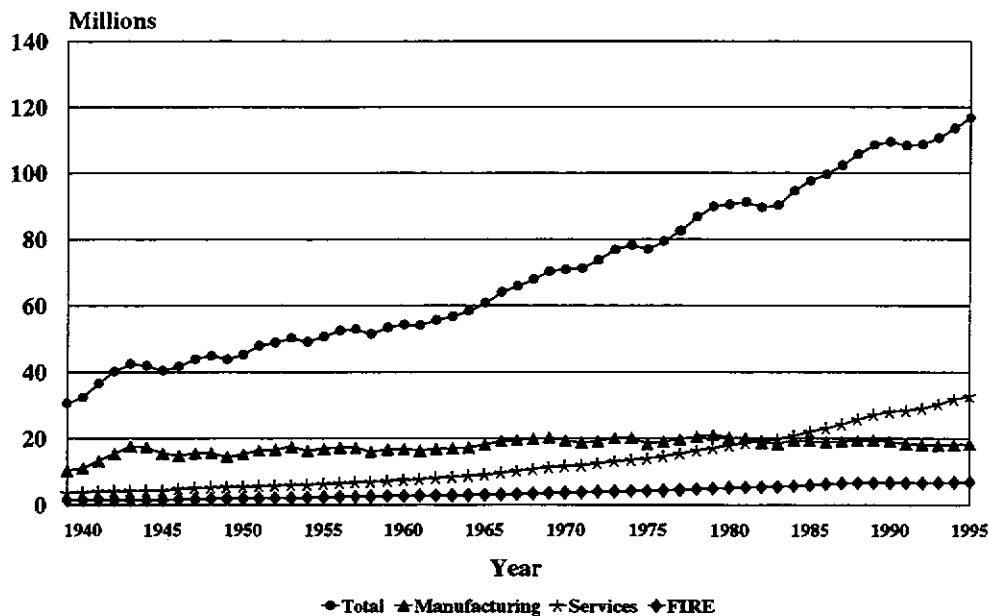
In conclusion, it should be noted that, while at any point there are approximately 13.6% of Delawareans uninsured, the proportion that are uninsured at some point during the year is closer to 18% based on national statistics. The same statistics, derived from the Survey of Income and Program Participation, point to a median time without coverage of 7.1 months. This rate is lower than the one shown in Figure 1-5 above because children, who are less likely to experience periods without coverage, are included in the estimate. Overall, it appears that health insurance coverage in Delaware is headed in the right direction and, with the addition of Medicaid managed care, the proportion of insured Delawareans should grow.

Labor Market Issues

Background

Health care coverage is inexorably linked to an individual's employment status along with the type and size of firm for which they work. Many Delawareans have recently experienced more instability in their labor market activity and this has, inevitably, affected aspects of their coverage. The factors producing this increased instability are varied and are both national and international in scope. There are, however, some basic trends that are important to understand since they are affecting and will continue to affect health care coverage in the years to come.

Figure 2-1
US Non-Agricultural Employment:
Selected Sectors

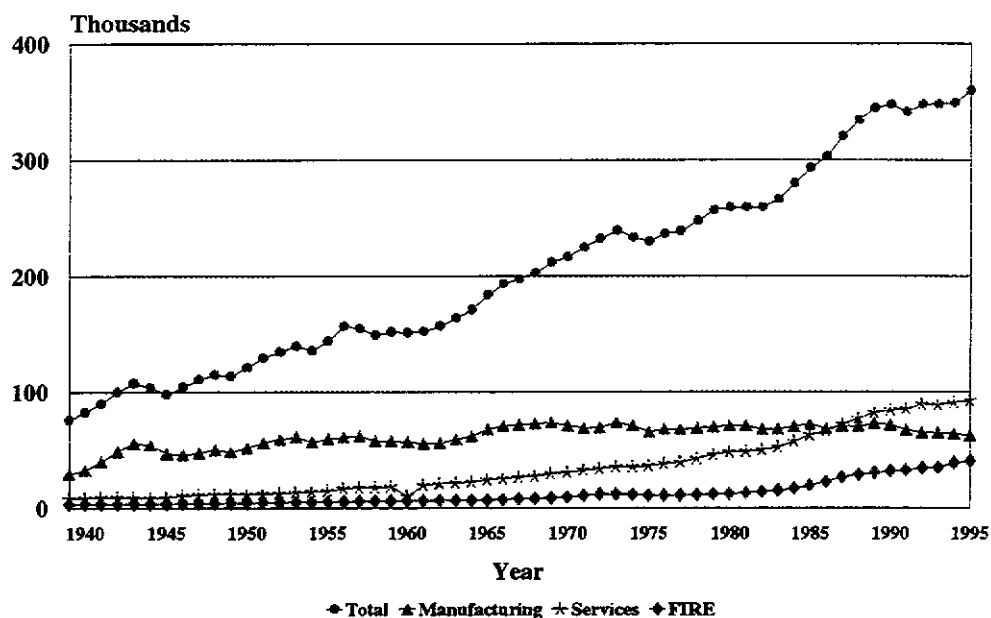


Source: Center for Applied Demography and Survey Research, University of Delaware
US Bureau of Labor Statistics

In Figure 2-1 above, the total employment for the United States from 1939 through 1995 is shown along with three of the ten employment sectors namely: manufacturing, services, and FIRE (finance, insurance, and real estate). The graph clearly shows the impact that the business cycle has had on total employment in the mid-1970s, the early 1980s, and the early 1990s. All of these economic events are associated with rapid increases in the percentage of persons without health

coverage. The more subtle influence is related to the change in the structure of employment. Manufacturing employment peaked in the late 1970s and has been in a steady, although very shallow, decline since. Service industry employment increased steadily over the entire period and began accelerating its growth when manufacturing employment was at its peak. In 1981, service sector employment surpassed manufacturing employment and today it accounts for nearly twice as much employment as manufacturing. This trend will probably continue unabated for the foreseeable future.

Figure 2-2
Delaware Non-Agricultural Employment:
Selected Sectors

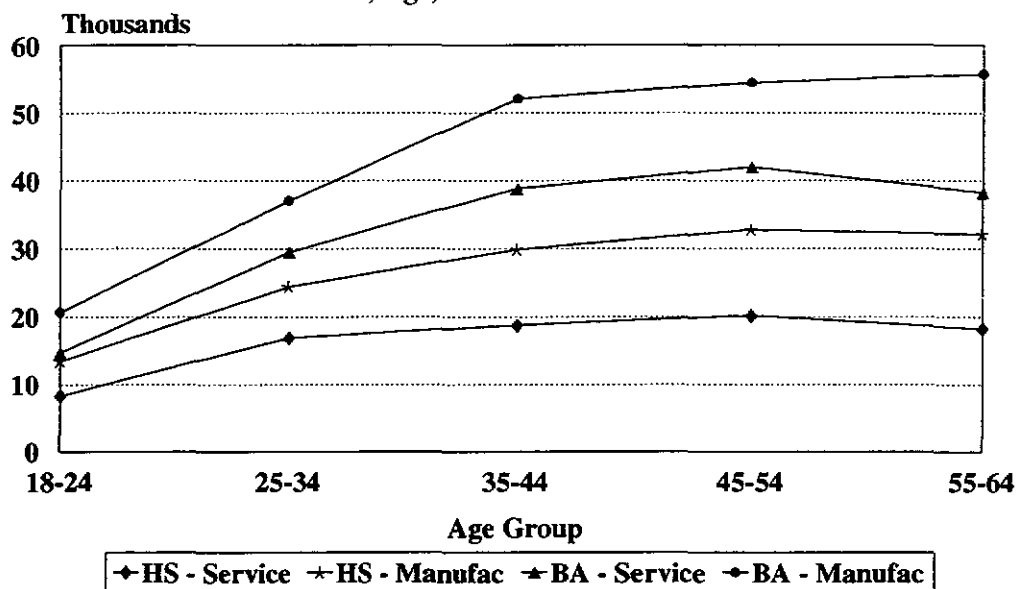


Source: Center for Applied Demography and Survey Research, University of Delaware
US Bureau of Labor Statistics, Delaware Department of Labor

The pattern was similar in Delaware, although the recession of the mid-1970s was more severe and the later ones were perhaps less damaging than they had been nationwide. For instance, statewide manufacturing employment peaked during 1989. This marked the end of the expansion of the 1980s. Since then, the number of manufacturing jobs available to Delawareans has dropped significantly and continues to fall even today. In 1986, four years after it happened nationally, statewide service industry employment surpassed manufacturing employment. The rate of growth in service sector employment in recent years has slowed somewhat compared with the rate for the U.S. but this has been offset by the incredible growth in the FIRE sector. Employment in the FIRE

sector clearly exploded after the passage of the Financial Center Development Act in the early 1980s. It continued to grow dramatically until the 1990-1991 recession. To most observers' surprise, the growth re-ignited in 1992 and continues today. A comparison of the trends in Figure 2-1 and Figure 2-2 show this to be a Delaware phenomenon.

