

DRAFT

2004 Virginia Health Care Insurance and Access Survey: Select Results

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Executive Summary

Conducted by the Virginia Department of Health (VDH) with a grant from the U.S. Health Resources and Services Administration State Planning Grants (SPG) Program, the 2004 Virginia Health Care Insurance and Access Survey is the most comprehensive survey on health insurance ever fielded in Virginia. With these survey data, Virginia will better understand the characteristics of the uninsured, thus enhancing the focus of its programs, policies, and outreach activities, as well as increasing its ability to identify currently uninsured individuals who are eligible for private or public health insurance coverage. The information from the survey can also be used as a baseline for monitoring changes over time.

This report presents findings from the 2004 Virginia Health Care Insurance and Access Survey, conducted between July 2004 and November 2004. This survey estimates that 8.9% of all Virginia residents were uninsured (approximately 639,618 individuals). For children ages 0-18, the uninsurance rate is 6.4%; and for adults ages 19-64, the rate was 11.4%.¹

More than 45 million Americans in 2003 were uninsured and these numbers are increasing with the downturn in the nation's economy.² Recent data from the US Census indicate that the number of uninsured Americans increased by 1.0 million people nationally from 2002 to 2003—an increase from 15.2% to 15.6% of the population. The problems faced by the uninsured present one of America's biggest health challenges. Relative to their insured counterparts, the uninsured are more likely to miss recommended health screenings, have poor health outcomes, and lack access to important prescription medications. Enumerating the uninsured is a necessary first step in crafting options to extend health insurance coverage to those who do not have it.

While there are several national sources of data on the uninsured, states conduct their own surveys with larger state-level sample sizes to provide better estimates and more detailed information about the health insurance status of subpopulations.³ For example, this survey oversampled low-income households to obtain better estimates of coverage for this high-risk group. States also conduct their own surveys to provide state analysts an opportunity to work "hands-on" with the micro-data. This facilitates state-specific policy development, including simulation of health insurance coverage policy options, and marketing and outreach of public programs.

¹ These are point-in-time estimates

² DeNavas-Walt, Carmen, Bernadette D. Proctor, and Robert J. Mills, U.S. Census Bureau, Current Population Reports, P60-226, Income, Poverty, and Health Insurance Coverage in the United States: 2003, U.S. Government Printing Office, Washington, DC, 2004.

³ Blewett, L., Good, M.B., Call, K.T., and Davern, M. (2004). Monitoring the Uninsured: A State Policy Perspective. *Journal of Health Politics, Policy and Law*, 29(1): 107-145.

The results of the Virginia Health Care Insurance and Access Survey identified the following groupings, or sub-populations, as having disproportionately high rates of uninsurance:

- 19-24 year olds
- Individuals living below 150% of the Federal Poverty Level (FPL)
- Single adults
- Individuals with less than a high school education
- Unemployed individuals; and
- Self-employed, part-time, temporary and/or seasonal workers.

These sub-populations will be important to consider in the development of coverage expansion options.

The survey also captured several important observations that will be critical in developing policies to increase overall health insurance coverage:

- Several Virginians expressed concern over the stability of their health insurance coverage and access to health services. Over half of those with public coverage and over a third of those with private coverage said they were worried that over the next year they will no longer be able to afford health insurance, medical care, and/or prescription drugs.
- The two main reasons uninsured workers do not have employer-sponsored coverage are they 'don't qualify' (35.8%) and coverage is 'too expensive' (28.9%). These results highlight some of the barriers preventing low-income, part-time and temporary workers from obtaining employer-sponsored health insurance benefits.
- In comparison to those with private or public health insurance, the uninsured were more likely to report the ER as their usual source of care. This is of concern because the ER is a high cost and inefficient method of obtaining health care.

Finally, a number of themes emerged around the issue of employer-based insurance coverage. In comparing workers who are offered coverage to those who are not, the survey showed that:

- Workers in larger firms were more likely than those in smaller firms to be offered coverage.
- Higher wage workers were more likely than lower wage workers firms to be offered coverage.
- Workers in the retail, agriculture, and personal service sectors were the least likely to be offered health insurance coverage.

The combination of falling state revenues, growing health care expenditures, and increased unemployment suggests that efforts to increase health insurance coverage in Virginia will be difficult and that pursuing minor incremental strategies may prove advantageous, at least in the short term. As the economic situation improves, the task will become more manageable. In the meantime, with the results of the 2004 Virginia Health Care Insurance and Access Survey, provide policy makers with data critical to informing health policy in Virginia.

Chapter 1

Introduction

Why was a survey of Virginia insurance coverage conducted?

In 2000, the Health Resources and Services Administration (HRSA) in the U.S. Department of Health and Human Services issued State Planning Grants (SPG) to eleven states to help them determine rates of health insurance at the state level and develop strategies to increase access to coverage. In 2001, an additional nine states were funded and in 2002, eleven states and one U.S. territory received HRSA SPG grants. In 2003, ten states were awarded HRSA SPG grants; Virginia was one of those states. The aims of the Virginia SPG were to measure and describe the uninsured in Virginia, and to develop and evaluate a wide range of policy options to expand health insurance coverage and assure adequate safety net structures for citizens of Virginia. The in-depth quantitative data collection and analysis conducted under the 2004 Virginia SPG will equip policy makers to do so.

Why is health insurance important?

There are a host of reasons for concern about access to health insurance and the many problems associated with being uninsured. Understanding the characteristics of both the uninsured and the insured allows policy makers and health care providers to make informed decisions to better serve the public and anticipate the needs of communities.

Gaining a better understanding of the characteristics of the uninsured is critical to improving access to health care. Uninsured adults and children are less likely to have a regular physician or source of medical care, and they are less likely to receive preventive health care services.⁴ In addition, the uninsured often delay seeking medical care when they are sick. As a result, many serious medical conditions are identified late and, consequently, are more costly to treat. In addition, uninsured persons have higher rates of avoidable hospitalization and higher rates of emergency room use – a high-cost method of receiving care.⁵ Recent research suggests that providing health coverage to the uninsured may result in cost savings by decreasing hospital expenditures on uncompensated care.⁶

Studying health insurance coverage allows analysts to identify trends such as the rising costs of health care and health insurance, and reductions in employer-sponsored health insurance. According to a survey by the Employee Benefit Research Institute, between 2001 and 2002

⁴ Brown, et. al. Monitoring the Consequences of Uninsurance: A Review of Methodologies. *Medical Care Research and Review*. 1998; 55:177-210.

⁵ Ahern M, McCoy HV. Emergency Room Admissions: Changes During the Financial Tightening of the 1980s. *Inquiry*. 1992; 26:67-79.

⁶ Blewett L, et al. Hospital Provision of Uncompensated Care and Public Program Enrollment. *Medical Care Research and Review*. 2003; 60:509-527.

19% of small employers offering health benefits made changes to their health plans – 65% increased deductibles and co-pays, 30% increased the employee share of premiums, and 29% reduced benefits.⁷ Erosion of employer-sponsored coverage not only affects individual employees, but it also affects the overall health and productivity of the businesses, the viability of the health care system, and society at large.

Finally, inadequate health insurance coverage can negatively affect other areas of a person's life beyond physical health. For example, research shows that the uninsured are three times as likely as the insured to have difficulty paying for basic costs of living such as food, rent, heating or electric bills.⁸ Not having insurance strains resources that are needed for other areas in one's life.

Who conducted the 2004 Virginia Health Care Insurance and Access Survey?

Clearwater Research, Inc. conducted the field survey for this study. Clearwater has extensive state survey experience, having fielded the Behavioral Risk Factor Surveillance System for nine states, as well as studies with ten different state departments of health. The State Health Access Data Assistance Center (SHADAC) completed the data analysis and worked with the Virginia Department of Health on interpreting the results. The household survey instrument used for the data collection – the Coordinated State Coverage Survey (CSCS) – was developed by SHADAC and tailored to the special needs of Virginia.

The 2004 Virginia Health Care Insurance and Access Survey was a random digit dial (RDD) telephone survey. The sample design included a stratum for each of the five health service regions of the state and a stratum for low-income households. Clearwater Research, Inc. completed interviews with 4,041 people from the state with 558 completes in Health Service Region 1 (Northwest), 845 completes in Health Service Region 2 (North), 1,102 completes in Health Service Region 3 (Southwest), 649 completes in Health Service Region 4 (Central), 887 completes in Health Service Region 5 (East). A detailed description of sampling and weighting methodologies employed is provided in Appendix A.

⁷Employee Benefit Research Institute. *Small Employers and Health Benefits: Findings from the 2002 Small Employer Health Benefits Survey*. *EBRI Issue Brief*. January 2003. Accessed at www.ebri.org/findings/health_findings.htm September 07, 2004.

⁸ Lambrew, Jeanne. *How the Slowing U.S. Economy Threatens Employer-Based Health Insurance*. New York: The Commonwealth Fund. November 2001. Accessed at www.cmf.org September 09, 2004.

Chapter 2

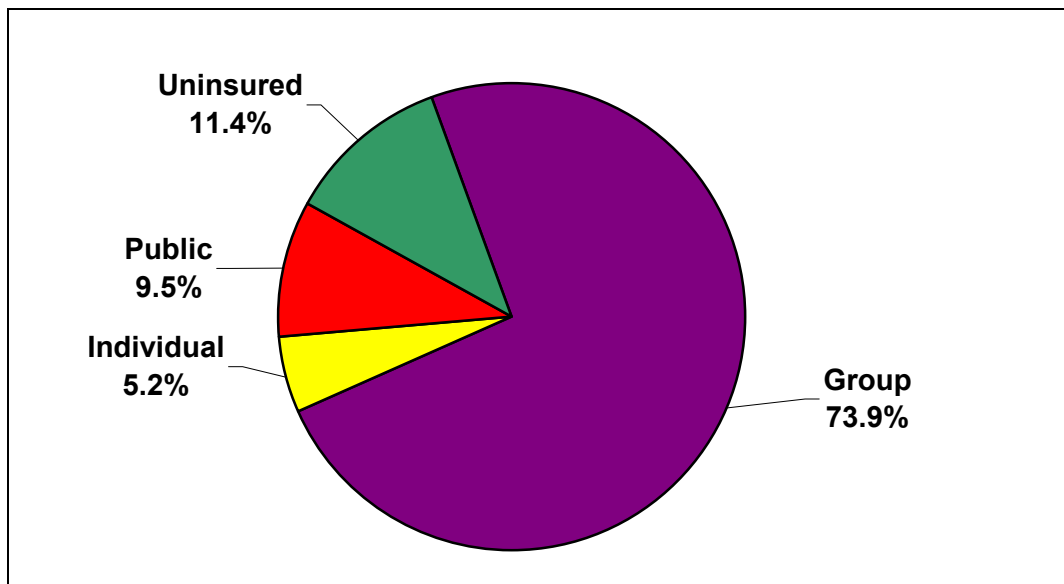
Uninsured Individuals and Families

This chapter examines the overall level of uninsurance in Virginia and presents detailed information on the characteristics of Virginia's uninsured population. Several characteristics of Virginia's population were analyzed, in addition to basic health insurance coverage information. Analyses were performed to determine uninsurance rates of subpopulations grouped by age, race/ethnicity, employment status, household income, education, marital status, self-identified health status, and geographic location. Further analyses assessed whether certain groups are disproportionately uninsured compared to the population as a whole.

What is the overall level of uninsurance in Virginia?

Overall, 11.4% of adults, ages 19-64, in Virginia were uninsured according to the 2004 Virginia Health Care Insurance and Access Survey. The sources of coverage among adults are displayed in Figure 2-1. The majority of adults (73.9%) in Virginia were covered by a group health insurance plan. Virginia's public programs covered 9.5% of the adult population. An additional 5.2% purchased private individual insurance.

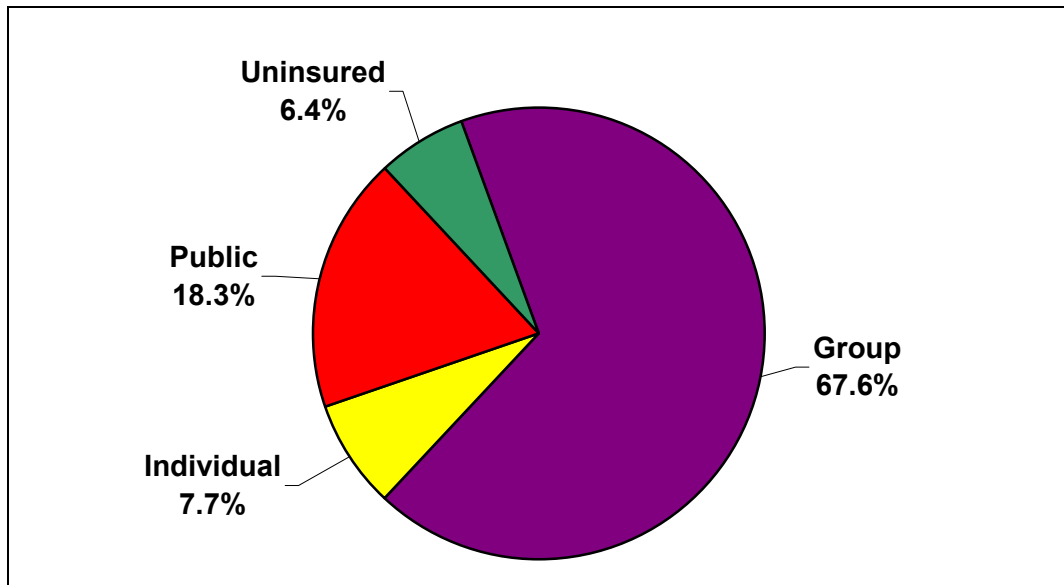
Figure 2-1. Sources of Health Insurance in Virginia, 2004 (Adults 19-64 years)



Total weighted count = 4,495,003

In contrast to the adult population, 6.4% of children ages 0-18 were uninsured. The sources of coverage among children are displayed in Figure 2-2. A majority of children (67.6%) had group coverage and a small proportion had individual coverage (7.7%). The rate of public coverage among children was 18.3%.

Figure 2-2. Sources of Health Insurance in Virginia, 2004 (Children 0-18 years)



Total weighted count = 1,879,151

Estimated rates of uninsurance vary with the definition of “uninsured” that is used. Four general timeframes are commonly used in measuring coverage – respondents are asked about their insurance status: (1) at the time of the survey or point-in-time, (2) over an entire year, (3) for a portion of the year, or (4) at any single point during the year.

Table 2-1 displays the commonly used time references and the corresponding range of rates of health insurance coverage for Virginia, based on the 2004 survey. The point-in-time measurement is the most commonly used across the surveys. This approach minimizes concerns about misclassification, which typically occurs when a respondent is required to think back in time. People who are uninsured at “some point during the year” will be the largest rate, as the numerator comprises the number of full- and part-year uninsured, in addition to anyone who was uninsured for *any* length of time during the period covered by the survey. ***Throughout this report, unless otherwise indicated, the analyses refer to the “point-in-time” uninsured.***

Table 2-1. Alternative Definitions of Insurance Rates in Virginia, 2004⁹

Definition	Percentage	Weighted Count
Point-in-Time	8.9%	639,618
Uninsured All Year	6.3%	453,029
Uninsured Part Year	5.2%	371,739
Uninsured at Some Point During Year	11.5%	824,768

⁹ Standard errors are available for all tables and figures in Appendix B.

What are the characteristics of the uninsured in Virginia?

Table 2-2 displays Virginia's uninsurance rates among select population groupings. There was no significant difference in the rate of coverage among males and females (9.9% and 8.0%, respectively). Adults, ages 19-24 had the highest rate of uninsurance at 25.5%, compared to other age groups.

