Economic Benefits of Less Restrictive Regulation of Advanced Practice Registered Nurses in North Carolina:

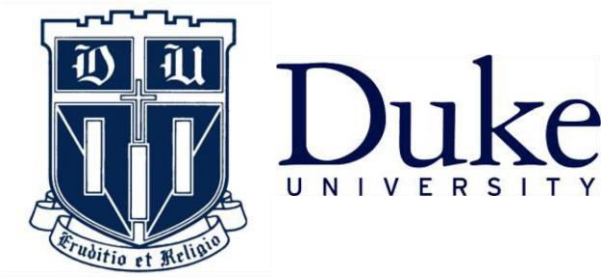
Technical Appendices

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Preface

This report presents findings from several interrelated analyses of data designed to assess the economic impact of removing barriers to independent practice of Advanced Practice Registered Nurses (APRNs) in North Carolina. The project began in May, 2014 with a research grant from the North Carolina Nurses Association.

This work builds on the Principal Investigator's work on the benefits and costs of health services regulation in the U.S. This work has been supported for more than a decade through various grants and contracts, including the Cato Institute, the Office of the Assistant Secretary for Planning and Evaluation, U.S. Department of Health and Human Services, and the Searle Freedom Trust.

The economic impact assessment parallels similar work that has been conducted by The Lewin Group (*The State-Level Economic Impact of Office-Based Physicians*) and The Perryman Group (*The Economic Benefits of More Fully Utilizing Advanced Practice Registered Nurses in the Provision of Health Care in Texas: An Analysis of Local and Statewide Effects on Business Activity*).

These appendices are a companion to the full report (*Economic Benefits of Less Restrictive Regulation of Advanced Practice Registered Nurses in North Carolina: An Analysis of Local and Statewide Effects on Business Activity*). These appendices contain all details of sources and methods as well as complete tabulations of findings at the county level. A companion highlights report also is available as a separate document (*Economic Benefits of Less Restrictive Regulation of Advanced Practice Registered Nurses in North Carolina: Key Findings*). All publications are available for download at the Center for Health Policy and Inequalities Research website: http://chpir.org/_homepage-content/completed-projects/economic-benefits-of-less-restrictive-regulation-of-advanced-practice-registered-nurses-in-north-carolina/

These reports and related data should be of interest to policymakers, legislators and thought leaders in healthcare as well as others concerned with issues of regulation of health professionals, the supply and demand of various types of health professionals, and health financing more generally.

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Table of Contents

PREFACE iii

Appendix

A. METHODS USED A-1
Overview A-1
Data Sources A-1
Regional Classification Schemes A-2
Data Sources A-1
Projected Changes in Demand for APRNs A-5
Projected APRN Supply Under Less Restrictive Regulation of APRNs A-9
Annual Economic Impact of Less Restrictive Regulation of APRNs A-14
Projected Impact of Expanded APRN Use on Health Expenditures A-15

B. PROJECTED CHANGES IN DEMAND FOR APRNS B-1
Table B-1. Estimated Change in Health Expenditures Due to Demographics ... B-2
Table B-1a. Estimated Increase in Health Expenditures Due to Aging B-8
Table B-2. New Health Spending Due to Federal Exchange Subsidies B-20
Table B-2a. Uninsured Persons by Poverty Status, by County, 2012 ..... B-26
Table B-2b. Low Income Nonelderly Uninsured Adults, by County, 2012 ..... B-30
Table B-3. New Federal Health Expenditures Due to Medicaid Expansion B-34
Table B-4. Estimated Increase in Health Expenditures Due to ACA B-40

C. ESTIMATED APRN SUPPLY UNDER LESS RESTRICTIVE REGULATION C-1
Table C-1. Active Advanced Practice RNs by County, 2012 ..... C-2
Table C-2. Nurse Practitioner Compensation by County, July 2014 ..... C-8
Table C-3. CNM, CRNA and CNS Compensation by County, July 2014 ..... C-12
Table C-4. APRN Gross Compensation by County, July 2014 ..... C-16
Table C-5. Derivation of APRN Estimated Practice Expenses C-20
Table C-6. APRN Practice Outlays by County, 2012 ..... C-24
Table C-7. Potential Changes in Supply and Demand for APRNs by County ... C-28
Table C-8. Impact of Less Restrictive Regulation on Physician Shortages C-32

D. ECONOMIC IMPACT OF LESS RESTRICTIVE APRN REGULATION D-1
Table D-1. Annual Economic Impact for State and Major Regions D-2
Table D-2. Annual Economic Impact, Regional Breakdowns (HSAs/MSAs) D-3
Table D-3. Annual Economic Impact by County D-6

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Appendix A: Methods Used

The following provides a detailed summary of methods used in this report. Fine methodological details are codified in detailed tables reported in Appendices B, C and D.

Overview

To assess the impact of less restrictive regulation of APRNs in North Carolina, we conducted three interrelated analyses. The first analysis estimated changes in demand for APRNs between 2012 and 2020. This entailed separate analyses of the anticipated increase in demand related to demographic factors and the additional demand expected as a result of continuing implementation of the Affordable Care Act. The second analysis calculated the increase in APRN supply that would result from less restrictive APRN regulations. This included an assessment of the extent to which the increased APRN supply might reduce the anticipated shortage of various types of physicians in 2020. The third analysis examined the economic impact of APRN regulatory reform on total output, jobs, wages and benefits and tax revenues. An additional component of this analysis estimated the potential health system savings that might result from expanded APRN use.

Data Sources

Seven primary data sources were used in this assessment of the economic benefits of more fully utilizing APRNs:

- The **North Carolina Health Professions Data System (HPDS)** (located at http://www.shepscenter.unc.edu/hp/) provides data by county regarding the number of active NPs and CNMs in 2012. The companion *North Carolina Health Professions 2012 Data Book* lists by county 4,244 NPs and 258 CNMs active in 2012. However, these published data do not provide information on hours worked nor are parallel estimates provided on the location by county for CRNAs or CNSs. Consequently, we secured from the Sheps Center at UNC-CH a subset of the raw HPDS survey data which included Zip code of primary practice location and practice setting codes to differentiate those in clinic settings vs. hospital, school or other "corporate" settings. These individual-level data also provide information on a) clinical primary care hours per week; b) clinical specialty care hours per week; and non-clinical care hours per week. We analyzed these raw data to produce estimates of full-time-equivalent NPs, CNMs, CRNAs and CNSs by county.
- The **Area Health Resource File** provides data by county regarding the total number of physicians by specialty as well as basic population counts and characteristics (HRSA, 2014a).
- **Small Area Health Insurance Estimates** (SAHIE) provides 2012 estimates of the uninsured by county for four age categories: 0-64, 18-64, 40-64 and 50-65 and income breakdowns: 0-138% poverty and 138-400% poverty (Bureau of the Census, 2014).
- **North Carolina County/State Population Projections** from the North Carolina Office of State Budget and Management provides 2010-2020 estimates of total population, by age, for each NC county (OSBM, 2014).
- **Medicare Reimbursement Per Enrollee by County: Price, Age, Sex and Race-adjusted** from the Dartmouth Atlas of Health Care provides a standardized way of comparing medical prices across counties (Dartmouth Atlas of Health Care, 2013a).

- **Salary Wizard** at Salary.com provides detailed data on annual compensation (salary plus bonus, Social Security and all other fringe benefits) for several categories of NPs, CRNAs, CNMs and two categories of CNSs as of July 2014.
- **IMPLAN**, the input-output modeling system developed by the Minnesota IMPLAN Group, estimates output, labor compensation (wages and benefits), and employment multipliers for each industry by selected geographic area using a social accounting system. IMPLAN also provides data on tax revenues generated by individual industries by geographic area (MIG, 1997).

Regional Classification Schemes

We conducted our analyses at six levels of aggregation: county, NCI-modified Health Service Areas, MSAs, Sheps Center Health Service Areas, region, and statewide. To avoid confusion, we refer to the 6 health service areas defined by the Sheps Center as Sheps HSAs, and to the 32 areas defined by SEER as HSAs. We refer to the three regions defined by NC State's Center for Health Statistics as our "regional" level of analysis. All larger regions are composed of one or more whole, contiguous counties. The table and maps below illustrate these regional classifications.

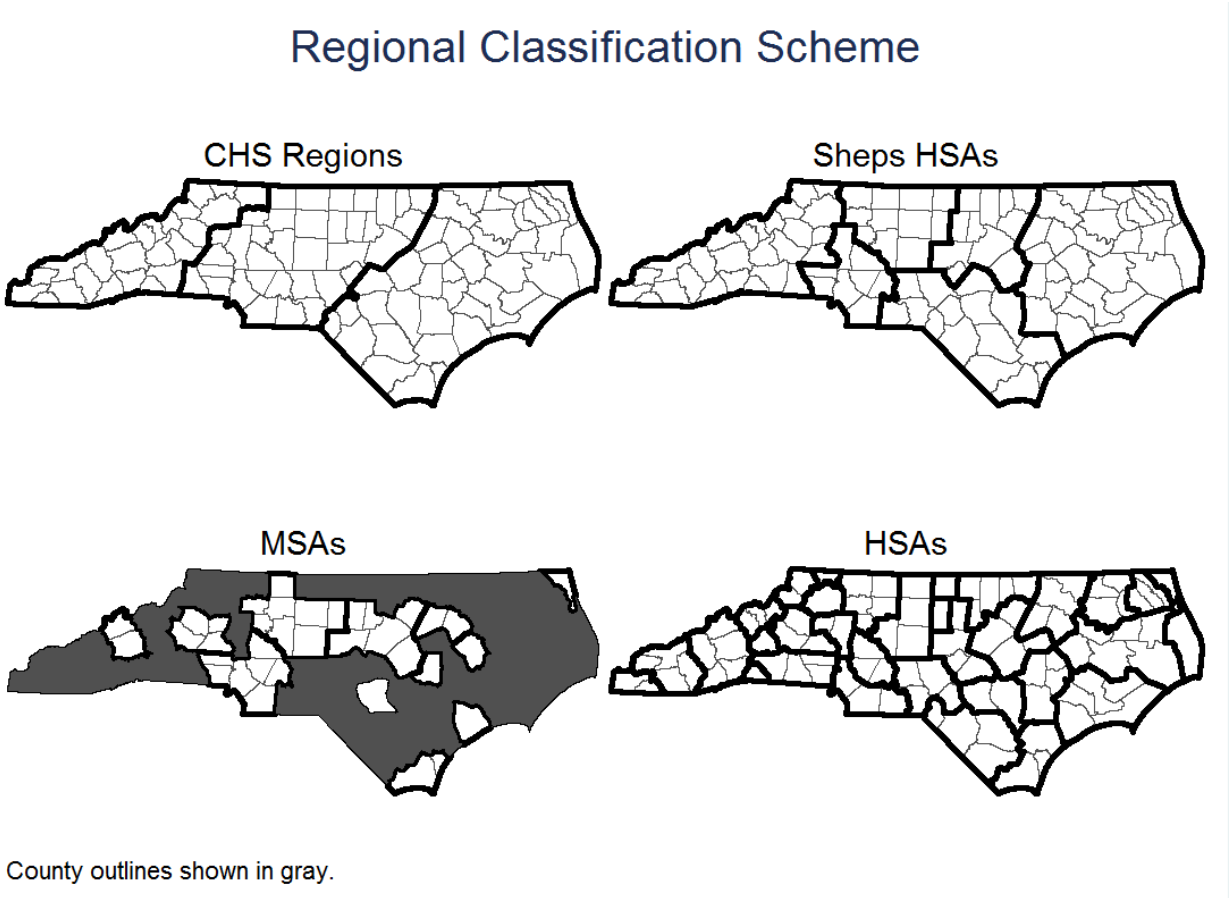


Table A-1. Regional Classification Scheme

COUNTIES		REGION	SHEPS HSA	HSA	MSA
County Name	FIPS Code				
Alamance	37001	Piedmont	Piedmont	267	3120
Alexander	37003	Piedmont	Western	192	3290
Alleghany	37005	Western	Western	73	
Anson	37007	Piedmont	Cardinal	167	
Ashe	37009	Western	Western	194	
Avery	37011	Western	Western	240	
Beaufort	37013	Eastern	Eastern	195	
Bertie	37015	Eastern	Eastern	243	
Bladen	37017	Eastern	Cardinal	207	
Brunswick	37019	Eastern	Cardinal	168	9200
Buncombe	37021	Western	Western	225	480
Burke	37023	Western	Western	229	3290
Cabarrus	37025	Piedmont	South Piedmont	235	1520
Caldwell	37027	Western	Western	229	3290
Camden	37029	Eastern	Eastern	264	
Carteret	37031	Eastern	Eastern	242	
Caswell	37033	Piedmont	Piedmont	132	
Catawba	37035	Piedmont	Western	229	3290
Chatham	37037	Piedmont	Capitol	203	6640
Cherokee	37039	Western	Western	258	
Chowan	37041	Eastern	Eastern	243	
Clay	37043	Western	Western	258	
Cleveland	37045	Piedmont	Western	218	
Columbus	37047	Eastern	Cardinal	207	
Craven	37049	Eastern	Eastern	242	
Cumberland	37051	Eastern	Cardinal	262	2560
Currituck	37053	Eastern	Eastern	6	5720
Dare	37055	Eastern	Eastern	264	
Davidson	37057	Piedmont	Piedmont	186	3120
Davie	37059	Piedmont	Piedmont	149	3120
Duplin	37061	Eastern	Eastern	238	
Durham	37063	Piedmont	Capitol	170	6640
Edgecombe	37065	Eastern	Eastern	214	6895
Forsyth	37067	Piedmont	Piedmont	149	3120
Franklin	37069	Piedmont	Capitol	198	6640
Gaston	37071	Piedmont	South Piedmont	218	1520
Gates	37073	Eastern	Eastern	243	
Graham	37075	Western	Western	209	
Granville	37077	Piedmont	Capitol	170	

COUNTIES		REGION	SHEPS HSA	HSA	MSA
County Name	FIPS Code				
Greene	37079	Eastern	Eastern	238	
Guilford	37081	Piedmont	Piedmont	186	3120
Halifax	37083	Eastern	Eastern	214	
Harnett	37085	Eastern	Cardinal	203	
Haywood	37087	Western	Western	225	
Henderson	37089	Western	Western	225	
Hertford	37091	Eastern	Eastern	243	
Hoke	37093	Eastern	Cardinal	205	
Hyde	37095	Eastern	Eastern	195	
Iredell	37097	Piedmont	South Piedmont	192	
Jackson	37099	Western	Western	209	
Johnston	37101	Eastern	Capitol	198	6640
Jones	37103	Eastern	Eastern	242	
Lee	37105	Piedmont	Capitol	203	
Lenoir	37107	Eastern	Eastern	238	
Lincoln	37109	Piedmont	South Piedmont	218	1520
Macon	37113	Western	Western	209	
Madison	37115	Western	Western	225	480
Martin	37117	Eastern	Eastern	195	
McDowell	37111	Western	Western	261	
Mecklenburg	37119	Piedmont	South Piedmont	167	1520
Mitchell	37121	Western	Western	240	
Montgomery	37123	Piedmont	Cardinal	205	
Moore	37125	Piedmont	Cardinal	205	
Nash	37127	Eastern	Eastern	214	6895
New Hanover	37129	Eastern	Cardinal	168	9200
Northampton	37131	Eastern	Eastern	214	
Onslow	37133	Eastern	Eastern	242	3605
Orange	37135	Piedmont	Capitol	203	6640
Pamlico	37137	Eastern	Eastern	242	
Pasquotank	37139	Eastern	Eastern	264	
Pender	37141	Eastern	Cardinal	168	
Perquimans	37143	Eastern	Eastern	264	
Person	37145	Piedmont	Capitol	170	
Pitt	37147	Eastern	Eastern	195	3150
Polk	37149	Western	Western	191	
Randolph	37151	Piedmont	Piedmont	186	3120
Richmond	37153	Piedmont	Cardinal	205	
Robeson	37155	Eastern	Cardinal	207	
Rockingham	37157	Piedmont	Piedmont	186	
Rowan	37159	Piedmont	South Piedmont	235	1520