Figure 2-3
Average Annual Earnings by
Sector, Age, and Education in 1994



Source: Center for Applied Demography and Survey Research, University of Delaware
US Bureau of Census Current Population Survey, March 1995

The importance of these inter-sector employment shifts is shown in Figure 2-3 above. Figure 2-3 shows the average annual earnings by age, education, and industrial sector. The top two lines represent annual earnings for college graduates in the manufacturing and service sector respectively. The bottom two lines depict the same information for high school graduates in the same two sectors.

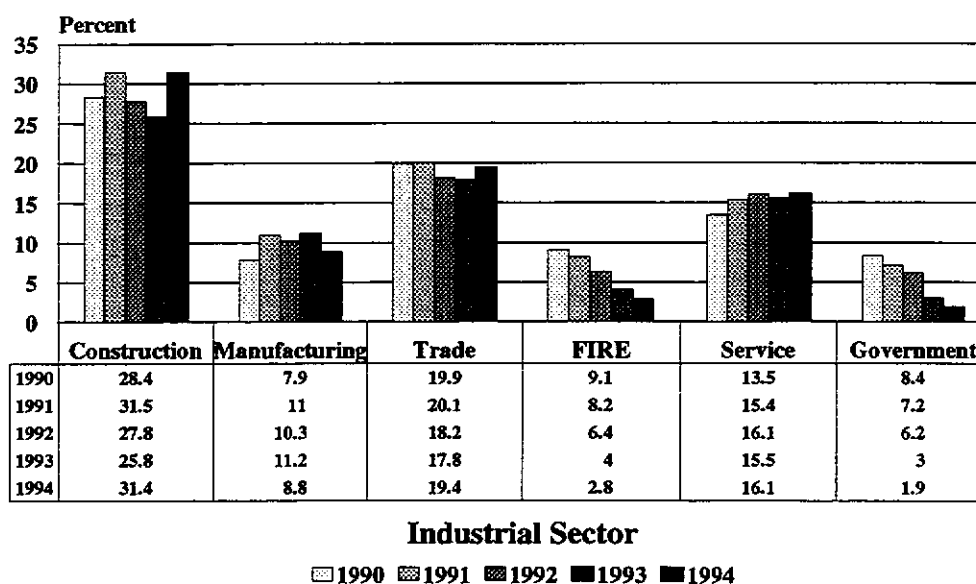
The graph shows a difference of about \$10,000 in annual earnings between the two sectors for both levels of education. If the same health care benefits were offered in both sectors, the cost to employers would be a much larger proportion of the annual salary in the service sector than in manufacturing. This suggests that there are likely to be fewer benefits offered to employees in the service sector.

In addition, those employed in manufacturing are much more likely to be represented in a collective bargaining unit, a union. They are also more likely to work full-time with significant overtime, which further reduces the impact of the cost of benefits on total compensation. In contrast, service sector workers are more likely to be employed by non-union companies and are much more likely to work part-time. These factors, coupled with the increasing number of service sector workers relative to the number of manufacturing workers will tend to increase the number of uninsured or under-insured people.

Firm Sector and Size

There are significant differences in both the level and pattern of the uninsured, depending upon the type of industry in which an individual is employed. For instance, according to Figure 2-4 below, construction workers frequently report being uninsured. Although it may be noted that some construction workers are unionized, and are usually provided health coverage, many more are either employed by a non-union company or self-employed. Overall, it is estimated that roughly 30% of all construction workers are uninsured.

Figure 2-4
Percent of Persons in Delaware without Health Insurance
by Industrial Sector



Source: Center for Applied Demography and Survey Research, University of Delaware
US Bureau of Census Current Population Survey, March 1990-1994

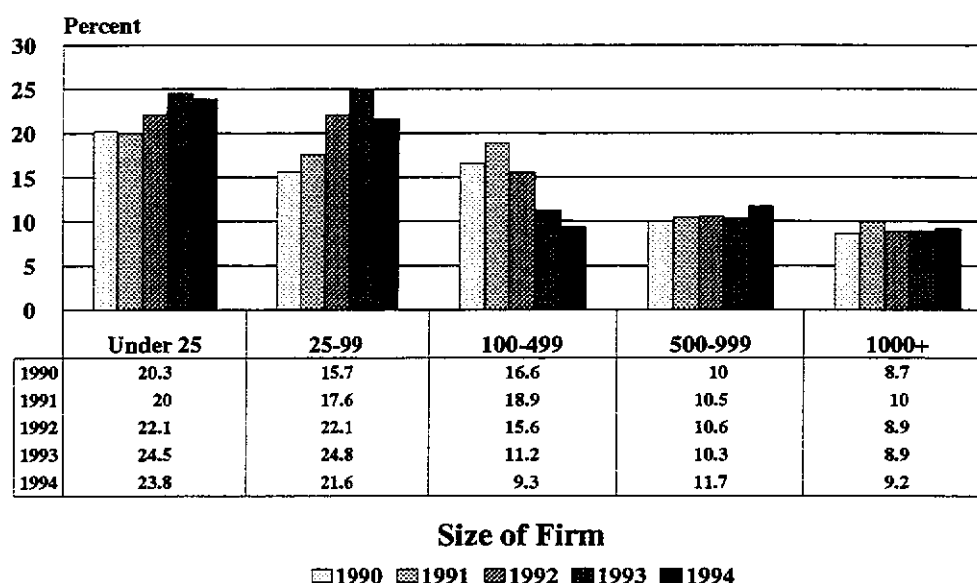
Many persons employed in the trade industry also find themselves without access to health coverage. Because this sector is heavily unionized, as well as reliant on a large number of part-time workers (most of whom do not qualify for a typical insurance package), it is estimated that as many as 20% of those employed in the trade industry currently lack health coverage.

Of the other industries represented in Figure 2-4, approximately 15% of all those employed in the service industry are not offered access to health insurance as part of a benefits package. Roughly 10% of those employed in manufacturing do not have health coverage. Respectively, only about 5% of either those employed by the FIRE industry or the government are not provided health insurance as part of a benefits package. It should be pointed out that these differences are among the largest observed for any variable in this report.

The importance of this information relates to the changing structure of the economy. As employment shifts from manufacturing to the service sector, the percentage of uninsured workers increased by 5%. The importance of the FIRE sector in Delaware cannot be over estimated at least with respect to health coverage. While the percentage of uninsured in the region has been rising, Delaware's rate has either been falling or remaining steady. This appears, in large part, to be related to the accelerating FIRE sector and to a less rapidly growing service sector.

The other important inter-sectoral shift, which is more subtle, is associated with the nature of downsizing in Delaware's manufacturing sector. A significant portion of those employees who were "downsized" belonged to headquarters support operations as opposed to the factory floor. In many cases, those same employees started or joined firms that supplied services to their previous employer who simply wanted to "out-source" those functions. Many of these new jobs are classified as business services, part of the service sector, and are far from the typical "hamburger flipper" often discussed in the media. This has produced increases in annual earnings in the service sector which bodes well for benefit programs in the future.

Figure 2-5
Percent of Persons without Health Insurance in the US
by Size of Firm



Source: Center for Applied Demography and Survey Research, University of Delaware
 US Bureau of Census Current Population Survey, March 1990-1994

Employees who work for small firms (under 100 employees) are less likely to have health insurance than those that work for large firms (more than 500 employees). Figure 2-5 above shows this relationship for a U.S. population sample. Although in some categories the Delaware CPS sample does not have data about a sufficient number of firms to provide reasonably reliable results, there is little reason to believe that these data would behave differently in Delaware's economy.

The graph shows that there are two distinct groupings: (1) firms with less than 100 employees where the percentage without health insurance is 20% and (2) firms with more than 500 employees where the percentage of those without health insurance is 10%. The larger firms are perhaps more likely to be unionized at least to the extent that larger firms have a higher probability of being in sectors such as manufacturing. They are also more likely to pay higher wages which makes the relative cost of health insurance more tolerable. From a tax perspective, the provision of health insurance also provides a convenient way to increase total compensation.