Blacks and Hispanics had significantly higher rates of uninsurance (11.1% and 27.4%, respectively) compared to Whites. In addition, coverage was disparate across levels of income. The rates of uninsurance across all income categories at or below 300% FPL were significantly higher than those with incomes above 301% FPL (2.4%).

Rates of uninsurance decrease as level of education increases, with the rate of uninsurance being 23.4% among those who did not complete high school in comparison to 1.7% among those with a postgraduate degree.

Residents of Virginia who had never married, were living with a partner, were divorced or were separated had higher rates of uninsurance than people who were married.

Self-perceived health status was also related to insurance coverage. Those reporting poor health status (12.8%) were uninsured at a rate over twice that of those reporting excellent health status (5.0%). Chronically ill individuals were less likely to be uninsured than those without chronic conditions, with rates at 6.7% and 10.1%, respectively.

Unlike the national trend, Virginians living in non-Metropolitan Statistical Area (MSA)¹⁰ locations were significantly less likely to be uninsured (8.4%) compared to those living in MSA locations (12.0%).

¹⁰ MSA stands for Metropolitan Statistical Area, which is a Census Bureau-defined urbanized area of at least 50,000 inhabitants with a total metropolitan population of at least 100,000. Additional contiguous counties are included in the MSA if they meet certain requirements of commuting to the central counties and other selected requirements of metropolitan character (such as population density and percent urban).

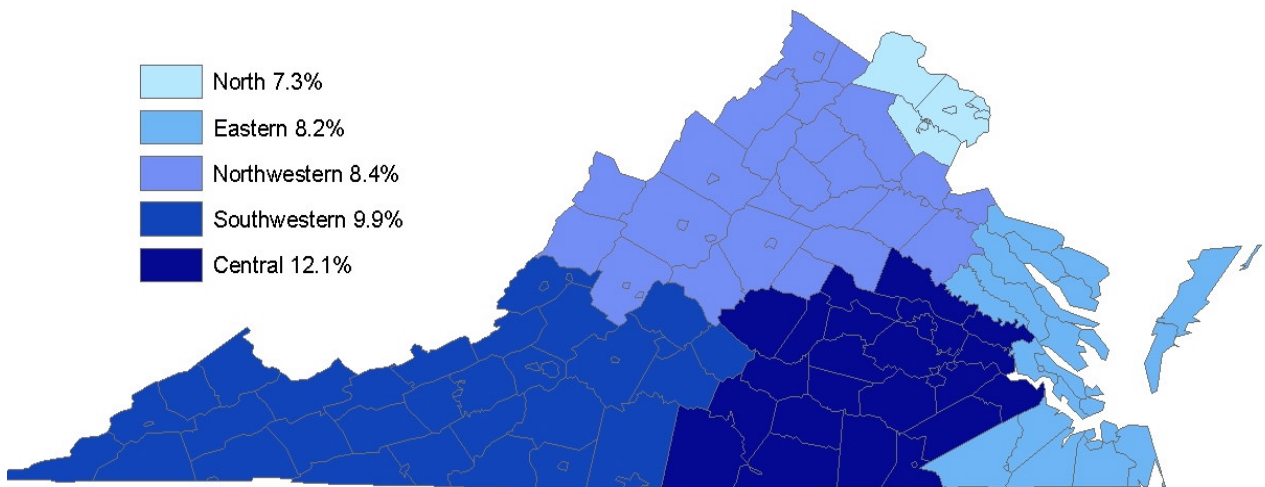
Table 2-2. Virginia's Uninsurance Rates by Selected Population Groups

Population Group	Weighted Percent	Standard Error	Weighted Count ^b	*p<.05 **p<.01 ***p<.001
Total Population	8.9		639,618	
Gender				
Male	9.9	(0.97)	344,996	
Female	8.0	(0.76)	294,621	
Age				
0-5 (reference group)	6.4	(1.85)	39,130	
6-18	6.5	(1.22)	81,919	
19-24	25.5	(3.88)	143,972	***
25-34	14.7	(2.40)	128,965	**
35-54	7.9	(0.89)	166,667	
55-64	7.6	(1.22)	71,485	
65+	1.0	(0.57)	7,479	**
Race/Ethnicity^a				
White (reference group)	6.4	(0.53)	304,322	
Black	11.1	(1.67)	149,433	**
Hispanic	27.4	(4.78)	108,440	***
Asian	8.6	(4.07)	13,382	
American Indian	22.3	(13.35)	6,000	
Mixed	12.1	(3.32)	38,733	
Household Income (%FPL)				
<= 100%	20.3	(2.58)	183,458	***
101-133%	19.0	(3.84)	65,454	***
134-150%	28.8	(6.27)	44,250	***
151-200%	14.8	(2.54)	82,991	***
201-250%	16.1	(3.11)	87,859	***
251-300%	13.6	(2.70)	79,007	***
>300% (reference group)	2.4	(0.37)	96,598	
Level of Education				
Less than HS	23.4	(3.28)	137,459	***
HS graduate	12.3	(1.40)	217,528	***
Some College	9.4	(1.31)	162,732	***
College Graduate	4.2	(0.75)	81,547	**
Postgraduate (reference group)	1.7	(0.56)	16,592	
Marital Status				
Married (reference group)	5.7	(0.61)	270,681	
Living with Partner	16.2	(4.53)	36,038	*
Widowed	6.1	(2.50)	17,317	
Divorced	11.9	(2.13)	59,069	**
Separated	21.7	(5.53)	37,103	**
Never Married	17.4	(2.16)	204,962	***
Health Status				
Excellent (reference group)	5.0	(0.82)	130,182	
Very Good	8.4	(1.09)	177,439	*
Good	12.0	(1.49)	190,937	***
Fair	16.7	(2.76)	96,854	***
Poor	12.8	(3.06)	24,971	*
Disability Status				
All Others	10.1	(0.82)	482,876	**
Chronic Disease (reference group)	6.7	(0.83)	156,742	
Metropolitan Statistical Area (MSA)^d				
MSA (reference group)	12.0	(1.49)	510,751	
Non-MSA	8.4	(0.67)	128,867	*
Health Service Areas				
Northwestern	8.4	(1.45)	79,621	
Northern	7.3	(1.19)	149,900	*
Southwestern	9.9	(1.17)	149,900	
Central (reference group)	12.1	(1.85)	153,460	
Eastern	8.2	(1.16)	140,182	

- a. For those reporting Hispanic ethnicity and some other race, Hispanic was selected as racial classification
- b. Details may not sum to totals because of rounding.
- c. Details do not sum to totals due to missing observations (Weighted percent for missing observations: Race 3.0%; Education 3.7%; Marital status 2.2%; and Health status 2.7%).
- d. MSA stands for Metropolitan Statistical Area, which is a Census Bureau-defined urbanized area of at least 50,000 inhabitants with a total metropolitan population of at least 100,000. Additional contiguous counties are included in the MSA if they meet certain requirements of commuting to the central counties and other selected requirements of metropolitan character (such as population density and percent urban).
- e. Source: 2004 Virginia Health Care Insurance and Access Survey, State Health Access Data Assistance Center

Rates of uninsurance by geographic location are displayed in Figure 2-3. The only significant difference in uninsurance rates was found between the central region that had the highest rate of uninsurance (12.1%) and the north region, which had the lowest rate of uninsurance (7.3%).

Figure 2-3: Uninsurance Rates by Geographic Location, Virginia 2004



As shown in Table 2-3, the survey also explored health coverage among working Virginians ages 19-64. Working Virginians were less likely to be uninsured than those not working (10.2% versus 14.7%).

The survey findings suggest that a worker's likelihood of having health insurance coverage is related to whether they work in the public or private sector. Table 2-3 shows that individuals who worked for the government had lower rates of uninsurance (3.2%) than those who worked for private firms (12.5%) and those who were self-employed (24.9%).

Survey results indicate that the rate of uninsurance among workers with temporary or seasonal jobs was more than twice that of those with permanent positions (24.1% vs. 8.6%). Employer size was also strongly associated with access to health insurance. Workers in firms with more than 100 employees were significantly more likely to have coverage than those in firms with 50 or fewer employees.

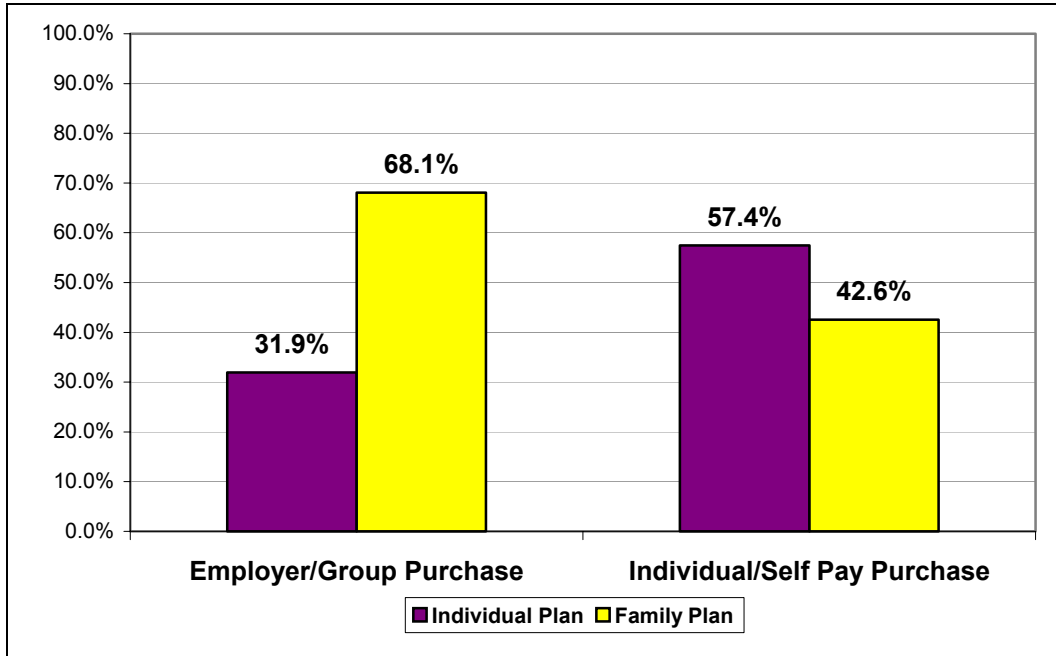
Table 2-3. Uninsurance Rates among Adults (Ages 19-64) by Employment Characteristics, Virginia 2004

	Uninsurance Rate %	Weighted Count	*p<.05 **p<.01 ***p<.001
Employment			
Employed (reference group)	10.2%	338,910	
Not Employed	14.7%	172,178	**
Employment Sector			
Government (reference group)	3.2%	28,217	
Private Company	12.5%	227,696	***
Non-Profit	2.8%	7,222	
Self-Employed	24.9%	62,337	***
Unpaid	.96%	340	
Hours Worked per Week			
<20	21.2%	27,374	
21-35	23.5%	83,355	***
>35 (reference group)	7.9%	221,591	
Type of Job			
Permanent (reference group)	8.6%	262,039	
Temporary/Seasonal	24.1%	64,024	**
Size of Employer			
<11	22.6%	121,479	***
11-50	16.7%	66,272	*
51-100	7.9%	18,806	
101+ (reference group)	4.8%	87,515	
Industry Sector			
Education	4.4%	14,241	
Social Services	12.1%	5,184	
Manufacturing	8.4%	15,113	
Health Care	6.7%	18,451	
Entertainment	0%	0	
Banking	6.5%	10,370	
Transportation	6.7%	14,400	
Professional	7.7%	18,618	
Government (reference group)	1.8%	10,728	
Business	3.7%	3,893	
Construction	19.1%	38,796	***
Retail	16.7%	51,445	***
Agriculture	3.5%	1,520	
Personal Service	32.4%	40,607	***
Other	18.0%	72,848	***

Details do not sum to totals due to missing observations (Weighted percent for missing observations: Employment Sector 3.9%; Hours Worked per Week 1.9 Type of Job 1.9%; Size of Employer 1.9%, and Industry 3.6%).

Survey results show that whether individuals obtained individual or family coverage was influenced by whether they had purchased it through their employers or on their own. Figure 2-4 shows that Virginians who purchased coverage through an employer or group were more likely to have family coverage than individual or self-pay buyers (68.1% vs. 42.6%).

Figure 2-4. Private Coverage Plans among Insured Adults (19-64 years) by Purchaser Type, Virginia 2004



Weighted counts: Employer/Group Purchase = 3,913,209; Individual/Self Pay Purchase=421,346

In addition to providing details on private coverage, the survey captured the proportion of Virginians covered by public health programs. Table 2-4 shows the percentage of adults enrolled in Medicare, Medicaid/SCHIP and CHAMPUS, by age group.

Table 2-4. Percentage of Virginians Enrolled in Public Health Coverage, 2004

Weighted Count	Ages 0-18 (1,879,151)	Ages 19+ (5,271,564)	Total Population (7,150,714)
Public Program¹¹			
Medicare	5.4%	19.0%	15.4%
Medicaid/SCHIP	14.4%	3.7%	6.7%
CHAMPUS	11.3%	10.7%	10.9%

What population groupings are particularly important in Virginia for developing targeted coverage expansion options?

The following list highlights the groups that are most at risk for being without coverage and should therefore be considered when developing targeted coverage expansions in Virginia.

Young adults. Young adults ages 19-24 had one of the highest rates of uninsurance in the state at 25.5%.

Mid- to low-income families. Among residents of Virginia, uninsurance was most commonly experienced by those with incomes between 135-150% of the federal poverty level

¹¹ If respondents indicate that they have both public and private coverage, they are coded as having public coverage.

(FPL). Approximately 44,250 Virginians, or 28.8% of these individuals were uninsured. The highest rates of uninsurance were found among the three lowest income categories (i.e., those that fall below 150% FPL) had rates of uninsurance that ranged from 28.8% to 19.0%. The second highest rates of uninsurance were found among the next three income categories (i.e., those between 151-300% FPL) with rates of uninsurance that ranged from 14.8% to 13.6%. Higher income families (i.e., those above 300% FPL) had a remarkably lower rate of uninsurance (2.4%).

Part-time, temporary and seasonal workers. In addition to income, employment status also affected an individual’s likelihood of possessing health insurance coverage. Particularly vulnerable to uninsurance, with rates ranging from 21.2 to 24.1%, were Virginia residents working temporary, part-time (less than 35 hours per week) or seasonal jobs.

Employees of small firms. Individuals working in small firms (fewer than 11 employees) were at greater risk of being uninsured than individuals working for large firms (greater than 100 employees) (22.6% vs. 4.8%).

Why don’t uninsured individuals participate in public programs?

Of particular interest were Virginians who are potentially eligible for public coverage programs but remain uninsured. Table 2-5 shows three subpopulations that were eligible for public coverage by their insurance status. Survey results suggest that a majority of children who were eligible for public programs were covered by public insurance. The largest group that appeared to be eligible for Medicaid but was not enrolled consists of individuals who lived in low-income families with dependent children.

Table 2-5. Health Insurance Status of Individuals Who Are Potentially Eligible for Public Programs, Virginia 2004*

Eligibility Group	Insurance Type			Weighted count
	Private	Public	Uninsured	
<i>FAMIS PLUS – MEDICAID</i> Children Under 19 Years in Households with Income <=133% FPL	28.8%	63.5%	7.7%	89,096
<i>MEDICAID</i> Individuals Who Live in Low-income** Families with Dependent Children	28.4%	49.5%	22.1%	230,351
<i>FAMIS – CHILDREN’S HEALTH INSURANCE PROGRAM</i> Children Under 19 Years in Households with Income <=200% FPL	25.9%	64.9%	9.2%	167,372

*Eligibility categories are not mutually exclusive.