COUNTIES		REGION	SHEPS HSA	HSA	MSA
County Name	FIPS Code				
Rutherford	37161	Western	Western	218	
Sampson	37163	Eastern	Cardinal	262	
Scotland	37165	Eastern	Cardinal	207	
Stanly	37167	Piedmont	South Piedmont	235	1520
Stokes	37169	Piedmont	Piedmont	149	3120
Surry	37171	Western	Piedmont	149	
Swain	37173	Western	Western	209	
Transylvania	37175	Western	Western	225	
Tyrrell	37177	Eastern	Eastern	195	
Union	37179	Piedmont	South Piedmont	167	1520
Vance	37181	Piedmont	Capitol	170	
Wake	37183	Piedmont	Capitol	198	6640
Warren	37185	Piedmont	Capitol	170	
Washington	37187	Eastern	Eastern	195	
Watauga	37189	Western	Western	194	
Wayne	37191	Eastern	Eastern	238	2980
Wilkes	37193	Western	Western	256	
Wilson	37195	Eastern	Eastern	198	
Yadkin	37197	Piedmont	Piedmont	149	3120
Yancey	37199	Western	Western	240	
# of Areas:		3	6	32	12
Notes		[A]	[B]	[C]	[D]

Notes

[A] County classification reported at [S1].

[B] County classification reported at [S2: 190-191].

[C] HSAs as defined by the National Cancer Institute's Surveillance, Epidemiology, and End Results Program [S3].

[D] MSA definitions developed by Centers for Medicare and Medicaid Services, as reported in [S4]. The more familiar OMB MSA definitions are slightly different. Any county not assigned to an MSA is omitted when discussing results at this level.

Sources

[S1] **North Carolina State Center for Health Statistics.** *NC CHAMP - Regional Data*. Available at: http://www.schs.state.nc.us/schs/champ/Regions/ (accessed July 31, 2014).

[S2] **North Carolina Health Professions Data System**. *North Carolina Health Professions 2012 Data Book: A Report on Health Care Resources in North Carolina*. Chapel Hill, NC: The North Carolina Health Professions Data System, Program on Health Workforce Research and Policy, Cecil G. Sheps Center for Health Services Research, 2014.

[S3] **National Cancer Institute, Surveillance, Epidemiology, and End Results Program**. *Health Service Areas (HSAs)*. Available at: http://seer.cancer.gov/seerstat/variables/countyattribs/hsa.html (accessed July 31, 2014).

[S4] **National Bureau of Economic Research**, *Index of /cbsa-msa-fips-ssa-county-crosswalk*. Available at: http://www.nber.org/cbsa-msa-fips-ssa-county-crosswalk/cbsatocountycrosswalk.csv (accessed July 31, 2014).

Projected Changes in Demand for APRNs

We analyzed the change in demand for APRNs in two steps. In both cases, we used a 2012 baseline for analysis since this is the latest year for which actual counts of APRNs by county were available through the North Carolina Health Professions Database (HPDS). The first step was to estimate the increase in baseline demand that would result "naturally" between 2012 and 2020 due to demographic factors, including a) population growth; and b) changes in demographic characteristics (age and sex) over that period. The second step was to project the increase in baseline demand that would result from implementation of the Affordable Care Act over the same period.

For simplicity, we have calculated all effects as percentage changes from the 2012 baseline, that is, as if they had hypothetically been fully realized in that year. For purposes of analysis, it is not important to determine the exact path of changes on a year-to-year basis. What we essentially have estimated is the permanent increase in demand (relative to 2012) that will occur by a certain year in the future (2020). Understanding what will happen to aggregate demand provides a context for understanding our subsequent projections of APRN supply expected to result from less restrictive APRN regulation.

Changes in Health Spending Due to Demographic Factors

We first estimated the expected change in health expenditures between 2012 and 2020 that would result from population growth and aging. Official state forecasts of changes in county populations over that 8 year period inclusive of changes in the distribution by sex and age (10 age categories) were used to estimate county-specific changes in health spending. These projections should be viewed as the change in demand for "real" health services, not taking into account what might happen to either medical prices or general inflation in the interim. That is, if a given county's population uses 100,000 APRN visits in 2012 and grows 10 percent by 2020 without any changes whatsoever in the age or sex mix, it would be expected to use 110,000 visits in 2020.

Consequently, simply comparing the total population in 2020 to the total population in 2012 shows how much spending will rise purely due to the effects of population growth. Statewide, that increase is 8.2 percent, but it ranges from negative growth in at least 20 counties to growth as high as 21.9 percent in Brunswick County (Table B-1).

We used a national age curve to determine relative spending by age and gender (Yamamoto 2013). This curve is normalized so that an index value of 1.0 represents average spending for members of an employer group PPO (the most common form of health insurance coverage for most Americans). This curve shows that males age 75-84 have an index value of 4.19 meaning their total annual health spending (inclusive of amounts paid out-of-pocket and by third party payers) is 4.19 times as large as the group average (these index values are reported in Table B-1a). We used these index values to calculate for each county a weighted average spending index value based on the distribution of the population by age and sex. As the population ages, this index value will rise, so the ratio of the 2020 index to the 2012 index provides a useful method of estimating the percent increase in spending due to aging. Statewide, we project this increase is 6.2 percent (i.e., the effects of aging nearly double the increase in spending predicted from population alone), ranging from a low of 2.6 percent in Swain County to a high of 11.1 percent in Camden County (Table B-1).

Thus, the combined effects of population growth and aging will result in a 14.4 percent increase in health expenditures independent of any other factors. That is--assuming no change in current practice patterns--the "need"/demand for APRNs (and other health providers) will rise by 14.4 percent over the 8 year period examined. This is a conservative estimate insofar as it does not take into account the effects of new technology or higher incomes on the demand for care. Historically, leaving aside the most recent slowdown, real per capita income in North Carolina has grown 2.1 percent a year.[1] Despite the recent slowdown in health spending that begin midway in the first decade of the 21st century, increases in intensity and use alone have increased per capita health spending by about 1 percent a year in 2012 and 2013 (Hartman et al. 2015). Thus, our estimate of the increase in baseline demand that would have occurred even without the Affordable Care Act or changes in APRN regulation is quite conservative.

Changes in Health Spending Due to the Affordable Care Act

We then determined how new federal spending under the Affordable Care Act (ACA) will change the need for APRNs in the years ahead. Our rationale for focusing on federal spending is that this represents the injection of additional demand into the local economy. That is, this new flow of federal dollars will result in greater economic activity that can be measured using economic impact analysis, such as new jobs, higher output and additional tax collections. In contrast, while the ACA also will result in higher spending by North Carolina residents on their own health care than would have occurred otherwise, this new demand for health services will not provide a net benefit to the economy since every new dollar spent out of the pockets of North Carolinians because of the ACA will be diverted from spending within the state that would have instead gone to the purchase of other goods and services.[2] The methodology for assessing this economic impact is explained in a subsequent section. Here we focus on how the increase in federal spending on health services demand was calculated.

That required two calculations. The first estimated the net increase in federal spending related to subsidies provided on the ACA exchange (Table B-2). The second calculated the increase in new federal Medicaid spending (Table B-3). Because it is uncertain if or when North Carolina will adopt the Medicaid expansion allowed under the ACA, both sets of calculations include a lower-bound estimate that assumes no Medicaid expansion and an upper-bound estimate assuming that Medicaid expansion (or its equivalent) is adopted sometime before 2020. In both cases, we have relied on state-level estimates by Urban Institute researchers of the projected increase in federal spending that would be expected in each scenario (Buettgens et al., 2011). Urban Institute researchers used the identical simplifying assumption that we have in this report: they estimated the aggregate increase in federal spending in the year 2011 assuming hypothetically that the ACA had been fully implemented by that year. This approach allowed for a straightforward comparison of how these spending changes related to baseline health expenditures in 2011. Since we used a 2012 baseline, we simply adjusted all

[1] Authors' analysis of data from U.S. Bureau of Economic Analysis, Per Capita Personal Income in North Carolina [NCPCPI] and Gross Domestic Product: Implicit Price Deflator [GDPDEF], retrieved from FRED, Federal Reserve Bank of St. Louis Available at: https://research.stlouisfed.org/fred2/series/GDPDEF/ (accessed February 1, 2015).

[2] North Carolina accounts for 2.3 percent of federal tax collections (IRS, 2014). Thus, strictly speaking a small fraction of new federal spending likewise essentially will be pulled out of North Carolina households and hence likewise would otherwise have been spent on other goods and services. Thus, explicitly accounting for this would only change the estimated amount of new demand arising from federal dollars under the ACA only a small fraction. For simplicity, it was therefore ignored.

the Urban Institute dollar figures by 3.1% to reflect the increase in U.S. personal health expenditures per capita between 2011 and 2012 (CMS, 2013).

Estimation of Federal Exchange Subsidies. We used Bureau of Census estimates of the distribution of the state's uninsured population by county and 4 poverty categories (<138% of federal poverty level (FPL), <200% FPL, <250% FPL, and <400% FPL; Table B-2a reports these estimates and their margin of error for each county). We used this information to allocate to counties the aggregate amount of subsidies reported by Urban Institute into four groups: 100-138% FPL, 138-200% FPL, 200-300% FPL and 300-400% FPL. Without Medicaid expansion, the first group (100-138% FPL) would be permitted to obtain subsidized coverage on the Exchange. Thus, the only difference in the cost estimates for a no-expansion scenario compared to a Medicaid-expansion scenario is that the former includes $718 million in additional subsidies going to this first group; subsidies for all income groups above 138% FPL are assumed to be the same in either scenario (Table B-2).

Estimation of Increased Federal Medicaid Spending. We used a parallel process to allocate the federal share of new Medicaid spending based on the distribution of the uninsured by poverty status (below 100% FPL and 100-138% FPL). SAHIE reports separate figures for the total number of uninsured people and uninsured adults below 138% FPL, but provides no breakdown of what share of these are below poverty. North Carolina Medicaid currently covers all infants up to 185% poverty; all children 1-5 up to 133% of poverty and all children 6-19 up to 100% of poverty. Therefore the vast majority of the Medicaid expansion will be among uninsured adults.[3] Consequently, we estimated the distribution of all uninsured persons below 100% of FPL based on figures reported by Urban Institute (2014) for uninsured adults below 100% of FPL and 100-138% FPL; that is, if 75% of uninsured adults below 138% FPL had incomes below poverty in county X, it was assumed that the same was true of the total uninsured population.[4]

Estimation of Total Health Spending in 2012. The latest official estimates of health spending per capita in North Carolina are for the year 2009 (CMS, 2010b). This figure was inflated by 9.0% to reflect the percentage increase in U.S. personal health spending per capita between 2009 and 2012. To obtain county-level estimates of per capita health spending in 2012, we made two adjustments. First, to account for demographic differences between each county and the state as a whole, we multiplied it by the ratio of that county's total health spending index in 2012 to the statewide health spending index for the same year. Second, to account for differences in medical care prices across counties, we multiplied by a Medicare price adjuster.[5] We multiplied these per capita spending figures times the total county population in 2012 to derive total health spending for that year (Table B-4).

[3] As shown in Table B-3, 89.8% of the state's uninsured below 138% FPL are adults age 18-64. This percentage varies only modestly across counties.

[4] Urban Institute researchers reported estimates for 11 Consolidated Statistical Areas (CSAs), 17 named counties and 10 geographic areas within CSAS. As detailed in Table B-2b, we assigned values to each of the remaining 83 unnamed counties based on the descriptions of the geographic areas given in the original source where it was clear that the county fell within that geographic area. Otherwise, assignment was based on geographic location, using the figures from the most proximate county within the same Health Service Area, CSA or region.

[5] We calculated this adjuster using Dartmouth Atlas compilations by county (Dartmouth Atlas of Health Care, 2013a) and state (Dartmouth Atlas of Health Care, 2013b) of Age, Sex and Race-Adjusted Medicare Spending per Enrollee (ASR Medicare Costs) and Price, Age, Sex and Race-Adjusted Medicare Spending per Enrollee (PASR Medicare Costs): Index = [(County ASR Medicare Costs)/(State ASR Medicare Costs)] / [(County PASR Medicare Costs)/(State PASR Medicare Costs)].

We then used the previously derived estimates of the aggregate increase in federal spending under the ACA to convert these into percentage increases in total demand. These calculations show, for example, that without Medicaid expansion, the new federal dollars flowing into North Carolina as a consequence of the ACA will boost health spending by 3.1 percent. With Medicaid expansion, the increase would be 5.7 percent. We then compared these percentage increases to the estimated increase in demand projected due to demographic changes. These show that the new federal dollars under the ACA are equivalent to increasing the expected baseline growth in health spending due to demographics by an additional one fifth (21.3%)--if Medicaid is not expanded—to two fifths (39.2%) if Medicaid is expanded (Table B-4).

Projected APRN Supply Under Less Restrictive Regulation of APRNs

This component of the analysis had four steps. We first calculated the size of the APRN market in 2012 in dollar terms. We then projected the increase in APRN supply that would result from less restrictive regulation of APRNs. We then compared this estimated increase in supply to previously-derived estimates of projected changes in demand. Finally, we compared projected changes in FTE APRNs to various estimates of projected shortages in physician supply in the year 2020 to assess the extent to which an expanded supply of APRNs might alleviate physician shortages for selected specialties.

Current Size of the APRN Market in North Carolina

To perform an economic impact analysis of expanded use of APRNs after the adoption of less restrictive scope-of-practice regulations, a baseline estimate of the current size of the APRN market (in dollar terms) was needed.

Total Number of APRNs. The North Carolina Health Professions Data System (HPDS) provided a dataset for 2012 from which to calculate the total number of FTE APRNs by county. These survey data included information that allowed us to identify four types of APRNs (NPs, CNMs, CRNAs, and CNS's, their practice location (by county and Zip code), their practice setting and information about hours worked. We convert individual-level data on hours worked by each type of APRN into full-time equivalents (FTEs) by county. In all cases, we have assumed that 40 hours per week represents one FTE since this was the modal response to the hours of work question on the HPDS survey of RNs.