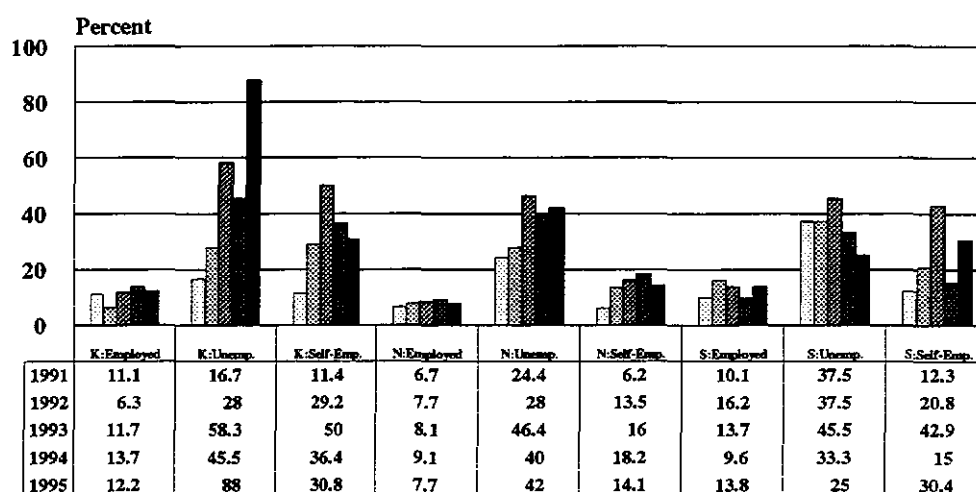
A somewhat disturbing trend is also evident in Figure 2-5. It appears, at least from the national perspective, that those working for smaller firms are less likely to be provided with insurance today than they were five years ago. What makes this trend so disconcerting is the fact that this increase has occurred during an upswing in the business cycle. The same trend has not been exhibited among the larger firms, however. The downward trend in the group 100-499, which is clearly a transitional set of firms, could mean that they are becoming more like the larger firms or possibly that the distribution of firms within the group has shifted toward the upper end.

In conclusion, these data suggest that any effort to increase coverage must focus on smaller firms. Those firms will tend to provide lower levels of compensation, will probably use more part-time employees, and may offer less stable employment. However, they are growing faster and becoming a bigger part of the economy. This fact may tend to mitigate some of the negative factors over time. There is no doubt, however, that all of these factors will tend to make the goal of better access to health care a challenge for the foreseeable future.

Employment Status and Class

Approximately 75% of all Delawareans are covered by some form of group health insurance. The vast majority are covered through their employer and therefore any disruption in employment will undoubtedly increase the likelihood that coverage will lapse. The reason that coverage may not automatically lapse is that the individual might be covered by another worker in the family, or the coverage may be extended through payments by the employee, or the individual may qualify for some government sponsored plan like Medicaid or Medicare. Still, the disruption is significant as is shown in Figure 2-6 below.

Figure 2-6
Percent of Adults without Health Insurance in Delaware
by County and Employment Status



County and Employment Status

□ 1991 ▨ 1992 ▩ 1993 ■ 1994 ■ 1995

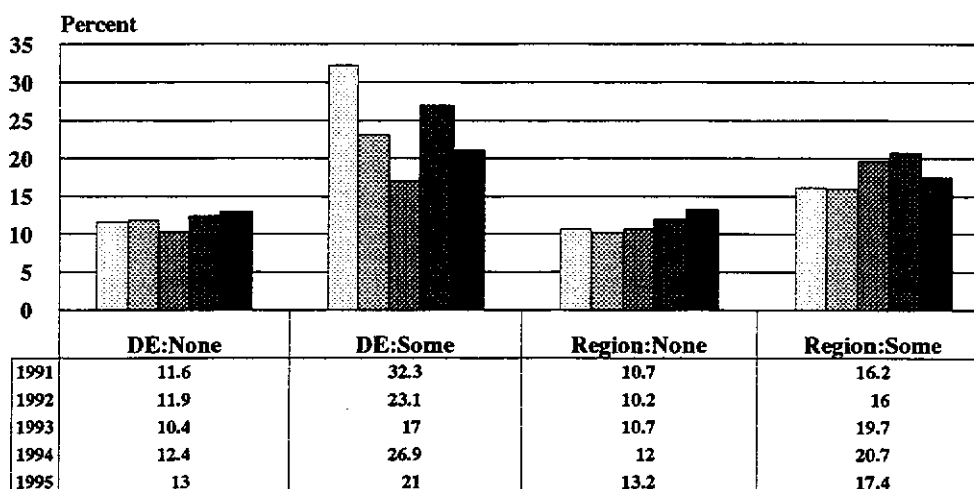
Source: Center for Applied Demography and Survey Research, University of Delaware
 Delaware Health and Social Services, 1991-1995 Behavioral Risk Factor Survey

The information reported in Figure 2-6 shows that the probability of being without health insurance increases by a factor of four when the individual is unemployed. The percentage on the average rises from about 10% to in the vicinity of 40% as the individual's employment status changes. There is considerably more volatility in the estimates in Kent and Sussex counties because of small sample sizes, but the relationship mirrors that in New Castle County where sample size is not a problem. While those that are self-employed are also found in relatively small numbers in the BRFSS survey, the lack of health insurance is at least twice as prevalent as that of those with traditional employment. It is also notable that the self-employed in New Castle County may be in different or a least more mature businesses than those self-employed in Kent and Sussex counties, since the lack of coverage is considerably less.

The other piece of information that deserves comment is the relative differences between the lack of coverage for employed workers in the three counties. The rate in New Castle County is significantly lower. Following the earlier argument, this probably arises from differences in the economic base, since larger firms with higher wages and more stable employment are located primarily in the northern part of the state.

In Figure 2-7 below, further evidence is found about the relationship between insurance coverage and employment status. In this analysis, the receipt of unemployment compensation is used as an indicator of an interruption of employment at some point during the year. In both Delaware and the region, there is a significant rise in the lack of health coverage associated with receiving benefits. While the effect is more muted than in Figure 2-6, where a more direct measure was available, the percentage is almost double. Delaware also seems to have a somewhat higher rate when compared with the region. Curiously, the trend noted earlier, with respect to increasing percentages of employees in smaller firms lacking coverage, is exhibited in both the state and the region. This could easily reflect the increases in part-time employment.

Figure 2-7
Percent of Persons without Health Insurance
by Receipt of Unemployment Compensation and Area



Unemployment Compensation by Area

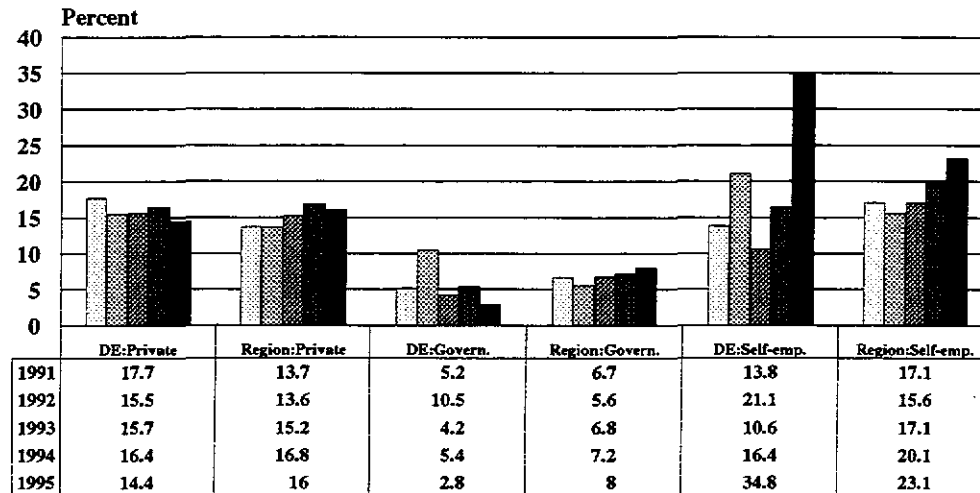
1991
 1992
 1993
 1994
 1995

Source: Center for Applied Demography and Survey Research, University of Delaware
 US Bureau of Census Current Population Survey, March 1991-1995

The final graph in this section of the report represents the percentage of workers without health insurance in Delaware and the region as indicated by three broad classes namely: private sector workers, government workers, and the self-employed. In Figure 2-8 below, Delaware and the region have similar rates for the private sector, approximately 15%. Within the private sector, Delaware seems to be improving over the time period, which is consistent with the increase in workers in the FIRE sector. The rates in the region, for the private sector, are increasing which

probably reflects increases in the service sector and in part-time employees. Both trends should be watched carefully.

Figure 2-8
Percent of Persons without Health Insurance
by Class of Worker and Area



Class of Worker by Area

■ 1991 ■ 1992 ■ 1993 ■ 1994 ■ 1995

Source: Center for Applied Demography and Survey Research, University of Delaware
US Bureau of Census Current Population Survey, March 1991-1995

It is no surprise that government employees both in Delaware and the region are far more likely to have health insurance than the private sector in general. Government rates are comparable with very large private sector firms operating in a unionized work place. The only government workers who are likely to lack coverage are temporary/part-time workers or private contractors. The increase in those types of workers may be the reason the percentage of the uninsured is rising in the region for the government class of worker.

