Impacts of Health Reform in Tennessee

An Examination of Changes in Health Insurance Coverage, Use of Health Care Resources, and the Implications on Health Care Manpower

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MAJOR POINTS

The Patient Protection and Affordable Care Act (PPACA), enacted into law in March 2010, will have substantial direct and indirect impacts on the health care enterprise of Tennessee. Based upon 2009 information, 910,215 Tennessee residents are uninsured. The most prominent changes under PPACA will include:

- *expanding health insurance coverage to 558,044 nonelderly state residents who are currently uninsured through eligibility expansions for private insurance and Medicaid and the creation of an expanded competitive market through a health insurance exchange;*
- *reducing the proportion of the state's nonelderly residents without health insurance from 16.7 percent to 6.5 percent;*
- *changing the volume, sites, and payer mix of health care services used in the state, with a substantial increase in the number of ambulatory care visits, a modest reduction in emergency room visits, and a significant change in the payer mix of hospital admissions, with increases in publicly- and privately-insured cases and a reduction in uninsured admissions;*
- *reducing the amount of uncompensated care and bad debt provided by hospitals, community-based providers, and physicians from $4.11 billion to $1.84 billion, a 55.3 percent decrease;*
- *placing substantial additional burdens on regions in Tennessee that are currently experiencing health manpower shortages as more people gain health insurance and increase their utilization of health services; and*
- *requiring 194 new primary care physicians to raise the current physician workforce level to "adequate" in the 44 of 95 counties in Tennessee that are rated as currently having inadequate or marginal supplies.*

These changes, while generally promoting more effective and efficient health care in the state, will present challenges. These include:

- *the continuing need for and the challenges to the current safety-net services for the 352,171 nonelderly state residents who will remain uninsured;*
- *the need for continuing support for substantial uncompensated care, especially as private and public payment rates, including disproportionate share funds, are reduced;*
- *the need for additional health care manpower, especially primary care providers, to meet the increased demand for ambulatory care services;*

- *the increase in state funding for Medicaid services as the number of enrollees increases as a result of eligibility expansion as well as substantial crowd out of private coverage;*
- *the need to monitor the ever-changing political and regulatory landscapes; and*
- *the necessity of adjusting the estimated impacts when new information and evidence become available.*

EXECUTIVE SUMMARY

The Patient Protection and Affordable Care Act (PPACA) enacted in March 2010 defines a comprehensive health care reform that, once fully implemented, will impact virtually every portion of the health care system. It is the purpose of this report to analyze and summarize the impacts of this reform on health care in the state of Tennessee. The major goals of the study were to assess (1) the impact of changes in insurance eligibility on the number of uninsured in Tennessee; (2) the changes in health care utilization in the state that result from the expanded insurance coverage; (3) the impact of expanded coverage on the state's health system financing and uncompensated care; and (4) the impact of the expanded coverage on health care manpower in the state.

Health Insurance Expansion

Based upon an analysis of the 2009 American Community Survey, it is estimated that 910,215 Tennessee residents under the age of 65 were uninsured in 2009, corresponding to 16.7 percent of the state's population; 18.2 percent had public insurance; and 65.1 percent had private coverage (individual or group).

Of the total uninsured residents, it is estimated that approximately 558,044 persons, or 61.3 percent of the currently uninsured residents of Tennessee, will gain health insurance because of (1) the changes in young adult eligibility (91,390 persons), (2) the expansion of Medicaid (239,101 persons, including both the newly eligible and the previously eligible but not enrolled), and (3) the implementation of an insurance exchange (227,554).

While this increase is substantial, there will remain an estimated 352,171 nonelderly residents without insurance after these three interventions are implemented. This represents 6.5 percent of the nonelderly population and 38.7 percent of the previously uninsured. Thus, the challenges presented to and by the uninsured will be reduced, but not eliminated, as a result of these three reforms. The need for safety-net programs will remain, although the smaller number of residents dependent upon these programs may make public political support more tenuous. In addition, the substantial increase in Medicaid enrollees resulting directly from eligibility expansion as well as significant crowd-out of private coverage will have significant impact on state financing of health care at a time during which states, including Tennessee, are reducing health care funding to meet fi-

nancial challenges. Greater reliance on Medicaid will also place limits on access to care, as Medicaid beneficiaries have substantial barriers to access compared to those with private coverage.

Increases in Health Care Service Utilization

The increase in the number of Tennessee residents who have health insurance will change the utilization of ambulatory care, hospital, and emergency room services. Providing insurance to 558,044 additional residents will lead to an additional 1,083,164 ambulatory care visits per year, with the greatest increase in visits for primary care (707,042 visits) and a small decline in hospital outpatient visits (10,603 visits).

The increases in outpatient care will require additional primary care manpower. Many parts of Tennessee are currently considered primary care shortage areas. Increasing the number of primary care visits by 707,042 per year will require additional primary care physicians at a time when fewer new physicians are choosing careers in primary care.

Insurance expansion is also projected to cause a small reduction in both the number of hospital discharges (-0.9 percent) and in total bed days of care (-3.3 percent). The payer mix will change, with greater proportions of discharges and inpatient days of care from Medicaid and privately insured persons and a substantial decline from the uninsured.

The implications of the projected change in hospital payer mix are also significant and will vary from facility to facility. The impact on the state's safety-net hospitals, such as the Regional Medical Center in Memphis and the Erlanger Health System in Chattanooga, may be substantial. As many of the patients with uninsured admissions to these safety-net hospitals become insured, they may seek care in other non-safety-net community hospitals, reducing the total volume of admissions at safety-net hospitals but increasing the proportion of those remaining who are uninsured.

Overall emergency department (ED) use is projected to decline by 9.6 percent, driven by a reduction in the number of uninsured with high utilization rates. Little change is expected in the proportion of ED visits that are emergent.

Health System Finances and Uncompensated Care

In 2009, the acute care hospitals in Tennessee reported approximately $2.51 billion in uncompensated care, of which 91.1 percent was for the uninsured. Community-based clinics and office-based physicians in Tennessee provided an additional $1.04 billion and $558.7 million in uncompensated care, respectively. Thus, the total level of uncompensated care in the state in 2009 was approximately $4.11 billion.

Uncompensated care for all provider groups will decrease substantially after expansion of health insurance coverage. Overall levels of uncompensated care will decline by $2.27 billion, or 55.3 percent. Bad debt from insured patients will rise modestly (by approximately 6.8 percent), reflecting the greater number of patients with insurance.

The impact of reform on hospital and physician finances will be complex, depending upon the relative impacts of reducing the demand for free or discounted care and the projected payment reductions. Overall hospital charges will rise by over $172.0 million (reflecting changes in payer mix with different utilization rates and charges per admission), while actual revenues will increase by $691.0 million (reflecting changes in collection rates with the change in payer mix).

The overall level of uncompensated care in Tennessee will, however, remain substantial—approximately $1.84 billion. The financial significance of this may become more important as payment rates by insurers decline and as Medicaid and Medicare disproportionate share (DSH) funding is withdrawn.

Health Care Manpower

The analysis of baseline health care manpower data indicates that the supply of primary care providers in Tennessee as a whole ranks in the middle of all states. However, large portions of Tennessee are currently underserved by primary care providers, with 55 of 95 counties designated as shortage areas by the federal Health Resource and Services Administration (HRSA) classification and 44 counties having inadequate supplies based upon the criteria of the State Health Access Data Assistance Center (SHADAC) of the University of Minnesota.

Health care reform will place substantial additional burdens on these regions as more people gain health insurance and increase their utilization of health services. Tennessee may experience a

greater than average shortage because it is a state likely to have an above average insurance expansion and a state with current significant manpower shortages. It is projected that 194 new primary care physicians would be needed in the 44 counties rated as currently having inadequate or marginal supplies.

The PPACA reform includes changes intended to expand primary care access. These include (1) increasing Medicaid payments to Medicare levels for primary care doctors in 2013 and 2014; (2) providing a 10.0 percent increase in Medicare rates between 2010 and 2015 for some primary care physicians, general surgeons, nurse practitioners, clinical nurse specialists, and physician assistants; (3) reallocating unused residency slots toward new primary care opportunities; and (4) increasing funding for federally-qualified health centers and facilitating provider training in community clinic settings. These federal measures, while beneficial, may not be sufficient to meet the daunting manpower challenges facing Tennessee. They may need to be augmented by state-level regulatory and legislative changes to expand the use of non-physician health care providers such as nurse practitioners and physician assistants.

Risk and Uncertainty Will Remain

Forecasting the impact of bold, new health reform legislation is at best a proposition fraught with risk and challenges. The political and regulatory uncertainties are enormous, and they are further complicated by the assumptions used in projecting future changes. For example, insurance take-up rates by individuals can change widely depending upon how aggressively new programs are promoted and the complexity of enrollment processes. Similarly, published estimates of how much public insurance programs crowd out private coverage range from near 0.0 percent to 60.0 percent.

Recognizing the risk and uncertainty involved in model design and estimation, this report's authors have consistently used middle-range estimates of key assumptions, such as the take-up rates by individuals seeking insurance and the effects of the public and publicly-funded insurance crowding out private insurance. The actual impacts may prove to be greater or smaller than those reported in this report, and much depends upon both the outcomes of election-year politics nationally as well as how market competition and promotional practices in Tennessee will affect the actual enrollment of the previously uninsured through the various channels, such as the new insurance exchange and Medicaid expansion.

I. INTRODUCTION

President Barack Obama signed the Patient Protection and Affordable Care Act (PPACA)[1] and the follow-up Health Care and Education Affordability Reconciliation Act into law in March 2010. These laws define a comprehensive health care reform that, once fully implemented, will impact virtually every portion of the health care system at the national and local levels. The extent of these changes is suggested by the need to monitor 51 different impacts covering insurance coverage, affordability, and access to care.[2]

It is the purpose of this report to analyze and summarize the impacts of the reform on health care in the state of Tennessee. The major goals of the study were to assess (1) the impact of changes in insurance eligibility on the number of uninsured in Tennessee, (2) the changes in health care utilization in the state that result from the expanded insurance coverage, (3) the impact of expanded coverage on the state's health system financing and uncompensated care, and (4) the impact of the expanded coverage on health care manpower in the state. The findings and conclusions of the study will be presented in Sections II through VI of the report. In each section, information will be presented that relates to the current status of care in Tennessee, the projected changes after reform, and the implications of these changes for the state's health care enterprise.

A state-specific analysis is important even though numerous national projections have been published. The impacts of reform will vary from state to state because of pre-existing differences in health insurance coverage, in health care system organization and financing, and in economics and demographics, each of which will affect the extent of change to be expected from the reform proposals. The decrease in the uninsured, for example, is expected to vary from 1.1 to 16.0 percentage points across the states.[3] Tennessee is likely to have a greater than average impact from Medicaid expansion because of its high proportion of residents who will become eligible for Medicaid ((that is, those with incomes at or below 138.0 percent of the Federal Poverty Level (FPL, $30,843 in 2011),[4] and the fact that it is a high impact state for federal subsidies through exchanges because of

[1]In this report, both laws will be referred to collectively as the Patient Protection and Affordable Care Act (PPACA). The full text of the PPACA can be found at http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=111_cong_bills&docid=f:h3590enr.txt.pdf. The text of the Health Care and Education Affordability Reconciliation Act can be found at http://docs.house.gov/ rules/hr4872/111_hr4872_amndsub.pdf. For a summary of the health reform law, see *Focus on Health Reform, Summary of New Health Reform Law* (Washington, DC: Kaiser Family Foundation, March 2010).

[2]J. Sonler and E. Lukanen, *A Framework for Tracking the Impacts of the Affordable Care Act in California* (University of Minnesota, State Health Access Data Assistance Center, June 2011).

[3]M. Buttegens, J. Holahan, and C. Carroll, *Health Reform Across the States: Increased Insurance Coverage and Federal Spending on the Exchanges and Medicaid* (Washington, DC: The Urban Institute, March 2011).

[4]PPACA sets a national eligibility level of 133.0 percent of the Federal Poverty Level and mandates a 5.0 percent offset from income, raising the effective eligibility level to 138.0 percent.

the high proportion of residents with incomes between 138.0 and 400.0 percent of the FPL ($30,843 to $89,400 per year for a family of four in 2011).[5] In addition, states will have considerable flexibility in implementing parts of the reform package so that approaches to the challenges of reform will also vary.[6]

The analyses in this report are subject to several limitations. These include limiting the scope of the assessment to (1) the major structural changes in the insurance market, including expanding coverage for young adults, expanding Medicaid coverage, and implementing insurance exchanges; (2) residents under the age of 65, as those older are eligible for Medicare with near universal coverage and are affected differently by the PPACA reforms;[7] and (3) the full implementation of the law as currently enacted, understanding that the full impact of many provisions will not be completely felt until one or more years after initial implementation and that many important details will be determined through the ongoing political, regulatory, and legal processes. The analyses in the various sections of this report will be based upon different data sets that best fit each topic; in many cases, data have been extrapolated from relevant national or other state studies to Tennessee. In many cases, our projections are based upon reasonable assumptions, understanding that changes in these assumptions can have significant impacts on the results. Finally, like all projections of the future, the estimates that will be offered are, by necessity, only approximations of what may happen.

[5]Buttegens, Holahan, and Carroll, *Health Reform Across the States*.

[6]As one example, states may choose to create Basic Health Plans to provide insurance to adults with incomes of 133.0-200.0 percent of the FPL and for legal immigrants who are not eligible for Medicaid (see S. Dorn, *The Basic Health Program Option Under Federal Health Reform*. State Coverage Initiatives, March 2011).

[7]For changes to Medicare, see *Summary of Key Changes to Medicare in 2010 Health Reform Law* (Washington, DC: Kaiser Family Foundation, 2011).

II. CHANGES IN HEALTH INSURANCE ELIGIBILITY

The limitations of health insurance coverage in the United States have been a persistent and increasing problem. The number of residents without insurance has risen to 49.9 million people, or 16.3 percent of the U.S. population.[8] Those without insurance have limited access to needed medical care, suffer significantly greater morbidity and mortality, and have substantially greater personal finance challenges than do those with coverage.[9] In addition, lack of insurance impacts the community as a whole by, as examples, expanding the need for public health system support, increasing the level of uncompensated care, and reducing workforce productivity.[10]

The PPACA will expand health insurance eligibility by several interrelated pathways. These various directions include (1) requiring insurers to include coverage of young adults up to age 26 on their parents' policies; (2) expanding Medicaid coverage for persons with modified adjusted gross incomes (MAGI)[11] up to 138.0 percent of the FPL; (3) facilitating the purchase of individual policies in the market by establishing competitive insurance exchanges, with subsidies for lower income individuals and selected employers; (4) establishing temporary high-risk insurance pools for those who would be otherwise uninsurable because of pre-existing health conditions; (5) establishing employer and individual mandates for coverage, with financial penalties for noncompliance; and (6) reducing the overall cost of health care that will, presumably, reduce health insurance premiums to make coverage more affordable. Some of these reforms have already gone into effect, e.g., expanded coverage for young adults, while others will not be fully implemented until 2018.[12]

[8]C. DeNavas-Walt, B. D. Proctor, and J. C. Smith, *U.S. Census Bureau, Current Population Reports, P60-239, Income, Poverty, and Health Insurance Coverage in the United States: 2010* (Washington, DC: U.S. Government Printing Office, 2011).