NPs. For NPs, hours worked was reported in four categories (primary care hours, clinical specialty hours, non-clinical care hours, and hours on call). However, there were two problems with the data. First, about 30% of the entire population of NPs reported working more than 80 hours total in a week. Many of those reported hours were much higher, some over 200 hours in a week, which is clearly impossible. The maximum number of hours reported in question 16 of the National Sample Survey of Nurse Practitioners (HRSA 2014b) is 80 hours. Consequently, we used that as the threshold for adjusting reported hours: we assume that everyone reporting hours in excess of 80 per week was actually reporting monthly hours. Multiplying these monthly totals by 12/52, we obtain what we believe is a more accurate estimate of weekly hours worked.

Second, about 52% of NPs did not report any hours worked per week. To handle these missing cases, we used data from those who reported 80 or less total hours per week to calculate the average number of hours in each of the four hour categories reported (primary care hours, clinical specialty hours, non-clinical care hours and on-call hours), estimating a different set of four averages for each practice setting. We assigned these four practice averages to the missing values based on the respondent's practice setting.

CNMs. For CNMs, HPDS did not report number of hours worked. Instead, we relied on the findings of the ACNM that in 2011, 74% of CNMs worked full-time, another 5% worked full-time and had a second job, and the remaining 21% worked part-time (see table 3 in Schuiling, Sipe, and Fullerton 2013). For the ordinary full-time category, we assume a 40 hour workweek since this was the modal response for the other three categories of North Carolina APRNs being studied. Using the NP data from HPDS, we calculated expected hours for the other two categories:

- We took the average of all NPs who reported between 40 and 80 hours and divided the aggregate number of "excess" hours (above 40) by the total number of NPs who reported hours in this range. This figure plus 40 gives us the expected hours to assume for CNM reporting having worked more than full-time.
- For the part-time CNMs, we used the average hours worked by NPs who reported working less than 40 hours.

Using these expected FTEs and the percentages from the ACNM survey, we calculated an average number of hours to assign to each CNM in our sample:

$$(0.74*40)+(0.05*(40+\text{Avg NP hours over 40}))+(0.21*\text{Avg NP hours under 40})$$

Multiplying each county's raw count by this average and dividing by 40 yields an expected number of FTEs for the county.

CRNAs and CNSs. There were no missing data on hours per week for either CRNAs or CNSs.

This analysis found there were 4,244 NPs (4,006 FTE), 258 CNMs (238 FTE), 2,035 CRNAs (1,981 FTE) and 951 CNSs (909) active in North Carolina in 2012 (Table C-1).

APRN Compensation. Information from Salary.com provided information, by city, on the average compensation for each category of APRNs.[6] Compensation figures include salary and bonus and fringe benefits (inclusive of employer payroll tax contributions on behalf of workers for Social Security and Medicare). We compiled the data from the largest city in each MSA and assigned these values to each county within that MSA. Salary data from Clinton, NC were used to impute values for non-MSA counties in Eastern region; Oxford, NC

[6] The Salary Wizard is an interactive database of up-to-date market compensation information. Unlike compensation surveys, which report data effective as of a fixed date, the Salary Wizard is a report of a continual research study. It includes data on approximately 1,200 unique jobs and 4,000 job titles that can be mapped to those jobs. The data is intended to provide a reasonable range for typical cash compensation earned by the typical person working in that job. The data used to develop the pay levels shown in the Salary Wizard is based on the pay practices of companies of all industries, companies of all sizes, and companies from all around the United States. Every job in the Salary Wizard has been thoroughly researched and validated by Salary.com's team of compensation consultants who have combined experience of over 40 years in the compensation and statistical analysis fields. Salary.com purchases the most current salary surveys available from well-recognized, reputable compensation consulting firms. This survey data is used for analysis and benchmarking by extracting and reporting the market salary data for each position that matches to one of the jobs reported in the Salary Wizard. To ensure jobs are appropriately matched, our analysts benchmark the jobs based on job content, not job title. Note that all data used in researching salary levels for the Salary Wizard has been reported by human resource professionals. Salary.com does not use any salary information from individual site users, placement agencies, job postings, nor any other sources that would traditionally be characterized as "unreliable" by compensation or human resource professionals. The Salary Wizard data represents the typical person in a job based on national average information. The Salary Wizard lets the user specify a metropolitan region that applies a geographic differential to reflect differences in pay levels in different cities or geographic areas. These differences are similar to, but not the same as, differences in the cost of living (Salary.com, 2014).

was used for non-MSA counties in Piedmont region; Marion, NC was used for non-MSA counties in Piedmont region.

Salary.com reports separate figures for four different types of NPs: primary care, hospital emergency department, all other hospital-based and long-term care (Table C-2). Separate figures also are reported for two categories of CNSs: home care and all other (Table C-3). In these cases, APRN gross compensation was calculated using the number of nurses reported in each sub-category times the average compensation for that sub-category (Table C-4). This analysis showed that in terms of their own direct compensation, APRNs represent a $1 billion industry in North Carolina (Table C-4). This figure was used as the basis for lower-bound estimates of the economic impact of increasing APRN supply.

APRN Practice Expenses. We recognize that APRN compensation is merely one component of this industry. Each APRN implicitly supports other clinical and non-clinical personnel whose livelihoods depend on the revenues generated by the APRN. This is obviously true in the case of APRNs who have their own private practice. It is equally true of APRNs hired by other organizations such as hospitals or community health centers since these organizations likewise must hire additional personnel (lab technicians, billing clerks) to support whatever services are provided by the APRN. These practice expenses - which include clinical and clerical personnel as well as office expenses, medical equipment, medical supplies and drugs - were imputed for each category of APRN based on calculating the ratio of such practice expenses (PE) to physician compensation for similar categories of physicians. NPs were assumed to have PE similar to those of MDs in Family Medicine, CNM PEs were imputed from those of OB/GYNs, CRNA PEs were imputed from anesthesiologists, and CNS PEs were imputed from those of MDs in Internal Medicine (Table C-5).

We begin with MD baseline figures on reported mean patient care hours per year estimates for respondents to the Physician Practice Information Survey; for each physician specialty, these survey results were converted into practice expense per hour (PE/HR) estimates reported by the AMA (2009) for eleven different cost categories ranging from clerical wages to medical supplies (detailed in Table C-5). A companion report shows how practice expenses vary by geographic location, showing higher expenses in non-metro and small metro areas compared to large metro areas (Gillis, 2009). Therefore we adjusted the baseline figures to derive 3 separate estimates for each specialty depending on location.

We used the following formula for this adjustment: (Non-physician Payroll, Non-metro) = (Non-physician Payroll, All Physicians) x [(Median PE, Non-physician payroll, Non-metro)/(Median PE, Non-physician payroll, All physicians)] x (Mean Annual Patient Care Hours, MD Baseline) x (Mean Annual Patient Care Hours, Non-Metro). The first adjustment accounts for differences in practice expenses by location, using figures reported by Gillis (because Gillis reports these estimates for all physicians, not by specialty, this adjustment is identical for all 4 specialties used as APRN comparators). The second adjustment accounts for differences in hours worked by location, using figures reported by Gillis (showing that weekly work hours are higher in non-metro and small metro areas compared to large metro areas).[7] This method was used to derive figures for a)

[7] All figures based on metro size are calculated by authors assuming that differences in hours worked by location are the same across all specialty types, e.g. Non-metro Annual Patient Care Hours, Family Medicine = (MD Baseline, Annual Patient Care Hours, Family Medicine) x (Non-metro Weekly Patient Care Hours)/(Weekly Patient Care Hours, All Physicians), using weekly hours for all physicians reported in Gillis (2009).

Non-physician payroll; b) Office expenses; c) Medical equipment; d) Medical materials and supplies; e) Drugs (using the medical supplies PE estimates in [P1]); and Other professional expenses. Sub-components of these categories (e.g., Clinical payroll, can bill independently, were derived for each specialty assuming that the distribution of sub-components in each geographic location mirrored that reported in the MD baseline for that specialty.

Because the PE/hour figures were from the 2006 PPIS, they were inflated by 20.8% to account for the change in the 2006-based Medicare Economic Index prior to productivity adjustment between CY2006 and CY2012, as reported by the 2012 Medicare Economic Index Technical Advisory Panel (MEI-TAP, 2013).

We then calculated the ratio of total PE to MD compensation for each of the four comparator specialties (with separate ratios for the three geographic locations). We used this formula: (Non-physician Compensation) x (Inflation Adjustment, 2006-2013)/[(Hourly Mean Wage/(43.88/48.266)] using hourly mean wage figures reported by Bureau of Labor Statistics (BLS, 2014), where 43.88=cost weight for wages and salaries in current 2006-based MEI and 48.266=cost weight for physician compensation in MEI (MEI-TAP, 2012). We calculated a parallel ratio that excluded clinical payroll (all details in Table C-5).

We then imputed the latter ratios to counties based on urbanization status and population size. Thus, each county had a different ratio for each category of APRNs within that county. We then multiplied total APRN compensation times these ratios to derive estimated practice expenses by type of APRN within each county (Table C-6). When such practice expenses are included along with total APRN compensation, the total size of the APRN industry rises to just under $2 billion.

Potential Changes in APRN Supply Due to Less Restrictive Regulation of APRNs

The next step was to calculate a parallel figure showing the potential increase in APRN supply through 2019 that would result from less restrictive APRN practice regulations. As explained in Section II, less stringent regulations already have been adopted in other states. Thus, what has been modeled is moving from a regime of relatively restrictive regulations to a regime of fewer scope-of-practice restrictions, not the complete elimination of all regulations related to APRNs.

As shown in Section II, of the half dozen studies that have examined the relationship between APRN regulation and APRN supply, five focused on NPs and only one focused on CNMs (DeClerq et al. 1998). However, the latter study a) used much older data (from 1991 and 1995); b) only examined the cross-sectional correlation between regulation and supply rather than how regulation may have affected rates of growth in APRN supply; and c) did not control for other important state characteristics that may have influenced CNM supply such as the number of OB/GYNs. This study confirmed that the level of CNM supply per 100,000 females age 15-44 was 3.3 times as high in states with a high level of regulatory support (i.e., less restrictive regulation) compared to states in the "low support" category. This is certainly consistent with the view that regulation affects CNMs by a considerable amount, but does not provide a very solid basis for quantifying the magnitude of that effect.

The best available study (Reagan and Salsberry, 2013) compared states with the most NP restrictions in 2001—defined to mean requirements for a collaborative practice agreement to diagnose, treat and prescribe—to states without any such restrictions. The analysis showed that controlling for a variety of other state characteristics

(such as the supply of primary care and specialty physicians), the increase in the number of NPs per 100,000 population by the year 2008 was 10.91 per 100,000 population higher than in states with no such restrictions.[8] Assuming an equivalent increase were to occur in North Carolina in 2012, such an absolute gain in NPs per 100,000 would have expanded the supply of NPs by 24.4 percent since there were 43.5 NPs per 100,000 that year.[9]

Since we lacked good empirical evidence on how regulation might affect the supply of CNMs, CRNAs and CNSs, we elected to use the conservative figure of 24.4 percent derived from the Reagan and Salsberry study as the basis for predicting how less restrictive APRN regulation would increase the supply for all four categories of APRNs studied here.

We applied this 24.4 percent increase to the baseline estimates of the size of the APRN industry in 2012, finding that less restrictive APRN regulation would expand the size of that industry by $260 million (using APRN compensation) to $481 million (inclusive of APRN practice expenses) (Table C-7).

Projected Impact of Expanded APRN Use on Physician Shortages

As demonstrated in Section II, the supply of regular physicians in North Carolina is expected to fall short of that demand by the year 2020, with the exact size of the shortage depending on specialty. We used these estimates to compute lower-bound and upper-bound estimates of potential shortages for a) all primary care MDs excluding OB-GYNs, b) OB-GYNs; c) anesthesiologists; and d) all nonfederal physicians.

Substitution Ratios. APRNs are not trained to do everything MDs and DOs can do. For example, the Office of Technology Assessment (1981) determined that NPs were capable of managing 80 percent of adult primary care and 90 percent of pediatric primary care. Moreover, there are well-established differences between physicians and APRNs in terms of typical hours worked. We used evidence from the literature to arrive at substitution ratios for each category of APRN. A substitution ratio of 75% implies that 1 FTE APRN will substitute for 75% of whatever physician specialty is used as a comparator. Put another way, increasing in the supply of APRNs by 100 would, in this instance, be expected to reduce a projected shortage of physicians by 75.

NPs. We assumed a substitution ratio of 75% using primary care MDs as the comparator. A recent HRSA report (2013: 28) employs a 0.75 weighting to NPs and PAs relative to primary care physicians. This weighting reflects the consensus of the Negotiated Rulemaking Committee on the Designation of Medically Underserved Populations and Health Professional Shortage Areas. The ratio reflects differences in both the demographic make-up of each profession and practice styles. That is, a higher fraction of NPs are female, who in turn, tend to work fewer hours than their counterparts who are male; for example, in 2005 the average number of work hours

[8] Reagan and Salsberry's model 3 calculated the change in number of NPs from 2001 to 2008 as the dependent variable, with independent variables for scope of practice regulations, census regions, per capita numbers of primary care and specialty physicians, poverty level, population density, share of the population without health coverage, and share of the population over age 65.

[9] It is worth noting that the 10.91/100,000 gain reported by Reagan and Salsberry represented a 40 percent increase in the baseline supply of NPs/100,000 in states with no restrictions. Thus, use of the 24.4 percent figure is arguably conservative, but since the baseline supply of NPs grew by 73 percent between 2001 and 2008 even in states with the most restrictions, one could also argue that it is not reasonable to expect that less restrictive regulation could produce an additional 40 percent expansion of the much higher 2008 supply level. It is worth noting that North Carolina's 2012 supply was nearly identical to the level (43.62/100,000) reported for the most restrictive states in 2008.

per week reported by female physicians in North Carolina was about 91% of the average hours reported by males (NCIOM, 2007). NPs typically spend more time per visit with patients, doing more patient education, for example. As HRSA cautioned in reporting this ratio, "It is important to note that the Committee did not intend for this weighting to represent the general relative cost or value of NP and PA services compared with physician services. The Committee also acknowledged that these providers often deliver a different set of services than a physician, and that weighting them at 1.0 would overstate the assessment of primary care capacity."

CNMs. We assumed a substitution ratio of 80.2% using OB-GYNs as the comparator. Current Medicare payment rules imply that CNMs have the equivalent productivity as physicians who deliver the identical services. However, AMA survey data show that average weekly hours of patient care were nearly identical for OB-GYNs and MDAs in 1998. These 1998 figures are from an annual survey conducted by the AMA annually (but which ceased in 1999), as reported in Exhibit 10 in HRSA (2008). Average weekly hours have unquestionably declined in the interim (MDAs reported 57 patient care hours weekly in 1998 compared to 49 hours reported in in (Daugherty, 2010), while OB-GYNs reported 58 patient care hours. For purposes of analysis, it was assumed that current OB-GYN hours = 58 x 49/57, implying OB-GYN hours declined at the identical rate as for MDAs. Assuming weekly work hours declined at the same rate in both professions, the equivalent figure currently would be 50 hours. In North Carolina, the typical workweek for CNMs is 40 hours, implying one FTE CNM would substitute for about 80 percent of an OB-GYN, calculated as follows: 40/(58*49/57).