A more interesting structural shift, which has been underway for some time, is that government workers are representing a smaller proportion of the labor force, since that sector is growing less rapidly than employment overall. This implies that the percentage of uninsured workers will tend to rise, even if all the rates within these classes remains constant.

The information about the self-employed corroborates the information from the BRFSS discussed earlier. The data for the region, however, shows a significant upward trend over the five

year period. There are a variety of potential explanations. One reason, which is consistent with other data, is that an increasing proportion of the work force are classified as "self-employed", as many of those who were laid off due to downsizing find it difficult to reenter the labor force in comparable positions. Starting a small business or a consulting firm may be more palatable than taking a pay cut of 50% or more. Unfortunately, until the newly self-employed are able to generate sufficient income, obtaining health insurance will probably not receive a very high priority.

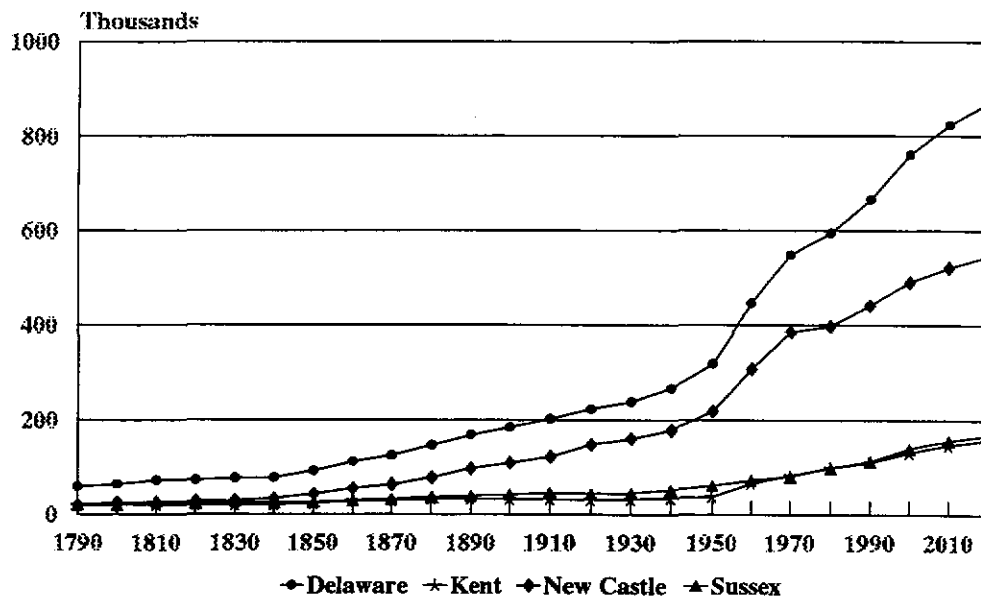
Demographic Characteristics

Background

Labor market characteristics are only some of the variables which play a role in influencing the proportion of people without health insurance. Demographic variables also may help explain a population's lack of health insurance. Others simply provide a convenient method for describing this condition among subsets of the population. Both will be addressed in this section.

Before returning to the health insurance issue, a few important factors driving population growth need to be addressed. In the first section of the report, it was reported that the number of uninsured had remained reasonably stable while the population increased substantially. There are, however, some recent indications, also discussed in the previous section, that future population increases could be accompanied by increasing numbers of uninsured. For that reason, it is important to understand how Delaware is growing.

Figure 3-1
Population of Delaware and Counties

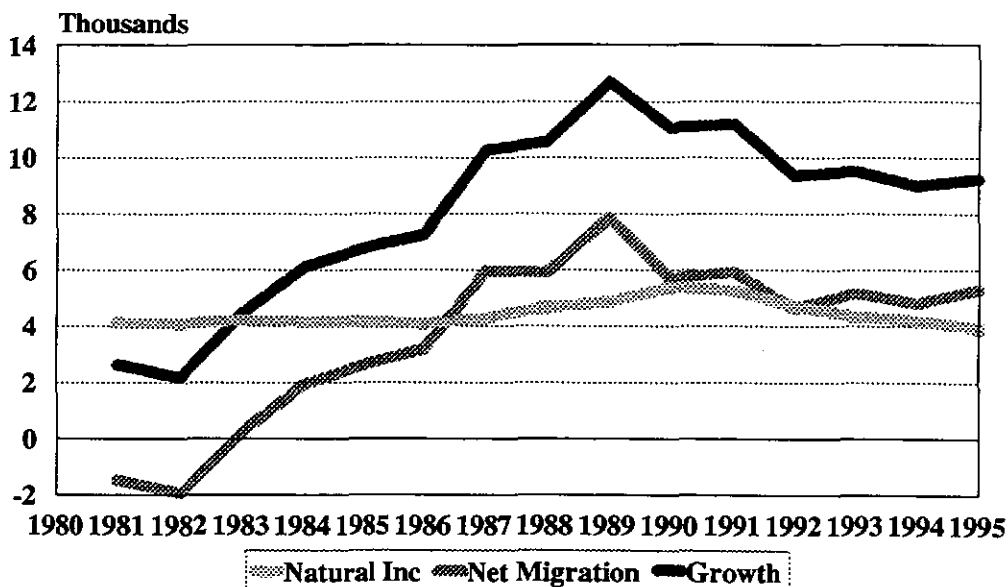


Source: Center for Applied Demography and Survey Research, University of Delaware
US Bureau of Census Decennial Census 1790-1990
Delaware Population Consortium, January 1996

In Figure 3-1 above, the pattern of population growth for the state and for each county is shown from the first U.S. census in 1790 through the current 30 year projection in 2020. The state grew at a fairly steady rate from 1840 to 1950, when population growth began to explode. This pattern continued unabated for 20 years until the oil-crisis induced recession and the migration to the sunbelt began. Population growth resumed in 1980, although at a much slower rate, and is predicted to continue to grow at rates around 1% annually. Kent and Sussex counties continue to grow slowly, at rates which are consistent with those of the state in the last century. At this point, there is nothing to suggest the onset of explosive growth rates of the type observed in New Castle County during 1950-1970.

If current conditions continue, this population growth would likely generate another 15,000-20,000 uninsured persons over the next 25 years. But, current conditions, especially those in the labor market, are unlikely to continue. In fact, global competition and pressure on production costs may cause employers to rethink the total compensation package. The structural changes in the labor market alone will probably lead to an increase in the uninsured. Legislative changes and innovative government programs may also act to control an increase in those numbers. However, it is difficult to speculate as to how these different factors will average out.

Figure 3-2
Sources of Population Growth in Delaware



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

Figure 3-2 above illustrates the components of Delaware's population growth since 1980. Annual population growth which is represented by the darkest line in the graph has been as little as 2,000 persons in 1982, at the end of the recession, and as much as 13,000 persons when the economy peaked in 1989.

Overall growth is dependent upon two components: natural increase and net migration. Natural increase is the number of births to Delaware residents less the number of Delaware residents that die. That quantity is represented by the lightest curve in Figure 3-2 and has been around 4,000 per year until the "baby boomlet" started in 1985 and ended in 1991.

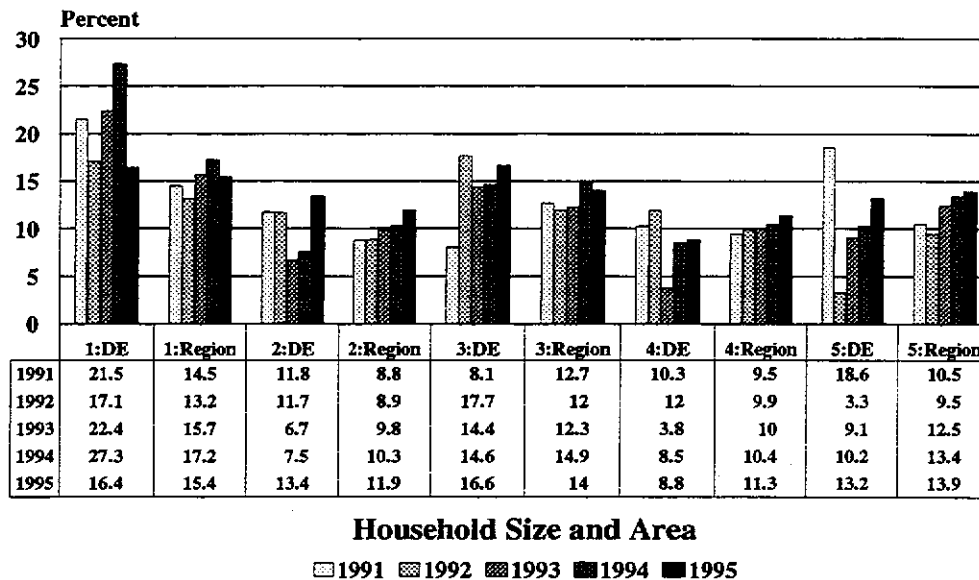
Net migration, which is the result of persons moving into Delaware less persons moving out of Delaware, is clearly the volatile component of the growth picture. It has moved from net out-migration in 1982 of -2000 to a high of +8000 net in-migration at the peak of the economic cycle. It then fell during the recession years of the early 1990s and today accounts for slightly more than half of all population growth. From these data, it is easy to see that Delaware's population growth is heavily influenced by local labor market conditions. Delaware's economy has consistently produced unemployment rates below those for the nation and region and has continued to generate new jobs sufficient to attract net in-migration. The characteristics of those jobs, in particular their health benefits, can and have affected coverage rates in Delaware. The types of jobs which have been created are also much more likely to induce people to move to Delaware.