[9]For a full discussion of the impacts of being uninsured, see *The Uninsured, A Primer* (Washington, DC: Kaiser Family Foundation, December 2010).

[10]D. M. Mirvis and D .E. Bloom, "Population, Health and Economic Development in the United States," *Journal of the American Medical Association* 300:93–95, 2008.

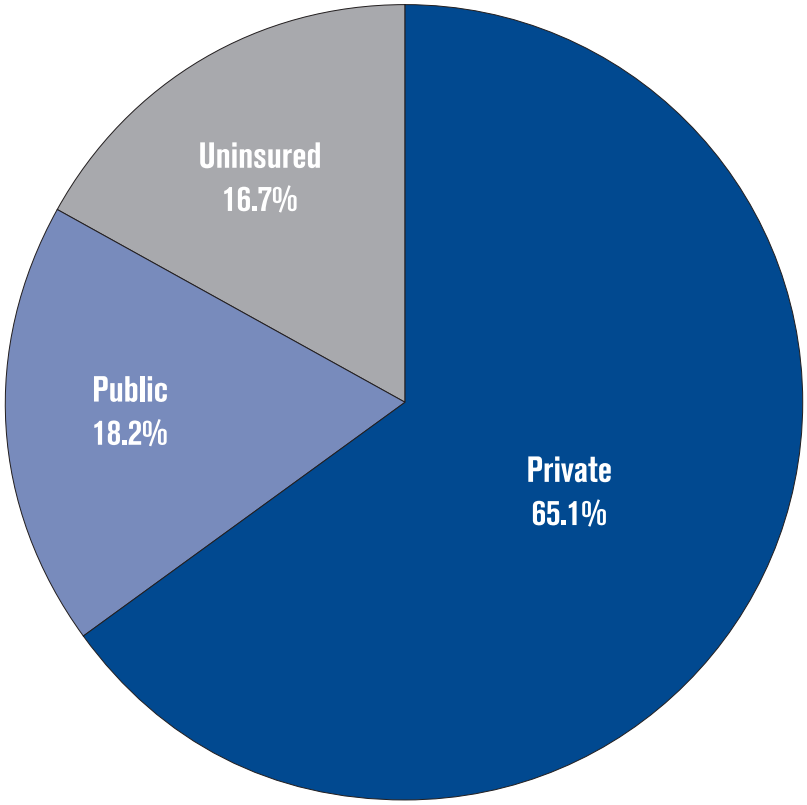
[11]PPACA stipulates the formula for computing the modified adjusted gross income (MAGI) as adjusted gross income plus foreign investment income plus tax-exempt income for the entire household. It also eliminates consideration of other assets in determining eligibility. See Kaiser Family Foundation, *The New Rules for Determining Income Under Medicaid in 2014* (Washington, DC: Kaiser Family Foundation, June 2011).

[12]For a complete timeline of changes, see *Timeline for Health Care Reform Implementation* (Washington, DC: The Commonwealth Fund, 2011).

The Uninsured of Tennessee

Figure 1 shows the distribution of health insurance coverage for the nonelderly (under age 65) population of Tennessee, based upon data from the 2009 American Community Survey (ACS).[13]

Figure 1. Insurance Status of Residents of Tennessee Under Age 65



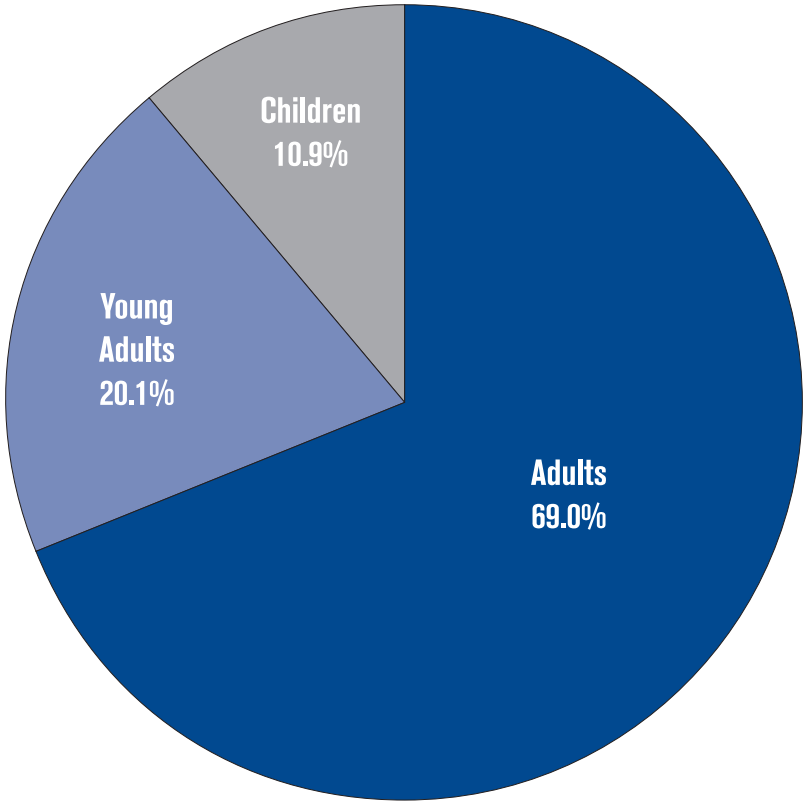
Source: Authors' analysis of the 2009 American Community Survey.

[13]The American Community Survey (ACS) is a national survey of three million households per year that provides annual data on various topics, including demographics, health insurance, income, housing, etc., for population centers of 65,000 persons or more. The ACS assessment of insurance status is based upon coverage at the time of the interview. In 2009, the Tennessee sample included 63,282 responses. For a full discussion of the ACS, see M. Davern, B. C. Quinn, G. M. Kenney, and L. A. Blewett, "The American Community Survey and Health Insurance Coverage Estimates: Possibilities and Challenges for Health Policy Researchers," *Health Services Research* 44: 593, 2009.

It is estimated that 910,215 Tennessee residents under the age of 65 were uninsured at the time of the 2009 ACS survey, corresponding to 16.7 percent of the state's population; 18.2 percent had public insurance, and 65.1 percent had private coverage (individual or group).[14]

Figures 2 and 3 show the age distribution of the uninsured. The greatest number of uninsured were adults between the ages of 26 and 64 (628,283, Figure 2), while the young adult age group (19 to 25 years) had the highest percentage of uninsured (30.9 percent) (Figure 3).

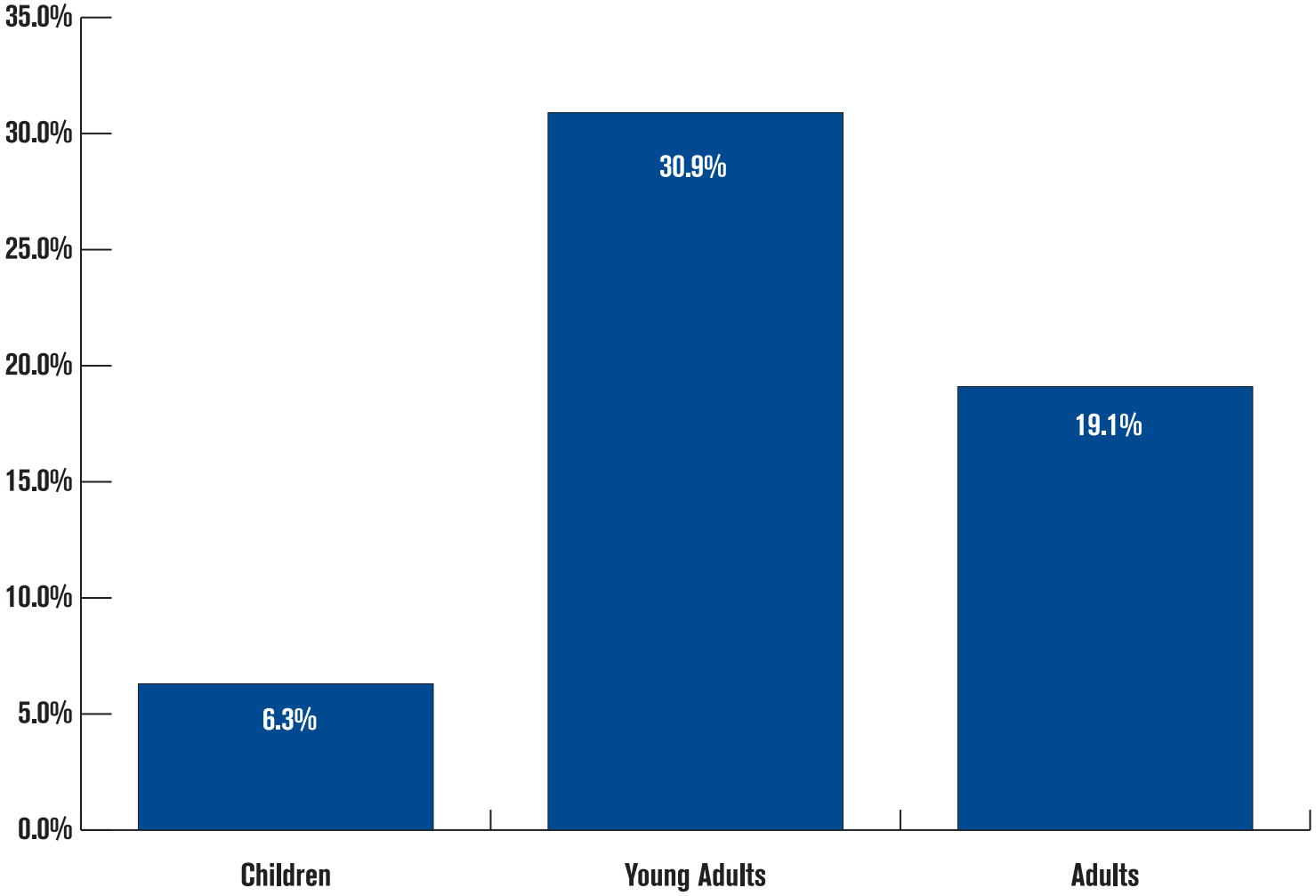
Figure 2. Distribution of the Uninsured in Tennessee by Age



Source: Authors' analysis of the 2009 American Community Survey.

[14]Of those over 65 years of age, only 4,225 (0.5 percent) were uninsured. The estimates here are subject to considerable constraints. These include, as examples, the differences in the number of persons uninsured at the time of the survey and uninsured at any time during the past year (a difference of 11.7 million people in the 2010 National Health Insurance Survey), as well as by the significant undercount of persons with Medicaid. See J. A. Kierman, M. Davern, K. T. Call et al., "Understanding the Current Population Survey's Insurance Estimates and the Medicaid Undercount," *Health Affairs Web Exclusive*, September 2009.

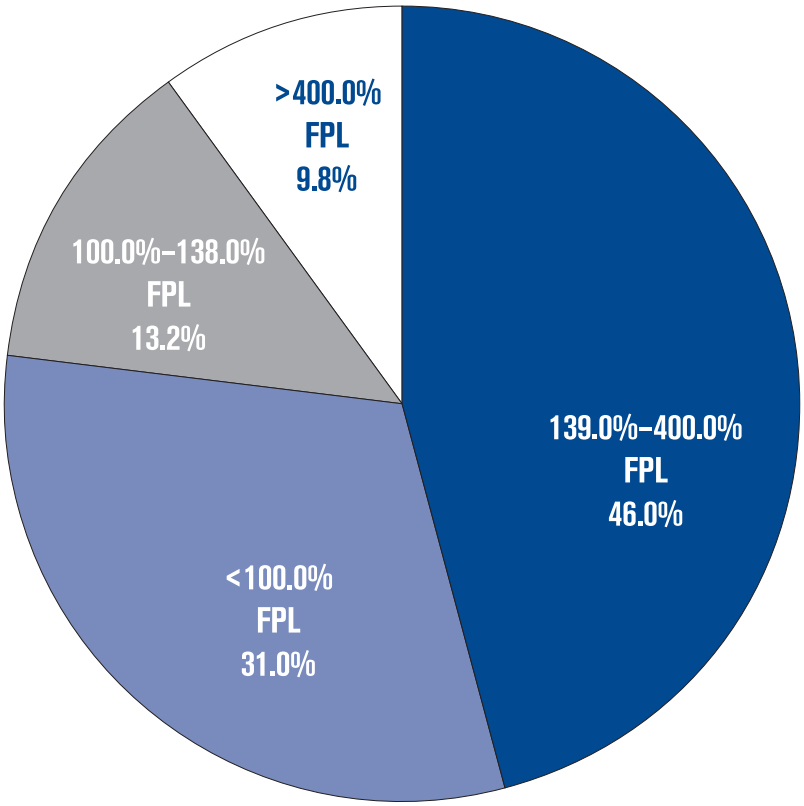
Figure 3. Proportion of Each Age Group That Was Uninsured



Source: Authors' analysis of the 2009 American Community Survey.

Figures 4 and 5 show the income distribution (based on 2009 FPL levels, the year for which insurance status was determined from the ACS) of the nonelderly (through age 64) uninsured;[15] 31.0 percent of the state's uninsured had 2009 gross incomes[16] under the FPL ($22,050 gross yearly income for a family of four in 2009), 44.2 percent had incomes under 138.0 percent of the FPL ($30,429 per year for a family of four in 2009), and 90.2 percent had incomes under 400.0 percent of the FPL ($88,200 per year for a family of four in 2009, Figure 4). Of those with incomes under 138.0 percent of the FPL, that is, those eligible for insurance under Medicaid expansion, 28.6 percent were uninsured. Those with higher incomes up to 400.0 percent of the FPL will be eligible for coverage through insurance exchanges.