CRNAs. We assumed a substitution ratio of 75.5% using anesthesiologists as the comparator. A RAND Corporation study showed that CRNAs spend 37 hours weekly on procedures while the parallel figure for anesthesiologists (MDAs) is 49 hours (Daugherty et al., 2010). Thus, even though productivity of CRNAs and MDAs are equivalent in terms of productivity per case (as reflected by Medicare payment rules), one FTE CRNA only can substitute for roughly 75 percent of an MDA due to the latter's longer clinical workweek calculated as follows: 37/49.

CNSs. We assumed a substitution ratio of 50% using primary care MDs as the comparator. There is no commonly accepted equivalency standard for CNSs. "CNSs are engaged in direct clinical practice; function as consultants in their area of expertise; provide expert coaching and guidance; interpret, evaluate, and participate in research; provide clinical and professional leadership; collaborate; and employ ethical decisionmaking" (O'Grady, 2008). In light of the solid evidence that CNSs reduce the need for inpatient care, as one example, the reduction in patient needs for various medical services may have at least as important in alleviating physician shortages as any direct substitution of CNS for MD services. Thus, depending on their training, the services CNSs perform can reduce the need for a variety of specialists ranging from OB/GYN physicians to general internists. But in light of the lack of solid evidence regarding how many fewer physicians might be required for every 100 CNSs, we conservatively use a substitution ratio of .5, which is the ratio HRSA formerly applied to NPs when determining the number of FTE primary care providers for purposes of designating Health Professional Shortage Areas (NCIOM, 2007: 117).

We use these figures to translate the projected increase in FTE APRNs under less restrictive APRN regulation into the number of MD equivalents. Table C-8 shows how this projected number of MD equivalents compares

to the 2012 supply of physicians in each of the four categories as well as the projected physician shortage in 2020.

Annual Economic Impact of Less Restrictive Regulation of APRNs

Using these estimates of the increase in the size of the APRN industry, we calculated the economic impact of these changes in the wider economy. We used Regional I-O multipliers to predict the total impact of increased APRN activity. We obtained the 4 multipliers from IMPLAN.[10] The output, value added, and payroll multipliers each represent the total (direct, indirect, and induced) dollar effects of one more dollar of output for the APRN industry.[11] The employment multipliers represent the total change in employment as a result of a $1 million change in output.

These multipliers vary depending on the level of aggregation. For county-level analysis, we use the county multipliers reported in Table D-3. For other higher levels of analysis (HSA, MSA, Sheps HSA), multipliers and companion analytic results are reported in Table D-2. The equivalent information is provided for the statewide analysis and three major regions in Table D-1.

In addition to the overall economic impact analysis, we use IMPLAN software to calculate the increase in state and local tax revenue North Carolina could expect from deregulation. Using the total statewide increase in demand for APRNs, IMPLAN calculates increases in various categories of state and local tax revenues, based on the assumption that tax revenues have a positive linear relationship with output. This tax analysis is reported in Table 1 of the main report.

Projected Impact of Expanded APRN Use on Health Expenditures

Section II reviewed a large body of literature demonstrating the potential of APRNs to reduce health expenditures. Estimates of net overall health system savings resulting from expanded use of APRNs range from 0.63 percent--based on the RAND Corporation's assessment for the State of Massachusetts (Eibner et al., 2009)—to 6.2 percent—based on the Perryman Group's assessment for the State of Texas (2012). It seemed reasonable to assume that savings in North Carolina likely would fall within this broad range.

Total health expenditures in North Carolina in 2012 amounted to $68.8 billion (Table B-4). We used these estimates to calculate that if equivalent savings occurred in North Carolina, the potential amount of annual health cost savings that might result from expanded use of APRNs ranges from $433 million to $4.3 billion. This translates into $44 to $437 per North Carolina resident.

[10] IMPLAN Group, LLC, IMPLAN System (data and software), 16740 Birkdale Commons Pkwy, Suite 206, Huntersville, NC 28078 www.implan.com

[11] The IMPLAN multipliers were all calculated for IMPLAN industry 394 (Offices of physicians, dentists, and other health practitioners). Unfortunately, this is the lowest level of aggregation within IMPLAN: there are no multipliers specifically for APRNs or any other subset of the industry. However, we have no reason to think that the multipliers for APRN practices (or businesses which employ APRNs) would be appreciably different than for industry 394 as a whole.

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Appendix B: Projected Changes in Demand for APRNs

The tables in Appendix B give information used in calculating the increase in demand for APRNs over time assuming no changes in APRN regulations. Tables B-1 and B-1a provide county-level projected population increases and population aging in North Carolina from 2012 to 2020, broken down by gender, along with the estimated increases in APRN demand from these demographic trends.

Tables B-2, B-3, and B-4 give estimates of demand increases in North Carolina as a result of implementation of the Affordable Care Act (ACA), again at the county-level, but using MSA-level data in some of the calculations when county-level data is not available. Table B-2 calculates the increase in demand due to subsidies given to low-income households on the insurance exchanges (Tables B-2a, b show proportions of population in the relevant income ranges). Table B-3 gives the demand increases due to Medicaid; some of this will occur anyway as the health insurance exchange identifies and enrolls people who previously had been eligible-but-unenrolled, but the analysis also projects the larger increase in demand were North Carolina to elect to implement the voluntary expansion of Medicaid permitted by the ACA. Table B-4 summarizes the total ACA-related increases in APRN demand under the different Medicaid expansion scenarios.

Table B-1. Estimated Change in Health Expenditures Due to Population Growth and Aging from 2012 to 2020, by County

FIPS	COUNTY	2012					2020					PERCENT INCREASE IN HEALTH SPENDING FROM 2012-2020		
		Total male population	Total female population	Male health spending index	Female health spending index	Total health spending index	Total male population	Total female population	Male health spending index	Female health spending index	Total health spending index	Total	Due to population growth	Due to aging
	North Carolina	4,752,218	5,010,604	1.159	1.463	1.315	5,134,830	5,429,721	1.250	1.536	1.397	14.4%	8.2%	6.2%
37001	Alamance	72,613	80,344	1.204	1.512	1.366	74,483	83,452	1.267	1.572	1.428	7.8%	3.3%	4.6%
37003	Alexander	18,827	18,564	1.258	1.556	1.406	18,288	19,055	1.386	1.666	1.529	8.6%	-0.1%	8.7%
37005	Alleghany	5,452	5,548	1.456	1.734	1.596	5,471	5,601	1.588	1.825	1.708	7.7%	0.7%	7.0%
37007	Anson	13,909	12,717	1.177	1.552	1.356	14,014	12,414	1.293	1.627	1.450	6.2%	-0.7%	6.9%
37009	Ashe	13,566	13,819	1.430	1.726	1.579	13,666	13,850	1.540	1.818	1.679	6.8%	0.5%	6.4%
37011	Avery	9,699	8,089	1.307	1.665	1.470	9,753	8,116	1.456	1.751	1.590	8.6%	0.5%	8.2%
37013	Beaufort	23,113	24,756	1.390	1.651	1.525	23,271	24,519	1.512	1.757	1.638	7.2%	-0.2%	7.4%
37015	Bertie	10,327	10,349	1.281	1.654	1.467	10,354	9,821	1.375	1.740	1.552	3.4%	-2.4%	5.8%
37017	Bladen	16,913	18,293	1.280	1.573	1.432	17,054	18,389	1.397	1.671	1.539	8.2%	0.7%	7.5%
37019	Brunswick	55,613	57,002	1.545	1.728	1.638	69,250	67,999	1.713	1.868	1.790	31.1%	21.9%	9.3%
37021	Buncombe	118,206	127,175	1.280	1.594	1.442	130,435	139,961	1.374	1.664	1.524	15.8%	10.2%	5.7%
37023	Burke	44,992	44,990	1.267	1.592	1.429	43,811	43,874	1.364	1.667	1.516	3.5%	-2.6%	6.0%
37025	Cabarrus	89,386	94,079	1.098	1.405	1.255	100,552	107,127	1.179	1.467	1.327	19.0%	13.2%	5.8%
37027	Caldwell	40,658	41,924	1.272	1.558	1.417	40,419	41,556	1.379	1.645	1.514	6.1%	-0.7%	6.8%
37029	Camden	5,045	4,969	1.219	1.466	1.341	5,337	5,014	1.380	1.607	1.490	14.4%	3.4%	11.1%
37031	Carteret	33,827	34,568	1.435	1.681	1.559	37,624	37,530	1.548	1.780	1.664	16.6%	9.9%	6.7%
37033	Caswell	11,986	11,605	1.291	1.630	1.458	12,057	11,660	1.429	1.741	1.582	9.1%	0.5%	8.5%
37035	Catawba	76,100	79,384	1.215	1.511	1.366	76,156	79,888	1.304	1.582	1.446	6.2%	0.4%	5.9%
37037	Chatham	32,025	34,453	1.410	1.682	1.551	36,204	39,362	1.582	1.818	1.705	23.6%	13.7%	9.9%
37039	Cherokee	13,407	13,999	1.564	1.779	1.674	13,453	13,608	1.694	1.894	1.795	6.0%	-1.3%	7.2%
37041	Chowan	6,957	7,758	1.409	1.692	1.558	7,120	7,925	1.454	1.761	1.615	5.9%	2.2%	3.7%
37043	Clay	5,294	5,429	1.587	1.822	1.706	5,241	5,340	1.706	1.951	1.829	5.9%	-1.3%	7.2%
37045	Cleveland	47,145	50,544	1.243	1.538	1.396	46,629	49,841	1.327	1.615	1.476	4.5%	-1.2%	5.7%
37047	Columbus	29,011	29,026	1.225	1.563	1.394	29,009	28,369	1.309	1.639	1.472	4.5%	-1.1%	5.6%
37049	Craven	51,946	53,257	1.190	1.510	1.352	54,832	57,500	1.234	1.561	1.401	10.4%	6.8%	3.6%
37051	Cumberland	160,231	169,984	0.999	1.326	1.167	167,864	177,840	1.069	1.407	1.243	11.1%	4.7%	6.4%
37053	Currituck	11,981	12,174	1.233	1.465	1.350	11,970	12,086	1.399	1.596	1.498	10.5%	-0.4%	10.9%

FIPS	COUNTY	2012					2020					PERCENT INCREASE IN HEALTH SPENDING FROM 2012-2020		
		Total male population	Total female population	Male health spending index	Female health spending index	Total health spending index	Total male population	Total female population	Male health spending index	Female health spending index	Total health spending index	Total	Due to population growth	Due to aging
37055	Dare	17,436	17,436	1.339	1.577	1.458	18,451	18,348	1.482	1.705	1.593	14.8%	5.5%	9.3%
37057	Davidson	80,334	82,939	1.235	1.519	1.380	82,386	83,849	1.339	1.603	1.472	8.5%	1.8%	6.7%
37059	Davie	20,161	21,217	1.326	1.591	1.462	20,524	21,865	1.435	1.693	1.568	9.7%	2.4%	7.3%
37061	Duplin	29,447	30,570	1.196	1.509	1.356	30,460	31,958	1.295	1.581	1.442	10.4%	4.0%	6.4%
37063	Durham	132,370	148,854	1.028	1.359	1.203	149,445	173,485	1.112	1.415	1.275	20.8%	14.8%	6.0%
37065	Edgecombe	25,968	30,094	1.229	1.535	1.394	25,336	29,599	1.324	1.635	1.492	5.0%	-2.0%	7.0%
37067	Forsyth	169,477	188,116	1.159	1.461	1.318	177,832	199,131	1.242	1.527	1.393	11.1%	5.4%	5.7%
37069	Franklin	30,762	31,063	1.176	1.489	1.333	33,904	33,890	1.300	1.603	1.451	18.5%	9.7%	8.9%
37071	Gaston	101,415	107,069	1.178	1.487	1.337	105,795	113,854	1.261	1.542	1.407	10.6%	5.4%	5.2%
37073	Gates	6,001	6,113	1.290	1.524	1.408	5,353	5,321	1.431	1.672	1.551	-1.7%	-11.9%	10.2%
37075	Graham	4,356	4,494	1.418	1.680	1.551	4,606	4,757	1.472	1.751	1.613	9.8%	5.8%	4.0%
37077	Granville	30,996	27,008	1.175	1.506	1.329	31,126	27,433	1.341	1.607	1.466	11.2%	1.0%	10.3%
37079	Greene	11,462	9,896	1.131	1.503	1.303	11,308	9,751	1.295	1.577	1.426	8.0%	-1.4%	9.4%
37081	Guilford	237,823	264,022	1.136	1.433	1.292	256,215	289,947	1.223	1.496	1.368	14.7%	8.8%	5.8%
37083	Halifax	25,970	28,253	1.271	1.602	1.444	24,842	26,671	1.370	1.696	1.539	1.6%	-5.0%	6.6%
37085	Harnett	59,552	61,687	1.045	1.345	1.198	68,772	70,322	1.120	1.406	1.265	20.3%	14.7%	5.6%
37087	Haywood	28,636	30,625	1.461	1.738	1.604	29,869	31,762	1.566	1.818	1.696	9.7%	4.0%	5.7%
37089	Henderson	52,140	55,929	1.488	1.762	1.630	55,560	59,994	1.583	1.834	1.713	12.1%	6.9%	5.1%
37091	Hertford	12,121	12,386	1.241	1.597	1.421	12,350	11,881	1.358	1.692	1.521	6.0%	-1.1%	7.1%
37093	Hoke	24,265	25,766	0.935	1.246	1.095	27,888	30,492	1.023	1.305	1.170	23.6%	16.7%	6.9%
37095	Hyde	3,190	2,555	1.203	1.669	1.411	3,330	2,727	1.371	1.740	1.537	14.4%	5.4%	9.0%
37097	Iredell	80,246	82,721	1.170	1.465	1.320	88,440	90,979	1.274	1.545	1.411	17.0%	10.1%	6.9%
37099	Jackson	20,273	20,393	1.218	1.496	1.357	21,063	20,728	1.316	1.589	1.451	9.7%	2.8%	6.9%
37101	Johnston	85,819	88,867	1.071	1.380	1.228	95,810	100,406	1.177	1.460	1.322	19.9%	12.3%	7.6%
37103	Jones	5,119	5,496	1.351	1.608	1.484	5,207	5,517	1.427	1.678	1.556	5.9%	1.0%	4.9%
37105	Lee	28,707	30,332	1.168	1.482	1.329	31,347	34,023	1.240	1.539	1.396	15.7%	10.7%	5.0%
37107	Lenoir	28,397	30,986	1.254	1.591	1.430	28,258	30,466	1.315	1.659	1.493	3.3%	-1.1%	4.4%
37109	Lincoln	39,249	39,955	1.222	1.498	1.361	41,210	42,485	1.359	1.601	1.482	14.5%	5.7%	8.9%
37113	Macon	16,574	17,400	1.543	1.810	1.680	16,922	17,345	1.625	1.902	1.765	5.9%	0.9%	5.1%
37115	Madison	10,497	10,709	1.366	1.642	1.505	10,844	11,031	1.488	1.749	1.620	10.7%	3.2%	7.6%