**Low-income families with dependent children (LIFC) are eligible for Medicaid based on 185% of the Standards of Need requirements defined by geographic region by the Virginia Department of Health.

To better understand uninsured individuals’ awareness of and interest in public coverage, uninsured respondents were asked whether they had ever requested or been given information about one of Virginia’s public health programs, such as Medicaid. Table 2-6 displays the results. A majority (65.4%) of the uninsured had neither requested nor received information about Virginia’s public health insurance programs. The survey results also show

that most of the uninsured (87.7%) would be willing to enroll in a public coverage program. This suggests that increasing awareness of existing public programs for the uninsured may help increase enrollment in them and decrease rates of uninsurance.

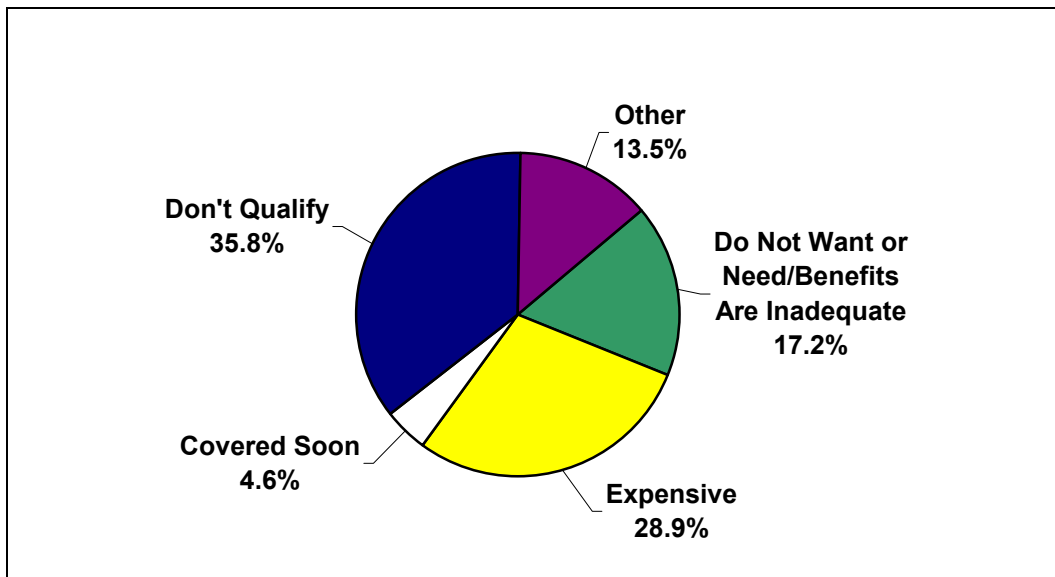
Table 2-6. Knowledge of and Interest in Public Coverage among the Uninsured, Virginia 2004

	Yes	No	Weighted Count
Have Requested or Received Information about Public Programs	34.6%	65.4%	581,887
Willing to Enroll	87.7%	12.3%	537,330

Why do uninsured individuals and families not participate in employer-sponsored coverage?

Individuals were asked why they did not participate in employer-sponsored coverage. As shown in Figure 2-5, the most common reason for not having employer-sponsored coverage was that the individual did not qualify (35.8%). The second leading reason for not having employer-sponsored coverage was that the coverage was too expensive (28.9%). Some uninsured individuals (17.2%) did not have employer-sponsored coverage because they did not want it or felt that the benefits offered were inadequate. A few (4.6%) individuals reported that they expected to be covered by their employers' plan soon.

Figure 2-5. Reasons Uninsured Workers Do Not Have Employer-Sponsored Coverage, Virginia 2004



Total weighted count = 243,495

How should “underinsured” be defined? How many individuals defined as “insured” are underinsured?

In response to escalating health care costs and insurance premiums, many employers have increased employees' cost sharing for health insurance and/or have reduced the comprehensiveness of their health benefits.¹² There is concern that these changes have led to growing numbers of underinsured individuals with inadequate health coverage for their medical needs.

Researchers have taken a number of different approaches to defining underinsurance or inadequate coverage. Attitudinal approaches identify underinsurance in terms of the perceptions of the individual covered. Structural approaches identify underinsurance in terms of whether the benefits provided by a health insurance plan are commensurate with some benchmark of benefits. Economic approaches identify underinsurance in terms of an individual's ability to pay for health care needs and out-of-pocket costs such as premiums and deductibles.¹³

Taking an attitudinal approach to studying underinsurance in Virginia, survey respondents were asked questions about the stability of their coverage. More specifically, they were asked how worried they were that over the next year they would lose their health coverage, that their health benefits would be cut, and that they would no longer be able to afford their coverage, medical care and/or prescription drugs. Figure 2-6 presents these data by health insurance status.

The stability of coverage was a concern for the insured. A third of those with public coverage (33.3%) and a quarter of those with private coverage (24.7%) said they were worried they would lose their health coverage over the next year. Maintaining the comprehensiveness of their health benefits package was also of concern to insured Virginians. Half of those with public coverage and half of those with private coverage said they worried their health benefits package would be cut over the next year.

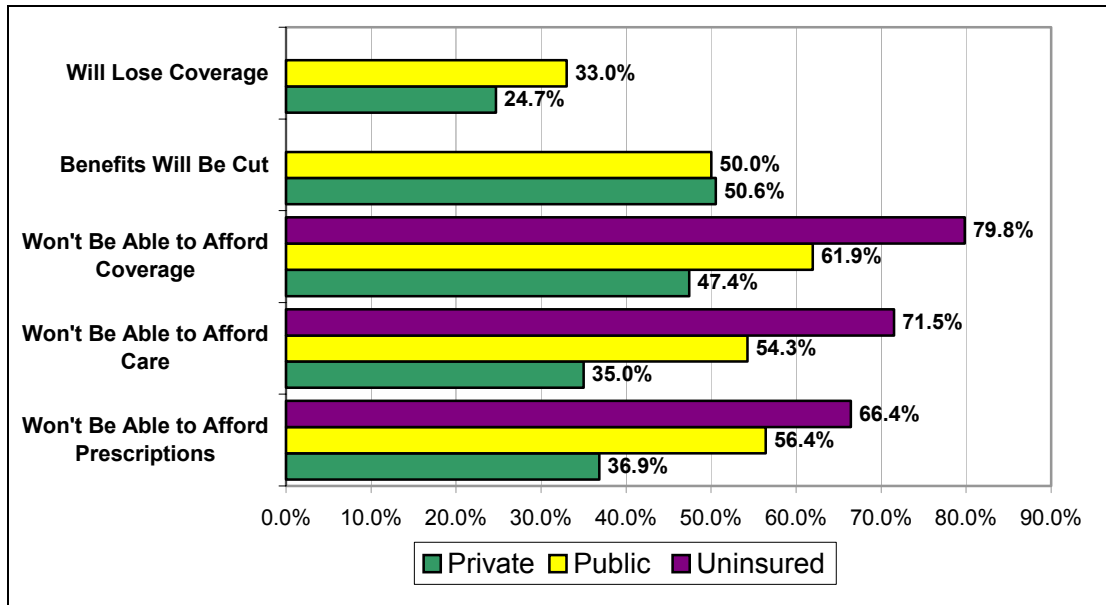
Not surprisingly, the uninsured exhibited the greatest concern over the cost of health insurance, health care, and prescription drugs. Those with public coverage had the second highest levels of concern with more than six in ten of those with public coverage (61.9%) expressing worry that they would not be able to afford coverage over the next year, and over half expressing worry that they would be unable to afford medical care (54.3%) and prescription drugs (56.4%).

Nearly half of those with private coverage (47.4%) were concerned they would not be able to afford coverage, and over a third were concerned they would be unable to afford medical care (35.0%) and prescription drugs (36.9%).

¹²Employee Benefit Research Institute. Small Employers and Health Benefits: Findings from the 2002 Small Employer Health Benefits Survey. *EBRI Issue Brief*. January 2003. Accessed at www.ebri.org/findings/health_findings.htm September 07, 2004.

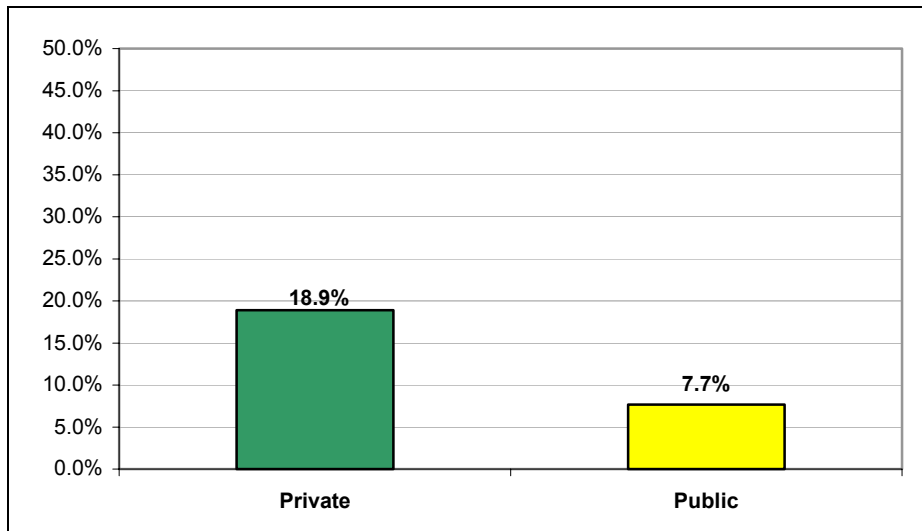
¹³ Ward, A., Beebe, T.J., Blewett, L.A., and Smaida, S. Issues in Defining and Measuring Adequacy of Coverage. *State Health Access Data Assistance Center Working Paper*, 2002, p.3.

Figure 2-6. Percentage of Virginians Somewhat or Very Worried about Access to Health Coverage, Medical Care and Prescription Drugs 2004



For further examination of underinsurance from the attitudinal perspective, survey respondents were asked if they or an immediate family member ever passed up a job opportunity, or refrained from quitting a job or retiring to keep their health insurance benefits. Figure 2-7 shows that this problem, also known as “job lock,” has affected 18.9% of those with private coverage and 7.7% of those with public coverage.

Figure 2-7. Percentage Reporting They Could Not Leave a Job Because It Would Result in Loss of Health Insurance, Virginia 2004

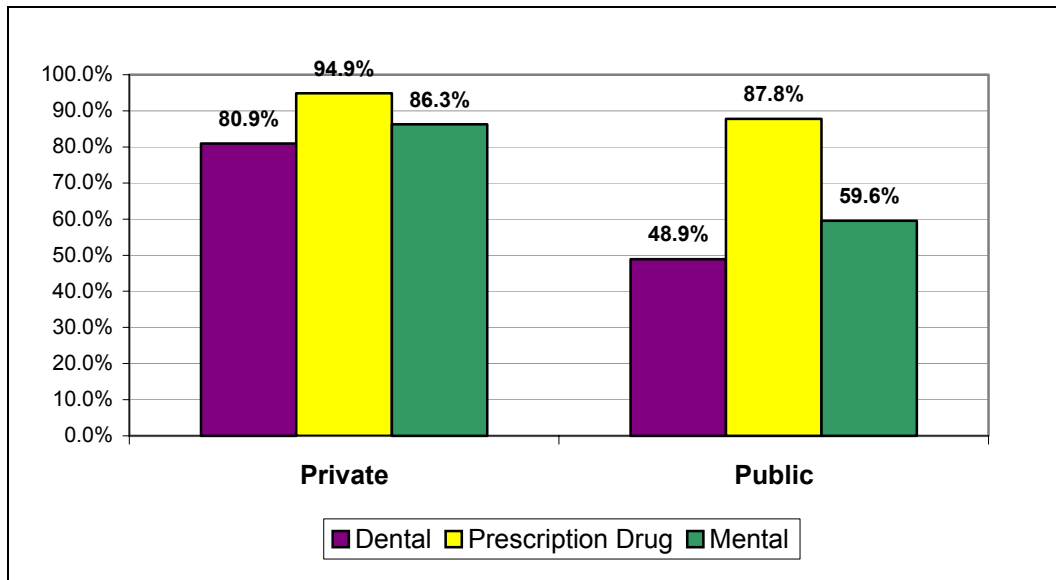


Using a structural approach to explore underinsurance in Virginia, we examined the comprehensiveness of residents’ health care coverage. Figure 2-8 displays the percentage of privately and publicly insured individuals who had dental, prescription drug, and mental health coverage.

Most people with private coverage had dental and mental health benefits (80.9% and 86.3%, respectively) and nearly all (94.9%) had prescription drug coverage. Virginia's public programs cover dental care, mental health care, and prescription drugs. However, as displayed in Figure 2-8, about half of those with public coverage (48.9%) reported having dental benefits, 59.6% reported having mental health benefits, and 87.8% reported having prescription drug benefits.

These results suggest that either those with public coverage did not know what services were covered or when they tried to access services they were unable to find a provider who would accept their coverage. From a structural perspective, underinsurance appears not to be a large problem in Virginia because most of the privately insured had a comprehensive benefits package; and, although some of the publicly insured may have been unaware of it, they too had a comprehensive benefits package.

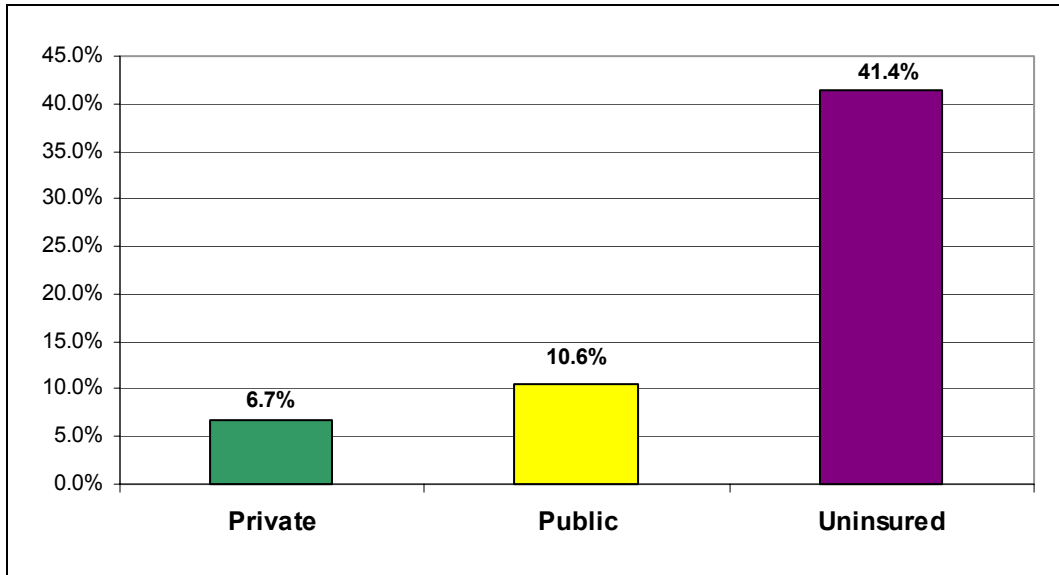
Figure 2-8. Percentage of Insured Virginians with Dental, Prescription Drug or Mental Health Coverage 2004



Taking an economic approach to studying underinsurance in Virginia, we examined the number of individuals who identified cost as a barrier to needed medical services. Figure 2-9 shows the percentage of Virginians who were unable to see a doctor in the past 12 months due to cost. It is not surprising to see that the uninsured were the most likely to experience barriers to care due to cost (41.4%).