Figure 4. Distribution of the Nonelderly Uninsured in Tennessee by Income

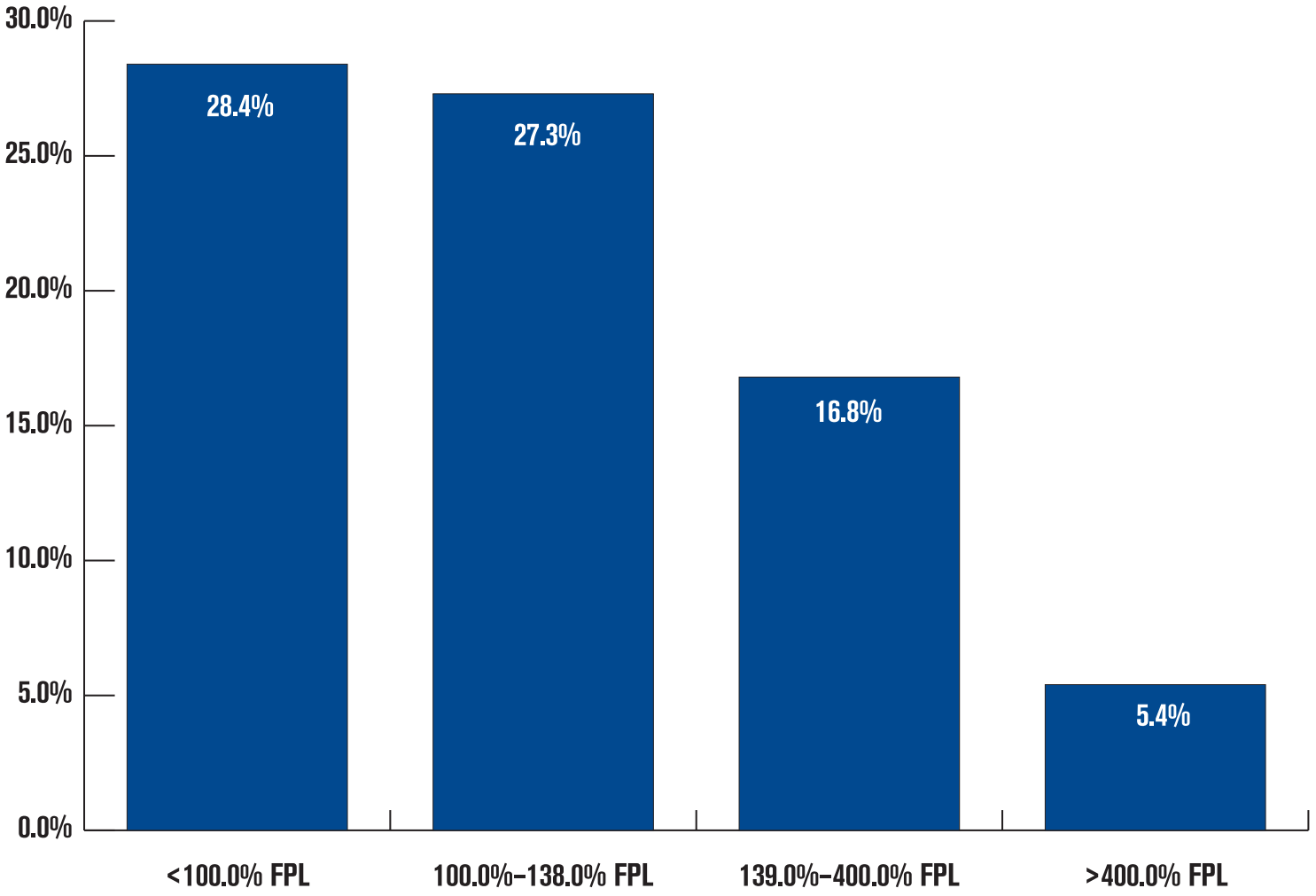


Source: Authors' analysis of the 2009 American Community Survey.

[15]Income data were missing for 2.2 percent of the ACS sample. To adjust for this, counts for subgroups based upon income were adjusted for this data loss by scaling the observed counts upward.

[16]Gross incomes as reported in the ACS were relied on, although actual eligibility is dependent upon a household's modified adjusted gross income (as defined above) which was not reported.

Figure 5. Proportion of Each Income Category That Was Uninsured



Source: Authors' analysis of the 2009 American Community Survey.

Expanded Private Coverage for Young Adults

In the nation, over 14.8 million young adults aged 19–25 are currently uninsured, corresponding to an uninsured rate of approximately 30.0 percent.[17] Among those not in college, the uninsured rate is approximately 40.0 percent. In Tennessee, as shown in Figure 3, this group also had the highest proportion of uninsured members (30.9 percent).

This high uninsured rate is the result of several factors. Many young adults lose coverage under their parents' plans when they become 19 years old; 60.0 percent of firms that offer family coverage to employees do not cover dependent children over the ages of 18 or 19 who are not attending college.[18] National data indicate that the rate of being uninsured increases by 7.1 percentage points at age 19, of which 5.6 points are due to aging out of parental coverage by those not in school.[19] Those young adults who are employed commonly have lower paying jobs that do not offer employer-sponsored coverage, and the proportion of those who are offered coverage who enroll is lower than that for other groups because of the relative expense and a lower perceived need for coverage. In 2010, 45.0 percent of young adults attributed their lack of coverage to the high cost; in 2001, only 31.0 percent attributed their lack of coverage to high cost.[20]

State Medicaid eligibility rules typically include more restrictive income thresholds as age increases, making public coverage less available. Current Tennessee Medicaid eligibility rules[21] stipulate that children up to one year old may be covered if their household modified adjusted gross income is up to 185.0 percent of the FPL ($41,348 annual income for a family of four in 2011). Up to age six, children are eligible for TennCare coverage if their family income is 133.0 percent of the FPL or lower ($29,726 annual income for a family of four in 2011). However, children aged six and older must live in households with incomes at or below 100.0 percent of the FPL ($22,350 gross annual income for a family of four in 2011). Above the age of 18, eligibility is tightly restricted to those with low incomes and unusually poor health status.

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[17] J. L. Nicholson, S. R. Collins, B. Mahato et al., *Why Young Adults Become Uninsured and How New Policies Can Help, 2009 Update* (Washington, DC: The Commonwealth Fund, August 2009).

[18] G. M. Kenney, J. E. Pelletier, and L. J. Blumberg, *How Will the Patient Protection and Affordable Care Act of 2010 Affect Young Adults?* (Washington, DC: The Urban Institute, July 2010).

[19] M. Anderson, C. Dobkin, and T. Gross, *The Effect of Health Insurance Coverage on the Use of Medical Services* (Cambridge, MA: National Bureau of Economic Research Working Paper #15823, March 2010).

[20] S. Collins, *How the Affordable Care Act is Helping Young Adults Stay Covered* (Washington, DC: The Commonwealth Fund Blog, May 26, 2011).

[21] TennCare Bureau, State of Tennessee, *TennCare Eligibility Categories*, available at ,http://www.tennessee.gov/tenncare/mem¬categories.html.

PPACA includes several provisions to expand coverage to the young adult group.[22] As of September 23, 2010 (six months post-enactment), all health plans that offered dependent coverage were required to cover young adults up to the age of 26.[23] In addition, this group will be aided by the general provisions of the reform, including raising the Medicaid income threshold, establishing insurance exchanges with low-income subsidies, etc.[24] The departments of Health and Human Services, Labor, and Treasury estimate that approximately 1.7 million young adults will become covered under parents' policies by 2013; early reports indicate that as many as 1.0 million have already done so.[25]

Current Insurance Status of Young Adults in Tennessee

Figure 6 shows the health insurance status of the 2.2 million persons in Tennessee under the age of 26. The distribution of insurance coverage varied significantly among the age subgroups. Private insurance coverage peaked in the 6–18 year age group, with 60.5 percent of individuals having private insurance. Private insurance coverage was lower in the 19–23 year age group (53.8 percent) and in the 24–25 year age group (51.9 percent), consistent with losing coverage under their parents' policies.

Public insurance coverage, predominantly Medicaid, was most common for young children under the age of six. There was a substantial decrease in the percentage of children covered by public insurance between the Under 6 and the 6–18 year age groups (from 45.6 percent to 32.7 percent), and then between the 6–18 and 19–23 year age groups (from 32.7 percent to 16.6 percent); only 14.2 percent of the oldest age group (age 24–25 years) had public coverage. This is consistent with more restrictive income requirements as children age and with general ineligibility for Medicaid at age 20.

From birth through age 25, the proportion that was uninsured increased dramatically with age (Figure 6). The proportion increased from 4.9 percent among those less than six years old to 33.9

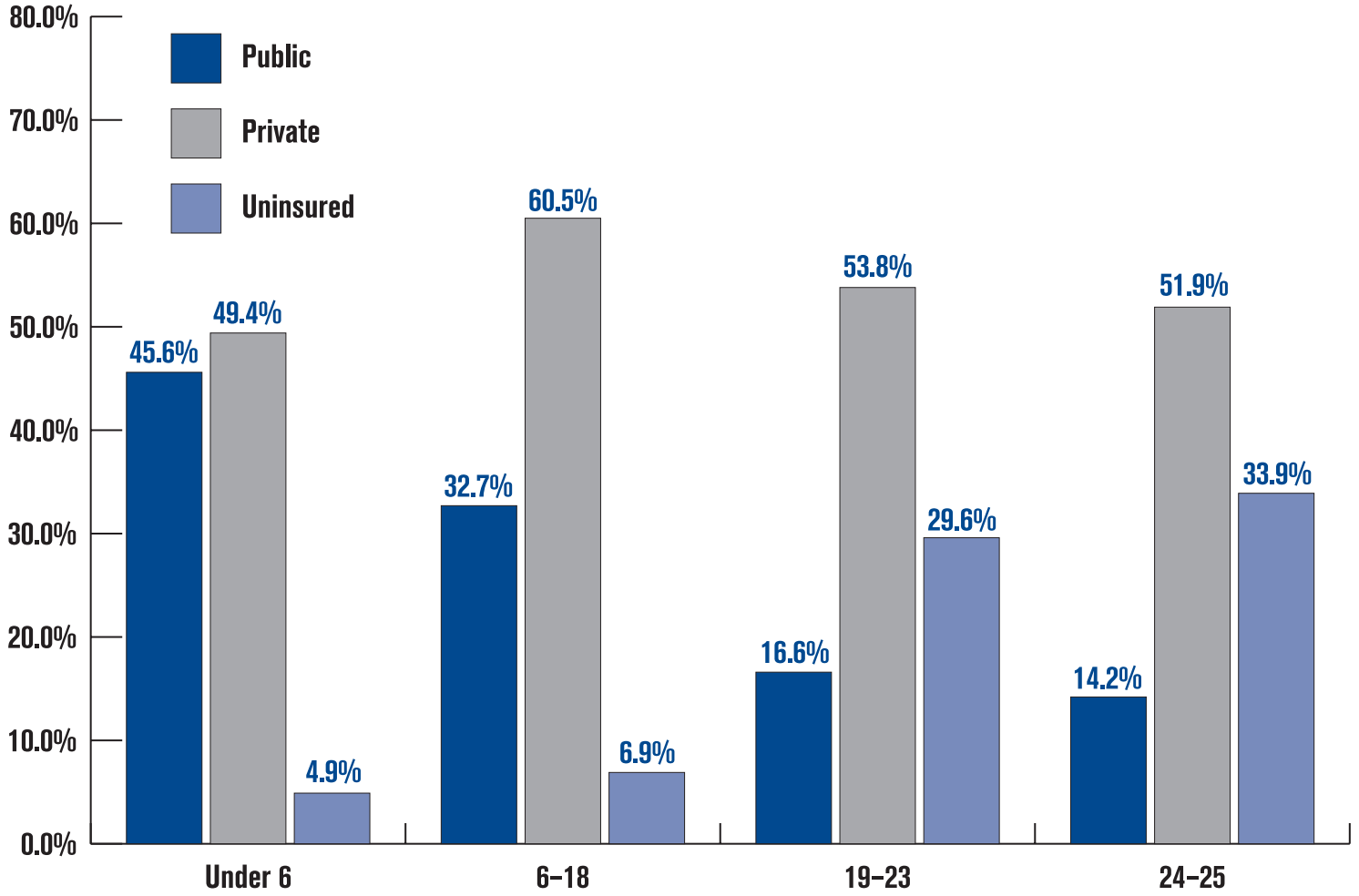
[22]Kenney, Pelletier, and Blumberg, *How Will the Patient Protection and Affordable Care Act of 2010 Affect Young Adults?*

[23]Tennessee passed legislation in 2008 that required dependent coverage on parents' plans for unmarried and financially-dependent young adults up to the age of 24 (Tenn. Code Annotated 56-7-2302).

[24]The analysis in this report assumed that all young adults newly eligible for coverage under their parents' policies opted for this coverage rather than for Medicaid or other private coverage.

[25]R. A. Cohen and M. E. Martinez, *Health Insurance Coverage: Early Release of Estimates from National Health Insurance Survey, January–March 2011* (Atlanta, GA: Centers for Disease Control and Prevention, 2011).

Figure 6. Insurance Status for Children and Young Adults in Tennessee



Note: Numbers may not add due to rounding.
Source: Authors' analysis of the 2009 American Community Survey.

percent among those aged 24–25. This increase was driven predominantly by declines in public coverage.

Expanded Private Insurance Coverage for Young Adults

According to the 2009 ACS, 591,343 Tennesseans were between the ages of 19 and 25, that is, those who will be impacted by the reform law. The estimate in this analysis of the number of these young adults who will become privately insured is based upon the logic depicted in Table 1.

According to the ACS, 591,343 young adults between the ages of 19 and 25 lived in Tennessee in 2009 (top row). Of these, 182,552 were uninsured (second row) and, hence, potentially eligible for new coverage.

Of the uninsured, only young adults aged 19–25 whose parents have coverage that includes dependents are eligible. It was assumed that the proportion of this population that will be eligible for parental coverage equaled the proportion of 6–18-year olds with private insurance; based upon the ACS, 53.6 percent of all 6–18-year olds in Tennessee were covered under a parent's private insurance coverage.

Not all eligible young adults will enroll in their parents' policies. The proportion of children aged 6–18 who have parents with private insurance and who were actually enrolled provides the likely proportion of young adults who have parents willing and able to add them to their policies. Based upon ACS data, 93.4 percent of children eligible for parental coverage were enrolled, that is, the take-up rate for this group was 0.934.

Table 1 summarizes the calculation steps described above. It is estimated that 91,390 young adults will gain private coverage through their parents' policies, corresponding to 50.1 percent of

Table 1. Calculation of Newly Privately Insured in Tennessee, Aged 19–25

Measure	Value	Result
Total Number of Young Adults	591,343	–
- Number of Young Adults with Health Insurance	408,791	182,552
x Proportion of 6–18-Year Olds with Parental Coverage	53.6%	97,848
x Take-Up Ratio	93.4%	91,390

Source: Authors' analysis of the 2009 American Community Survey.

the uninsured young adults in Tennessee.[26] Based upon these estimates, 91,162 young adults will remain uninsured after this intervention (182,252 uninsured young adults minus 91,390 newly insured), with a residual uninsured rate for this group of 15.4 percent.

Expanded Public Insurance Coverage for Uninsured of All Ages

The PPACA mandates expansion of Medicaid coverage to all adults with modified adjusted gross incomes (MAGI) up to 133.0 percent of the FPL ($29,726 per year for a family of four in 2011) in 2014.[27] A standard 5.0 percent deduction from income raises the effective eligibility floor to 138.0 percent of the FPL ($30,843 per year for a family of four in 2011). This Medicaid expansion is intended to reduce the current interstate variation in eligibility[28] and the role of family status (e.g., greater eligibility for parents than for nonparents) in determining Medicaid eligibility as well as to expand overall coverage.

Income and Medicaid Eligibility for Residents of Tennessee

To estimate the number of currently uninsured persons who will gain public coverage under the PPACA reforms, insurance status was first determined for nonelderly Tennessee residents who had incomes no more than 138.0 percent of the FPL, that is, those potentially newly eligible for Medicaid. For these calculations, FPL levels for 2009 were used, that is, the year for which insurance status was determined in the ACS. Based upon the 2009 ACS, 1,406,917 Tennessee residents reported incomes less than or equal to 138.0 percent of the FPL. Of these, 394,726 (28.1 percent) were under the age of 65 and were uninsured and, hence, eligible for new Medicaid coverage under the reform law.