Household Composition

The size and structure of the households, within which individuals live, has much to do with the probability of having health care coverage. Each of the variables addressed in this section which include household size, marital status, and relationship to head of household give a slightly different slant on the problem. Figure 3-3 below, contains information about the percentage of uninsured in relation to household size within Delaware and the region. The most disadvantaged group is the single person household. The percentage of uninsured is 5% above the proportions for most of the other categories. Single person households also fare somewhat worse in Delaware than in the region. Those individuals may be somewhat disadvantaged since there is no second worker in the household to share the risk of losing coverage. They are also more likely to be a younger person

at the low-end of the life cycle of earnings and are more likely to work in a job without coverage. Of course, the rate is reduced somewhat by older persons living alone who are covered by Medicare.

Figure 3-3
Percent of Persons without Health Insurance
by Household Size and Area



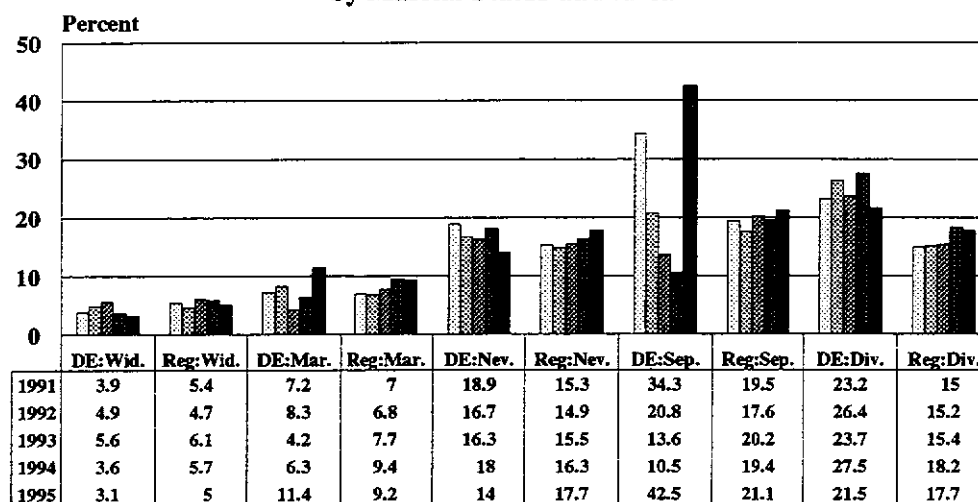
Source: Center for Applied Demography and Survey Research, University of Delaware
US Bureau of Census Current Population Survey, March 1991-1995

Two and four person households were least likely to report lacking health coverage. The two person household has a high probability of being a married couple with two incomes. The four person household is also likely to have two working adults within it. The three person household is a mixed picture since it is likely to consist of a single parent with two minor children and the risk of being without coverage rises. Overall the relationship between household size and the lack of health insurance coverage in Delaware tracks well with that of the region.

Marital status is closely linked to household size and composition. This relationship can be easily seen in Figure 3-4 below. For instance, the lowest rates observed, under 5%, are reported by the widowed. This is expected since the largest majority of this group qualify for Medicare. Thus, age may have more to do with their low insurance rate than marital status. Married people have the next lowest rate, under 10%. Married couples, with or without children, usually have two chances to obtain coverage. That may not be true if one spouse is not in the labor force or only works part-

time. Still, the probabilities of having health insurance increases as the household is more likely to be protected against the loss of coverage during times when one or the other is unemployed.

Figure 3-4
Percent of Persons without Health Insurance
by Marital Status and Area



Marital Status and Area

□ 1991 ▨ 1992 ▩ 1993 ■ 1994 ■ 1995

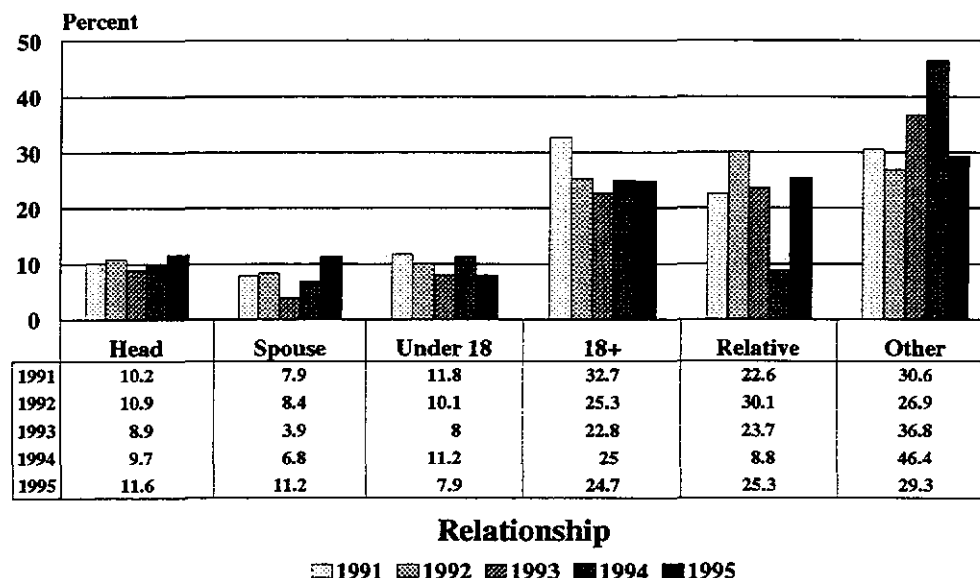
Source: Center for Applied Demography and Survey Research, University of Delaware
US Bureau of Census Current Population Survey, March 1991-1995

The “never married” category is heavily populated by younger adults who, as will be explained later, are less likely to have coverage. For this reason, their risk of being uninsured is roughly twice that of a married person.

The last two groups, which must generally be considered to be one adult households, are interesting for different reasons. First, the “separated” group in Delaware is quite volatile, however on the average the risk is higher than for the younger, “never married” category. This group is typically a transitional one and the person will probably move on to the divorced category. The separated person’s lack of coverage is less than the divorced person because some may be able to legally retain coverage until a final disposition of the marriage is reached. Once the person is divorced, the probability of having coverage will depend in large part on the person’s labor force status. It should be kept in mind that a significant number of people in this category are making major transitions and may suffer significant income losses. Interestingly, Delawareans in this

category are significantly worse off than their regional counterparts. Given the similarity in all of the other categories, this difference does stand out, although it is not at all clear why there should be such a difference.

Figure 3-5
Percent of Persons without Health Insurance in Delaware
by Relationship to Head



Source: Center for Applied Demography and Survey Research, University of Delaware
US Bureau of Census Current Population Survey, March 1991-1995

The final demographic variable examined is relationship to the head of household. Figure 3-5 above depicts its association with the risk of being without health insurance. There are, once again, two distinct groupings. First, there are the typical adults and minor children whose risk levels are around 10%. The head group also includes all of those single person households whose risks were also elevated. This is the reason why the spouse group has about a 2% less risk of being without health insurance. Minor children are dependent on the adult(s) health insurance coverage and there may be either one or two adults in the household. Thus, the risk will always be higher than that for the spouse group where there must be two married adults in the household.

The second major grouping includes adult offspring who are living at their parent's home, relatives or non-related persons. The risk level for all three groups is more than twice that of the first group. With the exception of full-time students who still might be covered by their parents

insurance, all will require health insurance through some other means. The fact that they are adults living in a household where they are neither the head or spouse in the household suggests that they are less likely to be active labor force participants.