FIPS	COUNTY	2012					2020					PERCENT INCREASE IN HEALTH SPENDING FROM 2012-2020		
		Total male population	Total female population	Male health spending index	Female health spending index	Total health spending index	Total male population	Total female population	Male health spending index	Female health spending index	Total health spending index	Total	Due to population growth	Due to aging
37117	Martin	11,204	12,778	1.363	1.645	1.513	10,655	12,054	1.472	1.746	1.617	1.6%	-5.3%	6.9%
37111	McDowell	22,750	22,514	1.302	1.601	1.451	23,211	22,308	1.415	1.690	1.550	7.4%	0.6%	6.8%
37119	Mecklenburg	464,566	497,894	1.003	1.335	1.175	552,763	588,755	1.091	1.408	1.254	25.4%	18.6%	6.8%
37121	Mitchell	7,503	7,913	1.445	1.732	1.593	7,369	7,867	1.529	1.778	1.658	2.9%	-1.2%	4.1%
37123	Montgomery	13,427	14,483	1.285	1.557	1.426	12,841	14,845	1.397	1.649	1.532	6.6%	-0.8%	7.4%
37125	Moore	43,243	47,482	1.509	1.752	1.636	47,091	52,588	1.582	1.816	1.705	14.1%	9.9%	4.2%
37127	Nash	46,124	49,310	1.220	1.530	1.380	44,861	47,696	1.340	1.628	1.488	4.8%	-3.0%	7.9%
37129	New Hanover	101,724	108,191	1.181	1.494	1.342	117,813	123,842	1.266	1.567	1.420	20.9%	15.1%	5.8%
37131	Northampton	10,496	11,043	1.361	1.734	1.552	9,603	9,775	1.432	1.819	1.627	-5.2%	-10.0%	4.8%
37133	Onslow	102,064	89,444	0.867	1.210	1.027	114,364	103,445	0.916	1.232	1.066	17.5%	13.7%	3.8%
37135	Orange	66,313	72,053	1.066	1.331	1.204	72,738	78,779	1.187	1.432	1.314	18.7%	9.5%	9.2%
37137	Pamlico	6,755	6,433	1.529	1.776	1.649	6,772	6,299	1.700	1.917	1.805	8.5%	-0.9%	9.4%
37139	Pasquotank	19,934	20,197	1.151	1.467	1.310	19,465	18,763	1.242	1.527	1.382	0.7%	-4.7%	5.5%
37141	Pender	27,217	27,151	1.267	1.534	1.400	31,476	31,680	1.365	1.605	1.485	22.2%	16.2%	6.1%
37143	Perquimans	6,557	7,122	1.513	1.712	1.616	7,165	7,734	1.643	1.844	1.747	17.0%	8.9%	8.1%
37145	Person	18,959	20,202	1.266	1.567	1.422	19,264	20,190	1.373	1.654	1.517	7.4%	0.7%	6.7%
37147	Pitt	81,528	91,001	1.027	1.318	1.181	86,377	97,693	1.122	1.396	1.268	14.0%	6.7%	7.4%
37149	Polk	9,750	10,562	1.593	1.858	1.731	10,147	10,864	1.704	1.949	1.831	9.2%	3.4%	5.8%
37151	Randolph	70,149	72,397	1.216	1.504	1.363	70,187	72,861	1.311	1.579	1.448	6.6%	0.4%	6.2%
37153	Richmond	22,821	23,362	1.205	1.512	1.360	22,697	23,169	1.263	1.571	1.418	3.6%	-0.7%	4.3%
37155	Robeson	65,318	69,023	1.093	1.393	1.247	63,778	67,518	1.188	1.476	1.336	4.8%	-2.3%	7.1%
37157	Rockingham	44,727	48,095	1.301	1.600	1.456	43,299	46,805	1.415	1.670	1.547	3.4%	-2.9%	6.3%
37159	Rowan	68,058	70,083	1.211	1.515	1.365	69,485	72,409	1.301	1.581	1.444	8.5%	2.7%	5.7%
37161	Rutherford	32,865	35,091	1.328	1.614	1.476	32,274	34,271	1.400	1.681	1.545	2.6%	-2.1%	4.7%
37163	Sampson	31,428	32,693	1.189	1.505	1.350	32,290	33,566	1.266	1.573	1.422	8.1%	2.7%	5.3%
37165	Scotland	17,506	18,852	1.188	1.499	1.349	16,738	18,544	1.286	1.570	1.435	3.4%	-3.0%	6.4%
37167	Stanly	29,984	30,446	1.252	1.557	1.406	30,480	31,612	1.347	1.636	1.494	9.0%	2.8%	6.3%
37169	Stokes	22,943	24,092	1.307	1.594	1.454	21,900	22,987	1.412	1.686	1.552	2.1%	-4.6%	6.7%
37171	Surry	35,943	37,733	1.278	1.595	1.440	35,732	37,636	1.353	1.651	1.506	4.1%	-0.4%	4.6%
37173	Swain	7,047	7,419	1.296	1.545	1.424	7,731	7,945	1.345	1.573	1.461	11.0%	8.4%	2.6%

FIPS	COUNTY	2012					2020					PERCENT INCREASE IN HEALTH SPENDING FROM 2012-2020		
		Total male population	Total female population	Male health spending index	Female health spending index	Total health spending index	Total male population	Total female population	Male health spending index	Female health spending index	Total health spending index	Total	Due to population growth	Due to aging
37175	Transylvania	15,938	17,062	1.615	1.863	1.743	16,708	17,892	1.726	1.971	1.853	11.1%	4.8%	6.3%
37177	Tyrrell	2,275	1,873	1.223	1.690	1.434	2,115	1,837	1.357	1.762	1.546	3.1%	-4.7%	7.8%
37179	Union	102,317	105,518	1.064	1.344	1.206	117,478	122,814	1.178	1.442	1.313	24.5%	15.6%	8.9%
37181	Vance	21,325	24,130	1.195	1.512	1.363	20,908	23,717	1.277	1.583	1.440	3.8%	-1.8%	5.6%
37183	Wake	458,892	486,362	1.013	1.327	1.174	536,177	570,021	1.129	1.421	1.279	26.0%	17.0%	8.9%
37185	Warren	10,523	10,142	1.391	1.700	1.543	10,358	9,582	1.533	1.807	1.665	4.4%	-3.5%	7.9%
37187	Washington	6,014	6,793	1.396	1.663	1.537	5,771	6,592	1.490	1.758	1.633	2.7%	-3.5%	6.2%
37189	Watauga	26,495	25,985	1.091	1.366	1.227	27,867	26,685	1.181	1.458	1.317	11.3%	3.9%	7.3%
37191	Wayne	61,471	63,483	1.138	1.468	1.305	63,715	65,261	1.213	1.531	1.374	8.5%	3.2%	5.3%
37193	Wilkes	34,434	35,276	1.324	1.612	1.470	34,599	35,478	1.434	1.701	1.569	7.3%	0.5%	6.7%
37195	Wilson	39,083	42,623	1.197	1.519	1.365	42,451	45,421	1.302	1.610	1.461	14.6%	7.5%	7.1%
37197	Yadkin	18,771	19,464	1.282	1.576	1.432	18,455	19,044	1.369	1.650	1.511	3.6%	-1.9%	5.5%
37199	Yancey	8,785	9,084	1.443	1.724	1.586	8,892	9,163	1.519	1.802	1.663	5.9%	1.0%	4.9%
Notes		[A]		[B]		[C]	[D]		[B]		[C]	[E]	[F]	[G]

Update: 7/23/2014

Note: Unless otherwise shown, all figures calculated by authors using Zip code level data obtained by special request through the North Carolina Health Professions Data System (HPDS). All practitioners are assigned to a county using business address county (or Zip code where county missing).

Notes

[A] All figures are OSBM population estimates for July 1, 2012 reported in [S2] and [S4].

[B] All figures are weighted averages calculated by authors using health spending index values derived from a U.S. age curve for 2010 reported in [S6] and 10 age categories per county. Details are reported in [S1]. An index value of 1.0 represents the weighted average for the population using Group PPO data, as detailed in [S6].

[C] All figures are weighted averages calculated by authors using health spending index values and population figures shown in adjacent columns.

[D] All figures are OSBM population estimates for July 1, 2020 reported in [S3] and [S5].

[E] All figures are calculated as the sum of figures shown for population growth and aging.

[F] All figures are calculated by authors: [(Total Male Population, 2020) + (Total Female Population, 2020)]/[(Total Male Population, 2012) + (Total Female Population, 2012)] - 1.

[G] All figures are calculated by authors: (Total Health Spending Index, 2020)/(Total Health Spending Index, 2012) - 1.

Sources

[S1] **Conover, Christopher J.** and **Robert Richards**. Table B-1a. Estimated Increase in Health Expenditures Due to Aging, 2012-2020. Duke University, Center for Health Policy and Inequalities Research, last updated July 23, 2014.

[S2] **North Carolina Office of State Budget and Management.** *July 1, 2012 County Total Age Groups - Males*. Available at: http://www.osbm.state.nc.us/ncosbm/facts_and_figures/socioeconomic_data/population_estimates/demog/countytotals_agegroup_males_2012.html (accessed July 9, 2014).

[S3] **North Carolina Office of State Budget and Management.** *July 1, 2020 County Total Age Groups - Males*. Available at: http://www.osbm.state.nc.us/ncosbm/facts_and_figures/socioeconomic_data/population_estimates/demog/prmage.html (accessed July 9, 2014).

[S4] **North Carolina Office of State Budget and Management.** *July 1, 2012 County Total Age Groups - Females*. Available at: http://www.osbm.state.nc.us/ncosbm/facts_and_figures/socioeconomic_data/population_estimates/demog/countytotals_agegroup_females_2012.html (accessed July 9, 2014).

[S5] **North Carolina Office of State Budget and Management.** *July 1, 2012 County Total Age Groups - Females*. Available at: http://www.osbm.state.nc.us/ncosbm/facts_and_figures/socioeconomic_data/population_estimates/demog/prfage.html (accessed July 9, 2014).

[S6] **Yamamoto, Dale H.** *Health Care Costs—From Birth to Death*. Society of Actuaries, June 2013. Available at: http://www.healthcostinstitute.org/files/Age-Curve-Study_0.pdf (accessed July 22, 2014).

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Table B-1a. Estimated Increase in Health Expenditures Due to Aging, 2012 to 2020

FIPS	COUNTY	MALES										2012 HEALTH SPEND-ING INDEX
		Under 20	20-24	25-34	35-44	45-54	55-59	60-64	65-74	75-84	85 and older	
	Health Spending Index	0.500	0.394	0.461	0.727	1.176	1.740	2.233	3.018	4.190	5.187	
	2012											
37001	Alamance	20,471	5,573	8,113	9,479	10,655	4,743	4,026	5,538	2,961	1,054	1.204
37003	Alexander	4,629	1,035	2,306	2,690	2,930	1,275	1,223	1,797	763	179	1.258
37005	Alleghany	1,185	296	618	651	777	403	428	662	340	92	1.456
37007	Anson	3,247	1,022	2,090	1,999	2,089	979	820	1,027	462	174	1.177
37009	Ashe	2,985	712	1,526	1,714	1,964	1,018	1,024	1,615	802	206	1.430
37011	Avery	1,712	722	1,374	1,543	1,566	641	630	906	453	152	1.307
37013	Beaufort	5,957	1,163	2,409	2,676	3,119	1,777	1,753	2,730	1,219	310	1.390
37015	Bertie	2,531	520	1,555	1,229	1,522	794	644	888	484	160	1.281
37017	Bladen	4,412	1,044	1,962	2,076	2,335	1,344	1,230	1,614	741	155	1.280
37019	Brunswick	11,804	2,429	5,924	6,333	7,053	3,780	4,881	9,301	3,443	665	1.545
37021	Buncombe	28,229	7,198	16,295	16,298	16,498	8,199	7,685	10,560	5,306	1,938	1.280
37023	Burke	12,045	3,052	4,816	5,650	6,800	3,037	2,927	4,138	1,969	558	1.267
37025	Cabarrus	27,762	4,913	10,740	13,784	13,278	5,260	4,399	5,841	2,592	817	1.098
37027	Caldwell	10,305	2,426	4,291	5,769	6,298	2,938	2,668	3,802	1,714	447	1.272
37029	Camden	1,361	252	549	700	872	378	288	406	185	54	1.219
37031	Carteret	7,282	1,769	4,015	3,906	5,012	2,656	2,667	4,112	1,854	554	1.435
37033	Caswell	2,682	660	1,491	1,595	1,987	995	832	1,142	471	131	1.291
37035	Catawba	20,662	4,674	8,768	10,492	11,608	5,151	4,564	6,480	2,920	781	1.215
37037	Chatham	7,840	1,499	3,162	4,238	4,676	2,403	2,293	3,494	1,800	620	1.410
37039	Cherokee	2,955	584	1,257	1,484	1,823	1,019	1,125	1,975	936	249	1.564
37041	Chowan	1,820	348	768	741	936	528	500	778	411	127	1.409
37043	Clay	1,176	241	501	572	687	373	447	782	416	99	1.587
37045	Cleveland	12,881	3,367	4,819	5,899	7,210	3,367	3,003	4,180	1,892	527	1.243
37047	Columbus	7,407	1,806	4,001	3,783	4,150	1,998	1,867	2,564	1,187	248	1.225
37049	Craven	14,198	5,682	6,980	5,807	6,161	3,048	2,763	4,240	2,371	696	1.190
37051	Cumberland	50,868	16,690	24,950	18,586	19,258	8,652	7,207	8,843	4,229	948	0.999
37053	Currituck	3,064	600	1,288	1,620	2,168	927	756	1,054	409	95	1.233
37055	Dare	3,876	871	2,155	2,352	2,636	1,450	1,292	1,794	807	203	1.339
37057	Davidson	21,437	4,576	9,144	11,057	12,545	5,622	4,878	7,001	3,225	849	1.235
37059	Davie	5,330	1,021	2,055	2,564	3,121	1,487	1,336	1,977	952	318	1.326
37061	Duplin	8,526	1,893	3,670	3,758	4,013	1,904	1,767	2,457	1,171	288	1.196
37063	Durham	37,053	11,554	22,755	19,264	16,074	7,426	6,412	7,283	3,287	1,262	1.028
37065	Edgecombe	7,662	1,632	2,806	2,988	3,669	1,988	1,728	2,200	1,011	284	1.229
37067	Forsyth	48,780	12,317	21,531	22,434	23,944	10,791	9,375	12,081	6,131	2,093	1.159
37069	Franklin	8,396	1,936	3,679	4,389	4,698	2,145	1,825	2,348	1,070	276	1.176
37071	Gaston	27,986	6,537	12,105	14,335	15,268	6,891	5,951	7,684	3,675	983	1.178
37073	Gates	1,604	349	573	724	1,010	484	348	587	241	81	1.290
37075	Graham	1,116	215	451	503	611	306	315	505	250	84	1.418
37077	Granville	7,441	2,187	3,670	4,871	5,188	2,183	1,864	2,370	962	260	1.175