[26]The number of newly-insured young adults will also be affected by the Medicaid expansion as discussed below. While some young adults currently insured by employer or individual coverage will choose to be covered under their parents' insurance policies after the reforms are implemented, this would not change the total number of privately insured or uninsured young adults. The number of young adults covered by private insurance will also be impacted by crowd out resulting from the expansion of public coverage, as described below.

[27]For a full description of the impacts of the reform law on Medicaid, see *Medicaid and Children's Health Insurance Program Provisions in the New Health Reform Law* (Washington, DC: Kaiser Family Foundation, April 2010).

[28]For example, there is currently no federal requirement to provide Medicaid for childless adults regardless of income. See Kaiser Family Foundation, *Federal Core Requirements and State Options for Medicaid* (Washington, DC: Kaiser Family Foundation, April 2011).

Newly Publicly Insured Under Medicaid Expansion

The number of eligible residents who will actually enroll in Medicaid is affected by the take-up rate, that is, the proportion of people eligible for coverage who will actually enroll. Take-up rates vary widely in the literature.[29] The Congressional Budget Office (CBO) has estimated the take-up rate to be 57.0 percent under current conditions.[30] Requirements in PPACA that are intended to simplify enrollment, including developing consumer-friendly, simplified, coordinated, expanding media coverage, and technology-driven application processes,[31] are anticipated to increase this take-up rate in the future. Under these conditions, the CBO estimated the take-up rate to increase to 75.0 percent.[32]

In this analysis, the CBO's conservative take-up rate of 57.0 percent was used. Thus, it was estimated that 224,994 residents would be newly eligible for and enroll in Medicaid, producing a 24.7 percent reduction in the overall number of uninsured in the state.[33]

Other Factors Impacting Medicaid Enrollment

Two factors in addition to the expanded eligibility criteria will increase Medicaid enrollment. First, some previously eligible persons who were not enrolled may now enroll; this is referred to as the "woodwork effect" and results from simplified enrollment procedures, the individual mandate to have insurance, and other factors.[34] Holahan and Headen (cited above) estimate that, nationally, 5.9 percent of the new Medicaid enrollees will have been previously eligible for coverage. Applying

[29]R. Kronick and T. Gilmer, "Insuring Low Income Adults: Does Public Coverage Crowd-Out Private?" *Health Affairs* 21:225-239, 2002.

[30]J. Holahan and I. Headen, *Medicaid Coverage and Spending in Health Reform: National and State-by-State Results for Adults at or Below 133% of FPL* (Washington, DC: Kaiser Family Foundation, May 2010).

[31]Kaiser Family Foundation, *Explaining Health Reform: Eligibility and Enrollment Processes for Medicaid, CHIP and Subsidies in the Exchanges* (Washington, DC: Kaiser Family Foundation, August 2010).

[32]A wide range of take-up rates has been reported in the literature. For example, the Center for Medicare and Medicaid Services (CMS) has predicted take-up rates as high as 97.0 percent. Center for Medicare and Medicaid Services, *2010 Actuarial Report* (Washington, DC: Department of Health and Human Services, December 2010).

[33]Applying the CBO's higher take-up ratio of 75.0 percent, the number of newly-eligible, publicly-insured individuals would be 296,045, corresponding to a 32.5 percent reduction in the number of uninsured in the state.

[34]B. D. Sommers and A. M. Epstein, "Why States Are so Miffed About Medicaid—Economics, Politics, and the 'Woodwork Effect,'" *New England Journal of Medicine* 365:100-103, 2011.

this proportion to Tennessee suggests that an additional 14,107 previously eligible but uninsured persons will enroll in Medicaid.[35]

The second factor is crowd out, that is, switching from private insurance to less expensive public coverage. Thus, expanding public coverage eligibility can be expected to reduce the prevalence of private coverage while increasing public coverage as people shift from higher cost private to lower cost public programs. The projected extent of this crowd-out effect varies widely in the literature; some have projected that as many as 60.0 percent of employers will stop offering coverage, driving many employees to enroll in public insurance programs,[36] while others predict crowd-out rates as low as near zero.[37] Holahan and Headen estimate that 25.8 percent of newly enrolled Medicaid recipients will have previously had private insurance.[38] Applying this percentage, as a middle range estimate, to Tennessee shows that health care reform would increase the Medicaid rolls by 78,232 persons who were previously insured as a result of crowding out.[39]

Thus, the overall increase in Medicaid enrollment in Tennessee is projected to be 317,333, of which only 70.9 percent (or 224,994 persons) will be newly eligible and currently uninsured, 4.5 percent (or 14,107 persons) will have been previously eligible but not enrolled, and 24.7 percent (78,232 persons) will have been previously insured through private plans (Figure 7).[40] Thus, 75.4 percent (239,101 persons) of the new Medicaid enrollees will have been previously uninsured.

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[35]The number of previously eligible and the resulting total newly enrolled was calculated as total newly enrolled = (newly eligible and enrolled)/(1.0-.059), and the number enrolled as a result of crowd out was then computed as total newly enrolled – newly eligible and enrolled.

[36]S. Sighal, J. Stueland, and D. Ungerman, "How U.S. Health Care Reform Will Affect Employee Benefits," *McKinsey Quarterly*, June 2011.

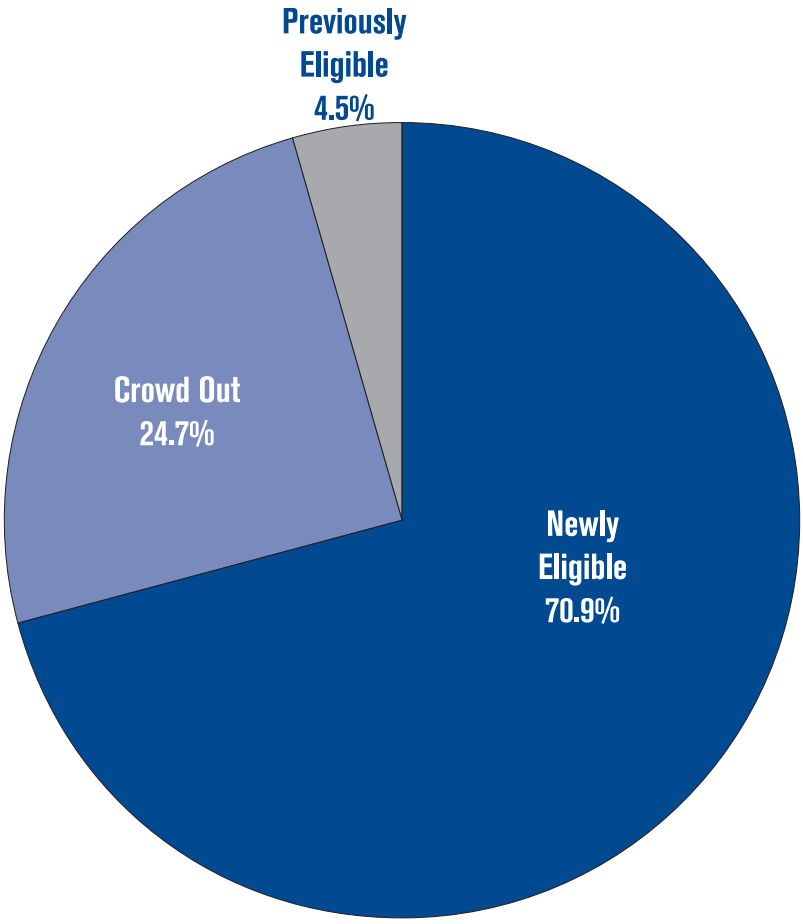
[37]J. Gruber, for example, reported a 0.6 percent increase in employer-sponsored coverage after health system reform in Massachusetts over a period in which employer coverage in the U.S. fell by 4.0 percent (see J. Gruber, *The Impacts of the Affordable Care Act: How Reasonable Are the Projections?* (Cambridge, MA: National Bureau of Economic Research Working Paper #17168, June 2011)). The variable predictions in crowd out, among other factors, lead to wide ranges in the projected increase in Medicaid enrollment. Sommers et al. suggest that the increase in enrollment may be between 8.5 and 22.4 million. See B. Sommers, K. Swartz, and A. Epstein, "Policymakers Should Prepare for Major Uncertainties in Medicaid Enrollment, Costs, and Needs for Physicians Under Health Reform," *Health Affairs Web First*, November 2011.

[38]Holahan and Headen, *Medicaid Coverage and Spending in Health Reform*.

[39]The number of previously privately insured and the resulting total newly enrolled was calculated as total newly enrolled = (newly eligible and enrolled)/(1.0-.258), and the number enrolled as a result of crowd out was then computed as total newly enrolled – newly eligible and enrolled.

[40]A smaller proportion of persons on Medicaid will convert to private coverage, that is, reverse crowd out. The RAND study cited above estimates this to occur for fewer than 10.0 percent of Medicaid enrollees. There may also be substantial shifts from SCHIP enrollment to Medicaid enrollment.

Figure 7. Sources of New Medicaid Enrollees



Note: Numbers may not add due to rounding.
Source: Authors' analysis of the 2009 American Community Survey.

Insurance Exchange

A major change that will take place only after 2014 is the development of insurance exchanges. Under PPACA, each state is required to have an exchange in place by 2014 to provide individuals and eligible employers with a choice of insurance plans that compete based upon price and quality.[41] Consumers with incomes up to 250.0 percent of the FPL will be eligible for premium subsidies

[41]States are required to have exchanges in place by January 2014 or accept federal plans. Tennessee is currently exploring options for its exchange. For more information, see the report by the Center for Budget and Policy Priorities at http://www.cbpp.org/files/CBPP-Analysis-on-the-Status-of-State-Exchange-Implementation.pdf. To date, only 10 states have enacted enabling legislation for an exchange; Tennessee continues to evaluate its options and is among 11 states without any legislative or gubernatorial activity to create the legal framework for establishing an exchange. See S. Collins, *State Health Insurance Exchange Legislation: A Progress Report* (Washington, DC: The Commonwealth Fund, June 2011).

and assistance with out-of-pocket costs; those with incomes between 251.0 percent and 400.0 percent of FPL will be eligible for tax credits to offset a portion of premiums. In addition, beginning in 2010, businesses with fewer than 25 employees and with average salaries under $50,000 and that pay at least half of their employees' health insurance costs became eligible for tax credits to subsidize employee insurance coverage.[42] Families USA has suggested that 89.6 percent of the 74,200 small businesses in Tennessee will be eligible for these credits.[43]

National estimates suggest that as many as 25.0 percent of the currently uninsured will gain coverage through these exchanges.[44] Applying these national projections to the total number of uninsured in Tennessee suggests that as many as 227,554 additional residents may gain coverage through the new insurance exchange, including those who will and will not receive subsidies.

Summary and Policy Implications

The net impacts of the changes in insurance eligibility considered here are presented in Table 2. Overall, it is estimated that 558,044 persons, or 61.3 percent of the currently uninsured residents of Tennessee, will gain health insurance because of the changes in young adult eligibility (91,390 persons), the expansion of Medicaid (239,101 persons including both the newly eligible and the previously eligible but not enrolled), and the establishment of a health insurance exchange. The proportion of the newly enrolled (including the crowd out group) from each source is shown in Figure 8.

Table 2. Projected Changes in the Number of Uninsured in Tennessee

Intervention	Newly Insured	Cumulative Newly Insured	Remaining Uninsured	Reduction in Uninsured (%)
Baseline	–	–	910,215	–
Young Adult Eligibility for Parental Coverage	91,390	91,390	818,825	10.04%
Medicaid Expansion	239,101	330,491	579,724	36.31%
Insurance Exchange	227,554	558,044	352,171	61.31%

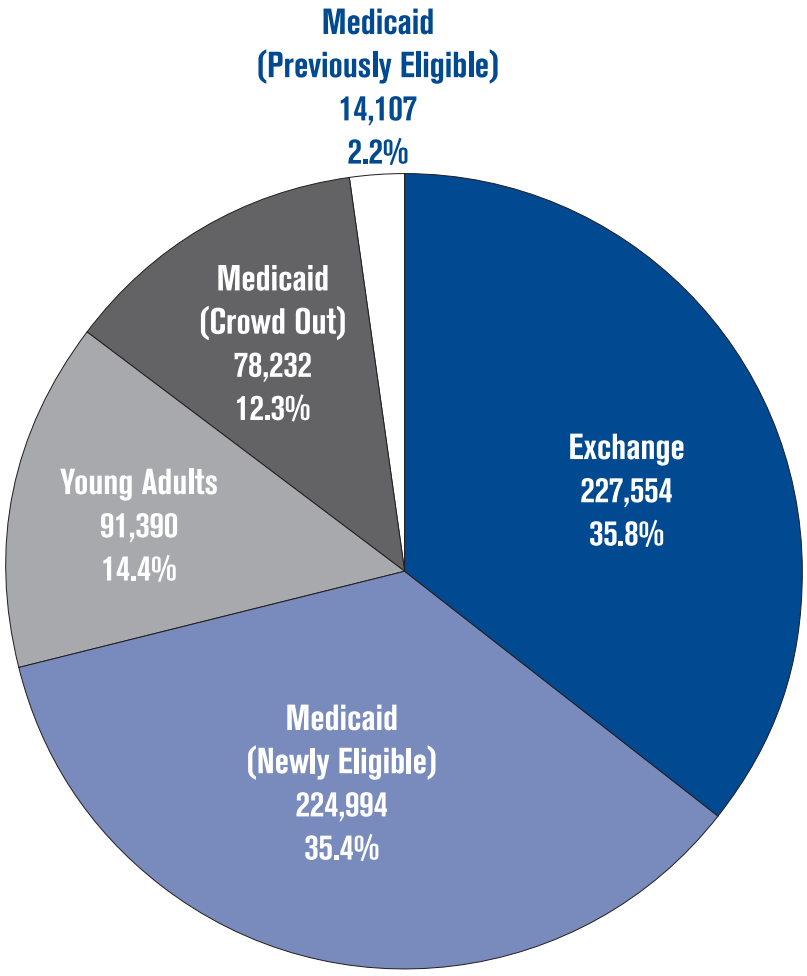
Source: Authors' analysis of the 2009 American Community Survey.

[42]For a full description of subsidies, see C. L. Peterson and T. Gabe, *Health Insurance Premium Credits in the Patient Protection and Affordable Care Act* (Washington, DC: Congressional Research Service, April 2010).

[43]Families USA, *A Helping Hand for Small Businesses. Health Insurance Tax Credits* (Washington, DC: Families USA, July 2010).

[44]The Lewin Group, *Patient Protection and Affordable Care Act (PPACA): Long-Term Costs for Governments, Employers, Families and Providers* (Falls Church, VA: The Lewin Group, June 2010).

Figure 8: Sources of Insurance for PPACA-Affected Tennesseans



Note: Numbers may not add due to rounding.
Source: Authors' analysis of the 2009 American Community Survey.