Taken together these demographic variables point in the same direction. Does the person have multiple opportunities to obtain health insurance coverage? For instance, households containing two married adults reduces the risk not only for themselves but also for any minor children. Unfortunately, demographic trends do not favor this model. First, from 1980 to 1990 the number of single person households rose from 21% of all households to 23% and is continuing to grow. Second, those living in non-family households rose from 11% in 1980 to 13% in 1990. The number of married couple households with or without children has fallen from 61% in 1980 to 57% in 1990. Finally, the number of children under the age of 18 living with only one parent has risen from 19% to 21% over the decade. None of these trends favor reducing the risk of being without health insurance coverage and it is unlikely that those trends will be easily reversed.

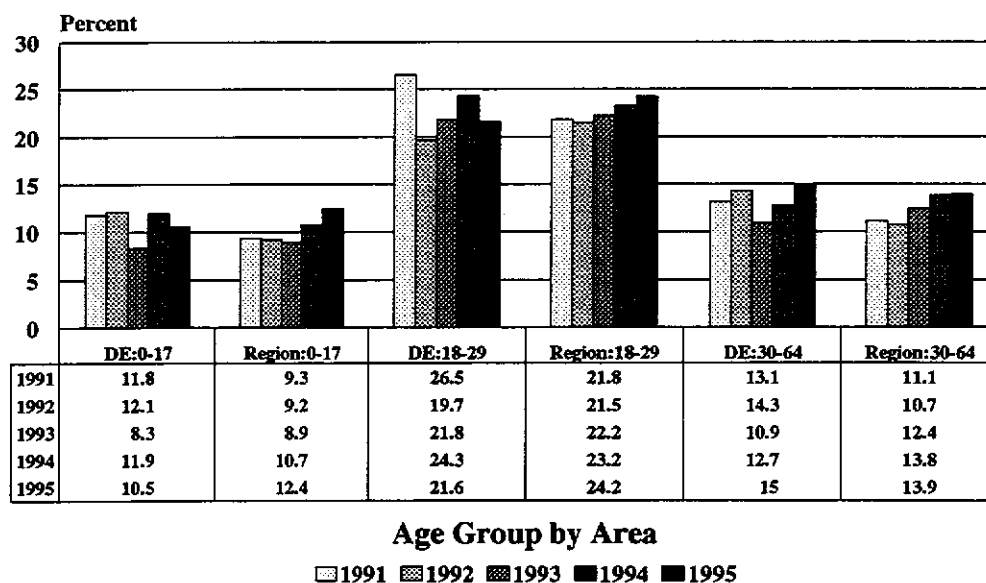
Age Structure

By-in-large, age appears to be a factor which influences the probability that a person has health coverage. The most obvious example which can be used to support this is the relationship between age and one's eligibility to qualify for Medicare (i.e. the person is 65 years old or older). Thus, the question for that age group must focus on the degree of coverage and not on its existence.

Because the majority of persons 65 years or older have access to health coverage, the percentage of persons without health insurance coverage for the other age groups is found in Figure 3-6 below. In both Delaware and the region, dependent children, those under the age of 18, have the lowest risk of being uninsured. Only about 10% of them are estimated to lack health coverage. Their uninsured percentage rate is somewhat higher than it was in Figure 3-5, which imposed the additional requirement that they also live in and were related to the head of household. Thus, it should be remembered that the following graph contains information for all children, regardless of their living arrangement.

For a variety of reasons, persons ages 18-29 were most likely to report being uninsured. In both the state and the region, the risk of not having health coverage for this group exceeds 20% and there is no sign of improvement in the time series. This group suffers from a multitude of disadvantages. First, they are more likely to be unmarried. Second, they are more likely to hold lower paying jobs which provide no health benefits. Third, because their income levels are generally lower, it is often difficult for them to purchase private insurance. Fourth, since they are generally healthy, it may seem reasonable not to expend the additional resources needed to purchase health coverage. As this group ages into the next group, aged 30-64, the risk begins to fall as those disadvantages recede.

Figure 3-6
Percent of Persons without Health Insurance
by Age Group and Area



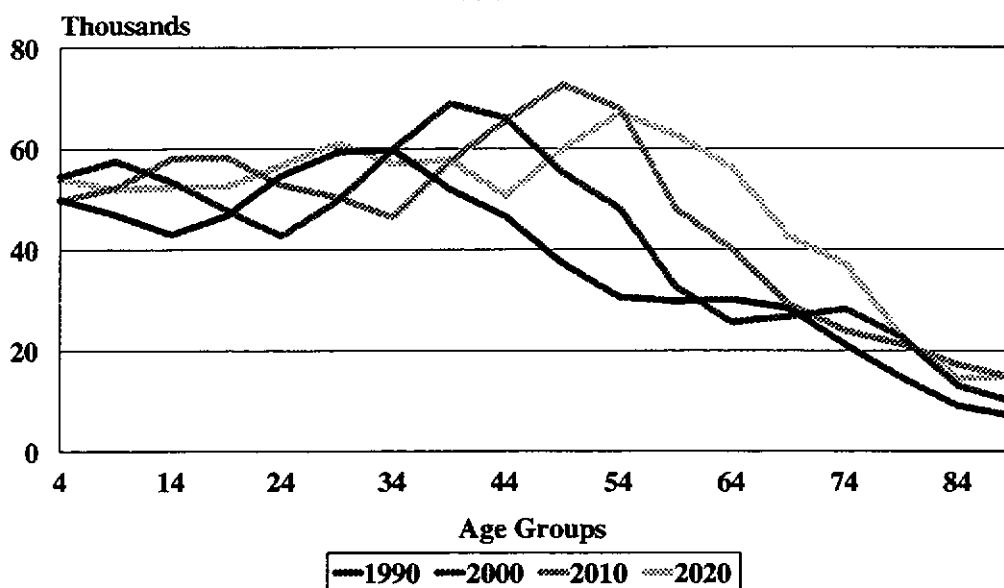
Source: Center for Applied Demography and Survey Research, University of Delaware
US Bureau of Census Current Population Survey, March 1991-1995

Given these very predictable differences, the way the age distribution changes over time will have a definite impact on the overall level of health insurance coverage in Delaware. This progression is found in Figure 3-7 below. Each line on the graph represents a different point in time. For example, the darkest line represents 1990, while the lightest represents the expected age distribution in 2020. In 1990, the largest age group is 30-34 and contains about 60,000 persons.

By the year 2000, however, the largest group is 35-39. Their ranks are being swollen by net immigration, which disproportionately affects those under the age of 50.

There are several observations to be made about Figure 3-7 below. First, the number of persons 20-24 is lowest in the year 2000 but is then projected to increase steadily for more than a decade. The falling numbers in this group are part of the reason Delaware's health coverage rates have been stable. As the proportion of this group begins to increase again, however, the tendency will be for overall risk to rise. Second, as the "baby boomers" which represent the bulge in the age distribution get older, their overall risk level should decrease. The real issue, therefore, will be economic conditions in the state and in the nation as this huge group reaches what would normally

Figure 3-7
Age Structure in Delaware
1990-2020



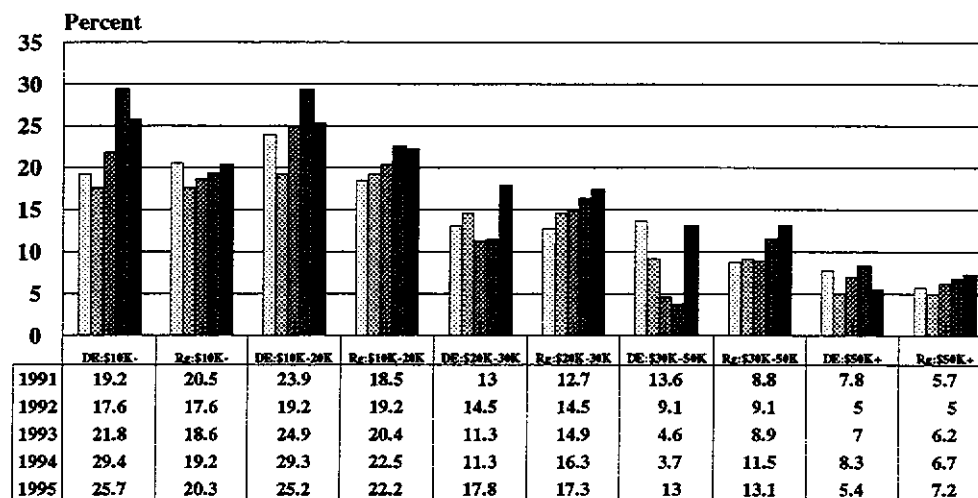
Source: Center for Applied Demography and Survey Research, University of Delaware

be their peak earning years. Will they be the victims of another round of downsizing? Will they become frustrated with the lack of advancement since there are so many competing for the same jobs? Will they turn to self-employment as a means of increasing their standard of living? All of these are unknown at this point but are likely to have an affect either positive or negative on health insurance coverage.