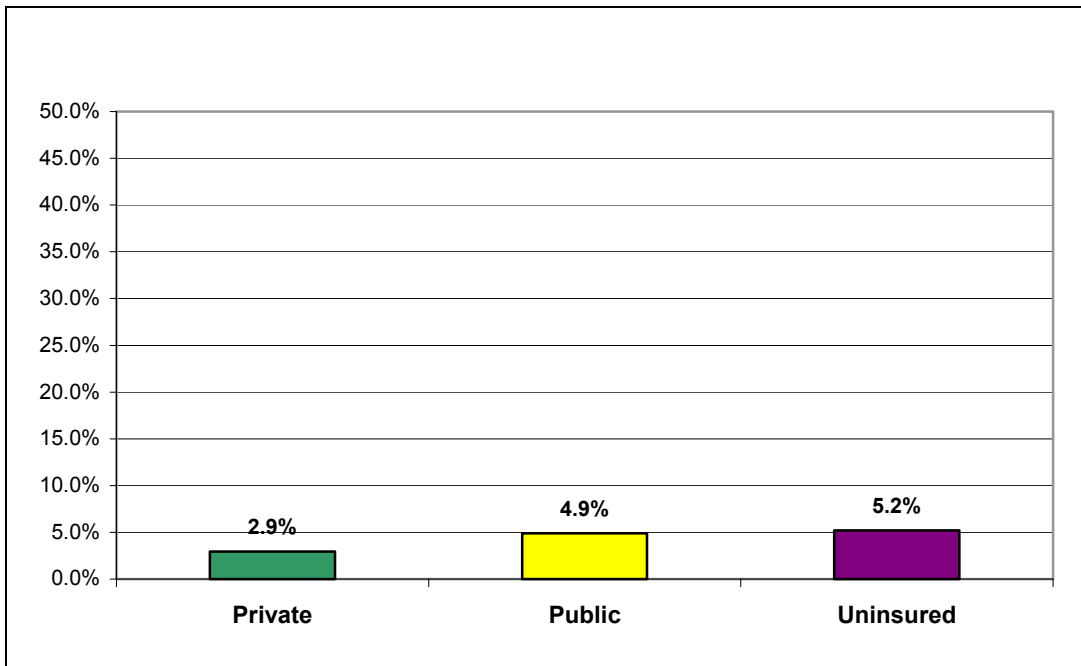
However, it is noteworthy that for a small proportion of individuals, having public or private coverage did not eliminate all financial barriers to care, with 10.6% of those with public coverage and 6.7% of those with private coverage reporting they had to forgo seeing a doctor in the past 12 months due to cost.

Figure 2-9. Percentage Unable to See a Doctor in Past 12 Months Due to Cost, by Insurance Type, Virginia 2004



Another economic measure of underinsurance we examined was the degree of financial hardship imposed on individuals as a result of personal spending on health care. Figure 2-10 displays the percentage of Virginians reporting bankruptcy in the past five years due to medical expenses, by their current insurance status. No significant differences were found across insurance groups. Among the uninsured 5.2% reported bankruptcy due to medical expenses. Among those with coverage, 4.9% of the publicly insured and 2.9% of the privately insured reported bankruptcy due to medical expenses.

Figure 2-10. Percentage of Virginians Reporting Bankruptcy Due to Medical Expenses, Virginia 2004



Are individuals likely to be influenced by subsidies, tax credits, or other incentives?

Cost is the reason most frequently cited in the research literature for being without health insurance. The findings displayed in Figures 2-5 provide evidence that cost is a major barrier to coverage for Virginians. As discussed earlier, most of the uninsured (87.7%) said they would be willing to enroll in a public health insurance program if it was offered to them.

These findings suggest the primary reason the uninsured do not have coverage is not that they do not want it, but that they cannot afford it. Therefore strategies that help lower the costs of premiums, such as subsidies and tax credits to individuals, are a potentially promising means of helping the uninsured overcome barriers to coverage.

Chapter 3

Employer-Based Coverage

This chapter examines characteristics of working Virginians who are offered health insurance by their employer. The chapter also explores the characteristics of employer-sponsored coverage in Virginia.

What are the characteristics of firms that do not offer coverage, as compared to firms that do?

Approximately 79% of Virginians reported they were employed. Of those, 68.9% reported working for firms that offer coverage. Table 3-1 provides information on the health insurance offer rates by firm characteristics.

Workers in small firms with 50 or fewer employees were less likely to be offered coverage than workers in larger firms. Approximately one third (32.4%) of workers in firms with ten or fewer employees, and nearly two-thirds (63.9%) of workers in firms with 11 to 50 employees were offered employer-sponsored coverage. In comparison, 79.3% of workers in firms with more than 50 employees said they were offered employer-sponsored coverage.

Higher wage employees were more likely to be offered coverage than low-wage employees. The offer rate for employees earning incomes more than 300% of the federal poverty level was nearly twice that of those who earn below the poverty level (77.0% vs. 39.6%).

Workers in the personal service, agriculture, and retail industries had the lowest offer rates ranging from 47.6% to 56.8%; while those working in health care, manufacturing, social services and education had the highest offer rates ranging from 78.9% to 80.7%. In addition, part-time (35 or fewer hours per week) and temporary or seasonal employees were less likely to be offered coverage than their full-time and permanent counterparts.

Table 3-1. Health Insurance Offer Rates among Adults by Selected Employer Characteristics, Virginia 2004

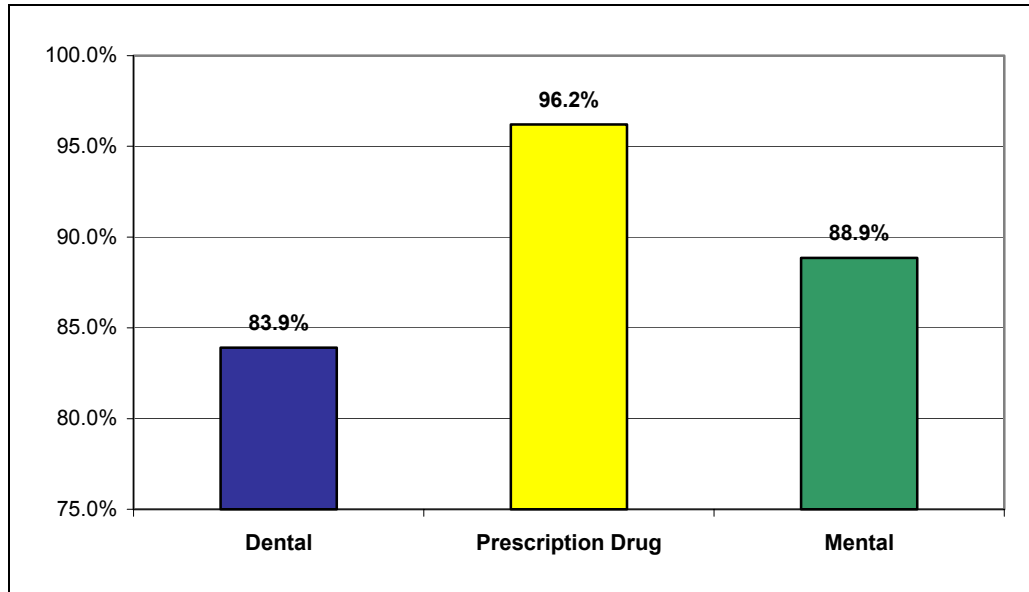
	Offer Rate (%)	Weighted Count	*p<.05 **p<.01 ***p<.001
Employer Size			
< 11 employees	32.4%	258,686	***
11-50 employees	63.9%	386,034	***
>50 employees (reference group)	79.3%	2,488,429	
Employee Income (as % of FPL)			
<100%	39.6%	183,105	***
100-133%	48.6%	94,858	***
134-150%	49.4%	52,153	**
151-200%	64.4%	210,787	**
201-250%	60.7%	222,815	***
251-300%	64.6%	271,916	**
>300% (reference group)	77.0%	2,384,208	
Industry Sector			
Education	80.7%	364,755	**
Social Services	79.9%	42,955	
Manufacturing	79.4%	241,692	**
Health Care	78.9%	323,143	**
Entertainment	76.0%	52,930	
Banking	75.9%	192,857	
Transportation	74.6%	264,494	
Professional	68.5%	256,317	
Government (reference group)	66.9%	581,087	
Business	64.9%	100,914	
Construction	63.4%	184,689	
Retail	56.8%	257,568	
Agriculture	56.0%	46,327	
Personal Service	47.6%	70,301	*
Other	63.7%	391,772	
Type of Employment			
Permanent (reference group)	71.6%	3,240,481	
Temporary/Seasonal	38.1%	91,522	***
Hours Worked			
<20	32.9%	57,792	***
20-34	46.0%	236,727	***
>35 (reference group)	73.2%	3,081,119	
Employment Sector			
Government (reference group)	71.6%	872,402	
Private Company	72.8%	2,044,593	
Non-Profit	83.0%	280,392	**
Self-Employed	25.2%	108,596	***
Unpaid	52.6%	22,610	

Details do not sum to totals due to missing observations (Weighted percent for missing observations: Employment Sector 2.7%; Hours Worked per Week 1.3 Type of Employment .61%; Size of Employer 8.4 and Industry .74%).

What are the characteristics of the health benefits packages offered by employers?

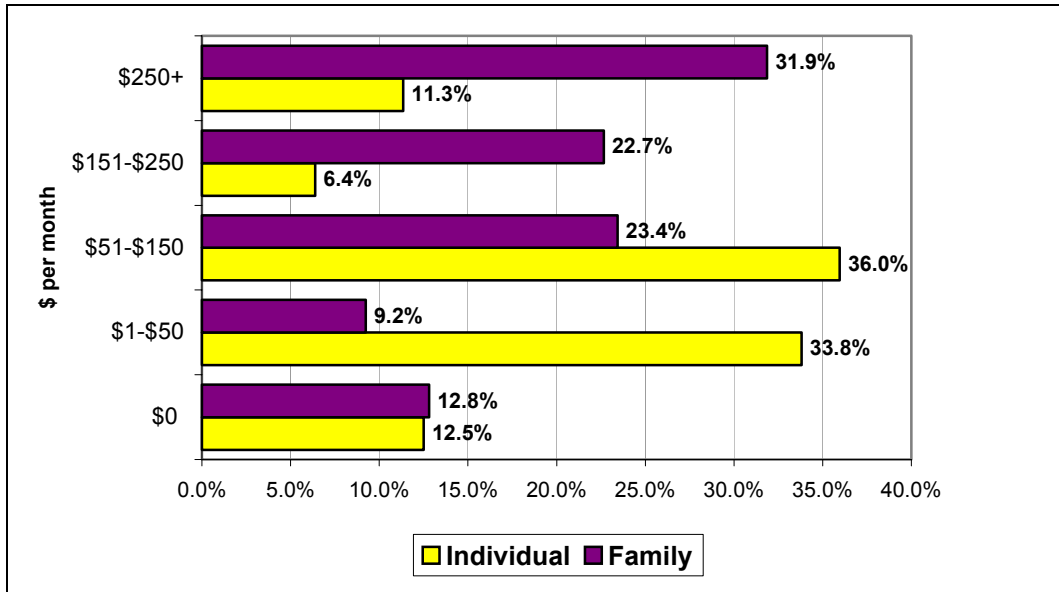
Employees covered by employer-sponsored insurance were asked about the characteristics of their health benefits packages. As shown in Figure 3-1, employer-sponsored insurance in Virginia appears to be quite comprehensive with 96.2% of respondents reporting prescription drug coverage, 88.9% reporting mental health care benefits, and 83.9% reporting dental benefits.

Figure 3-1. Percentage of Those with Employer-Sponsored Health Insurance Whose Benefits Include Dental, Prescription Drug and Mental Health Coverage, Virginia 2004



Many of the workers who had employer-sponsored coverage (57.2%) paid for all or part of the premium. The distribution of employees' out-of-pocket contributions is displayed in Figure 3-2. Over half of those with family coverage (54.6%) paid over \$150 per month, while most of those with individual coverage (82.3%) paid \$150 per month or less.

Figure 3-2. Employees' Out-of-Pocket Monthly Premium, Virginia 2004



Weighted counts: Individual plan = 787,135; Family plan = 2,179,629

Chapter 4

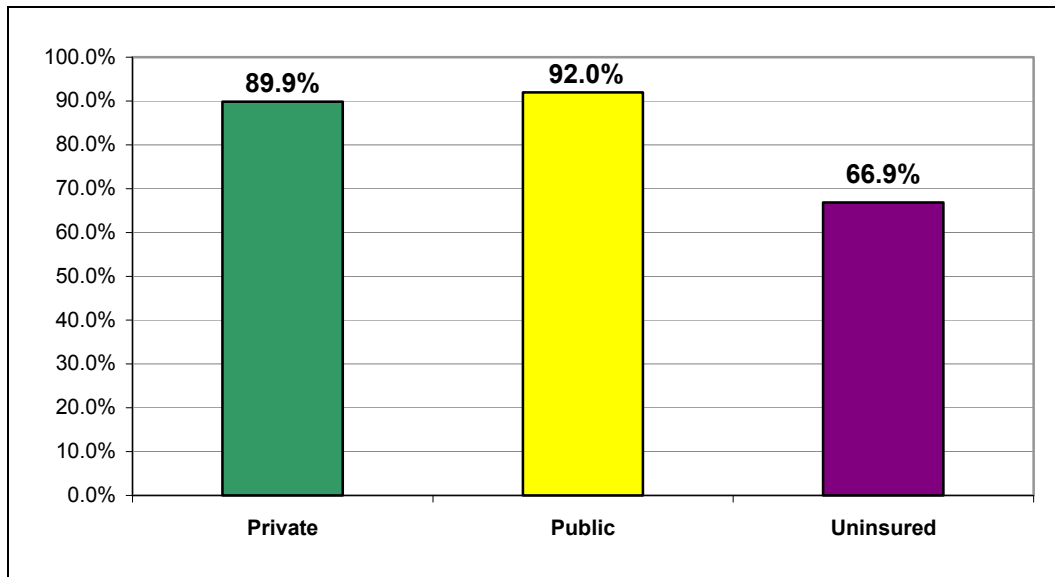
Health Care Utilization

This chapter compares how the insured and uninsured populations in Virginia utilize health care services to meet their medical needs. This chapter addresses where the insured and uninsured receive health care services as well as how frequently they receive medical care.

How are the uninsured getting their medical needs met?

A number of studies have documented that the uninsured are more likely to delay seeking care and are less likely to have a usual source of care or a regular provider.¹⁴ Delays in seeking care can lead to advanced stages of disease that are more threatening to an individual's health and are more costly to treat. Having a regular source of care is associated with fewer delays in receiving care and better use of preventive care. Figure 4-1 shows that the uninsured were less likely than those with private or public coverage to report having a usual source of care (66.9% vs. 89.9% and 92.0%).

Figure 4-1. Percentage Who Reported a Usual Source of Care by Insurance Status, Virginia 2004



All differences are statistically significant from uninsured at a .001 level

Where do the uninsured go for health care?

Respondents who indicated a usual source of care were asked where they receive their care. Table 4-1 depicts the distribution of types of usual sources of care by coverage status. Overall, for both the uninsured and the insured, the doctor's office was the most frequently

¹⁴ Brown, M.E., Bindman, A.B., and Lurie, N. (1998). Monitoring the Consequences of Uninsurance: A Review of Methodologies. *Medical Care Research and Review*, 55(2): 177-210.

cited usual source of care and clinics were the second most common usual source of care. Of particular note, however, is that the uninsured and those with public coverage were significantly more likely than those with private coverage to use the emergency room as their usual source of care. This is of concern because the emergency room is a more costly means of accessing services.