Expanding health insurance coverage improves health. After health insurance reform in Oregon, persons who gained health insurance reported significant improvement in seven self-reported measures of physical and behavioral health and decreases in measures of financial strain.[45] For example, acquiring insurance was associated with a 13.0 percentage point increase in the probability of reporting one's health as good, very good, or excellent; the probability of having to borrow money or not paying other bills to pay medical bills fell by 15.0 percentage points. The experience of TennCare also demonstrated the positive impact of insurance expansion on quality; after expansion

[45] A. Finklestein, S. Taubman, S. Wright et al., *The Oregon Health Insurance Experiment: Evidence From the First Year* (Cambridge, MA: National Bureau of Economic Research Working Paper #17190, July 2011).

of coverage, rates of preventive care, acute and chronic disease management, and clinical outcomes all improved significantly.[46]

The Remaining Uninsured

While the increase in insurance coverage is substantial, potentially reducing the percentage of nonelderly residents without insurance by 61.3 percent—from 16.7 percent to 6.5 percent—there will remain an estimated 352,171 residents without insurance after these three interventions are implemented.

National studies suggest that the remaining uninsured include several groups of people. The largest group (approximately 37.0 percent) includes persons eligible for Medicaid but who choose not to enroll.[47] Approximately 25.0 percent are undocumented immigrants who are prohibited by law from receiving federally-funded Medicaid benefits and from participating in state-run exchanges (our estimates of the newly insured and the remaining uninsured include both citizens and noncitizens). Others include those exempt from the mandate because they cannot find affordable coverage (16.0 percent),[48] persons with access to affordable coverage who choose not to enroll (15.0 percent), and those eligible for subsidies through exchanges but who do not enroll (8.0 percent). For example, in Massachusetts after reform, 42.0 percent of the remaining uninsured were eligible for coverage, half of whom were eligible for full subsidies; of those eligible for coverage, the uninsured rate was 9.8 percent.[49] Although the proportions will likely differ in Tennessee, the general categories of the remaining uninsured will be represented.

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[46] D. M. Mirvis, J. E. Bailey, and C. F. Chang, "TennCare—Medicaid Managed Care in Jeopardy," *American Journal of Managed Care* 8:57-68, 2002.

[47] Although many of these will be subject to the individual mandate, they may choose not to enroll because (a) the penalty for not enrolling (beginning in 2014 and rising to $695 per person, $2,085 per family, or 2.5 percent of family income, whichever is greater) may be less than the cost of insurance coverage; (b) they may consider that paying the penalty does meet the mandate requirement; (c) Medicaid enrollment has a significant social stigma; or (d) there are no legal penalties other than the financial penalty for failing to enroll. The number of currently uninsured not complying with the mandate will impact the number and distribution of newly insured as well as the impact of changes in the law to eliminate the individual mandate. See J. F. Sheils and R. Haught, "Without the Individual Mandate, the Affordable Care Act Would Still Cover 23 Million; Premiums Would Rise Less Than Predicted," *Health Affairs Web First*, November 2011.

[48] PPACA exempts persons with incomes too low to require filing federal income tax (approximately 85.0 percent of FPL) or who would pay more than 8.0 percent of family income (net of subsidies) for coverage.

[49] S. K. Long, L. Phadera, and V. Lynch, *Massachusetts Health Reform in 2008: Who are the Remaining Uninsured Adults?* (University of Minnesota, State Health Access Data Assistance Center, August 2010).

Other PPACA-related changes will modify all of these factors and expand the number of newly insured. These include forces that will increase enrollment including, as examples, federal subsidies for persons with incomes under 250.0 percent of the FPL; mandates (with penalties) on individuals and business to have and to offer coverage; prohibitions against denials because of pre-existing medical conditions; establishment of high-risk pools to cover the otherwise uninsurable population; and the possibility of lower premiums as health care costs decline. Other factors may reduce enrollment, such as the remaining high cost of insurance and out-of-pocket expenses,[50] higher insurance premiums for some groups,[51] and the possibility that small businesses will stop offering coverage (discussed below).[52]

Thus, the challenges presented to and by the uninsured will be reduced, but not eliminated, as a result of the reforms analyzed in this report. After the health reform in Massachusetts, the use of safety-net facilities increased, although the number of uninsured fell; the number of patients visiting community health centers rose by 31.0 percent, while the proportion that were uninsured decreased by 44.0 percent.[53]

The smaller number of uninsured will reduce the burden they pose to public and private safety-net systems, as discussed in the next section. The smaller number of residents dependent upon these programs may, however, make public political support more tenuous. The implications for the public safety-net systems are considered in more detail in subsequent sections of this report.

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[50]Gruber and Perry have estimated that 10.0 percent of families with incomes over the FPL and 25.0 percent of families with incomes of 200.0 to 300.0 percent of FPL with high out-of-pocket costs will not be able to afford the projected premiums and out-of-pocket costs. See J. Gruber and I. Perry, *Realizing Health Reform's Potential. Will the Affordable Care Act Make Health Insurance Affordable?* (Washington, DC: The Commonwealth Fund, April 2011).

[51]The Congressional Budget Office (CBO) estimates that premiums in the non-group market will increase by 10.0 to 13.0 percent as a result of reform changes. Premiums for the small group market are expected to rise by 1.0 to 2.0 percent, and those for the large group market are expected not to change or to decrease by up to 3.0 percent (CBO Letter to Sen. Evan Bayh, November 30, 2009). Rate increases may be higher than average in Tennessee as Tennessee's insurance market is considered highly concentrated, reducing competition to lower or moderate rates (see Focus on Health Reform, *How Competitive are State Insurance Markets?* (Washington, DC: The Kaiser Family Foundation, October 2011)).

[52]BlueCross BlueShield of Tennessee Health Institute, *National Health Care Reform: The Impact on Tennessee* (Chattanooga, TN: BlueCross BlueShield of Tennessee, 2011).

[53]L. Ku, C. Jones, P. Shin et al., "Safety-Net Providers After Health Care Reform," *Archives of Internal Medicine* 171:1379-1384, 2011.

Limitations of the Estimates

The estimate here of the number of Tennessee residents who are and who will remain uninsured represents a significant underestimate of the problem. The ACS estimates the number of persons uninsured at the time of the survey. Many more people had been uninsured at some time during the past year or several years.[54] Data from the Medical Expenditure Panel Survey suggests that the number of people uninsured at some time in the past year was approximately 40.0 percent higher than those documented to be uninsured at a single point in time. Hence, the number of Tennessee residents who, under the current law, had been uninsured at some time in the past year may be as high as 1.3 million, and the number who will remain uninsured at some time during the year after reform may be as high as 500,000.

In addition, the data presented above include only those who report being uninsured. A substantial additional number of residents have been and will be underinsured, that is, they have or will have health insurance that is inadequate to cover the costs of their health care needs with subsequent high out-of-pocket expenses.[55] It is estimated that 20.0 percent of those who are insured are underinsured.[56] If this proportion is applied to Tennessee, approximately 1.0 million residents are currently underinsured, and 116,000 newly insured will be underinsured.

This number may rise after PPACA is implemented. For example, the "bronze" insurance level approved under PPACA covers only 60.0 percent of the actuarial value of the care received, and the basket of essential services to be covered may be limited.[57]

An additional problem in projecting the newly insured is the fluidity of eligibility over short periods of time. For example, within one year, half of all persons with incomes under 200.0 percent of FPL will shift eligibility from Medicaid to the exchanges or the reverse.[58]

It is also important to recognize that different subgroups of the population, such as those with mental illness and severe disabilities, will be impacted in different ways. Among other factors, the impact will vary with the distributions of income among the groups and any special provisions in the law that impact eligibility or the benefit packages.

[54]K. Klein, S. Glied, and D. Ferry, *Entrances and Exits: Health Insurance Churning,* 1998–2000 (Washington, DC: The Commonwealth Fund, September 2005).

[55]For example, the "bronze" insurance level approved under PPACA covers only 60.0 percent of the actuarial value of the care received.

[56]C. Schoen, S. R. Collins, J. L. Kriss, and M. M. Doty, "How Many Are Underinsured? Trends Among U.S. Adults, 2003 and 2007," *Health Affairs Web Exclusive*, June 10, 2008.

[57]C. Ulmer et al., *Committee on Defining and Revising Essential Health Benefits: Balancing Coverage and Costs Package for Qualified Health Plans* (Washington, DC: Institute of Medicine, 2011).

[58]B. D. Sommers and S. Rosenbaum, "Issues in Health Reform: How Changes in Eligibility May Move Millions Back and Forth Between Medicaid and Insurance Exchanges," *Health Affairs* 30(2):228-236, 2011.

Forecasting the impact of bold new health reform legislation is at best a proposition complicated with risk and challenges. The political and regulatory uncertainties are enormous, and they are further complicated by the assumptions used in projecting future changes. For example, insurance take-up rates by individuals can change widely depending upon how aggressively new programs are promoted and the complexity of enrollment processes. Similarly, published estimates of how much public insurance programs crowd out private coverage range from near 0.0 percent to 60.0 percent.

Recognizing the risk and uncertainty involved in model design and estimation, this report's authors have consistently used middle-range estimates of key assumptions such as the take-up rates by individuals seeking insurance and the effects of the public and publicly-funded insurance crowding out private insurance. The actual impacts may prove to be greater or smaller than those reported in this report, and much depends on both the outcomes of election-year politics nationally and how market competition and promotional practices in Tennessee will affect the actual enrollment of the previously uninsured through the various channels, such as the new insurance exchange and Medicaid expansion.

Impact on State Finances

The increase in Medicaid enrollees may have significant impact on state financing of health care. It is estimated that Medicaid enrollment will increase by 15.9 million persons nationally by 2019.[59] Although the federal government will pay all of the costs for the newly eligible through 2016,[60] the proportion paid by the federal government—the Federal Medical Assistance Percentage or FMAP[61]—will then decline to 90.0 percent in 2020. Beginning immediately, states will pay their regular proportion of costs (based upon the state's current FMAP) for the previously eligible, and states will increase their share of the cost of the newly eligible beneficiaries to 10.0 percent by 2020.[62] Thus, the expansion is not free for states who are now acting to reduce Medicaid expenditures; every state enacted some law to reduce costs in 2010–2011.[63]

[59]Holahan and Headen, *Medicaid Coverage and Spending in Health Reform.*

[60]The federal government will pay 100.0 percent of Medicaid costs for those people who meet the income requirements, are between 19 and 64 years old, and who were not eligible for Medicaid as of December 1, 2009.

[61]Tennessee's FMAP for the first quarter of FY2011 was 75.6 percent, declining to 66.4 percent for FY2012 as the ARRA phases out.

[62]Between 2014 and 2016, the FMAP for newly eligible enrollees will be 100.0 percent. In 2017, it will be 95.0 percent; in 2018, it will be 94.0 percent; and in 2019, it will be 93.0 percent.

[63]V. K. Smith, K. Gifford, E. Ellis et al., *Hoping for Economic Recovery, Preparing for Health Reform: A Look at Medicaid Spending, Coverage and Policy Trends* (Washington, DC: Kaiser Family Foundation, September 2010).

As suggested above (Figure 7 and Figure 8), Medicaid enrollment in Tennessee will rise by 317,333, of which 303,226 are newly eligible (including 224,994 previously uninsured and 78,232 previously insured) and hence eligible for the higher percentage federal matching rates (the 14,107 new beneficiaries who were previously eligible but not enrolled would not be eligible for the 100.0 percent FMAP coverage). Based upon current Medicaid per capita expenditures and assuming that new enrollees will have costs similar to those of the current beneficiaries, the 90.0 percent federal match for newly eligible enrollees (in effect as of 2020), and the current FMAP for other enrollees, the incremental cost to the state for all new enrollees would be approximately $195 million per year.

This cost to the state for covering new enrollees represents only a portion of the financial and economic impact of PPACA. The federal portion of the cost for newly eligible beneficiaries will bring as much as $13 billion of federal funding into Tennessee.[64] Other portions of the act reduce state costs by, for example, switching adult Medicaid beneficiaries with incomes over 138% to subsidized Exchange options, converting mental health services funded solely by the state to Medicaid and hence recovering most of the cost from the federal government, and substantially reducing uncompensated care, and other options for the state. The overall impact of health care reform on state budgets is thus substantial and highly variable and is the net result of many factors, many of which are beyond the scope of this study.

Access to Care

Greater reliance on Medicaid will also place limits on access to care. Although Medicaid beneficiaries have greater access to care than do the uninsured, they do have substantial barriers to access compared to those with private coverage. Medicaid recipients traditionally receive fewer services, especially specialty services, than do the privately insured. This is likely the result of lower provider payment rates that limit access, as well as other factors such as delays in payment and the greater administrative and clinical burdens of caring for Medicaid enrollees.[65] Between 1999–2000 and 2008–2009, the proportion of physicians accepting new Medicaid patients fell from 73.5 to 64.5 percent.[66] Of physicians with low or moderate volumes of Medicaid patients in their practices, over

[64]Holahan and Headen, *Medicaid Coverage and Spending in Health Reform.*
[65]Kaiser Family Foundation, *Physician Willingness and Resources to Serve Medicaid Patients: Perspectives from Primary Care Physicians* (Washington, DC: Kaiser Family Foundation, April 2011).
[66]Morbidity and Mortality Weekly Report, *QuickStats: Percentage of Office-Based Physicians Accepting New Patients, by Types of Payment Accepted* (Atlanta, GA: Centers for Disease Control and Prevention, July 15, 2011).

80.0 percent are not accepting new Medicaid patients.[67] Thus, the substantial expansion of insurance coverage through Medicare does not necessarily assure full access to adequate and effective medical care.[68]

Impact on the Insurance Market

Changes in insurance eligibility will impact the health insurance market as well as the number of uninsured. Factors expanding private coverage purchased individually or through employers include, among others, the impact of the individual and employer mandates, the requirement to cover young adults on family coverage, the prohibition against denying coverage based upon pre-existing conditions, and the possible reduction in premiums.[69] Other factors will reduce private coverage. These include crowd out from private to public coverage as previously discussed, the switch from directly purchased employer-sponsored insurance (ESI) to coverage purchased through an exchange, and increasing premiums for some groups.[70] The availability of subsidies to purchase insurance through exchanges will also result in a shift from employer-sponsored coverage to exchange-based coverage. Nationally, as many as 1.1 million persons may opt for coverage through the exchanges.[71]

Estimates of the projected direction and size of the change in ESI vary widely. Some studies have projected a major decline in ESI. A survey conducted by McKinsey and Company[72] suggests that 30.0 percent of employers will "definitely or probably" stop offering coverage and that more than 60.0 percent will "pursue some alternative" to conventional ESI. One estimate for Tennessee suggests that by 2014, 413,825 people currently covered by ESI will switch to coverage through the insurance exchange, and that overall ESI enrollment will decrease by 517,000 enrollees.[73] For some

[67]Kaiser Family Foundation, *Physician Willingness and Resources to Serve Medicaid Patients: Perspectives from Primary Care Physicians*.

[68]As one example, a recent study demonstrated that 66.0 percent of children with Medicaid were denied appointments with specialists; of those with private insurance, only 11.0 percent were denied access. See J. Bisgaier and K. V. Rhodes, "Auditing Access to Specialty Care for Children with Public Insurance," *New England Journal of Medicine* 364:2324-33, 2011.

[69]For a full description of the impacts of PPACA on private insurance, see H. Chaikind, B. Fernandez, M. Newsom, and C. L. Peterson, *Private Health Insurance Provisions in PPACA* (Washington, DC: Congressional Research Service, April 2010).

[70]CBO Letter to Sen. Evan Bayh, November 30, 2009.

[71]BlueCross BlueShield of Tennessee Health Institute: *National Health Care Reform*.