Income and Education

Economic well-being has two different affects on the probability of having health insurance coverage. At the low end of the income spectrum, there are programs such as Medicaid available as part of the social safety net. Individuals at the high end of the income spectrum have the assets and income that allow them to be unconcerned about insuring their health. They can afford to take the risk. The biggest problem arises among those that do not qualify for a government program, cannot afford insurance, and certainly cannot pay the medical bills if their luck runs out. Figure 3-8 below provides data with respect to annual income and lack of health insurance.

Figure 3-8
Percent of Persons without Health Insurance
by Household Income and Area



Income Level and Area

1991 1992 1993 1994 1995

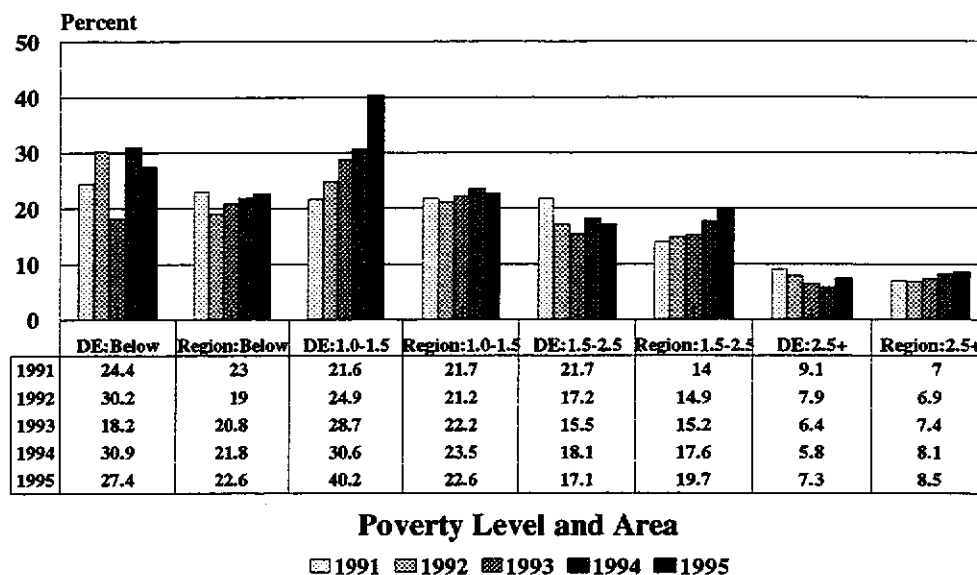
Source: Center for Applied Demography and Survey Research, University of Delaware
US Bureau of Census Current Population Survey, March 1991-1995

Persons whose annual income is under \$20,000 per year have a risk of about 1 in 4 of being without health insurance coverage. In the two lower income categories, Delaware seems to average about 5% higher than the region as a whole. As income increases, the percentage of persons without coverage falls. At the \$50,000 and over level, about 6% or 1 in 18 are without health insurance and some of those may have sufficient assets to warrant self-insurance. This

strong relationship undoubtedly represents the fact that health insurance as a percentage of total compensation falls as income rises and thus holders of those jobs are likely to be given those benefits.

Poverty is a function of two variables, household income and household size. It is poverty status that tends to be used to define who is eligible for government health programs. In Figure 3-9 below data are found relating poverty to the lack of health insurance coverage. There seems to be very little difference between those below poverty and the near poverty group, which is between 1.0 and 1.5 of the poverty level. The affect of Medicaid serves to keep the rate somewhat lower for those below poverty than it would be in the absence of the program. Some people in the second group also qualify for Medicaid, but the proportion is smaller than in the below poverty group.

Figure 3-9
Percent of Persons without Health Insurance
by Poverty Level and Area



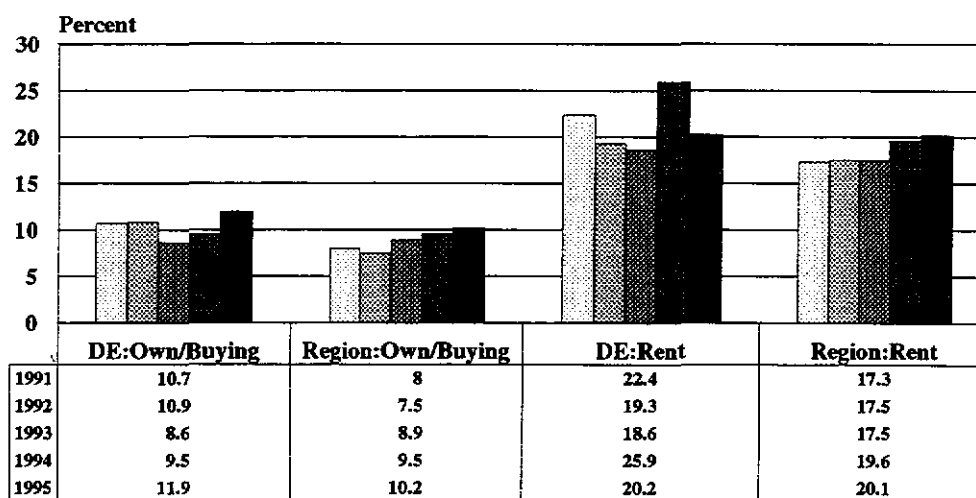
Source: Center for Applied Demography and Survey Research, University of Delaware
US Bureau of Census Current Population Survey, March 1991-1995

Overall, the percentage of persons without health insurance falls as the distance from the below poverty group increases. The group with the lowest level of risk appears to be experienced by households with incomes around \$40,000, the median household income in Delaware. Finally, the rates in Delaware are roughly comparable to those in the region. However, there does seem to

be a steady increase in the proportion of persons in the near poverty group in Delaware, while the regional proportion has remained consistently lower.

Another measure of economic well-being is the accumulation of assets. One measure of that accumulation is owning your own home. Those results are found in Figure 3-10 below. The graph shows that for renters, the percentage of those without coverage is twice the rate for those who own or are buying their principal place of residence. That pattern is confirmed by the results for the region which are quite comparable to those reported for Delaware. Certainly, this finding is not unexpected given that renters tend to be younger and have lower incomes, both factors that are correlated with higher risk. They are also less likely to have the assets to continue their insurance privately if there is an interruption in coverage.

Figure 3-10
Percent of Persons without Health Insurance
by Home Ownership and Area

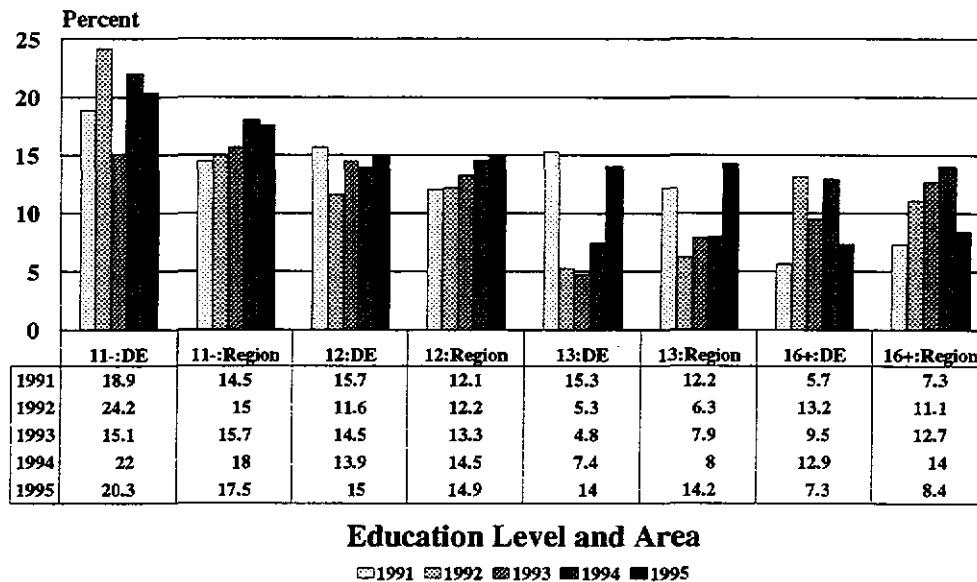


Home Ownership by Area

1991 1992 1993 1994 1995

Source: Center for Applied Demography and Survey Research, University of Delaware
US Bureau of Census Current Population Survey, March 1991-1995

Figure 3-11
Percent of Persons without Health Insurance
by Level of Education and Area



Source: Center for Applied Demography and Survey Research, University of Delaware
 US Bureau of Census Current Population Survey, March 1991-1995