Table 4-1. Distribution of Types of Regular Sources of Care by Coverage Status, Virginia 2004

	Private (4,465,792)	Public (1,341,051)	Uninsured (409,745)
Source of Care			
Emergency Room	2.6%	5.1% **	13.2% ***
Doctor's Office	81.6%	74.5% ***	58.5% ***
Clinic	7.6%	14.8% ***	24.8% ***
Hospital	0.7%	2.9% **	1.1%
Military	6.9%	1.5% ***	1.6% ***
Other	0.6%	1.2%	0.8%

p<.05 **p<.01 ***p<.001

Note: Private is the reference group for the significance tests.

Table 4-2 displays the degree to which the insured and uninsured populations utilized health care services. Overall, the uninsured used fewer services than insured respondents. Publicly and privately insured individuals were more likely than the uninsured to have had a doctor's visit in the past three months. A greater proportion of uninsured individuals had zero doctors visits compared to those with private and public insurance (41.5% vs. 20.1% and 15.3%, respectively).

The publicly insured appear to use more hospital services. The publicly insured were more likely than the privately insured and the uninsured to have had an overnight hospital stay in the past year (18% vs. 8% and 9.9%). And, the publicly insured were more likely than the privately insured and the uninsured to report having had three or more hospital admissions in the past year (16.7% vs. 9.4% and 5.9%).

Table 4-2. Health Services Utilization by Insurance Status, Virginia 2004

	Private	Public	Uninsured
Doctors Visits in Past 3 Months			
0	20.1%	15.3% *	41.5% ***
1	38.9%	36.0%	34.5%
2	17.6%	16.0%	13.9%
3+	23.4%	32.7% ***	10.1% ***
Overnight Hospital Stay in Past 12 Months			
Yes	8.0%	18.0% ***	9.9%
No	92.0%	82.0% ***	90.1%
Number of Hospital Admissions in Past 12 Months			
0	10.9%	1.6% **	14.8%
1	67.4%	65.2%	67.5%
2	12.3%	16.5%	11.8%
3+	9.4%	16.7%	5.9%
Emergency Room/Urgent Care in Past 12 Months			
Yes	23.8%	31.6% ***	26.5%
No	76.2%	68.4% ***	73.6%

p<.05 **p<.01 ***p<.001

Note: Private is the reference group for the significance tests.

Although the uninsured and the publicly insured were more likely than the insured to report the emergency room as their usual source of care, they were not more likely to report having visited the emergency room in the past year. This may reflect the uninsured's lower use of medical care in general and the publicly insured's greater use of other services such as hospital stays.

Chapter 5

Summary and Conclusions

The Virginia Health Care Insurance and Access Survey was the most comprehensive survey on health coverage ever fielded in the Commonwealth of Virginia. Survey results suggest that 8.9% of Virginia residents (or approximately 639,618 individuals) are uninsured. This section highlights notable results that should be considered as Virginia policy makers move forward in their efforts to make affordable, high quality health insurance coverage available to all Virginia residents.

Subpopulations with high rates of uninsurance

The results of the 2004 Virginia Health Care Insurance and Access Survey indicate there are population groups within Virginia that experience significantly higher rates of uninsurance than the state average.

Some potentially important groupings when targeting coverage expansion options and/or crafting outreach strategies include: adults ages 19-24, individuals in households with incomes below 150% FPL, single adults, individuals with less than a high school education, and unemployed adults. It is likely that no single strategy will be effective in expanding coverage to all groups that experience higher rates of uninsurance. Consequently, policy makers should consider taking a multi-faceted approach to meet the needs of this diverse group of uninsured individuals.

Employer-sponsored coverage in Virginia

The state of employer coverage in Virginia is in line with national trends. Health insurance offer rates among firms vary according to the type of business: individuals working for small firms (50 or fewer employees), low-wage workers, the self-employed, part-time workers and those with temporary or seasonal jobs were less likely to be offered health insurance as a benefit option. Employees who worked for firms in the agriculture, retail, and personal service industries were also less likely to be offered coverage.

In an attempt to increase employer offer rates, especially among small employers, some states are considering a host of direct and indirect subsidies to employers. Examples of direct subsidies include direct payments and tax incentives, while indirect subsidies include options such as increased use of reinsurance. States are also considering purchasing pools for small employers and buy-in demonstrations whereby small employers insure their workers through Medicaid or the Federal Employees Health Benefits Plan.

Evidence of underinsurance

Researchers' and policy makers' attention has increasingly turned to the population who may be "underinsured." The underinsured "...have health insurance but face significant cost sharing or limits on benefits that may affect its usefulness in accessing or paying for needed

health services.”¹⁵ The results of the Virginia Health Care Insurance and Access Survey provide insight into the extent of underinsurance among Virginia’s insured population.

The stability of coverage is a major concern for some insured Virginians. One in four privately insured Virginians and one in three publicly insured reported they were worried they would lose their health coverage over the next year. Most of the privately and publicly insured were offered a comprehensive health benefits package that included dental, mental health and prescription drug benefits. However, half of the insured said they were worried that over the next year their health benefits package would be cut.

While few of those with public or private coverage reported they had to forgo care due to cost in the past year, about half of those with public coverage and about a third of those with private coverage expressed worry over their ability to afford medical care and prescription drugs over the next year.

Inadequate health coverage can also have a large influence on lifestyle choices. Approximately 19% of those with private coverage and 8% of those with public coverage said they or an immediate family member had passed up a job opportunity, or had refrained from quitting a job or retiring to keep their health insurance benefits. And, 4.9% of those with public coverage and 2.9% of those with private coverage reported they had filed bankruptcy as a result of personal spending on health care services.

Uninsured lack a regular source of care

The uninsured were less likely to have had a usual source of care when compared to their publicly and privately insured counterparts. Having a usual source of care is associated with fewer delays in receiving care, better access to care, and better health outcomes. Providing insurance coverage will not guarantee a regular source of care – research has shown that many people do not see the need for a usual source of care because they seldom or never get sick.¹⁶ However, providing coverage will foster the attainment of a regular source of care and the concomitant benefits of having one.

The finding that many uninsured people who reported having a usual source of care also reported seeking that care in an emergency room is concerning because emergency room services are costly and do not provide the continuity of care that seeing a physician in a clinic does. Decreasing the uninsured population’s utilization of emergency room services and increasing use of clinics could potentially decrease hospitals’ uncompensated care expenditures and improve the continuity and quality of care they receive.

Conclusion

While there are several national sources of data on the uninsured, states conduct their own surveys with larger state-level sample sizes to provide better estimates and more detailed information about the health insurance status of subpopulations. Conducted by the Virginia Department of Health (VDH) with a grant from the U.S. Health Resources and Services Administration State Planning Grants (SPG) Program, the 2004 Virginia Health Care Insurance and Access Survey is the most comprehensive survey on health insurance ever fielded in Virginia. With these survey data, Virginia will obtain a better understanding of the

¹⁵ Kaiser Commission on Medicaid and the Uninsured. *Underinsured in America: Is Health Coverage Adequate?* The Henry J. Kaiser Family Foundation, July, 2002.

¹⁶ RWJF Synthesis Project, September 2001. Accessed at <http://www.rwjf.org/>, September 14, 2004.

characteristics of the uninsured. The information from the survey may also be used as a baseline for monitoring changes over time.

The challenge of covering the uninsured has recently been exacerbated by the combination of falling revenues and rising expenditures for health care at the state and local levels. As a result, many states are focusing on minor incremental strategies for increasing coverage, at least in the short term. Moreover, current economic conditions have negatively impacted employers' ability to offer coverage. Further research and monitoring will be needed in Virginia to determine the impacts of these social forces as well as the possible effects of any coverage expansion policies.

Appendix A: Sampling, Weighting and Imputation

Michael Davern, Ph.D.

The Virginia project team was interested in obtaining health insurance coverage estimates for a representative sample of people living in Virginia as well as strata within the state: five Health Service Regions and low income households. The five Health Service Regions were defined by the Virginia project team by zip codes and the low income cutoff was defined by the team to phone numbers associated with areas having a median income of \$32,000 and below (see Table 1 for the number of estimated households in Virginia that were allocated to each stratum).

The Virginia survey planning team determined that each region should have a standard error of no more than 2%. Assuming a design effect¹⁷ of 2 (which is typical of surveys of this type) we allocated a minimum of 450 completes to all the Health Service Region strata. To ensure ample representation of low-income Virginians in the survey, a target of 1000 completes was set for the low-income strata. The rest of the targeted completes were allocated to the Health Service Regions proportional to the estimated number of households in each. The principal benefit of such a design is that it keeps the overall design effect to a minimum, while reaching most of the goals of the survey team. The total number of households and targeted number of households per stratum are included in Table 1.

Table 1: The Targeted Number of Completed Surveys, the Actual Number of Completed Surveys, The Universe of Telephone Numbers, and the Response Rate Adjusted Probability of Selection

Stratum	Households	Sample Targeted Number of Completed Surveys	Actual Number of Completed Surveys	Universe of Telephone Numbers	Response Rate Adjusted Probability of Selection
Health Service Region 1	367822	447	489	838200	0.00058
Health Service Region 2	692341	840	845	2067000	0.00041
Health Service Region 3	327759	398	407	604600	0.00067
Health Service Region 4	494778	600	597	1212900	0.00049
Health Service Region 5	583536	707	706	1376400	0.00051
Low Income **	377123	1008	997	916200	0.00109
Total	2843359	4000	4041	7015300	0.00058

** Low income cut is an area code plus exchange grouping with a median household income below \$32,000

Weighting

The aim of weighting survey data is to make the selected respondents representative of Virginia's entire population. This was accomplished by weighting respondents relative to their probability of selection into the sample. This process was made more difficult by the fact that not all the respondents have the same probability of inclusion into the sample. The probability

¹⁷ The design effect is equal to the ratio of the variance taking the survey design features (stratification, differential probability of selection, and clustering) under consideration, to the variance calculated under the assumption that all cases were sampled through a simple random sample procedure (Kish 1965). Because telephone surveys often involve three main adjustments to determine the probability of selection of each respondent, they are not simple random samples. The first adjustment is to account for the fact that some households have more than one telephone line (and thus an increased probability of selection), the second adjustment is to account for the fact that some households have more people living in them than others (assuming one random person is selected from each household as the respondent), and the third adjustment is for the fact that some phone numbers are more likely to be selected due to disproportionate sampling (e.g., we will sample a higher percentage of people in the low income stratum than in Health Service Region 2). For RDD surveys using a fair amount of disproportionate sampling (for example, the Virginia Health Insurance Survey), that randomly chooses one person in each household to be the target, generally have a design effect of approximately 2.

of selection varied by: (1) the stratum (i.e., Health Services Region or low income) the respondent was in, (2) how many phone lines were connected to a household, and (3) the number of people living in a household. Each of these is discussed in more detail below. Weighting the respondents relative to their probability of selection into the sample accomplishes two key goals: (1) having the sampled respondents represent the entire population of Virginia, and (2) controlling for the fact that the respondents did not all have the same probability of selection into the sample.

The Virginia sample did not draw actual people, but rather it drew phone numbers. Phone numbers consist of three pieces: XXX-YYY-ZZZZ. The XXX is called an “area code”, the YYY is called an “exchange”, and the ZZZZ is called a “stem”. The RDD samples were drawn from phone numbers in active area codes plus exchange groupings within the state of Virginia. The stems within an active area code plus exchange group are divided into 100 groups of 100 consecutive telephone numbers (called 100 banks) and telephone numbers are randomly drawn from 100 banks with at least one listed telephone number in the interval.

Basic Probability

An important assumption in our weighting scheme is that, within each stratum, each phone number has an equal probability of selection. Then the basic probability is equal to:

$$\text{Probability of selecting a phone number (PSPN)} = \frac{\text{(total number of phone numbers selected into the sample)}}{\text{(total number of phone numbers from which the sampled numbers were drawn)}}$$

The total number of phone numbers from which the RDD sampled numbers were drawn was determined by how many “100 banks” were used by the vendor (Genesys Marketing Systems Group). All possible numbers from an (area code + exchange) combination were broken down into intervals of 100 (for example, 804-673-0000 to 804-673-0099). If there was a listed telephone number within the interval of 100 numbers, then all the numbers within the 100 bank were eligible to be sampled. The denominator was, therefore, the number of banks used for sampling within the state multiplied by 100. The total number of phone numbers selected into the sample was determined by counting the number of numbers actually called as part of the survey.¹⁸

Response Rate Adjustment

The probability of selecting a phone number is further adjusted by the response rate. For the purpose of weighting, the response rate is defined as the total number of completed surveys, divided by the total number of phone numbers in the sample.

$$\frac{\text{Response rate adjusted probability of selecting a phone number}}{\text{number}} = \frac{\text{(response rate)} * \text{(probability of selecting a phone number)}}{\text{number}}$$

¹⁸ Genesys’ screening process screens out business numbers through cross-listing the numbers with listed businesses, and Genesys dials the remaining numbers to screen out disconnected numbers as well.

Table 1 contains the estimated total number of households, the targeted number of completes, the actual number of completes and the response rate adjusted probability of selecting a phone number.

Phone Line Adjustment

The response rate adjustment is not equal to the probability of selecting any one household because households have an unequal number of phone lines leading to them. We can use the number of phone lines connected to a household to adjust a household's probability of selection into the sample.¹⁹ Information regarding the number of residential phone lines in each respondent's home is collected as part of the interview and it is used to make the following adjustment to the response rate adjusted probability of selecting a phone number:

$$\text{Probability of selecting a household} = \frac{\text{(number of phone lines within a selected household)}^*}{\text{(response rate adjusted probability of selecting a phone number)}}$$

Basic Person Probability

The purpose of the weighting scheme was to develop person weights. Within each household only one person was selected for an in-depth interview. In general, people in larger households have a smaller probability of being included than people in smaller households. The ultimate probability of selecting a person is equal to:

$$\text{Probability of selecting a person} = \frac{\text{(probability of selecting a household)}^*}{\text{(1/the number of adults living in the household)}}$$

Basic Person Weight

The basic person weight is equal to the inverse probability of selecting a person, or:

$$\text{Basic person weight} = \frac{1}{\text{probability of selecting a person}}$$

Post-stratification

The goal of post-stratification is to adjust the person weights to match known population distributions of a given group.

$$\text{Post-stratified weight} = \frac{\text{(basic person weight of the person in a group)}^*}{\text{((known population distribution for group) / (sum of the basic person weights in a post-stratified grouping))}}$$

Post-stratifying the basic person weights adjusts for differential survey non-response by making the sum of person weights equal to known population distributions. For the Virginia

¹⁹ This number was not allowed to exceed three, even though some households have more than three phone lines.

Health Insurance and Access Survey, we post-stratified by four age groups (0-18, 19-30, 31-64, 65 and over) race (black versus all else) and sex (male, female). The post-stratification adjustments were made using the 2003 American Community Survey estimates for Virginia's non-institutionalized population (total population = 7,150,715).

We used the 2004 estimate of Virginians without telephones from the Current Population Survey's Annual Demographic Supplement (CPS-ADS) to perform the non-telephone coverage adjustment on the data. The rationale for this adjustment is that those people who lacked phone service for a week or longer during the past year are very similar to those who do not have service. People who did not lack phone service differ with respect to health insurance coverage from those who did or those who did not have phones at all. Thus, the 5.2% of people in Virginia who live in households without phone service, are added to the weight total of those who lacked phone service for a week or longer. (See Davern, et al. 2004 for a detailed description of this technique as applied to state telephone surveys of health insurance coverage.)