[72]S. Singal, J. Stueland, and D. Ungerman, "How U.S. Health Care Reform Will Affect Employee Benefits," *McKinsey Quarterly*, June 2011.

[73]BlueCross BlueShield of Tennessee Health Institute. *National Health Care Reform*.

employers, the cost of providing insurance will exceed the penalties, encouraging them to discontinue coverage.[74]

Others, however, project much smaller shifts away from employer-sponsored coverage. The Congressional Budget Office projects that ESI will decline by 1.0 million enrollees between 2019 and 2021, including 7.0 to 8.0 million not currently offered ESI but who will be under PPACA, 1.0 to 2.0 million with offers of ESI who will enroll instead through exchanges, and 6.0 to 7.0 million who currently have offers of ESI but who will not have under PPACA.[75] In contrast, a summary of 10 studies of early experiences after health system reform in Massachusetts suggested no change or, in most studies, an increase in ESI.[76] Gruber[77] reported that after health care reform in Massachusetts, the number of people covered by ESI increased by 0.6 percent, while the proportion in the overall U.S. fell by 4.0 percent. Between 2005 and 2009, the proportion of employers offering ESI increased from 70.0 to 76.0 percent.

[74]A recent report by BlueCross BlueShield of Tennessee suggests that Tennessee employers could save as much as $6,344 per year by paying the penalty and not providing coverage (see BlueCross BlueShield of Tennessee Health Institute, *National Health Care Reform*).

[75]D. W. Elmendorf, *CBO's Analysis of the Major Health Care Legislation Enacted in March 2010* (Washington, DC: Congressional Budget Office, March 2011).

[76]S. K. Long, K. Stockley, and H. Dahlen, *National Reform: What Can We Learn from Evaluations of Massachusetts?* (University of Minnesota, State Health Access Data Assistance Center, June, 2011).

[77]J. Gruber, *The Impacts of the Affordable Care Act: How Reasonable Are the Projections?* (Cambridge, MA: National Bureau of Economic Research Working Paper #17168, June 2011).

III. CHANGES IN THE USE OF HEALTH CARE SERVICES

In this section, projections will be made of the changes in health care resource use expected in Tennessee as a result of the increases in insurance coverage estimated in the prior section. It is assumed that the health care resource use of the currently uninsured is lower than that of the insured[78] and that once the uninsured receive coverage, their utilization will increase.[79]

The extent of the increase in service use is controversial. Studies have reported that, in a broad-based study population, the increase in use after gaining insurance is to the level of the previously insured.[80] Other studies examining the longitudinal impact of Medicare enrollment[81] have documented that once the uninsured gain insurance their utilization rises to levels exceeding those of the previously insured. The CBO has concluded that the newly insured increase their utilization by 25.0 to 60.0 percent to reach levels of 75.0 to 90.0 percent of the previously insured.[82] As a best-guess scenario, it was assumed that gaining insurance will increase utilization from the level of the uninsured to the level of the privately insured for each type of service.

The impact of expanded insurance coverage on outpatient, inpatient, and emergency department (ED) use was assessed using a common approach. The newly insured were allocated to public or private coverage based upon the proportions shown in Figure 8. The use of each service by each group of newly insured was then computed by assigning the newly insured the same utilization rates as those currently covered by private insurance as determined from the literature or other data sources defined in each subsection below.

[78]In the classic studies by Jack Hadley and associates at the Urban Institute, those who were without insurance coverage for the full year consumed 38.0 percent of the health care financial resources used by the full-year insured. See J. Hadley, J. Holahan, T. Coughlin, and D. Miller, "Covering the Uninsured in 2008: Current Costs, Sources of Payment, and Incremental Costs," *Health Affairs Web Exclusive*, August 2008.

[79]The ACS records insurance coverage at the time of the interview. Thus, no distinguishment can be made between those who were uninsured the full year and those uninsured for only part of the year. Because of this, data reported in the literature for all uninsured will be utilized and an assumption will be made that the proportion of full- and part-year uninsured in Tennessee was approximately the same as in other studied populations.

[80]L. Ward and R. Franks, "Changes in Health Care Expenditures Associated with Gaining or Losing Health Insurance," *Annals of Internal Medicine* 146: 768, 2007.

[81]J. M. McWilliams, A. M. Zaslavsky, and J. Z. Ayanian. "Use of Health Services by Previously Uninsured Medicare Beneficiaries," *New England Journal of Medicine* 357:143-153, 2007.

[82]CBO Letter to Sen. Evan Bayh, November 30, 2009.

Ambulatory Care

The impact of the PPACA on ambulatory care visits in Tennessee is limited by the absence of reliable data at the state level. Relevant and applicable national figures were, therefore, applied to the state.

According to the National Ambulatory Care Medical Survey,[83] persons without insurance and those with private insurance have 65.3 and 192.0 visits per 1,000 population per year to primary care physician offices, respectively, for a utilization ratio of 2.9. This ratio varies from 2.0 for medical specialty services to 3.2 for surgical specialty visits. In contrast, the uninsured had slightly more visits to hospital outpatient clinics than did the privately insured (utilization ratio of 1.1).

The changes in ambulatory care visits were projected using these rates for the subgroups of newly insured (Table 3). The newly insured were assigned to the public or private insurance groups based upon the proportions previously described (Figure 8) and were assigned the utilization rate of the previously privately insured.

Table 3. Projected Changes in Outpatient Utilization After Health Care Reform

Type of Visit	Uninsured Rate Per 1,000 Population	Public Insurance Rate Per 1,000 Population	Private Insurance Rate Per 1,000 Population	Projected Change in Number of Visits
Primary Care	653	2,547	1,920	707,042
Medical Specialty	449	449	615	211,499
Surgical Specialty	331	331	551	175,226
Hospital Outpatient	192	849	173	- 10,603
Total	1,318	4,176	3,259	1,083,164

Note: Calculations are based on the "best guess" parameters described in the text. Rates are per 1,000 persons per year.

Source: Authors' analysis of the 2009 American Community Survey.

It was estimated that providing insurance to 558,044 residents will lead to 1,083,164 more ambulatory care visits.[84] The distribution of sites of care will also change, with the greatest increase in visits for primary care (707,042 visits) and with a small decrease in hospital outpatient visits (10,603 visits).

[83] S. M. Schappert and E. A. Rechsteiner, *Ambulatory Medical Care Utilization Estimates for 2007* (Atlanta, GA: Centers for Disease Control and Prevention, August 2011).

[84] The number of visits may be partially mitigated by the limitations on access for persons with Medicaid, as discussed earlier.

Hospitals

This analysis of hospital inpatient discharges after health system reform was based upon the current utilization rates for each insurance category, as reported in the *2009 Tennessee Joint Annual Report of Hospitals (JARH)*.[85] Only acute-care, general and pediatric non-federal hospitals were included. The use by the newly insured was projected to be the same as for the privately insured, as previously discussed.

Baseline hospitalization rates varied significantly by insurance type. Rates were substantially higher for those with public insurance (156.5 admissions per 1,000 persons) than for those either privately insured (53.9 per 1,000) or without medical insurance (59.9 per 1,000), based on the analysis of the 2009 *JARH*.

As shown in Table 4, insurance expansion is projected to cause a small reduction in both the number of discharges (-0.9 percent) and the total bed days of care (-3.3 percent). These changes reflect a large shift in payer mix, with shifts of uninsured persons to either private insurance (with slightly lower utilization rates) or to Medicaid with the same utilization rate as the privately insured. The change in overall volume results from an increase in private (6.5 percent) and public patient (13.3 percent) discharges and a marked reduction in uninsured discharges (-64.5 percent).

Table 4. Projected Changes in Hospital Utilization After Health Care Reform

Insurance	Projected Changes		Percent Change	
	Admissions	Days	Admissions	Days
Medicaid	17,104	73,548	13.3%	11.5%
Private	12,974	55,789	6.5%	1.5%
Uninsured	-33,422	-143,194	-64.5%	-64.5%
Total	- 3,344	- 13,857	- 0.9%	- 3.3%

Note: Only general acute care, general and pediatric hospitals are included.

Source: Authors' analysis of the 2009 Tennessee Joint Annual Report of Hospitals.

[85] *The Tennessee Joint Annual Report of Hospitals* is an annual report required by law submitted to the Tennessee Department of Health by every hospital describing its facilities and detailing its financial and utilization statistics.

Emergency Departments (ED)

The projected change in ED use was assessed using the same approach as was used for the outpatient and inpatient assessments above. The analysis was based upon Tennessee ED utilization rates for those with public and private insurance and the uninsured extracted from the 2008 Hospital Discharge Data System (HDDS).[86]

Current ED use in Tennessee varied widely with the type of health insurance. ED use was lowest among the privately insured (179.2 visits per year per 1,000 persons) and highest among the publicly insured (1,117.1 per year per 1,000 persons); the rate for the uninsured was 528.8 visits per year per 1,000 persons. This high rate among the publicly insured reflects the greater health burden of the publicly insured as well as their limited access to effective primary care; national data have indicated that 29.2 percent of all ambulatory care visits of the uninsured were ED visits, compared to 7.4 percent for the full population.[87]

Table 5 shows projected ED utilization after the expansion of health insurance. The results are based upon the projected number of newly insured apportioned between the public and private populations. The newly insured, whether through public or private policies, were assigned the same ED utilization rate as those currently insured by private policies, as described above for outpatient and inpatient utilization.

Table 5. Projected Changes in Emergency Department Utilization After Health Care Reform

	Current		Projected	
Insurance	Total	Rate Per 1,000 Population	Total	Percent Change
Public	915,141	1,117	972,016	6.2%
Private	662,005	179	705,147	6.5%
Uninsured	457,695	529	162,620	-64.5%
Total	2,034,841	378	1,839,783	- 9.6%

Source: Authors' analysis of the 2008 Tennessee Hospital Discharge Data System.

[86] As required by Tennessee law, all hospitals licensed by the Tennessee Department of Health must report to the Department all patient-level discharge information, including discharges from EDs.

[87] Schappert and Rechsteiner, *Ambulatory Medical Care Utilization Estimates for 2007*.

Overall ED use is projected to decrease by 9.6 percent. This projection is the net result of the reduction in use by the smaller group of uninsured partially mitigated by increases caused by expanding the privately- and publicly-insured groups.

Summary and Policy Implications

Insurance expansion will have significant impacts on health care resource use. The expanded coverage results in major changes in payer mix, with large reductions in the uninsured and large increases in those privately and publicly insured. Because utilization rates differed for these groups, the expansion will have induced substantial changes in the number of ambulatory care and emergency room visits, with smaller changes in the overall volume of hospital care. The substantial increase in primary care visits (Table 3) may be expected to improve overall population health by enhancing preventive services and by increasing continuity and effectiveness of outpatient care for chronic illnesses.[88] This, in turn, may reduce ED visits (Table 5), especially for ambulatory care-sensitive conditions.[89]

The magnitude and implications of the projected change in service use and payer mix on utilization will vary from facility to facility, depending largely upon their payer mix.[90] The impact on public and safety-net hospitals may be very substantial. The payer mix of the 1,131 public hospitals in the nation includes higher proportions of Medicaid (24.5 percent versus 17.3 percent) and uninsured (8.3 percent versus 4.7 percent) than private community hospitals[91]—the two population groups most affected by health care reform. Based upon the 2009 *JARH*, nine acute-care, general hospitals in Tennessee had more than 10.0 percent uninsured admissions, and 34 had more than 25.0 percent of all admissions for patients with Medicaid or who were uninsured.

If 61.3 percent of the patients with uninsured admissions to the high uninsured hospitals become insured (Table 2), many—especially the newly insured projected to gain private coverage through the exchanges—will have the option of seeking care in other non-safety-net community hospitals. As patients with new coverage choose to seek care elsewhere, the total volume of patients

[88] A. Finklestein, S. Taubman, S. Wright et al., *The Oregon Health Insurance Experiment: Evidence From the First Year* (Cambridge, MA: National Bureau of Economic Research Working Paper #17190, July 2011).

[89] M. Falik, J. Needleman, B. L. Wells, and J. Korb, "Ambulatory Care Sensitive Hospitalizations and Emergency Visits: Experiences of Medicaid Patients Using Federally Qualified Health Centers," *Medical Care* 39:551–561, 2001.

[90] The impacts on finances will be discussed in the next section.

[91] T. Fraze, A. Elixhauser, L. Holmquist, and J. Johann, *Pubic Hospitals in the United States, 2008*. Health Care Cost and Utilization Project Statistical Brief #95, September 2010.

and the proportion of uninsured, nonpaying patients in these hospitals will rise. In California, 58.0 percent of people who had no choice of hospital because they lacked insurance indicated that, if they had insurance, they would be interested in changing facilities.[92] Anecdotal evidence suggests that this shift from public to private facilities did occur after the insurance expansion in Tennessee as part of TennCare.

[92]Langer Research Associates, *On the Cusp of Change: The Healthcare Preferences of Low-Income Californians.* Blue Shield of California Foundation, June 2011.

IV. HEALTH SYSTEM FINANCES AND UNCOMPENSATED CARE

Expanding insurance coverage and the subsequent increase in service use, as detailed in the prior two sections, will have substantial impact on the financing of health care in Tennessee. Each newly insured person will increase overall health care spending by as much as $3,464 per year based upon estimates from the Centers for Medicare and Medicaid Services.[93] This will impact the revenues of hospitals, physicians, and other health care providers, as well as the level of uncompensated care.

Uncompensated Care

Uncompensated care is, in simplest terms, care provided by hospitals, physicians, and community-based providers for which payment is not received from or on behalf of the patient who receives the care. It is commonly considered to include both "charity care" and "bad debt." Tennessee law, as of July 2007, defines "bad debt" as charges for which bills are submitted but which are considered to be uncollectible after reasonable collection efforts are made.[94] "Charity care" costs are reductions in charges for care made by the provider because of the indigence (defined as income under 100.0 percent of the FPL) or medical indigence (defined as having used or committed all available or expected resources to pay for medical bills, regardless of absolute income) of the patient, as determined by the provider, for whom no other party is legally responsible (e.g., a guardian or local welfare agency).

The distinction between these two categories is flexible and depends upon, for example, the providers' definitions of "charity care" and their policies for how aggressively to collect for services. Hence, uncompensated care is typically computed as the sum of charity care and bad debt, as will be done in this report.[95]

Table 6 shows the uncompensated charges reported for the 168 acute-care, general and pediatric non-federal hospitals in Tennessee reported in the 2009 *JARH*. These hospitals provided

[93]R. Berenson and S. Zuckerman, *How Will Hospitals Be Affected by Health Care Reform?* (Washington, DC: The Urban Institute, July 2010).

[94]For more information on uncompensated care in Tennessee, see D. M. Mirvis, "The Uncompensated Care Problem: The Robin Hood Model of Health Care Financing," *Tennessee Medicine* 103: 29–32, 2010.

[95]Uncompensated care does not include negotiated discounts with private carriers or mandated limits on payments from public payers.