FIPS	COUNTY	MALES										2012 HEALTH SPEND-ING INDEX
		Under 20	20-24	25-34	35-44	45-54	55-59	60-64	65-74	75-84	85 and older	
37079	Greene	2,741	719	1,814	1,798	1,727	802	631	783	357	90	1.131
37081	Guilford	66,806	19,538	31,752	31,590	33,208	14,839	12,713	16,450	8,184	2,743	1.136
37083	Halifax	6,907	1,678	2,947	3,051	3,942	1,918	1,766	2,290	1,142	329	1.271
37085	Harnett	18,895	4,267	8,344	8,567	7,700	3,224	2,792	3,761	1,598	404	1.045
37087	Haywood	6,482	1,566	2,945	3,507	4,158	2,043	2,118	3,432	1,848	537	1.461
37089	Henderson	12,247	2,427	5,731	6,557	6,938	3,608	3,509	6,064	3,731	1,328	1.488
37091	Hertford	3,038	838	1,539	1,509	1,807	956	796	1,017	470	151	1.241
37093	Hoke	8,377	1,388	4,285	3,439	2,870	1,256	992	1,123	454	81	0.935
37095	Hyde	586	171	597	528	464	238	211	258	101	36	1.203
37097	Iredell	22,666	4,942	9,229	11,270	12,732	5,227	4,534	6,087	2,867	692	1.170
37099	Jackson	5,022	2,852	2,386	2,147	2,308	1,238	1,276	1,968	840	236	1.218
37101	Johnston	26,594	4,701	10,495	13,653	12,796	4,948	4,299	5,666	2,181	486	1.071
37103	Jones	1,240	303	631	544	742	452	362	500	279	66	1.351
37105	Lee	8,443	1,790	3,701	3,829	3,915	1,871	1,585	2,208	1,046	319	1.168
37107	Lenoir	8,013	1,753	3,345	3,248	4,070	2,099	1,829	2,381	1,295	364	1.254
37109	Lincoln	10,305	2,228	4,218	5,597	6,442	2,767	2,507	3,500	1,381	304	1.222
37113	Macon	3,762	896	1,768	1,736	2,125	1,133	1,293	2,237	1,275	349	1.543
37115	Madison	2,532	707	1,028	1,313	1,512	812	785	1,118	529	161	1.366
37117	Martin	2,858	627	1,119	1,235	1,666	965	860	1,175	548	151	1.363
37111	McDowell	5,512	1,218	2,814	3,184	3,307	1,597	1,575	2,201	1,030	312	1.302
37119	Mecklenburg	133,906	32,235	78,030	73,451	63,848	25,163	20,455	23,935	10,165	3,378	1.003
37121	Mitchell	1,637	400	827	951	1,070	579	530	945	435	129	1.445
37123	Montgomery	3,727	812	1,489	1,598	1,833	955	934	1,337	570	172	1.285
37125	Moore	10,961	1,936	4,489	4,975	5,666	2,743	2,872	5,140	3,207	1,254	1.509
37127	Nash	12,517	2,880	5,382	5,988	6,963	3,355	2,975	3,862	1,703	499	1.220
37129	New Hanover	24,487	9,281	15,623	13,710	13,148	6,336	5,755	8,217	3,908	1,259	1.181
37131	Northampton	2,474	730	1,223	1,173	1,508	833	728	1,142	508	177	1.361
37133	Onslow	31,539	20,112	17,158	9,915	8,927	4,049	3,346	4,432	2,150	436	0.867
37135	Orange	17,829	8,186	8,879	8,134	9,020	4,216	3,640	4,198	1,675	536	1.066
37137	Pamlico	1,236	359	800	800	986	511	569	916	466	112	1.529
37139	Pasquotank	5,464	1,799	2,705	2,467	2,789	1,270	1,025	1,441	710	264	1.151
37141	Pender	6,726	1,818	3,261	3,619	4,071	1,927	1,744	2,618	1,105	328	1.267
37143	Perquimans	1,504	357	674	659	901	522	469	898	462	111	1.513
37145	Person	4,924	1,105	2,140	2,432	2,947	1,481	1,242	1,674	772	242	1.266
37147	Pitt	23,699	10,682	11,217	10,100	9,539	4,626	4,012	4,887	2,143	623	1.027
37149	Polk	2,113	499	872	1,060	1,420	711	761	1,280	727	307	1.593
37151	Randolph	19,467	4,271	7,710	9,756	10,612	4,781	4,138	5,945	2,725	744	1.216
37153	Richmond	6,567	1,506	2,690	2,925	3,207	1,498	1,406	1,854	927	241	1.205
37155	Robeson	20,360	5,547	8,003	8,385	8,400	4,025	3,634	4,622	1,849	493	1.093
37157	Rockingham	11,409	2,524	4,628	5,853	7,043	3,467	3,033	4,226	1,951	593	1.301
37159	Rowan	18,373	4,680	8,302	8,954	10,001	4,697	4,111	5,439	2,669	832	1.211
37161	Rutherford	8,372	1,845	3,600	4,127	4,850	2,387	2,261	3,419	1,561	443	1.328
37163	Sampson	9,194	1,934	3,695	4,187	4,445	2,117	1,843	2,502	1,163	348	1.189
37165	Scotland	5,078	1,229	1,952	2,269	2,404	1,220	1,154	1,446	587	167	1.188
37167	Stanly	7,667	2,205	3,453	3,910	4,464	2,075	1,943	2,615	1,250	402	1.252
37169	Stokes	5,627	1,206	2,487	3,018	3,758	1,811	1,536	2,197	1,025	278	1.307

FIPS	COUNTY	MALES										2012 HEALTH SPEND-ING INDEX
		Under 20	20-24	25-34	35-44	45-54	55-59	60-64	65-74	75-84	85 and older	
37171	Surry	9,598	2,235	3,744	4,854	5,334	2,445	2,352	3,257	1,627	497	1.278
37173	Swain	1,872	472	794	826	1,000	463	474	741	336	69	1.296
37175	Transylvania	3,445	883	1,616	1,612	2,000	1,140	1,178	2,263	1,385	416	1.615
37177	Tyrrell	402	127	476	334	363	140	120	179	105	29	1.223
37179	Union	33,869	5,718	10,413	15,613	16,462	5,902	4,687	6,521	2,514	618	1.064
37181	Vance	6,333	1,536	2,401	2,646	2,813	1,469	1,300	1,824	787	216	1.195
37183	Wake	135,205	32,348	67,487	73,691	66,844	25,951	19,910	24,300	10,101	3,055	1.013
37185	Warren	2,284	657	1,316	1,221	1,546	841	764	1,149	579	166	1.391
37187	Washington	1,629	367	525	563	860	539	483	625	323	100	1.396
37189	Watauga	6,089	6,082	3,248	2,335	2,627	1,449	1,449	2,014	904	298	1.091
37191	Wayne	17,501	4,865	8,647	7,464	8,560	3,889	3,380	4,364	2,237	564	1.138
37193	Wilkes	8,614	1,849	3,807	4,462	5,283	2,579	2,260	3,454	1,646	480	1.324
37195	Wilson	11,242	2,540	4,910	4,856	5,337	2,713	2,445	3,129	1,467	444	1.197
37197	Yadkin	4,977	1,083	1,985	2,488	2,913	1,290	1,172	1,780	845	238	1.282
37199	Yancey	2,013	439	931	1,113	1,243	646	667	1,040	555	138	1.443
	2020											
37001	Alamance	20,013	5,807	9,502	8,079	9,751	5,168	4,752	6,964	3,372	1,075	1.267
37003	Alexander	3,974	1,075	2,385	2,288	2,566	1,434	1,220	2,006	1,074	266	1.386
37005	Alleghany	1,053	235	506	903	669	364	401	762	436	142	1.588
37007	Anson	2,916	811	2,060	2,099	1,990	1,022	938	1,403	605	170	1.293
37009	Ashe	2,886	767	1,487	1,605	1,767	999	963	1,870	1,029	293	1.540
37011	Avery	1,621	617	1,131	1,423	1,569	798	693	1,144	573	184	1.456
37013	Beaufort	5,522	1,315	2,562	2,455	2,773	1,574	1,675	3,275	1,695	425	1.512
37015	Bertie	2,226	478	1,371	1,640	1,245	782	766	1,138	537	171	1.375
37017	Bladen	3,945	1,088	2,197	2,048	2,066	1,115	1,243	2,137	977	238	1.397
37019	Brunswick	13,434	2,905	6,684	7,846	8,065	4,498	5,276	12,431	6,735	1,376	1.713
37021	Buncombe	29,090	7,581	16,834	18,512	17,114	8,533	8,504	14,877	7,127	2,263	1.374
37023	Burke	10,745	3,381	5,066	4,599	5,846	3,271	2,932	4,913	2,430	628	1.364
37025	Cabarrus	28,701	7,101	12,088	12,674	14,911	6,631	5,754	8,054	3,666	972	1.179
37027	Caldwell	9,096	2,847	5,012	4,342	5,904	3,021	2,791	4,612	2,260	534	1.379
37029	Camden	1,189	254	712	633	778	452	404	551	271	93	1.380
37031	Carteret	7,402	1,918	4,430	4,489	4,769	2,773	2,993	5,478	2,652	720	1.548
37033	Caswell	2,369	634	1,526	1,614	1,660	980	944	1,498	686	146	1.429
37035	Catawba	19,131	5,294	9,497	8,811	10,465	5,569	5,011	7,756	3,712	910	1.304
37037	Chatham	7,961	1,974	3,498	3,890	4,825	2,590	2,671	5,019	2,812	964	1.582
37039	Cherokee	2,670	712	1,371	1,382	1,628	897	987	2,101	1,335	370	1.694
37041	Chowan	1,706	424	883	880	732	495	472	888	492	148	1.454
37043	Clay	1,051	286	557	541	594	316	392	806	528	170	1.706
37045	Cleveland	11,498	3,375	6,299	4,773	6,066	3,401	3,164	5,131	2,345	577	1.327
37047	Columbus	6,772	1,723	4,034	3,940	3,832	2,023	1,811	3,103	1,433	338	1.309
37049	Craven	15,539	5,762	6,711	6,546	5,489	3,013	3,146	5,090	2,652	884	1.234
37051	Cumberland	53,331	18,073	21,469	22,092	16,668	9,012	8,542	12,222	5,059	1,396	1.069
37053	Currituck	2,577	613	1,514	1,415	1,696	1,026	1,018	1,327	640	144	1.399
37055	Dare	3,951	879	2,112	2,396	2,425	1,361	1,380	2,446	1,164	337	1.482
37057	Davidson	19,959	5,043	10,363	9,700	11,464	6,091	5,785	8,669	4,244	1,068	1.339
37059	Davie	4,847	1,234	2,392	2,285	2,697	1,511	1,454	2,444	1,269	391	1.435

FIPS	COUNTY	MALES										2012 HEALTH SPEND-ING INDEX
		Under 20	20-24	25-34	35-44	45-54	55-59	60-64	65-74	75-84	85 and older	
37061	Duplin	8,332	2,115	3,797	3,619	3,689	1,886	1,918	3,123	1,540	441	1.295
37063	Durham	42,964	12,623	22,766	18,251	19,200	8,331	7,621	11,679	4,545	1,465	1.112
37065	Edgecombe	6,737	1,770	3,210	2,768	2,913	1,706	1,763	2,907	1,235	327	1.324
37067	Forsyth	49,180	12,103	23,345	21,571	22,591	11,601	11,065	16,463	7,489	2,424	1.242
37069	Franklin	8,336	2,021	4,526	4,161	4,655	2,496	2,278	3,465	1,558	408	1.300
37071	Gaston	27,163	7,042	14,060	12,407	14,902	7,534	6,751	10,318	4,467	1,151	1.261
37073	Gates	1,119	420	760	499	644	454	416	605	345	91	1.431
37075	Graham	1,124	292	493	544	539	314	299	563	342	96	1.472
37077	Granville	6,587	2,223	3,561	3,952	4,931	2,510	2,306	3,268	1,414	374	1.341
37079	Greene	2,414	661	1,469	1,748	1,679	816	789	1,123	473	136	1.295
37081	Guilford	66,804	20,594	36,381	31,320	32,405	16,452	15,322	22,993	10,478	3,466	1.223
37083	Halifax	5,885	1,429	3,426	2,842	3,070	1,845	1,802	2,874	1,299	370	1.370
37085	Harnett	20,955	4,928	9,262	9,476	8,465	3,906	3,607	5,207	2,435	531	1.120
37087	Haywood	6,244	1,639	3,470	3,208	3,842	2,198	2,128	3,997	2,403	740	1.566
37089	Henderson	12,340	2,810	6,193	6,170	7,019	3,620	3,795	7,263	4,576	1,774	1.583
37091	Hertford	2,710	769	1,607	1,700	1,609	861	906	1,383	630	175	1.358
37093	Hoke	9,492	1,933	3,456	4,397	3,237	1,463	1,328	1,751	678	153	1.023
37095	Hyde	578	151	433	625	495	225	227	389	167	40	1.371
37097	Iredell	22,007	5,843	11,592	10,481	12,851	6,614	5,758	8,365	3,915	1,014	1.274
37099	Jackson	5,025	2,846	2,267	2,452	2,249	1,136	1,228	2,250	1,260	350	1.316
37101	Johnston	27,236	6,372	11,491	12,402	14,298	6,565	5,360	7,907	3,439	740	1.177
37103	Jones	1,180	274	695	678	568	365	391	658	307	91	1.427
37105	Lee	8,891	2,158	3,924	3,956	3,833	2,001	1,832	2,985	1,371	396	1.240
37107	Lenoir	7,226	1,761	3,962	3,355	3,220	1,964	1,937	3,069	1,371	393	1.315
37109	Lincoln	9,567	2,588	4,976	4,607	6,121	3,297	2,879	4,565	2,132	478	1.359
37113	Macon	3,846	908	1,895	1,770	1,837	1,050	1,158	2,342	1,563	553	1.625
37115	Madison	2,391	714	1,250	1,142	1,385	786	785	1,466	722	203	1.488
37117	Martin	2,495	554	1,300	1,136	1,252	752	883	1,447	664	172	1.472
37111	McDowell	5,184	1,274	2,821	2,927	3,250	1,591	1,639	2,776	1,391	358	1.415
37119	Mecklenburg	148,877	35,053	87,725	88,092	74,528	32,515	27,914	37,913	15,428	4,718	1.091
37121	Mitchell	1,509	336	983	859	963	505	528	935	605	146	1.529
37123	Montgomery	3,299	921	1,569	1,309	1,455	835	888	1,575	788	202	1.397
37125	Moore	11,338	2,515	5,086	4,937	5,453	3,019	3,061	6,118	3,953	1,611	1.582
37127	Nash	10,813	2,749	5,966	5,099	5,944	3,356	3,157	5,013	2,202	562	1.340
37129	New Hanover	25,971	10,451	17,422	16,464	14,717	7,238	6,698	11,553	5,597	1,702	1.266
37131	Northampton	2,028	429	1,572	1,181	1,136	652	661	1,110	639	195	1.432
37133	Onslow	40,177	20,299	14,418	12,719	8,812	4,264	4,125	5,971	2,800	779	0.916
37135	Orange	17,768	8,476	10,115	8,738	8,831	4,474	4,122	6,719	2,707	788	1.187
37137	Pamlico	1,112	291	786	848	829	488	548	1,049	609	212	1.700
37139	Pasquotank	5,077	1,731	2,403	2,477	2,330	1,352	1,219	1,769	844	263	1.242
37141	Pender	7,227	1,832	4,151	3,913	4,234	2,252	2,211	3,517	1,682	457	1.365
37143	Perquimans	1,485	377	804	776	766	485	556	1,064	670	182	1.643
37145	Person	4,613	1,031	2,478	2,287	2,493	1,434	1,463	2,172	1,026	267	1.373
37147	Pitt	23,498	10,826	11,432	10,714	9,888	4,654	4,487	7,046	3,038	794	1.122
37149	Polk	1,914	497	1,164	979	1,254	739	785	1,512	948	355	1.704
37151	Randolph	17,674	5,036	8,812	7,610	9,824	5,008	4,682	7,176	3,457	908	1.311