Table 2 compares the weighted data from the 2004 Virginia Health Care Insurance and Access Survey to the 2003 Virginia American Community Survey data.

Table 2: Comparison of the 2003 American Community Survey (ACS) Data to the 2004 Virginia Health Care Insurance and Access Survey

Group	Virginia ACS 2003	Proportional Distribution (%)	2004 Virginia Survey	Proportional Distribution (%)
Total	7,150,715	100	7,150,714	100
Age	7,150,715	100	7,150,714	100
Age 0-17	1,790,041	25	1,791,401	25
Age 18-29	1,080,600	15	1,095,651	15
Age 30-64	3,493,059	49	3,487,101	49
Age 65+	787,015	11	776,561	11
Sex	7,150,715	100	7,150,714	100
Female	3,662,527	51	3,672,610	51
Male	3,488,188	49	3,478,105	49
Household income	7,150,715	100	7,150,714	100
< 100% poverty	554,736	8	902,918	13
101-200% poverty	1,037,779	15	1,005,073	14
201-300% poverty	1,212,376	17	1,172,266	16
301% poverty+	4,355,824	61	4,070,458	57
Household income (categories)	7,150,715	100	7,150,714	100
less than 15000	602,774	8	823,201	12
15000<25000	626,509	9	657,031	9
25000<35000	656,269	9	643,453	9
35000<50000	1,083,943	15	920,725	13
50000<75000	1,569,422	22	1,524,898	21
75000+	2,611,798	37	2,581,406	36
Race (any race)**	7,150,715	102	7,150,714	101
American Indian/Alaska Native	53,901	1	132,911	2
Asian/PI	349,076	5	194,652	3
Black	1,439,902	20	1,482,521	21
White	5,297,975	74	5,160,001	72
Other	140,496	2	233,008	3
Ethnicity	7,150,715	100	7,150,714	100
Non-Hispanic	6,770,608	95	6,760,599	94
Hispanic	380,107	5	390,115	6
Age 25+*			4,634,341	100
No diploma	734,254	16	409,784	9
High school graduate	1,283,703	27	1,126,187	24
Some college/college degree	2,125,695	45	2,425,931	52
Post graduate degree	587,661	12	672,439	15
Age 19+**	5,263,872	100	5,164,850	100
Employed full or part time	3,491,715	66	3,308,041	64
Unemployed	184,441	4	data is not comparable in these classifications	
Homemaker/Retired/Student/Other	1,587,716	30		

** Can be greater than 100 as respondents are allowed to check multiple race categories

Source: 2003 American Community Survey data from the Census Bureau, 2004 Virginia Survey

Income Imputation

In survey research there is a substantial amount of missing data for certain types of items (e.g., income) because survey respondents refuse to answer the questions for some reason. If the organization collecting the data decides against imputing the missing values, they have made an assumption that the respondents with missing data are no different from the people with reported data. This assumption does not hold up under examination. For example, in the 2001 Colorado Household Survey the respondents with missing data on income had higher levels of education than those without missing income data. Higher levels of education are related to higher levels of income. Thus, the assumption that the respondents with missing data are no different than the respondents with reported data is incorrect and estimates derived from this assumption will be biased.

For the Virginia survey data, we used “hotdeck” imputation. Hotdeck is a process by which a respondent’s valid value for a specific variable is assigned to another respondent who does not have a valid value for this variable. The respondent with the valid value is called a “donor” and a person with a missing value is called a “recipient.” For example, if the donor is 35 years old, then the recipient (respondent with missing age) is given a value of 35 and the donor maintains the age of 35.

The process of selecting a donor is the most important component of the hotdeck procedure. Potential donors are sectioned into homogeneous groups called “cells” defined by many parameters. For example, all white, unemployed, college educated, males over the age of 65 with a valid value for the specific variable can be placed into one cell, while all non-white, unemployed, college educated, males over 65 can be placed into another cell. Recipients are matched to these homogenous cells of donors based on their characteristics. A random donor selected from the matching group supplies his/her value to the recipient.

The characteristics used to group the respondents should be highly correlated with the variable being imputed. For example, when imputing income, donors are matched with recipients based on highest educational level because education is highly correlated with income. The variables chosen to match the donors and the recipients form the basis of a “model” for predicting the imputed variable. A good imputation procedure should provide unbiased estimates of the mean and variance of the variable by correcting for potential distributional differences between people with and without reported data. The basic underlying assumption is that the value of the variable being estimated (such as state rates of health insurance coverage) is not conditional on (i.e., moderated by) the missing data mechanism.²⁰ For example, all those respondents with missing health insurance data do not have a different relationship between health insurance coverage and covariates than all the respondents with reported data.

Although properly specified imputation can alter basic distributional summary statistics (means and variances) from the statistics calculated using complete cases only, it should not transform the relationships among variables. If there was a relationship between two variables in the reported data it should be the same in the imputed data, and no new relationships should appear after the imputation. The basic idea of model-based (particularly hotdeck) imputation is to use the existing relationships within the reported data to adjust for distributional differences among those who are likely to report data and those who are less likely.

²⁰ Little, R. and Rubin, D. (1987). *Statistical Analysis With Missing Data*. New York: Wiley.

The hotdeck is limited in the number of “variable levels” it can have. For example, the variable “highest degree attained” can be broken down into three variable levels (or cells) for the hotdeck; less than high school, high school diploma and college degree. The number of hotdeck cells is equal to the product of the number of variable levels (e.g., covered, not covered) used to match donors with recipients. If there are too many variable levels used in the hotdeck, then many of the cells will not be populated with donors. The more variable levels that are used (i.e., the more hotdeck cells), the more donors are needed for the hotdeck to work.

Implementation of the Hotdeck

We implemented the hotdeck using STATA version 8’s hotdeck imputation procedure (available for download from the STATA web site²¹). The survey has both a categorical income question and a continuous income question. If the continuous income question is refused (roughly 24.6%), respondents are asked to put their income into a category. If they refuse to put their income into a category, then the data are completely missing (roughly 10.4%). Using the categorical income question to help impute continuous income is called the “unfolding bracket” methodology.

The first step of the imputation implementation is to classify all the people who reported continuous income into the appropriate category and impute the missing 24% of categorical income. Then the fully imputed categorical income question is used to impute a continuous income for each respondent. The imputation is done iteratively with variables removed from the procedure one at a time until each person receives an imputed value. The variables used are described below:

The categorical income question uses size of the household to impute the categorical income using the following hierarchy for each imputation iteration (variables 1-2 were always in the hotdeck and the procedure went through 4 iterations). The strata variable was the first removed, and so on down the list until the number of people variable was removed.

1. Age (1. Less Than 18; 2. 17-30, 3. 31-64; 4. 65 and Over)
2. Education (1. Less Than High School; 2. High School; 3. At Least Some College)
3. Race (1. Black; 2. Other)
4. Insurance Coverage (1. Any Public Coverage; 2. Private Coverage Only; 3. Uninsured)
5. Number of people in the household (1. One Person; 2. Two People; 3. Three or More People)
6. Strata

The same hierarchy was used for the continuous income imputation except that the categorical income variable became variable 1 in the hierarchy, the total number of people living in the house was variable 2 and everything else slid down two spots. The categorical income question was never removed during the iterations for the imputation of continuous income, but each of the others were (for a total of 5 iterations) until everyone had an imputed continuous income amount.

²¹ www.stata.com

For further information regarding the information presented in this technical appendix please contact:

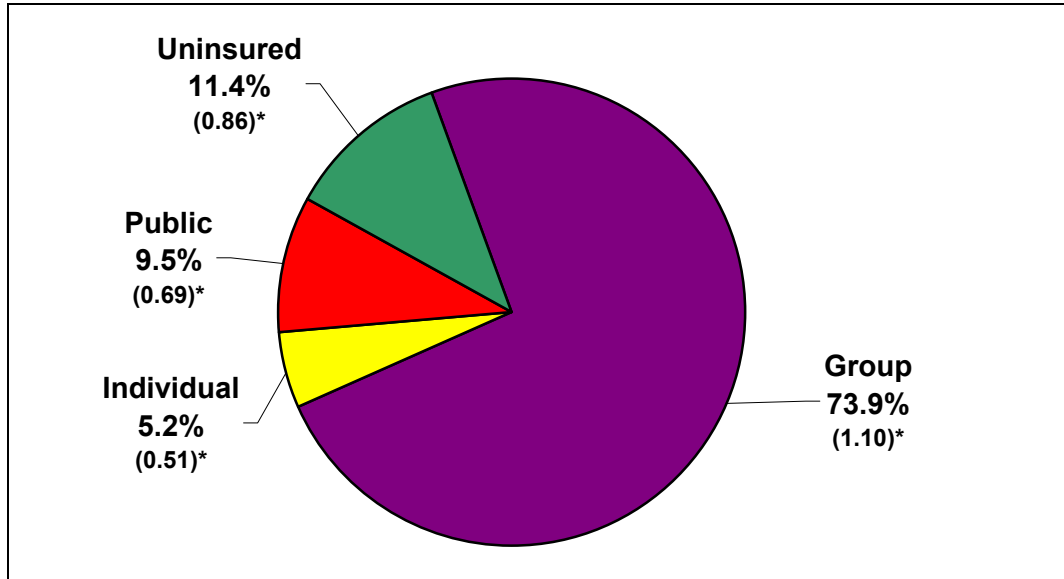
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References

Davern, Michael, James Lepkowski, Kathleen Thiede Call, Noreen Arnold, Tracy L. Johnson, Karen Goldsteen, April Todd Malmlov and Lynn A. Blewett. 2004. "Telephone Service Interruption Weighting for State Health Insurance Surveys." *Inquiry* 41(3): 280-290.

Appendix B. Detailed Tables and Figures

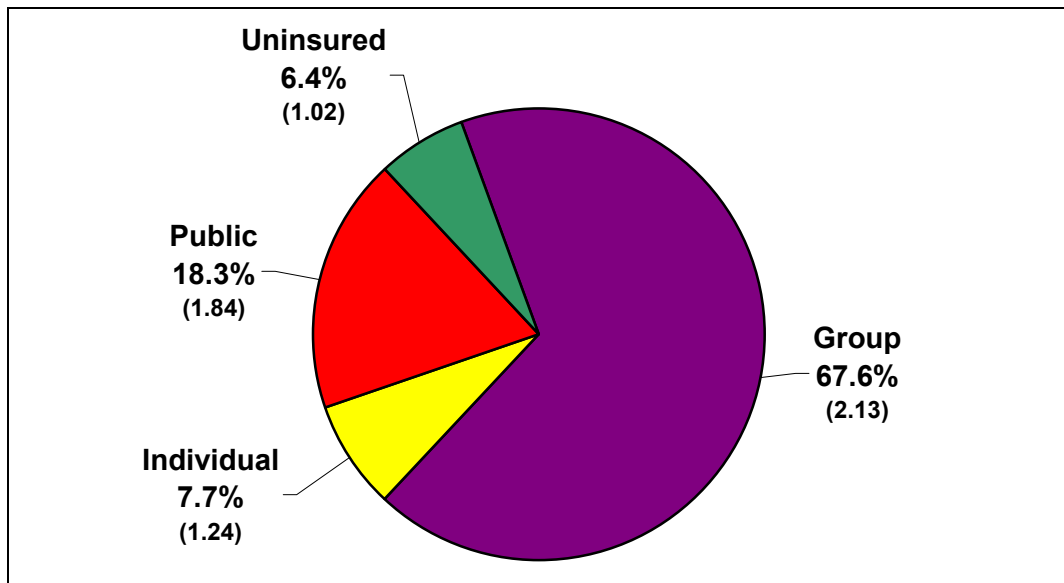
Figure 2-1. Sources of Health Insurance in Virginia, 2004 (Adults 19-64 years)



*=Standard Error

Total weighted count = 4,495,003

Figure 2-2. Sources of Health Insurance in Virginia, 2004 (Children 0-18 years)



Total weighted count = 1,879,151

Table 2-1. Alternative Definitions of Insurance Rates in Virginia, 2004

Definition	Percentage (SE)*	Weighted Count
Point in Time	8.9% (0.61)	639,618
Uninsured All Year	6.3% (0.52)	453,029
Uninsured Part Year	5.2% (0.52)	371,739
Uninsured at Some Point During Year	11.5% (0.71)	824,768

*SE = Standard Error

Table 2-2. Virginia's Uninsurance Rates by Selected Population Groups, 2004

Population Group	Weighted Percent	Standard Error	Weighted Count ^b	*p<.05 **p<.01 ***p<.001
Total Population	8.9		639,618	
Gender				
Male	9.9	(0.97)	344,996	
Female	8.0	(0.76)	294,621	
Age				
0-5 (reference group)	6.4	(1.85)	39,130	
6-18	6.5	(1.22)	81,919	
19-24	25.5	(3.88)	143,972	***
25-34	14.7	(2.40)	128,965	**
35-54	7.9	(0.89)	166,667	
55-64	7.6	(1.22)	71,485	
65+	1.0	(0.57)	7,479	**
Race/Ethnicity^a				
White (reference group)	6.4	(0.53)	304,322	
Black	11.1	(1.67)	149,433	**
Hispanic	27.4	(4.78)	108,440	***
Asian	8.6	(4.07)	13,382	
American Indian	22.3	(13.35)	6,000	
Mixed	12.1	(3.32)	38,733	
Household Income (%FPL)				
<= 100%	20.3	(2.58)	183,458	***
101-133%	19.0	(3.84)	65,454	***
134-150%	28.8	(6.27)	44,250	***
151-200%	14.8	(2.54)	82,991	***
201-250%	16.1	(3.11)	87,859	***
251-300%	13.6	(2.70)	79,007	***
>300% (reference group)	2.4	(0.37)	96,598	
Level of Education				
Less than HS	23.4	(3.28)	137,459	***
HS graduate	12.3	(1.40)	217,528	***
Some College	9.4	(1.31)	162,732	***
College Graduate	4.2	(0.75)	81,547	**
Postgraduate (reference group)	1.7	(0.56)	16,592	

Table 2-2. Virginia's Uninsurance Rates by Selected Population Groups, 2004 (continued)

Population Group	Weighted Percent	Standard Error	Weighted Count ^b	*p<.05 **p<.01 ***p<.001
Marital Status				
Married (reference group)	5.7	(0.61)	270,681	
Living with Partner	16.2	(4.53)	36,038	*
Widowed	6.1	(2.50)	17,317	
Divorced	11.9	(2.13)	59,069	**
Separated	21.7	(5.53)	37,103	**
Never Married	17.4	(2.16)	204,962	***
Health Status				
Excellent (reference group)	5.0	(0.82)	130,182	
Very Good	8.4	(1.09)	177,439	*
Good	12.0	(1.49)	190,937	***
Fair	16.7	(2.76)	96,854	***
Poor	12.8	(3.06)	24,971	*
Disability Status				
All Others	10.1	(0.82)	482,876	**
Chronic Disease (reference group)	6.7	(0.83)	156,742	
Metropolitan Statistical Area (MSA)^d				
MSA (reference group)	12.0	(1.49)	510,751	
Non-MSA	8.4	(0.67)	128,867	*
Health Service Areas				
Northwestern	8.4	(1.45)	79,621	
Northern	7.3	(1.19)	149,900	*
Southwestern	9.9	(1.17)	149,900	
Central (reference group)	12.1	(1.85)	153,460	
Eastern	8.2	(1.16)	140,182	

- a. For those reporting Hispanic ethnicity and some other race, Hispanic was selected as racial classification
- b. Details may not sum to totals because of rounding.
- c. Details do not sum to totals due to missing observations (Weighted percent for missing observations: Race 3.0%; Education 3.7%; Marital status 2.2%; and Health status 2.7%).
- d. MSA stands for Metropolitan Statistical Area, which is a Census Bureau-defined urbanized area of at least 50,000 inhabitants with a total metropolitan population of at least 100,000. Additional contiguous counties are included in the MSA if they meet certain requirements of commuting to the central counties and other selected requirements of metropolitan character (such as population density and percent urban).