Table 6. Projected Changes in Uncompensated Care After Health Care Reform

		Current	Change	Total	Percent Change
Hospital Bad Debt	Medicaid	–	–	–	–
	Private	$ 222,486,294	$ 15,067,851	$237,554,145	6.8%
	Uninsured	1,037,694,927	- 636,201,137	401,493,790	-61.3%
	Subtotal	1,260,181,221	- 621,133,286	639,047,935	-49.3%
Hospital Charity	Inpatient	658,027,343	- 403,430,462	254,596,881	-61.3%
	Outpatient	587,086,094	- 359,937,040	227,149,054	-61.3%
	Subtotal	1,245,113,437	- 763,367,503	481,745,934	-61.3%
Hospital Total		2,505,294,658	- 1,384,500,789	1,120,793,869	-55.3%
Physicians	Total	558,680,709	- 308,743,676	249,937,033	-55.3%
Community Provider	Total	1,044,707,872	- 577,336,829	467,371,044	-55.3%
Total		$4,108,683,239	$2,270,581,293	$1,838,101,946	-55.3%

Source: Authors' analysis of the 2009 Tennessee Joint Annual Report of Hospitals.

$2,505,294,658 in uncompensated care, of which 91.1 percent was for the uninsured, 49.7 percent was allocated by hospitals to charity care, and the remainder went to bad debt.

Although the only directly reported data are for hospitals, studies by Hadley et al.[96] estimated the uncompensated care for physicians and other providers who also provide uncompensated care. Over 70.0 percent of physicians provide some reduced-rate or free care.[97] They estimated that community-based providers provide 41.7 percent of the uncompensated care provided by hospitals, and that office-based physicians provide 22.3 percent of the uncompensated care provided by hospitals.

The data in Table 6 also show the findings for physicians and community-based clinics in Tennessee estimated by using the ratios reported Hadley et al. (cited above). Community-based clinics and office-based physicians in Tennessee provided an estimated $1.04 billion and $558.7 million in uncompensated care, respectively. The total level of uncompensated care in the state in 2009 was, thus, approximately $4.11 billion.

As shown in Table 6, uncompensated care for all provider groups will decrease substantially after expansion of health insurance coverage. Overall levels of uncompensated care will decrease by $2.27 billion, or 55.3 percent. Bad debt from insured patients will rise modestly (by approximately 6.8 percent), reflecting the greater number of insured.

Hospital Finances

Table 7 shows the impact of insurance expansion on projected hospital charges and revenues for the acute-care, general hospitals of Tennessee. The data suggest that after insurance expansion, overall hospital charges will rise by over $172.0 million, while actual revenues will increase by $691.0 million. The change in charges reflects changes in payer mix with different utilization rates and charges per admission, as described below. The increases in revenue likewise reflect changes in collection rates with the change in payer mix, also discussed below.

[96]Hadley, Holahan, Coughlin, and Miller, "Covering the Uninsured in 2008: Current Costs, Sources of Payment, and Incremental Costs."
[97]Zuckerman and Berenson, *How Will Physicians Be Affected by Health Care Reform?*

Table 7. Projected Changes in Hospital Revenue After Health Care Reform

Payer	Charges	Revenue	Admissions	Days of Care
Medicaid	$1,192,230,565	$501,334,713	17,104	71,915
Private	904,360,266	380,284,827	12,974	56,192
Uninsured	- 1,924,126,499	- 190,742,762	-33,422	-141,832
Total	$ 172,464,332	$690,876,779	- 3,344	- 13,725

Source: Authors' analysis of the 2009 Tennessee Joint Annual Report of Hospitals.

Summary and Policy Implications

The data presented in this section suggest that expanding insurance coverage in Tennessee will have significant implications for health system financing. The expansion will result in less uncompensated care (Table 6) and major changes in payer mix (Table 2), each of which impact finances.

Both the reduction in uncompensated care and the change in payer mix impact hospital charges and revenues. Charges increase because of changes in payer mix with different charges for the various insurance subgroups. Based on 2009 *JARH* data, the average charge per admission was higher for the privately insured ($69,706 per admission) than for the publicly insured ($28,635 per admission) or for the uninsured ($57,571 per admission). Thus, a shift in mix from the uninsured to public coverage and, especially, to private coverage would result in higher overall charges that would be only partially mitigated by the reduction in admissions (Table 4).

Revenues will increase more than charges (Table 7). This reflects the higher collection rate for the newly insured (estimated to be 45.1 percent for those with new private coverage and 31.4 percent for those newly enrolled in Medicaid), which substantially exceeds that for the uninsured (9.9 percent).

It is also important to note that the overall level of uncompensated care in Tennessee will remain substantial—over $1.8 billion (Table 6). The financial significance of this may become more important as payment rates by insurers decline and as Medicaid and Medicare DSH funding (the major governmental sources of support for uncompensated care) is withdrawn. DSH funds are expected to exceed $36.0 billion over ten years[98] as the number of uninsured declines. Tennessee Medicaid DSH funding is currently $305.0 million. The scheduled reduction, however, may exceed

[98]C. Burke and E. Martin, *Health Reform: Uncertainty Over Federal DSH Payments Poses Risk of the Uninsured* (New York: Nelson A. Rockefeller Institute of Government, October 2010).

the realized decrease in the number of uninsured and in uncompensated care, especially soon after reform is implemented, so that hospitals that continue to bear the uncompensated care burden may suffer. In addition, DSH funds are commonly used for other community-wide safety-net services and to compensate for Medicaid underpayments, which will increase as the number of Medicaid enrollees increases.

The overall impact of the reform law on hospital finances is complex and depends upon the balance between forces that will increase and decrease revenues. Insurance expansion is expected to increase hospital revenues (Table 7). Counterbalancing this increase, however, will be possible reductions in Medicare, Medicaid, and other payment rates (by up to $20.0 billion nationally); [99]withdrawals of Medicare and Medicaid disproportionate share (DSH) funding; crowd out of private for public coverage with lower payment rates; and changes in payer mix. Thus, most hospitals will see an increase in revenue, although the increase may be less than expected.[100]

For most physicians, reducing the number of uninsured will reduce the demand for free or reduced-rate care. Over 70.0 percent of physicians currently offer such care to the uninsured and underinsured.[101] For those who do not offer discounted care, greater private insurance coverage may increase the volume of patients they are willing to see. In 2008, 88.0 percent of physicians were willing to accept new privately insured patients, but only 65.0 percent were willing to accept new Medicaid patients.[102]

However, much of the increase in coverage will be through Medicaid expansion, and physician reimbursement rates will remain lower than desired. Nationally, Medicaid rates for all physician services are only 72 .0 percent of Medicare rates.[103] As described below, the law also increases primary care payments for Medicaid to Medicare levels and increases Medicare primary care payment rates to mitigate some of this impact. However, Medicare rates remain below charges or commercial payment rates, and the law does not change specialist rates. In addition, if significant shifts occur

[99]The more concentrated private insurance market in Tennessee may also lead to greater than average payment reductions as the carriers exercise greater negotiating power with hospitals and other providers (see Focus on Health Reform, *How Competitive are State Insurance Markets?*).

[100]Berenson and Zuckerman, *How Will Hospitals Be Affected by Health Care Reform?*

[101]S. Zuckerman and R. Berenson, *How Will Physicians Be Affected by Health Care Reform?* (Washington, DC: The Urban Institute, July 2010).

[102]Morbidity and Mortality Weekly Report, *QuickStats: Percentage of Office-Based Physicians Accepting New Patients, by Types of Payment Accepted* (Atlanta, GA: Centers for Disease Control and Prevention, July 15, 2011).

[103]Kaiser Family Foundation, www.statehealthfacts.org.

from private to public coverage, that is, a large amount of crowd out, revenues could fall. Thus, the net impact will vary from physician to physician.[104]

[104]Some data suggest that physicians collect more from uninsured patients for outpatient care than from the highly discounted payments they receive from the insured. If so, expanding insurance coverage may reduce some physicians' income. See J. Gruber and D. Rodriguez, "How Much Uncompensated Care Do Doctors Provide?" *Journal of Health Economics* 26:1151, 2007.

V. IMPLICATIONS FOR HEALTH MANPOWER

The increases in health care utilization will require additional health care manpower. Most pressing will be the greater need for primary care providers. According to the Association of American Medical Colleges,[105] the reform proposal will require 29,800 more primary care physicians in the nation by the end of 2015 and double that amount by 2020. This increased need is superimposed on the current shortage of primary care physicians and other providers that is growing as fewer physicians enter primary care and as more currently practicing primary care physicians age and retire.[106]

This projected shortage represents a significant impediment to achieving the access goals of health care reform.[107] Ku and associates have suggested that the projected Medicaid expansion will exceed primary care capacity in 25 states.[108] Indeed, after the Massachusetts health insurance expansion, many newly insured were unable to find a primary care physician.[109] In this section, Tennessee's current primary care manpower will be assessed and the need for additional workforce projected based upon the estimated insurance and utilization expansions described earlier in this report.

Health Professional Status and Needs

Manpower data for 2008 were compiled from the 2009–2010 release of the Area Resource File (ARF), a comprehensive health care manpower and utilization database compiled by the Health Resources and Services Administration, U.S. Department of Health and Human Services, Washington, DC.[110] In this analysis, general practitioners, family medicine specialists, general internists, general obstetricians-gynecologists, and general doctors of osteopathy were included as primary care physicians. Only active, non-federal physicians and doctors of osteopathy with primary patient care

[105]Association of American Medical Colleges, *Physician Shortages to Worsen Without Increases in Residency Training* (Washington, DC: Association of American Colleges at www.aamc.org).

[106]T. Bodenheimer and H. H. Pham, "Primary Care: Current Problems and Proposed Solutions," *Health Affairs* 29: 799–805, 2010.

[107]L. Ku, K. Jones, P. Shim et al., "The States' Next Challenge—Securing Primary Care for Expanded Medicaid Populations," *New England Journal of Medicine* 364:493–495, 2011.

[108]Ku, Jones, Shim et al., "The States' Next Challenge—Securing Primary Care for Expanded Medicaid Populations."

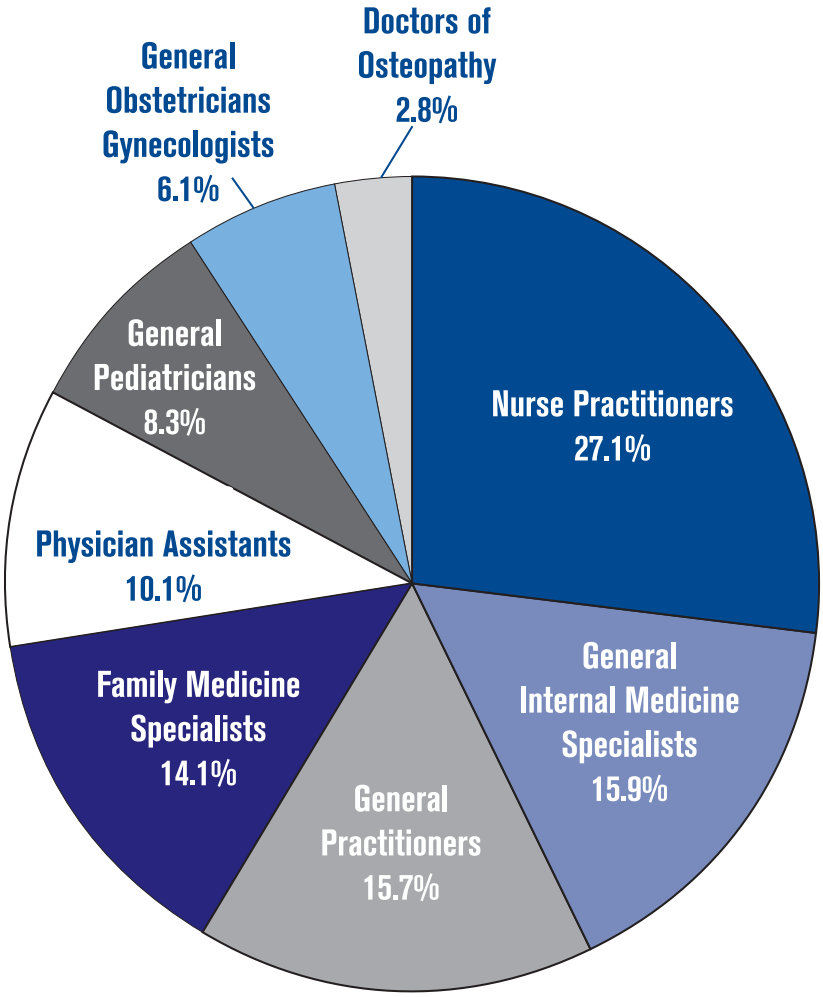
[109]Massachusetts Medical Society, *2011 MMS Physician Workforce Study* (Boston, MA: Massachusetts Medical Society, 2011).

[110]Physician manpower data in the Area Resource File are extracted from the American Medical Association's Physician Masterfile dataset.

practices were included. In addition, the number of nurse practitioners and physician assistants were considered as also able to deliver primary care within their scopes of practice.

Based upon this analysis, Tennessee had 6,827 primary care physicians, including 1,708 general practitioners, 1,530 family medicine specialists, 1,731 general internists, 898 general pediatricians, 134 general obstetricians, and 32 general osteopathic physicians (Figure 9). This corresponded to one primary care physician per 910 residents (Table 8). This is somewhat larger than the value for the U.S. as a whole (one primary care physician per 890 residents). When nurse practitioners and physician assistants were included in the workforce, Tennessee had one primary care provider for each 572 persons (versus the U.S. average of 553 persons per provider).

Figure 9. Current Distribution of Primary Care Manpower in Tennessee



Note: Numbers may not add due to rounding.

Table 8. Primary Care Manpower in Tennessee, Population Per Provider

Practitioner	Tennessee	U.S. Average	Tennessee Decile
General Practice	3,638.7	3,894.3	5
Family Medicine	4,062.0	4,371.0	5
General Internal Medicine	3,590.4	3,636.5	7
General Pediatrics*	1,298.3	1,323.4	6
General Obstetrics/Gynecology	9,416.5	9,416.8	6
Nurse Practitioners	2,108.2	2,419.1	6
Physician Assistants	5,665.4	3,657.0	2
Total Physicians/Doctors of Osteopathy	910.3	891.4	3
Total Physicians+Nurse Practitioners+Physician Assistants	571.6	552.9	4

*Rate based on U.S. population 0–14 years.

Note: Higher decile numbers reflect a smaller population to provider ratio, that is, fewer persons per provider.

Source: Authors' analysis of 2009–2010 release of the area resource file.