FIPS	COUNTY	MALES										2012 HEALTH SPEND-ING INDEX
		Under 20	20-24	25-34	35-44	45-54	55-59	60-64	65-74	75-84	85 and older	
37153	Richmond	6,126	1,818	2,655	2,687	2,898	1,529	1,425	2,311	994	254	1.263
37155	Robeson	17,725	5,839	8,193	7,671	7,775	3,918	3,742	5,941	2,430	544	1.188
37157	Rockingham	10,044	2,600	5,122	4,672	5,925	3,342	3,241	5,268	2,471	614	1.415
37159	Rowan	17,423	4,756	9,042	8,387	8,961	4,853	4,698	7,208	3,284	873	1.301
37161	Rutherford	7,765	1,897	3,923	3,870	4,133	2,267	2,142	3,809	1,964	504	1.400
37163	Sampson	8,819	2,352	4,007	3,703	4,223	2,176	1,943	3,173	1,505	389	1.266
37165	Scotland	4,422	1,132	2,121	1,911	2,161	1,153	1,089	1,844	741	164	1.286
37167	Stanly	7,200	2,020	4,170	3,419	4,030	2,229	1,991	3,369	1,633	419	1.347
37169	Stokes	4,753	1,109	2,931	2,587	3,043	1,729	1,601	2,562	1,248	337	1.412
37171	Surry	8,591	2,558	4,511	3,895	4,853	2,559	2,370	3,958	1,918	519	1.353
37173	Swain	2,064	458	958	890	920	543	499	855	447	97	1.345
37175	Transylvania	3,484	913	1,472	1,970	1,776	1,082	1,163	2,478	1,715	655	1.726
37177	Tyrrell	367	89	283	423	296	163	154	196	100	44	1.357
37179	Union	34,218	9,128	13,662	12,613	17,960	8,648	6,790	9,094	4,346	1,019	1.178
37181	Vance	5,614	1,439	3,015	2,200	2,575	1,335	1,284	2,187	1,013	246	1.277
37183	Wake	145,269	37,339	72,380	80,380	77,723	34,297	28,959	38,446	16,439	4,945	1.129
37185	Warren	1,988	458	1,461	1,281	1,246	778	791	1,365	738	252	1.533
37187	Washington	1,452	295	712	571	598	402	428	821	378	114	1.490
37189	Watauga	5,930	6,036	3,689	2,750	2,402	1,312	1,368	2,599	1,375	406	1.181
37191	Wayne	17,343	4,990	8,727	8,236	7,295	4,149	3,816	5,797	2,617	745	1.213
37193	Wilkes	7,882	2,049	4,127	3,966	4,589	2,595	2,539	4,094	2,178	580	1.434
37195	Wilson	11,030	2,775	5,632	4,974	5,331	2,816	2,704	4,630	2,021	538	1.302
37197	Yadkin	4,483	1,189	2,335	2,004	2,501	1,354	1,268	1,977	1,055	289	1.369
37199	Yancey	1,981	435	1,093	985	1,166	598	595	1,161	678	200	1.519
Notes		[A]										[B]

FIPS	COUNTY	FEMALES										2020 HEALTH SPENDING INDEX
		Under 20	20-24	25-34	35-44	45-54	55-59	60-64	65-74	75-84	85 and older	
	Health Spending Index	0.587	0.625	1.041	1.215	1.468	1.835	2.184	2.821	3.824	4.692	
	2012											
37001	Alamance	19,900	6,100	9,091	10,302	11,278	5,282	4,690	6,896	4,415	2,390	1.512
37003	Alexander	4,431	916	2,056	2,424	2,728	1,309	1,274	1,976	1,074	376	1.556
37005	Alleghany	1,194	263	478	632	752	446	436	702	452	193	1.734
37007	Anson	3,169	845	1,416	1,489	1,727	889	845	1,215	736	386	1.552
37009	Ashe	2,840	543	1,393	1,583	1,995	1,117	1,087	1,771	997	493	1.726
37011	Avery	1,667	589	833	926	1,090	581	579	993	576	255	1.665
37013	Beaufort	5,488	1,247	2,507	2,850	3,431	1,909	1,982	3,058	1,619	665	1.651
37015	Bertie	2,228	581	1,112	1,138	1,575	835	743	1,031	763	343	1.654
37017	Bladen	4,339	968	2,040	2,199	2,605	1,405	1,299	1,922	1,095	421	1.573
37019	Brunswick	10,861	2,280	5,969	6,296	7,330	4,637	5,700	9,184	3,487	1,258	1.728
37021	Buncombe	26,630	7,595	16,988	16,132	17,645	9,487	8,911	12,361	7,202	4,224	1.594

FIPS	COUNTY	FEMALES										2020 HEALTH SPENDING INDEX
		Under 20	20-24	25-34	35-44	45-54	55-59	60-64	65-74	75-84	85 and older	
37023	Burke	10,416	2,532	4,676	5,587	6,750	3,263	3,051	4,642	2,888	1,185	1.592
37025	Cabarrus	25,871	4,850	11,739	14,702	13,891	5,655	4,897	6,845	3,849	1,780	1.405
37027	Caldwell	9,950	2,379	4,235	5,563	6,277	3,022	2,839	4,256	2,431	972	1.558
37029	Camden	1,260	244	572	714	806	341	275	453	213	91	1.466
37031	Carteret	6,830	1,588	3,564	3,888	5,430	2,953	2,845	4,265	2,307	898	1.681
37033	Caswell	2,495	583	1,149	1,381	1,778	1,018	915	1,267	715	304	1.630
37035	Catawba	19,813	4,544	8,917	10,680	11,564	5,463	5,114	7,320	4,129	1,840	1.511
37037	Chatham	7,449	1,335	3,486	4,379	4,973	2,581	2,692	4,064	2,265	1,229	1.682
37039	Cherokee	2,742	600	1,291	1,484	1,843	1,140	1,219	2,157	1,059	464	1.779
37041	Chowan	1,746	350	813	801	1,114	584	584	911	574	281	1.692
37043	Clay	977	266	458	571	694	470	531	833	414	215	1.822
37045	Cleveland	12,363	3,201	5,232	6,373	7,339	3,639	3,400	4,954	2,898	1,145	1.538
37047	Columbus	7,309	1,508	3,094	3,467	4,128	2,057	1,953	3,055	1,769	686	1.563
37049	Craven	13,812	3,838	6,800	5,835	6,693	3,523	3,291	5,073	3,060	1,332	1.510
37051	Cumberland	47,253	14,363	27,131	21,472	21,890	10,099	8,224	11,070	6,144	2,338	1.326
37053	Currituck	2,986	647	1,392	1,606	2,114	907	748	1,080	487	207	1.465
37055	Dare	3,648	705	2,070	2,178	2,864	1,517	1,380	1,890	894	290	1.577
37057	Davidson	20,228	4,346	9,292	11,305	12,731	5,733	5,308	7,789	4,484	1,723	1.519
37059	Davie	4,971	1,041	2,134	2,767	3,241	1,600	1,422	2,150	1,307	584	1.591
37061	Duplin	7,983	1,745	3,688	3,840	4,089	2,142	1,852	2,762	1,734	735	1.509
37063	Durham	36,095	12,510	27,057	20,836	18,136	9,171	7,718	9,253	5,101	2,977	1.359
37065	Edgecombe	7,347	1,781	3,586	3,437	4,400	2,338	2,026	2,757	1,660	762	1.535
37067	Forsyth	47,209	14,019	24,215	24,065	26,580	12,511	11,040	14,825	9,248	4,404	1.461
37069	Franklin	7,899	1,449	3,551	4,277	4,800	2,276	1,991	2,750	1,423	647	1.489
37071	Gaston	26,658	6,340	12,533	15,122	15,526	7,268	6,682	9,280	5,373	2,287	1.487
37073	Gates	1,421	457	660	712	999	429	393	578	317	147	1.524
37075	Graham	980	236	489	474	623	332	327	561	336	136	1.680
37077	Granville	6,669	1,385	2,963	3,748	4,292	1,908	1,730	2,339	1,367	607	1.506
37079	Greene	2,628	591	1,069	1,222	1,384	762	613	833	551	243	1.503
37081	Guilford	65,802	22,442	35,316	34,516	36,291	16,796	14,969	19,875	11,875	6,140	1.433
37083	Halifax	6,640	1,582	3,014	3,164	4,205	2,208	1,958	2,800	1,826	856	1.602
37085	Harnett	18,144	4,253	8,824	8,484	7,800	3,477	3,047	4,347	2,407	904	1.345
37087	Haywood	6,148	1,367	2,941	3,595	4,495	2,273	2,341	3,993	2,421	1,051	1.738
37089	Henderson	11,757	2,224	5,595	6,414	7,469	3,925	4,248	7,448	4,578	2,271	1.762
37091	Hertford	2,947	737	1,385	1,323	1,738	1,037	821	1,208	806	384	1.597
37093	Hoke	8,178	1,464	4,536	3,623	3,182	1,427	1,094	1,302	689	271	1.246
37095	Hyde	561	122	259	306	335	247	195	254	189	87	1.669
37097	Iredell	21,709	3,963	9,440	11,667	13,236	5,329	4,844	7,066	3,929	1,538	1.465
37099	Jackson	4,669	2,560	2,307	2,054	2,393	1,374	1,357	2,155	1,109	415	1.496
37101	Johnston	25,268	4,233	10,843	14,201	12,846	5,477	4,884	6,552	3,266	1,297	1.380
37103	Jones	1,228	287	681	555	822	472	391	565	332	163	1.608
37105	Lee	8,162	1,651	3,877	3,888	4,087	1,978	1,752	2,615	1,569	753	1.482
37107	Lenoir	7,433	1,625	3,420	3,496	4,493	2,453	2,095	3,124	1,986	861	1.591
37109	Lincoln	9,648	2,123	4,167	5,753	6,415	2,894	2,626	3,738	1,864	727	1.498
37113	Macon	3,428	787	1,691	1,629	2,306	1,307	1,473	2,580	1,549	650	1.810
37115	Madison	2,285	609	1,067	1,289	1,544	889	826	1,207	673	320	1.642
37117	Martin	2,830	662	1,275	1,449	1,837	1,120	949	1,414	908	334	1.645

FIPS	COUNTY	FEMALES										2020 HEALTH SPENDING INDEX
		Under 20	20-24	25-34	35-44	45-54	55-59	60-64	65-74	75-84	85 and older	
37111	McDowell	5,162	1,145	2,368	2,902	3,266	1,687	1,601	2,365	1,389	629	1.601
37119	Mecklenburg	129,788	32,867	82,022	78,499	68,576	28,883	24,058	29,295	15,791	8,115	1.335
37121	Mitchell	1,549	392	823	871	1,171	634	582	981	634	276	1.732
37123	Montgomery	3,658	736	1,625	1,803	1,968	1,035	983	1,458	798	419	1.557
37125	Moore	10,444	1,806	4,804	5,495	6,233	3,288	3,450	6,015	3,845	2,102	1.752
37127	Nash	12,121	2,634	5,573	6,247	7,390	3,666	3,415	4,428	2,591	1,245	1.530
37129	New Hanover	24,001	9,806	14,833	13,686	14,153	7,191	6,765	9,703	5,292	2,761	1.494
37131	Northampton	2,276	597	1,088	1,095	1,643	899	785	1,346	878	436	1.734
37133	Onslow	27,391	11,054	15,767	9,905	9,358	4,218	3,426	4,775	2,588	962	1.210
37135	Orange	17,956	9,431	9,337	8,554	9,933	4,768	3,897	4,726	2,315	1,136	1.331
37137	Pamlico	1,257	272	611	609	914	543	594	904	536	193	1.776
37139	Pasquotank	5,177	1,781	2,421	2,261	2,771	1,380	1,171	1,736	1,005	494	1.467
37141	Pender	6,532	1,525	3,076	3,455	3,976	2,000	1,846	2,701	1,472	568	1.534
37143	Perquimans	1,508	343	731	705	1,011	544	562	999	493	226	1.712
37145	Person	4,712	1,006	2,239	2,592	3,061	1,559	1,384	1,980	1,157	512	1.567
37147	Pitt	24,162	12,025	12,424	10,907	10,973	5,390	4,563	5,616	3,324	1,617	1.318
37149	Polk	1,969	489	842	1,081	1,454	931	910	1,400	897	589	1.858
37151	Randolph	18,418	4,052	8,037	9,741	10,674	4,921	4,483	6,650	3,825	1,596	1.504
37153	Richmond	5,946	1,379	2,655	2,971	3,239	1,585	1,617	2,233	1,213	524	1.512
37155	Robeson	19,562	5,156	8,728	8,705	9,022	4,517	3,918	5,319	2,893	1,203	1.393
37157	Rockingham	10,862	2,470	5,145	6,144	7,353	3,661	3,231	4,849	2,987	1,393	1.600
37159	Rowan	17,514	4,388	8,380	8,748	10,055	4,804	4,257	6,269	3,819	1,849	1.515
37161	Rutherford	8,139	1,821	3,630	4,322	5,001	2,637	2,446	3,847	2,211	1,037	1.614
37163	Sampson	8,798	1,743	3,780	4,157	4,363	2,295	1,972	2,959	1,857	769	1.505
37165	Scotland	4,839	1,290	2,148	2,263	2,560	1,353	1,340	1,651	926	482	1.499
37167	Stanly	7,287	1,918	3,357	3,718	4,464	2,094	1,945	3,008	1,907	748	1.557
37169	Stokes	5,362	1,220	2,428	3,164	3,886	1,830	1,603	2,570	1,385	644	1.594
37171	Surry	9,164	1,967	3,730	4,875	5,437	2,645	2,486	3,897	2,380	1,152	1.595
37173	Swain	1,838	438	857	886	1,002	539	499	753	434	173	1.545
37175	Transylvania	3,137	843	1,567	1,663	2,204	1,263	1,307	2,702	1,623	753	1.863
37177	Tyrrell	419	100	176	194	283	154	122	210	146	69	1.690
37179	Union	32,053	4,447	12,059	16,936	16,624	5,948	5,286	7,415	3,412	1,338	1.344
37181	Vance	6,237	1,489	2,792	2,946	3,341	1,718	1,531	2,128	1,311	637	1.512
37183	Wake	130,898	30,759	72,900	78,027	71,412	28,656	23,330	28,683	14,477	7,220	1.327
37185	Warren	2,202	492	1,134	995	1,402	794	793	1,211	760	359	1.700
37187	Washington	1,522	356	695	774	925	565	482	754	505	215	1.663
37189	Watauga	6,018	5,510	2,517	2,292	2,805	1,556	1,513	2,081	1,132	561	1.366
37191	Wayne	16,573	4,095	8,348	7,798	8,695	4,235	3,774	5,319	3,284	1,362	1.468
37193	Wilkes	8,172	1,710	3,672	4,353	5,227	2,562	2,455	3,906	2,261	958	1.612
37195	Wilson	10,607	2,605	5,067	5,361	5,960	3,074	2,711	3,836	2,311	1,091	1.519
37197	Yadkin	4,597	980	2,087	2,568	2,931	1,326	1,300	1,962	1,229	484	1.576
37199	Yancey	1,848	432	871	1,091	1,260	698	735	1,147	692	310	1.724
	2020											
37001	Alamance	19,318	6,113	10,256	9,454	10,857	5,713	5,341	8,985	4,971	2,444	1.572
37003	Alexander	4,146	978	2,227	2,073	2,561	1,416	1,328	2,386	1,417	523	1.666
37005	Alleghany	1,052	337	601	527	682	376	428	821	528	249	1.825