Table 2-3. Uninsurance Rates among Adults (Ages 19-64) by Employment Characteristics, Virginia 2004

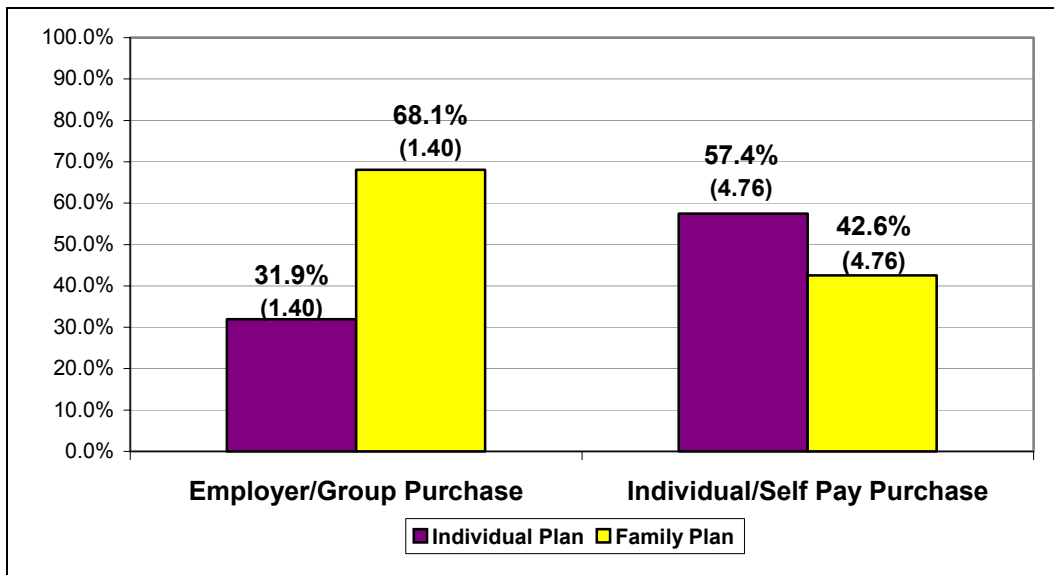
	Uninsurance Rate %	Weighted Count	*p<.05 **p<.01 ***p<.001
Employment			
Employed (reference group)	10.2%	338,910	
Not Employed	14.7%	172,178	**
Employment Sector			
Government (reference group)	3.2%	28,217	
Private Company	12.5%	227,696	***
Non-Profit	2.8%	7,222	
Self-Employed	24.9%	62,337	***
Unpaid	.96%	340	
Hours Worked per Week			
<20	21.2%	27,374	
21-35	23.5%	83,355	***
>35 (reference group)	7.9%	221,591	
Type of Job			
Permanent (reference group)	8.6%	262,039	
Temporary/Seasonal	24.1%	64,024	**

Table 2-3. Uninsurance Rates among Adults (Ages 19-64) by Employment Characteristics, Virginia 2004 (continued)

	Uninsurance Rate %	Weighted Count	*p<.05 **p<.01 ***p<.001
Size of Employer			
<11	22.6%	121,479	***
11-50	16.7%	66,272	*
51-100	7.9%	18,806	
101+ (reference group)	4.8%	87,515	
Industry Sector			
Education	4.4%	14,241	
Social Services	12.1%	5,184	
Manufacturing	8.4%	15,113	
Health Care	6.7%	18,451	
Entertainment	0%	0	
Banking	6.5%	10,370	
Transportation	6.7%	14,400	
Professional	7.7%	18,618	
Government (reference group)	1.8%	10,728	
Business	3.7%	3,893	
Construction	19.1%	38,796	***
Retail	16.7%	51,445	***
Agriculture	3.5%	1,520	
Personal Service	32.4%	40,607	***
Other	18.0%	72,848	***

Details do not sum to totals due to missing observations (Weighted percent for missing observations: Employment Sector 3.9%; Hours Worked per Week 1.9 Type of Job 1.9%; Size of Employer 1.9%, and Industry 3.6%).

Figure 2-4. Private Coverage Plans Among Adults (19-64 years) by Purchaser Type, Virginia 2004



Weighted counts: Employer/Group Purchase = 3,913,209; Individual/Self Pay Purchase=421,346

Table 2-4. Percentage of Virginians Enrolled in Public Health Coverage, 2004

	Ages 0-18 (1,879,151)	Ages 19+ (5,271,564)	Total Population (7,150,714)
Weighted Count			
Public Program	% (SE)	% (SE)	% (SE)
Medicare	5.4% (1.03)	19.0% (0.72)	15.4% (0.60)
Medicaid/SCHIP	14.4% (1.87)	3.7% (0.57)	6.7% (0.69)
CHAMPUS	11.3% (1.46)	10.7% (0.75)	10.9% (0.68)

Table 2-5. Health Insurance Status of Individuals Who Are Potentially Eligible for Public Programs*, Virginia 2004

Eligibility Group	Insurance Type			Weighted count
	Private %(SE)	Public %(SE)	Uninsured %(SE)	
<i>FAMIS PLUS – MEDICAID</i> Children Under 19 Years in Households with Income <=133% FPL	28.8% (9.03)	63.5% (9.57)	7.7% (4.56)	89,096
<i>MEDICAID</i> Individuals Who Live in Low-income** Families with Dependent Children	28.4% (6.19)	49.5% (7.17)	22.1% (6.07)	230,351
<i>FAMIS – CHILDREN’S HEALTH INSURANCE PROGRAM</i> Children Under 19 Years in Households with Income <=200% FPL	25.9% (6.37)	64.9% (6.98)	9.2% (3.70)	167,372

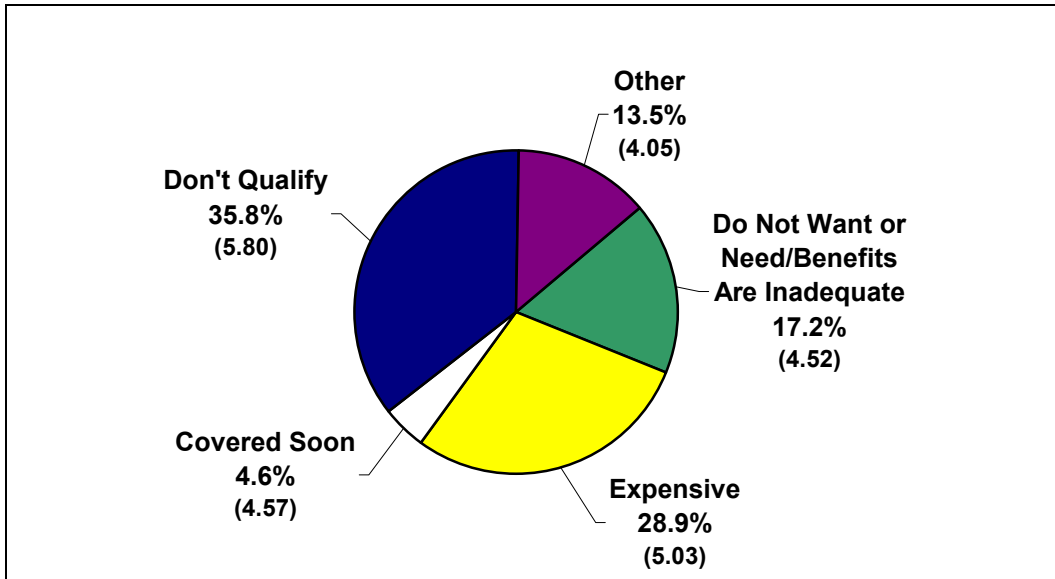
*Eligibility categories are not mutually exclusive.

**Low-income families with dependent children (LIFC) are eligible for Medicaid based on 185% of the Standards of Need requirements defined by geographic region by the Virginia Department of Health.

Table 2-6. Knowledge of and Interest in Public Coverage among the Uninsured, Virginia 2004

	Yes	No	Weighted Count
	% (SE)	% (SE)	
Have Requested or Received Information about Public Programs	34.6% (3.48)	65.4% (3.48)	581,887
Willing to Enroll	87.7% (2.90)	12.3% (2.90)	537,330

Figure 2-5. Reasons Uninsured Workers Do Not Have Employer-Sponsored Coverage, Virginia 2004



Total weighted count = 243,495

Figure 2-6. Percentage of Virginians Somewhat or Very Worried about Access to Health Coverage, Medical Care and Prescription Drugs 2004

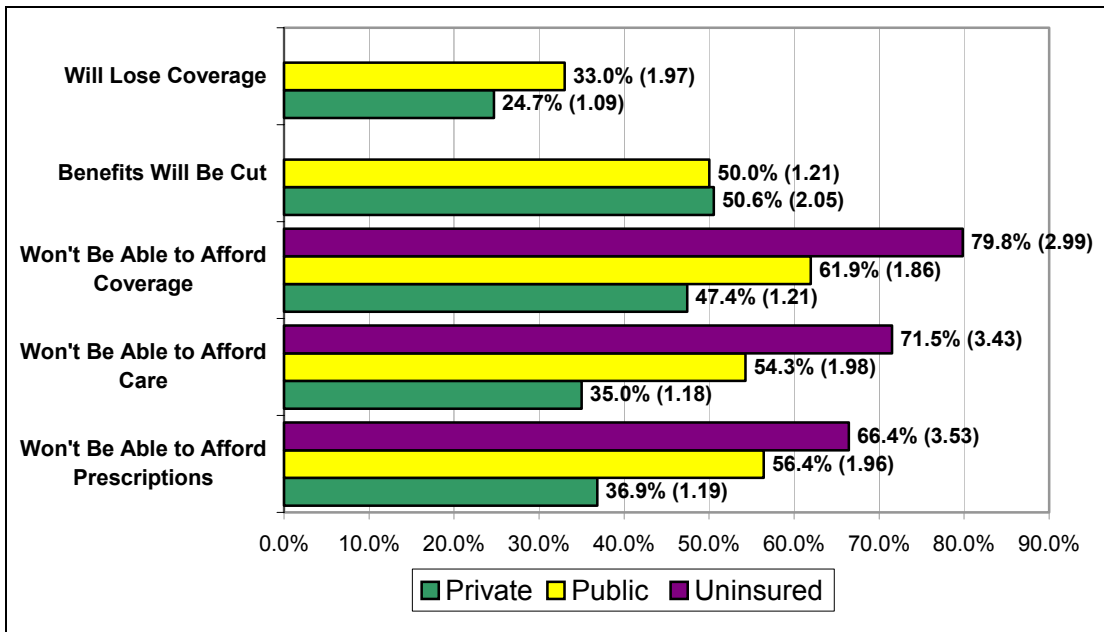


Figure 2-7. Percentage Reporting They Could Not Leave a Job Because It Would Result in Loss of Health Insurance, Virginia 2004

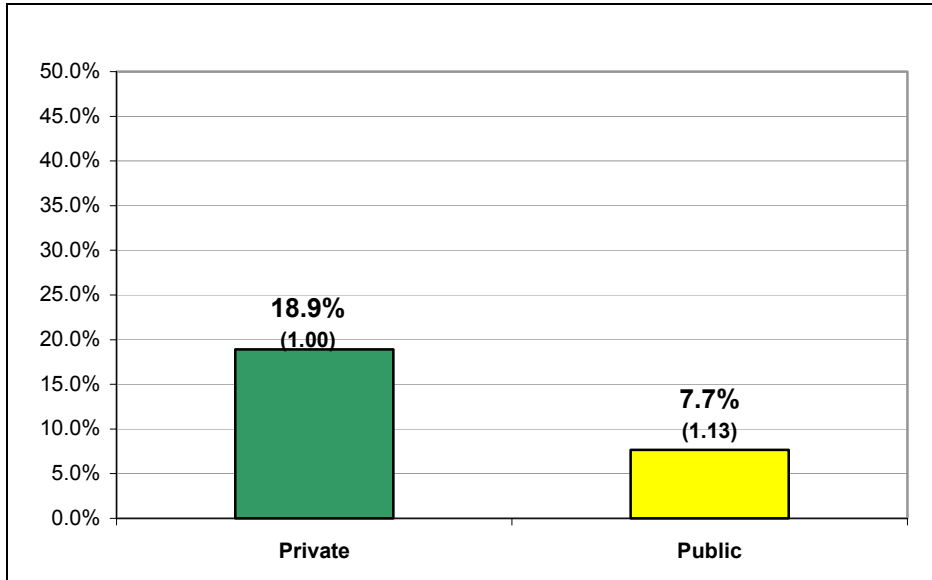


Figure 2-8. Percentage of Insured Virginians with Dental, Prescription Drug or Mental Health Coverage, 2004

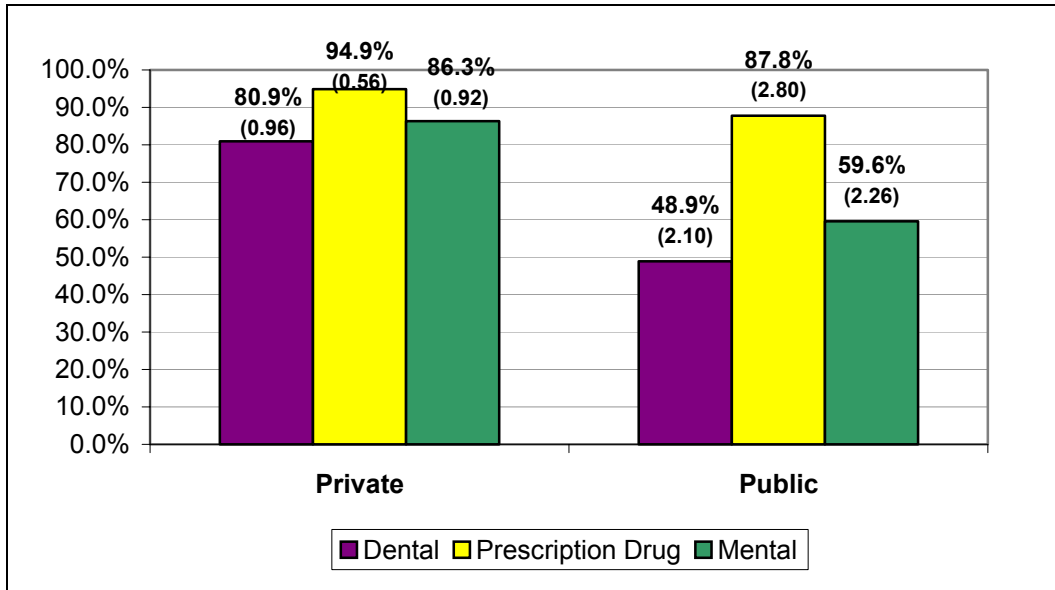


Figure 2-9. Percentage Unable to See a Doctor in Past 12 Months Due to Cost, by Insurance Type, Virginia 2004