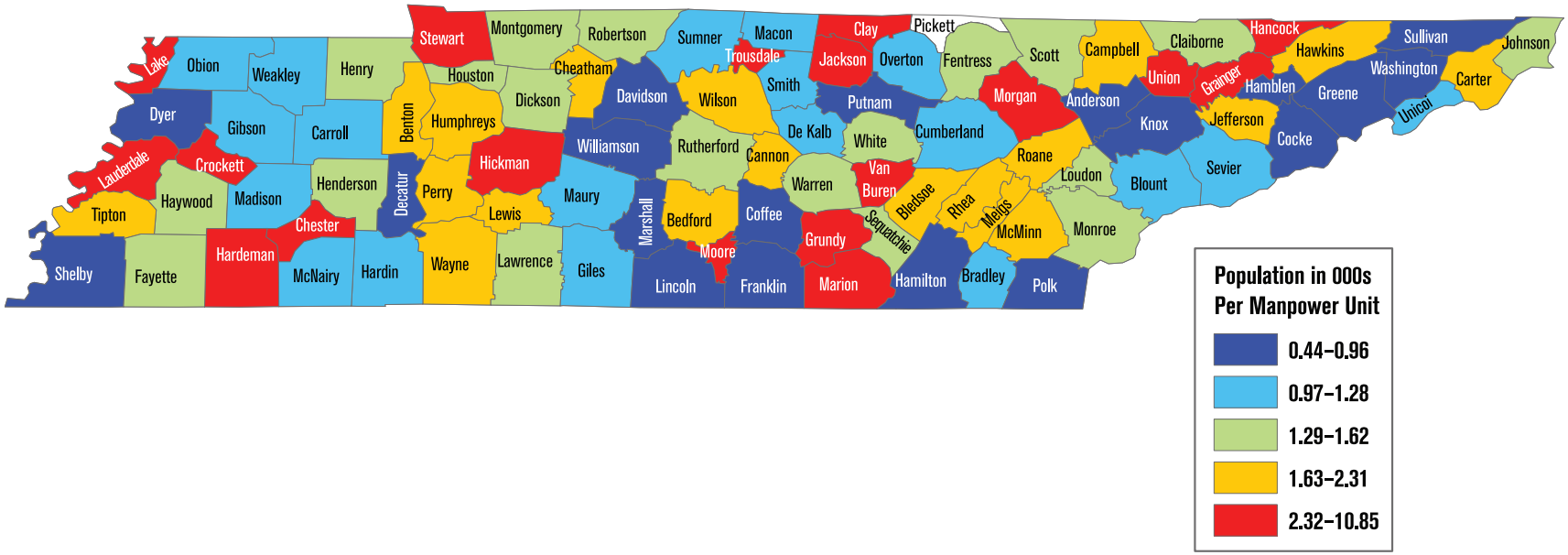
Also shown in Table 8 are the deciles of ranking for the practitioner groups against all states; a higher decile corresponds to a smaller number of people per practitioner, that is, a more adequate relative provider supply. Tennessee ranked in the 3rd decile for primary care physicians and in the 4th decile for overall primary care workforce. For the various professional subgroups, its ranking varied from the 2nd decile for physician assistants to the 7th decile for general internists. The geographic distribution of medical doctor and osteopathy manpower by county in Tennessee is shown in Figure 10 where the number of providers is expressed in terms of 1,000 general population (the number 0.44, for example, means that there is one doctor for every 440 people). The counties with the most providers (the blue counties in Figure 10) include most of the major population centers, such as Memphis (Shelby County), Nashville (Davidson County), Chattanooga (Hamilton County), and Knoxville (Knox County), and the adjacent counties that are part of the same metro areas.

Provider density varied widely from county to county. The population per primary care physician varied from 436 to 10,847, with one rural county reporting having no primary care physician.

The county-level adequacy of this workforce was assessed using the Health Professional Shortage Area (HPSA) classification established by the Health Resources and Services Administration (HRSA)[111] and by the criteria proposed by the State Health Access Data Assistance Center (SHADAC)

[111]A shortage area is defined by the Health Resources and Services Administration as an area with more than 3,500 people per primary care physician or more than 3,000 people per physician if there is high need or if the current manpower has insufficient capacity to meet the current need.

Figure 10. Current Distribution of Medical Doctor and Osteopathy Manpower by County in Tennessee



of the University of Minnesota.[112] The federal HPSA classification identifies counties in which the entire county had a shortage of primary care physicians, counties in which only part was a shortage area, and counties with an adequate primary care physician supply. Based upon these criteria, all of 26 Tennessee counties and parts of an additional 29 counties are considered primary care shortage areas (Table 9 and Figure 8). As shown in the table, 15.1 percent (936,872 people) of the population of Tennessee lived in counties that were identified as shortage areas, and an additional 48.5 percent (3,013,882 people) lived in counties that were partly short of primary care providers; only 36.4 percent lived in counties with an adequate number of primary care physicians.

Table 9. Tennessee Primary Care Manpower—Health Professional Shortage Areas

HPSA Primary Care Shortage Group	Counties	Population	Tennessee Population (%)	Currently Uninsured	Tennessee Uninsured (%)	Newly Insured
Shortage Counties—Total	26	936,872	15.1%	121,542	14.4%	79,755
Shortage Counties—Partial	29	3,013,882	48.5%	428,267	50.8%	281,027
Non-Shortage Counties	40	2,264,134	36.4%	292,524	34.7%	191,953

*Computed by applying the proportion of currently uninsured in each county to the total projected newly insured (Table 2) as detailed in the text.

Source: Authors' analysis of 2009–2010 release of the area resource file.

Using the SHADAC criteria, ten counties (including 129,744 persons) were deemed to have an inadequate primary care physician supply (more than 3,500 persons per primary care physician), and 34 counties (1,279,745 people) were deemed to have a marginal supply (1,501 to 3,499 persons per primary care physician, 1,279,745 people). The remaining 51 counties (4,800,598 people) were identified as having an adequate supply (1,500 or fewer persons per physician).

Also estimated was the number of additional primary physicians that would be needed to raise the current level of the primary care workforce to "adequate" levels based upon the SHADAC criteria. Based upon these calculations, it was estimated that 194 additional primary care physicians would be needed to raise the current workforce level to "adequate" in the 44 counties rated by SHADAC as inadequate or marginal.

Next, the stress that the increase in health service utilization would place on this workforce was assessed (Table 9). The projected number of newly insured was apportioned to each county based upon the percentage of the state's total number of currently uninsured living in that county, according to data from the ARF. HPSA counties that were fully or partially underserved are projected to

[112]M. Boudreaux, *Potential Gaps in the Availability of Primary Care Physicians Under Health Reform: Identifying Communities at Risk* (University of Minnesota, State Health Access Data Assistance Center, June 2011).

include 360,782 newly insured or approximately two-thirds of the state total. Based upon the projected increase in health care use (Table 4), these already underserved areas would be expected to provide an additional 707,000 outpatient visits after health insurance expansion.

Summary and Policy Implications

The adequacy of health care provider manpower is a critical part of insurance expansion. It is this workforce that transforms potential access to health care provided by health insurance into realized, actual health care at the site of care.

The data provided here indicate that the primary care provider supply in Tennessee as a whole ranks in the middle of all states (Table 8). However, large portions of Tennessee are currently underserved by primary care providers; 63.6 percent of Tennesseans live in counties designated as having a shortage of primary care physicians.[113] The population to primary care physician ratio among the counties varied from 436 to 10,847, with one county having no primary care physician; 55 of 95 counties were designated as shortage areas by the federal government HRSA classification, and 44 counties had inadequate supplies based upon the SHADAC criteria. This maldistribution is important because health care, especially primary care, is delivered at the local rather than at the state level.

This shortage is the result of the relatively small proportion of medical trainees entering primary care and the maldistribution of providers across counties. This longstanding trend is the result of relatively low pay,[114] low perceived respect among the medical community, and difficult lifestyle. The number of U.S. medical graduates entering primary care training has progressively declined. According to data from the National Intern and Resident Matching Program (NIRMP), in 2009, 11.0 percent of primary care residency programs (161 of 1,423 programs) did not fill their slots through the NIRMP, and only 57.0 percent of filled slots were filled by U.S. medical graduates. The number of post-graduate, year-one (PGY1), family practice residency positions filled by U.S. medical school seniors decreased by 50.0 percent, from 2,179 in 1998 to 1,071 in 2009. The number for internal medicine decreased by 10.0 percent, while that for radiology grew by 45.0 percent.

[113]For more information on primary care physician manpower in Tennessee, see D. M. Mirvis, "Where Have All the Primary Care Docs Gone?" *Tennessee Medicine* 102:33, 2009.

[114]Starting salaries for primary care physicians are substantially lower than those for specialists. According to the American Medical Group Association (2011), starting salaries of all primary care specialties were among the lowest of all physician groups. For example, salaries for family medicine averaged $144,990, whereas those for diagnostic radiology averaged $390,000.

Primary care residency programs in Tennessee face the same problems as those that are reflected in national statistics. In 2009, based on NIRMP data, only two-thirds of the state's PGY1 slots were filled with graduating U.S. medical school seniors. Rates were lowest for family medicine (33.3 percent) and categorical internal medicine (65.5 percent) and were highest for combined medicine-pediatrics programs (83.3 percent).

Limited access to primary care physicians has been demonstrated to reduce health outcomes and increase health care costs. The American College of Physicians has suggested that adding one primary care physician per 10,000 population would result in a 6.0 percent reduction in all-cause mortality and a 3.0 percent reduction in infant, low birth weight, and stroke mortality rates.[115] Manpower analyses have indicated that health outcomes improve as the supply of primary care providers increases and have suggested that an increase in the number of primary care physicians by one per 10,000 Medicare beneficiaries is associated with a $684 decline in per capita health care costs.[116]

Health care reform will place substantial additional burdens on these regions as more people gain health insurance and increase their utilization of health care services (Table 9). Tennessee may experience a greater than average shortage because it is a state likely to have a greater than average insurance expansion as described above and a state with current significant manpower shortages.

Projecting the number of primary care providers that will be needed to meet the expanded demand for health care services is a complex task.[117] Factors include the relative supplies and shifting roles of the various health care professional groups, changes in the incidence of disease, changes in the models of care delivery and health care financing, changes in payment systems, changes in public expectations, and changes in regulatory oversight.

As an initial step, an attempt was made to determine the number of additional primary care physicians that would be needed to bring all counties in the state to adequate levels using the SHADAC criteria. As described above, 194 new primary care physicians would be needed in the 44 counties rated as currently having inadequate or marginal supplies.

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[115]American College of Physicians, *How is a Shortage of Primary Care Physicians Affecting the Quality and Cost of Medical Care?* (Philadelphia: American College of Physicians, 2008).

[116]K. Baicker and A. Chandra, "Medicare Spending, the Physician Workforce, and Beneficiaries' Quality of Care," *Health Affairs Web Exclusive*, April 7, 2004.

[117]For an extensive discussion of the issues, see U. Reinhardt, "Health Manpower Forecasting: The Case of Physician Supply," in *Health Services Research. Key to Health Policy*, E. Ginzberg, ed. (Cambridge, MA: Harvard University Press, 1991); and Bipartisan Policy Center, *The Complexities of National Health Care Workforce Planning* (Washington, DC: Bipartisan Policy Center, October 2011).

PPACA includes changes intended to expand primary care access.[118] These include increasing Medicaid payments to Medicare levels for primary care doctors in 2013 and 2014 (currently Medicaid rates are approximately two-thirds of Medicare rates); providing a 10.0 percent increase in Medicare rates between 2010 and 2015 for some primary care physicians, general surgeons, nurse practitioners, clinical nurse specialists, and physician assistants; reallocating unused residency slots toward new primary care opportunities; increasing funding for federally-qualified health centers; and facilitating training in community clinic settings.

These interventions may have a limited impact. Reducing the number of uninsured should reduce demand for free or reduced cost care, but this benefit will be limited by the increased number with Medicaid beneficiaries who pay lower rates. The proportion of the overall patient workload of most primary care practitioners from Medicare and Medicaid is relatively low, so that the planned increases in these payment rates will have only a small impact on primary care physicians' total income.[119] After the two-year period during which the increase in Medicaid primary care payment rates are paid by the federal government, these costs revert to the states that may reduce the payment rates. No payment change is included for specialty rates, suggesting a continuing or increasing problem of access for specialty services.

The primary care manpower challenge may also be approached by expanding the use of non-physician health care providers, including nurse practitioners and physician assistants. Based upon data from the ARF, there were 2,948 nurse practitioners in Tennessee in 2008 and 1,097 physician assistants in 2007; combined, they represent 37.2 percent of the state's primary care workforce (Figure 9). As indicated in Table 8, Tennessee ranks low among the states in the number of physician assistants based upon its population.

The PPACA provides funds for training additional physician assistants and nurse practitioners. The services that they may provide, that is, their scope of practice, are determined by state law and regulation. Physician assistants are trained to provide care under the supervision of a physician. The scope of practice for nurse practitioners varies widely from state to state. As of January 1, 2011, nurse practitioners in 23 states and the District of Columbia were permitted to diagnose and treat patients without physician collaboration or supervision, and 15 states and the District of Columbia permitted them to independently prescribe controlled and non-controlled medications. Tennessee is one of eight states that require written documentation of physician involvement to prescribe,

[118]J. Teitelbaum, *Primary Care Physician Workforce* (Washington, DC: Health Reform GPS, George Washington University, March 2011).
[119]F. L. Mullan. Testimony before the House Committee on Education and Labor, June 23, 2009.

but not to diagnose or treat.[120] Carefully crafted legislative changes to the scope of practice of nurse practitioners and physician assistants may ease the projected manpower stress and shortage in Tennessee.

[120]Kaiser Family Foundation, *Improving Access to Adult Primary Care in Medicaid: Exploring the Potential Role of Nurse Practitioners and Physician Assistants* (Washington, DC: Kaiser Family Foundation, March 2011).

VI. CONCLUSION

The 2010 Patient Protection and Affordable Care Act (PPACA) is filled with a complex array of health care reforms that impact Tennessee. Traditional relationships, affiliations, and associations between consumers, providers, and insurers are being modified by a new maze of government rules and regulations. Confusion surrounding PPACA has only increased as a result of the divisive political environment and pending legal challenges in Washington and many states. The probability of substantial changes to the Act is highly correlated to the changing political and legal environment. Without doubt, health care reform will be a major part of the 2012 presidential election discussions. Changes to the existing law will occur over time, but the extent of revisions or even elimination of many of the law's current provisions remains an unknown.

Given these disclaimers, this report has attempted to estimate the impact of the new law on the number of uninsured in Tennessee, the utilization of health care, and the impact of PPACA on health care finances. The most prominent changes will include (1) expanding health insurance coverage to 558,044 nonelderly Tennessee residents who are currently uninsured; (2) an increase of over 1.0 million ambulatory care visits, including over 700,000 primary care visits, a small reduction (10,603) in emergency room visits, hospital discharges, and total bed days of care; (3) significant changes in the payer mix of hospital admissions, with increases in publicly and privately insured cases and a reduction in uninsured admissions; (4) a $2.27 billion reduction (-55.3 percent) in the amount of uncompensated care and bad debt provided by hospitals, community-based providers, and physicians; (5) an increase of $172.0 million in hospital charges and $691.0 million in actual revenues; and (6) an increase in the need for 194 new primary care physicians to meet the need for adequate level health care services in the underserved areas of Tennessee.

These changes will present challenges for Tennessee, including (1) the continuing need for and the challenges to current health care safety-net services for the 352,171 nonelderly residents who will remain uninsured; (2) the need for continuing support for uncompensated care ($1.84 billion), especially as private and public payment rates, including disproportionate share funds, are reduced; (3) the need for additional health care manpower, especially primary care providers, to meet both the existing shortages and the increased demand for ambulatory health care services in areas of the state that are already underserved; and (4) the increase in state funding, especially after the complete implementation of the legislation, for newly eligible and enrolled Medicaid beneficiaries who have responded to PPACA and for those crowded into the Medicaid system by the, still uncertain, reductions in employer provided health care.