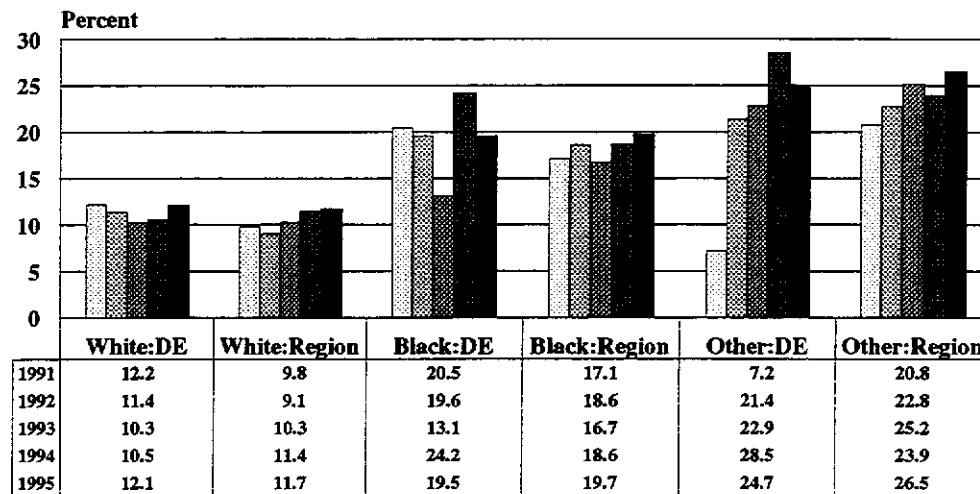
The final figure in this section, Figure 3-11 above, relates the educational level of the respondent and their health insurance status. Education could have two significant effects on health insurance coverage. First, it is possible that more educated people are better able to understand the advantages and disadvantages of health coverage and therefore, make better decisions. More likely, however, education is having an indirect effect with higher education being correlated with higher incomes and better jobs/benefits.

Coverage rates increase significantly as educational level increases. Predictably, those without a high school diploma are the most at risk of being without health insurance. Once again, it appears that the most disadvantaged group fares worse in Delaware than in the region. The uninsured rate falls by 5% for a high school diploma and another 5% for post high school education. There are no further reductions associated with additional years of education, however.

Race and Hispanic Origin

Health insurance coverage or lack thereof within sub-groups of the general population is shown in Figure 3-12 below to illustrate the impact of all the underlying contributing variables which determine who has health insurance coverage and who does not. Most of the research in this

Figure 3-12
Percent of Persons without Health Insurance
by Race and Area



Race and Area

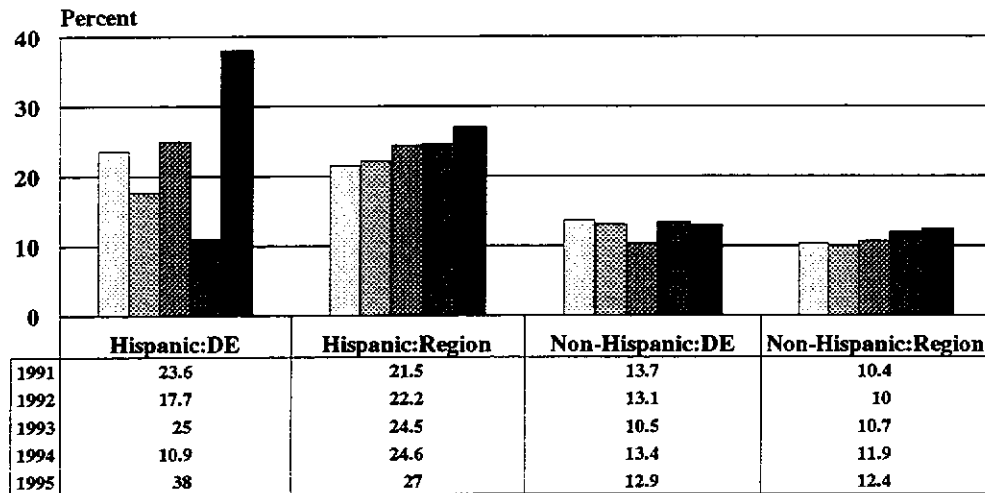
■ 1991 ■ 1992 ■ 1993 ■ 1994 ■ 1995

Source: Center for Applied Demography and Survey Research, University of Delaware
US Bureau of Census Current Population Survey, March 1991-1995

area indicates that there are significant differences, but do not report any divergence in cultural or risk-taking characteristics that would explain those differences. Thus, the differences are the result of other variables which themselves differ within these segments of the population.

There are significant differences between the three racial groups. Those respondents who classify themselves as black are nearly twice as likely to be without health insurance coverage as those that report being white. The "other" category includes primarily American Indians, Asians, those of mixed race, and those who do not find any of the categories listed to be appropriate. This group has an even higher risk, almost 5% higher, than blacks of being without health coverage. The rates throughout are consistent between Delaware and the larger region.

Figure 3-13
Percent of Persons without Health Insurance
by Hispanic Origin and Area



Hispanic Origin by Area

□ 1991 ▒ 1992 ▓ 1993 ■ 1994 ■ 1995

Source: Center for Applied Demography and Survey Research, University of Delaware
 US Bureau of Census Current Population Survey, March 1991-1995

The results for Hispanic respondents are shown in Figure 13-3 above. The percentages within Delaware are quite volatile because of the small sample size, but on average during the period, slightly more than 20% of those respondents who classify themselves as being of Hispanic origin are without health insurance coverage. This rate is almost double that for non-Hispanics. The regional results are more stable and are at similar levels to the period average for Delaware.

Summary

In this section as well as in its predecessor, the relationship between a number of factors and health insurance coverage has been examined. During earlier discussion, it became clear that many of the variables could be affecting coverage, either directly or indirectly. In addition, the impact of each variable was shown without controlling for the influences of many other factors. To obtain a more realistic view of the effect of each variable, a linear probability model was built that considers all relevant variables simultaneously.

The single most important variable controlling for all others is poverty status, and the results here are somewhat clearer than in the earlier presentation. For instance, those between the poverty line and 1.5 times the poverty line are 40% less likely to have coverage, while those below the poverty line are only 29% less likely to be without insurance. As the poverty level increases to the 1.5-2.5 the deficit is only 11%. All of these measurements are made relative to a poverty level of 2.5 and above. Government programs are clearly having an impact at the lowest levels.

The second most important variables controlling for all others were household composition and household size. Children under the age of 18 enjoy a 3% advantage, while those 18 and over living with their parent(s) have a 20% disadvantage. All others in the household, namely relatives and other non-relatives are at a 15% disadvantage relative to a head/spouse. Household sizes of one and three relative to all other sizes have 4% and 2% deficits respectively.

Marital status does make a difference and the results are somewhat different when controlling for all other variables. Widowed persons still have the advantage with a 15% edge. But the never married group also has a positive 7% coefficient. What appeared to be a negative factor in the descriptive analysis becomes positive as other variables enter the equation. Separated persons have a 20% disadvantage and the negative effect associated with being divorced was probably absorbed by the poverty variable.

Among the remaining variables, those with less than a high school diploma carry a 5% penalty and those with a college degree have a 2% advantage. The self-employed are 25% less likely to have health insurance coverage and those in the private sector have a 5% deficit. Both are interpreted with respect to government employment. Those classifying themselves as "other" with respect to race have a 5% deficit relative to whites and there is only a 0.5% difference between blacks and whites. Those who are of Hispanic origin are 20% less likely to have health coverage than non-Hispanics.

Conclusion

Those lacking health care coverage in Delaware are a diverse group. This is summarized by the list below:

**Figure 4-1
Who are the 96,000 Uninsured?**

- **84% are over the age of 17**
- **53% are male**
- **23% are black**
- **73% are white**
- **8% are Hispanic**
- **67% own or are buying their home**
- **20% live alone**
- **73% are above the poverty line**
- **15% make over \$50,000**
- **63% are single**
- **64% are working**
- **10% are self-employed**

This list illustrates both the complexity of the task and the need to use targeted strategies. Since 16% of the uninsured are children, the efforts to increase the coverage of Medicaid and the clinics offered by the A.I. DuPont Institute are likely to be effective. There are, however, still likely to be children who never qualify under Medicaid because their parents are above the income limits although they may still experience periodic unemployment.

Since 64% of the uninsured are working, legislative initiatives that encourage employer offered health coverage will have some effect. It's not clear at this point in time if any plan can help the low wage earner or part-time employee, since the cost of the insurance might represent a huge increase in labor costs. The working poor, in particular those in the 1.0-1.5 of the poverty line, are of particular concern.

Overall, Delaware seems to be doing better than the region in keeping the percentage of uninsured down. However, the longer term demographics of the population and the labor market suggest that this will probably be a continuing challenge.