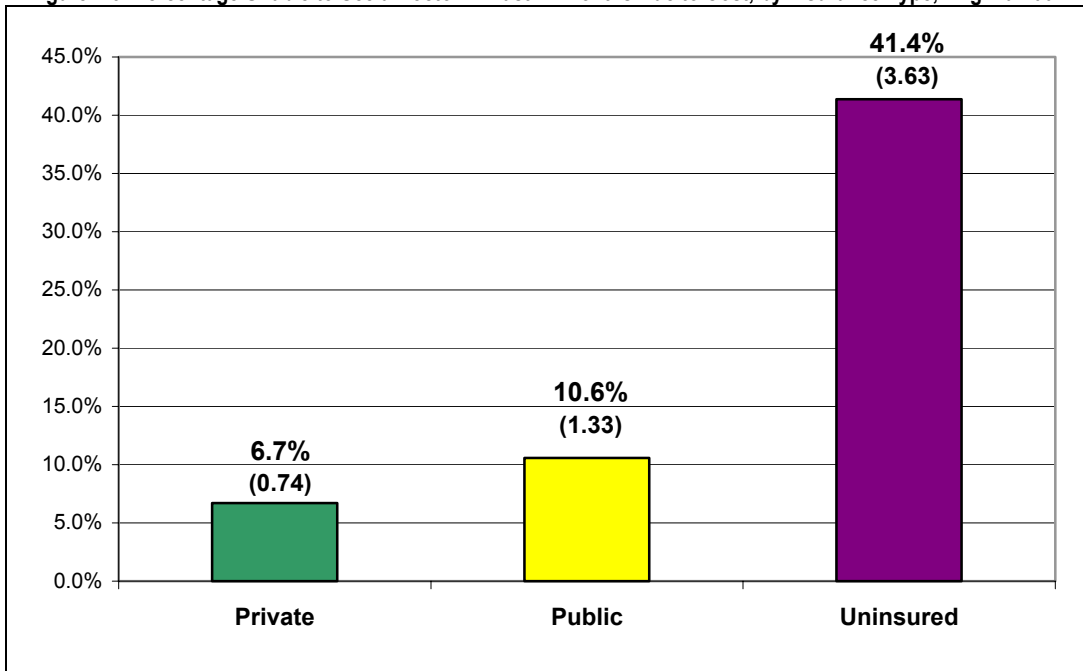


Figure 2-10. Percentage of Virginians Reporting Bankruptcy Due to Medical Expenses, Virginia 2004

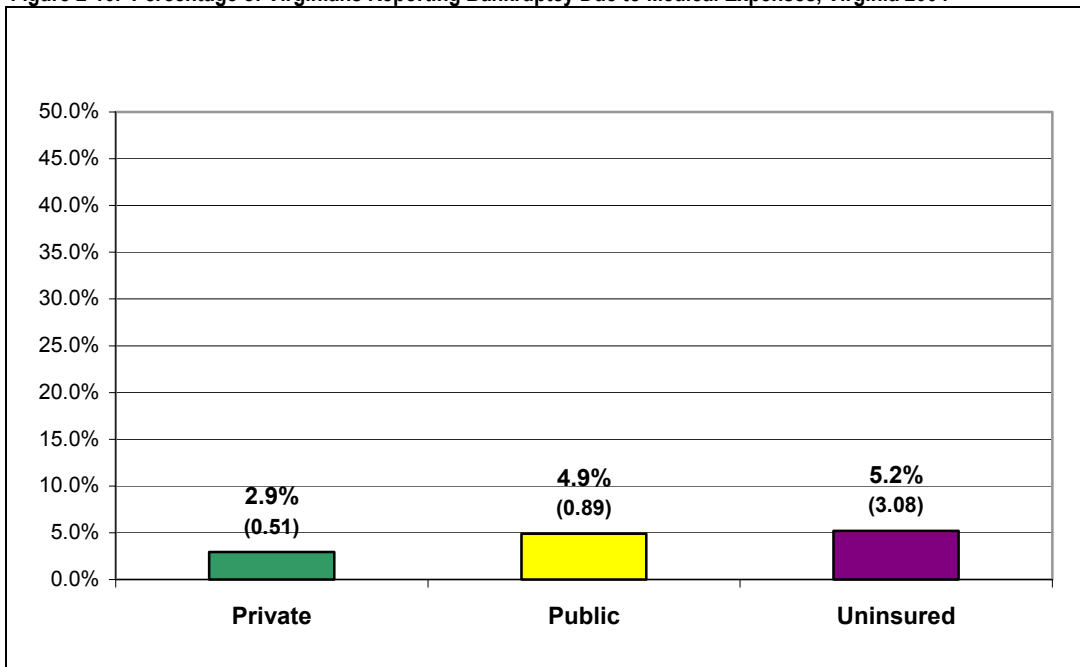


Table 3-1. Health Insurance Offer Rates by Selected Employer Characteristics, Virginia 2004

	Offer Rate % (SE)	
Overall Rate of Employer Offering Insurance Coverage	68.8%(1.17)	
Employer Size		
< 11 employees	32.4% (2.65)	***
11-50 employees	63.9% (3.67)	***
>50 employees (reference group)	79.3% (1.37)	
Employee Income (as % of FPL)		
<100%	39.6% (4.88)	***
100-133%	48.6% (6.95)	***
134-150%	49.4% (8.45)	**
151-200%	64.4% (4.42)	**
201-250%	60.7% (4.65)	***
251-300%	64.6% (4.24)	**
>300% (reference group)	77.0% (1.26)	
Industry Sector		
Education	80.7% (3.03)	**
Social Services	79.9% (7.05)	
Manufacturing	79.4% (3.76)	**
Health Care	78.9% (3.24)	**
Entertainment	76.0% (7.76)	
Banking	75.9% (4.53)	
Transportation	74.6% (4.27)	
Professional	68.5% (4.05)	
Government (reference group)	66.9% (3.04)	
Business	64.9% (6.56)	
Construction	63.4% (4.75)	
Retail	56.8% (4.34)	
Agriculture	56.0% (8.85)	
Personal Service	47.6% (7.24)	*
Other	63.7% (3.77)	
Type of Employment		
Permanent (reference group)	71.6% (1.177)	
Temporary/Seasonal	38.1% (4.58)	***
Hours Worked		
<20	32.9% (5.36)	***
20-34	46.0% (3.83)	***
>35 (reference group)	73.2% (1.23)	
Employment Sector		
Government (reference group)	71.6% (2.45)	
Private Company	72.8% (1.54)	
Non-Profit	83.0% (3.06)	**
Self-Employed	25.2% (3.42)	***
Unpaid	52.6% (10.92)	

p<.05 **p<.01 ***p<.001

Figure 3-1. Percentage of Employer-Sponsored Health Insurance Enrollees Whose Benefits Include Dental, Prescription Drug and Mental Health Coverage, Virginia 2004

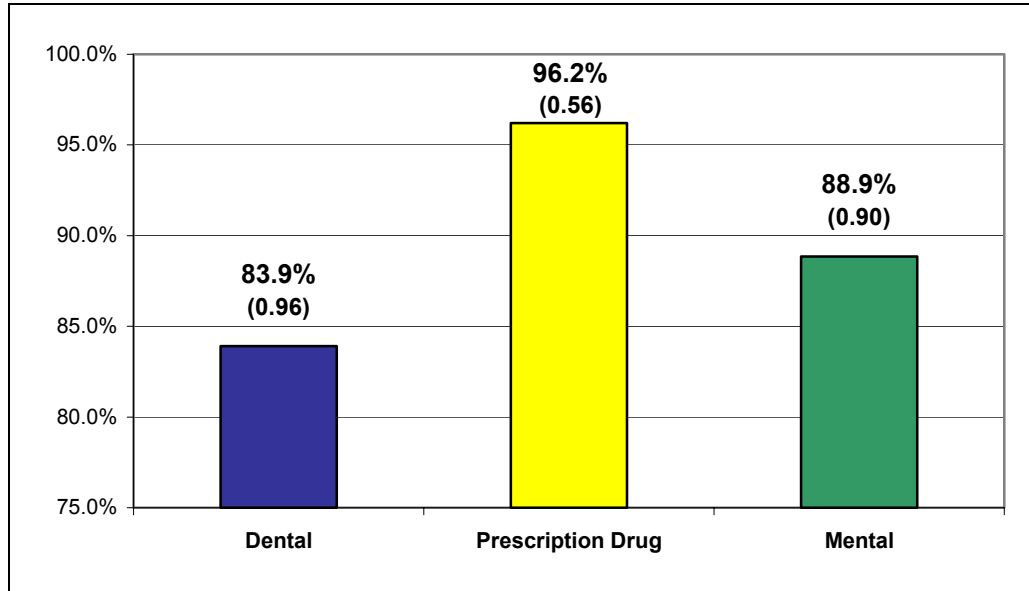
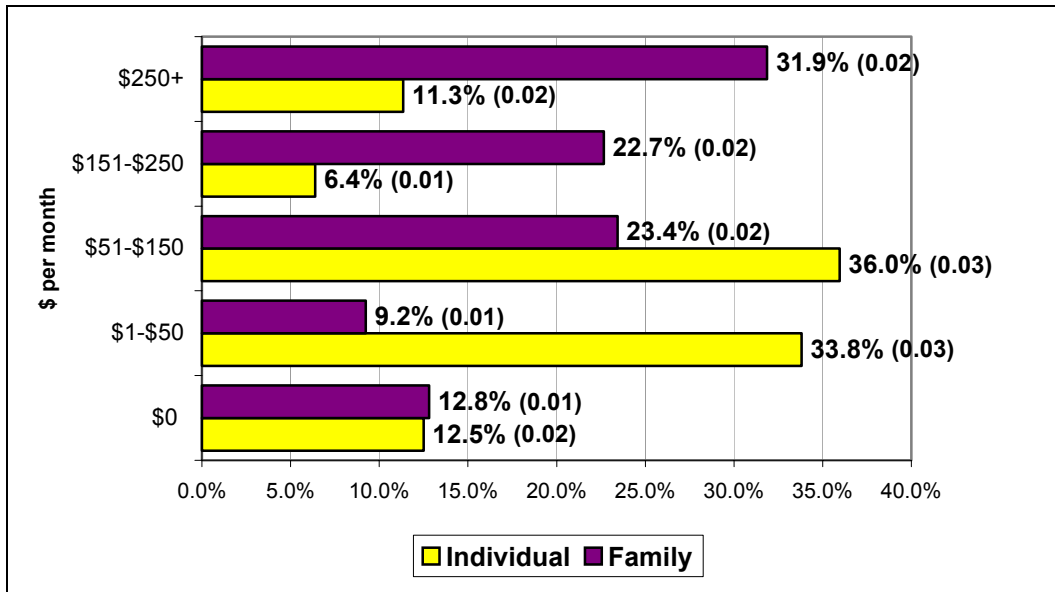
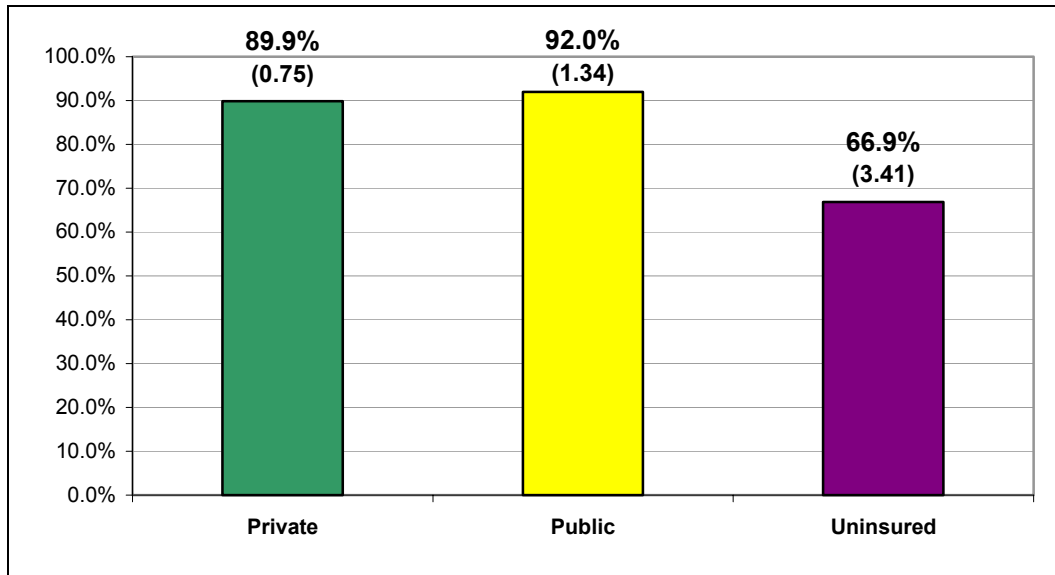


Figure 3-2. Employees' Out-of-Pocket Monthly Premium, Virginia 2004



Weighted counts: Individual plan = 787,135; Family plan = 2,179,629

Figure 4-1. Percentage of Respondents Who Reported a Usual Source of Care by Insurance Status



All differences are statistically significant from uninsured at a .001 level

Table 4-1. Distribution of Types of Regular Sources of Care by Coverage Status, Virginia 2004

	Private (4,465,792)	Public (1,341,051)		Uninsured (409,745)	
Source of Care	% (SE)	%(SE)		%(SE)	
Emergency Room	2.6% (0.41)	5.1% (0.86)	**	13.2% (0.31)	***
Doctor's Office	81.6% (1.01)	74.5% (1.88)	***	58.5% (4.51)	***
Clinic	7.6% (0.68)	14.8% (1.63)	***	24.8% (4.04)	***
Hospital	0.7% (0.21)	2.9% (0.67)	**	1.1% (0.67)	
Military	6.9% (0.68)	1.5% (0.38)	***	1.6% (0.73)	***
Other	0.6% (0.18)	1.2% (0.52)		0.8% (0.78)	

*p<.05 **p<.01 ***p<.001

Note: Private is the reference group for the significance tests.

Table 4-2. Health Services Utilization by Insurance Status, Virginia 2004

	Private		Public		Uninsured	
	% (SE)	Count	% (SE)	Count	% (SE)	Count
Doctors Visits in Past 3 Months						
0	20.1% (1.13)	724,775	15.3% (1.78)	180,908	41.5% (5.20)	131,023
1	38.9% (1.39)	1,404,129	36.0% (2.34)	425,383	34.5% (4.84)	108,861
2	17.7% (1.10)	637,127	16.0% (1.55)	189,356	14.0% (3.05)	44,088
3+	23.4% (1.22)	843,354	32.7% (2.03)	386,236	10.1% (2.53)	31,841
Overnight Hospital Stay in Past 12 Months						
Yes	8.0% (0.71)	4,608,558	18.0% (1.48)	1,189,356	9.9% (2.03)	557,934
No	92.0% (0.71)	401,081	82.0% (1.48)	260,800	90.1% (2.03)	61,181
Number of Hospital Admissions in Past 12 Months						
0	10.9% (3.19)	43,293	1.6% (0.78)	4,024	14.8% (7.72)	9,034
1	67.5% (4.79)	268,679	65.3% (3.98)	168,428	67.5% (10.38)	41,285
2	12.3% (2.54)	48,824	16.5% (2.84)	42,515	11.9% (8.37)	7,258
3+	9.4% (4.20)	37,478	16.7% (3.13)	43,170	5.9% (3.83)	3,604
Emergency Room/Urgent Care in Past 12 Months						
Yes	23.8% (1.08)	1,190,147	31.6% (1.92)	457,541	26.5% (3.18)	163,221
No	76.3% (1.08)	3,822,035	68.4% (1.92)	992,370	73.6% (3.18)	453,783

p<.05 **p<.01 ***p<.001

Note: Private is the reference group for the significance tests.