FIPS	COUNTY	FEMALES										2020 HEALTH SPENDING INDEX
		Under 20	20-24	25-34	35-44	45-54	55-59	60-64	65-74	75-84	85 and older	
37007	Anson	2,722	804	1,672	1,359	1,519	805	838	1,455	864	376	1.627
37009	Ashe	2,699	674	1,312	1,503	1,681	1,015	1,062	2,053	1,323	528	1.818
37011	Avery	1,538	453	1,089	864	953	547	573	1,098	695	306	1.751
37013	Beaufort	5,093	1,222	2,567	2,587	2,903	1,685	1,925	3,676	2,111	750	1.757
37015	Bertie	1,902	407	1,309	1,182	1,117	711	776	1,298	730	389	1.740
37017	Bladen	3,913	1,048	2,100	2,179	2,248	1,281	1,341	2,429	1,347	503	1.671
37019	Brunswick	11,961	2,613	6,396	7,580	7,690	4,720	5,672	13,032	6,595	1,740	1.868
37021	Buncombe	27,496	7,488	17,813	19,044	17,390	9,442	9,963	17,735	9,248	4,342	1.664
37023	Burke	9,212	2,738	5,235	4,644	5,683	3,221	3,257	5,354	3,218	1,312	1.667
37025	Cabarrus	27,109	6,284	12,865	14,725	16,005	7,242	6,385	9,525	5,043	1,944	1.467
37027	Caldwell	8,725	2,732	4,896	4,313	5,725	3,113	2,915	5,134	2,939	1,064	1.645
37029	Camden	1,047	293	614	573	745	398	374	529	322	119	1.607
37031	Carteret	6,865	1,938	3,717	4,093	4,692	3,022	3,314	5,737	3,015	1,137	1.780
37033	Caswell	2,269	529	1,363	1,284	1,448	892	943	1,680	899	353	1.741
37035	Catawba	18,609	5,079	9,337	8,969	10,812	5,587	5,465	9,267	4,892	1,871	1.582
37037	Chatham	7,731	1,628	3,674	4,363	5,087	2,829	2,995	6,019	3,386	1,650	1.818
37039	Cherokee	2,513	544	1,428	1,375	1,549	893	997	2,228	1,537	544	1.894
37041	Chowan	1,668	381	849	958	830	565	573	1,119	671	311	1.761
37043	Clay	885	229	502	544	587	348	451	972	592	230	1.951
37045	Cleveland	11,162	3,371	5,816	5,214	6,574	3,638	3,452	6,066	3,320	1,228	1.615
37047	Columbus	6,464	1,702	3,323	3,041	3,476	2,018	2,048	3,512	2,033	752	1.639
37049	Craven	14,891	4,074	6,986	6,576	5,880	3,497	3,823	6,552	3,663	1,558	1.561
37051	Cumberland	47,726	13,381	26,680	23,236	19,609	10,840	10,386	15,394	7,703	2,885	1.407
37053	Currituck	2,576	627	1,531	1,412	1,626	1,010	958	1,404	729	213	1.596
37055	Dare	3,836	678	1,970	2,217	2,268	1,450	1,543	2,648	1,293	445	1.705
37057	Davidson	18,733	4,780	9,882	9,635	11,707	6,334	5,787	9,652	5,339	2,000	1.603
37059	Davie	4,567	1,181	2,382	2,457	2,930	1,687	1,600	2,729	1,616	716	1.693
37061	Duplin	7,858	2,010	3,755	3,820	3,845	2,072	2,089	3,583	1,984	942	1.581
37063	Durham	42,298	13,371	27,725	24,783	20,564	9,860	9,717	15,201	6,678	3,288	1.415
37065	Edgecombe	6,499	1,619	3,644	3,521	3,538	2,149	2,190	3,728	1,900	811	1.635
37067	Forsyth	47,862	13,072	27,084	24,282	24,532	13,467	12,788	20,595	10,469	4,980	1.527
37069	Franklin	7,750	1,727	3,888	3,967	4,714	2,546	2,430	4,020	2,044	804	1.603
37071	Gaston	26,461	7,180	13,442	14,028	16,429	7,955	7,452	12,359	6,262	2,286	1.542
37073	Gates	1,002	277	930	473	614	470	369	649	378	159	1.672
37075	Graham	974	235	533	575	528	331	338	666	403	174	1.751
37077	Granville	6,061	1,433	3,414	3,054	3,860	2,103	2,032	3,123	1,654	699	1.607
37079	Greene	2,354	697	1,130	1,101	1,136	663	711	1,118	567	274	1.577
37081	Guilford	66,461	23,997	40,597	36,776	36,313	18,679	17,673	28,324	14,273	6,854	1.496
37083	Halifax	5,724	1,331	3,088	2,896	3,175	2,085	2,056	3,540	1,922	854	1.696
37085	Harnett	19,825	4,823	9,122	9,723	8,648	4,036	3,753	6,129	3,099	1,164	1.406
37087	Haywood	6,082	1,427	3,284	3,284	4,049	2,382	2,405	4,611	2,981	1,257	1.818
37089	Henderson	12,047	2,817	5,786	6,292	7,135	4,140	4,375	8,814	6,023	2,565	1.834
37091	Hertford	2,630	663	1,389	1,335	1,308	832	880	1,543	868	433	1.692
37093	Hoke	9,411	1,970	3,952	4,872	3,616	1,685	1,566	2,174	910	336	1.305
37095	Hyde	543	152	303	298	340	173	211	412	195	100	1.740
37097	Iredell	21,213	5,395	10,322	11,241	13,378	7,018	6,124	9,390	5,057	1,841	1.545
37099	Jackson	4,738	2,472	2,076	2,279	2,069	1,169	1,272	2,560	1,520	573	1.589

FIPS	COUNTY	FEMALES										2020 HEALTH SPENDING INDEX
		Under 20	20-24	25-34	35-44	45-54	55-59	60-64	65-74	75-84	85 and older	
37101	Johnston	26,169	5,974	11,472	13,356	14,996	6,814	5,911	9,533	4,595	1,586	1.460
37103	Jones	1,170	231	756	648	587	412	426	748	383	156	1.678
37105	Lee	8,679	1,979	4,043	4,439	4,212	2,148	2,109	3,556	1,992	866	1.539
37107	Lenoir	6,788	1,704	3,530	3,519	3,528	2,160	2,326	3,873	2,127	911	1.659
37109	Lincoln	9,111	2,434	4,707	4,925	6,380	3,356	3,126	5,084	2,532	830	1.601
37113	Macon	3,342	808	1,840	1,645	1,746	1,175	1,229	2,778	1,942	840	1.902
37115	Madison	2,130	729	1,038	1,198	1,408	799	862	1,633	877	357	1.749
37117	Martin	2,446	565	1,328	1,296	1,485	870	979	1,741	961	383	1.746
37111	McDowell	4,623	1,394	2,421	2,409	2,968	1,584	1,625	2,928	1,666	690	1.690
37119	Mecklenburg	144,155	34,289	87,585	95,785	80,777	35,882	31,924	46,857	21,655	9,846	1.408
37121	Mitchell	1,551	292	936	913	926	568	612	1,085	694	290	1.778
37123	Montgomery	3,363	933	1,642	1,679	1,873	966	1,009	1,884	1,023	473	1.649
37125	Moore	10,956	2,401	5,063	5,715	6,244	3,527	3,789	7,620	4,838	2,435	1.816
37127	Nash	10,523	2,593	5,569	5,505	6,241	3,612	3,418	6,062	2,930	1,243	1.628
37129	New Hanover	25,441	10,744	16,616	16,156	14,926	7,666	7,885	13,883	7,267	3,258	1.567
37131	Northampton	1,864	406	1,306	1,105	1,002	671	755	1,263	887	516	1.819
37133	Onslow	36,077	10,193	14,446	13,315	9,312	4,646	4,356	6,496	3,387	1,217	1.232
37135	Orange	17,742	9,739	10,597	8,925	9,608	5,040	4,890	7,541	3,341	1,356	1.432
37137	Pamlico	1,144	232	658	664	612	457	507	1,067	669	289	1.917
37139	Pasquotank	4,778	1,679	2,150	2,055	2,057	1,251	1,266	1,936	1,095	496	1.527
37141	Pender	7,089	1,807	3,675	3,888	4,121	2,299	2,295	3,801	1,949	756	1.605
37143	Perquimans	1,489	354	829	773	847	555	614	1,185	794	294	1.844
37145	Person	4,335	963	2,467	2,370	2,604	1,484	1,536	2,520	1,351	560	1.654
37147	Pitt	24,150	12,413	12,575	12,034	10,904	5,537	5,561	8,655	3,977	1,887	1.396
37149	Polk	1,810	489	1,125	928	1,270	774	925	1,853	1,094	596	1.949
37151	Randolph	16,970	4,880	8,381	8,112	9,935	5,230	4,889	8,150	4,586	1,728	1.579
37153	Richmond	5,425	1,575	2,763	2,656	2,965	1,549	1,554	2,767	1,448	467	1.571
37155	Robeson	17,263	5,015	8,846	8,307	8,191	4,103	4,220	6,979	3,400	1,194	1.476
37157	Rockingham	9,881	2,504	5,441	5,360	6,165	3,414	3,535	5,782	3,337	1,386	1.670
37159	Rowan	16,854	4,501	8,926	8,561	9,054	5,103	5,002	8,171	4,401	1,836	1.581
37161	Rutherford	7,414	1,796	3,979	3,913	4,358	2,351	2,421	4,373	2,653	1,013	1.681
37163	Sampson	8,517	2,209	3,669	3,879	4,165	2,084	2,244	3,732	2,140	927	1.573
37165	Scotland	4,455	1,082	2,495	2,032	2,230	1,244	1,237	2,254	1,106	409	1.570
37167	Stanly	6,898	1,835	3,888	3,461	4,111	2,393	2,180	3,806	2,191	849	1.636
37169	Stokes	4,354	1,132	2,910	2,584	3,209	1,861	1,790	2,891	1,681	575	1.686
37171	Surry	8,350	2,530	4,120	3,885	5,031	2,674	2,616	4,541	2,770	1,119	1.651
37173	Swain	2,040	407	969	968	908	500	519	923	530	181	1.573
37175	Transylvania	3,154	782	1,565	1,927	1,874	1,242	1,330	2,846	2,170	1,002	1.971
37177	Tyrrell	413	91	194	176	200	142	147	229	171	74	1.762
37179	Union	32,268	6,554	15,459	15,172	19,583	8,864	7,144	10,509	5,454	1,807	1.442
37181	Vance	5,642	1,378	3,197	2,640	2,919	1,562	1,563	2,704	1,444	668	1.583
37183	Wake	140,294	36,339	74,787	87,792	83,270	37,483	32,337	46,708	21,571	9,440	1.421
37185	Warren	1,905	383	1,263	1,050	1,006	634	669	1,345	870	457	1.807
37187	Washington	1,392	266	763	759	771	443	474	912	546	266	1.758
37189	Watauga	5,827	5,316	2,942	2,278	2,371	1,459	1,493	2,784	1,536	679	1.458
37191	Wayne	16,459	4,029	8,337	8,067	7,704	4,303	4,274	6,788	3,761	1,539	1.531
37193	Wilkes	7,530	1,961	3,945	3,819	4,490	2,678	2,525	4,618	2,823	1,089	1.701

FIPS	COUNTY	FEMALES										2020 HEALTH SPENDING INDEX
		Under 20	20-24	25-34	35-44	45-54	55-59	60-64	65-74	75-84	85 and older	
37195	Wilson	10,256	2,552	5,685	5,316	5,757	3,172	3,152	5,486	2,847	1,198	1.610
37197	Yadkin	4,173	1,107	2,179	2,084	2,605	1,450	1,273	2,228	1,378	567	1.650
37199	Yancey	1,694	457	1,032	1,021	1,119	624	675	1,350	850	341	1.802
Notes		[C]										[A]

Update: 7/23/2014

Notes

[A] All figures represents July 1 population estimates. 2012 figures reported at [S1]. 2020 figures reported at [S2].

[B] All figures shown are based on a 2010 age curve for the U.S. developed in [S5]. See Parameters for derivation of index values for 10-year age cohorts using these data. An index value of 1.0 represents the weighted average for the population using Group PPO data.

[C] All figures represents July 1 population estimates. 2012 figures reported at [S3]. 2020 figures reported at [S4].

Parameters

Age Group	2010 Male Population	Health Spending Index	2010 Female Population	Health Spending Index
Under 20	42,575	0.500	40,661	0.587
20-24	11,056	0.394	10,612	0.625
25-34	***20,739***	***0.461***	***20,508***	***1.041***
25-29	10,676	0.410	10,477	0.922
30-34	10,063	0.515	10,030	1.165
35-44	***20,396***	***0.727***	***20,585***	***1.215***
35-39	9,997	0.646	10,086	1.200
40-44	10,399	0.805	10,500	1.229
45-54	***22,149***	***1.176***	***22,864***	***1.468***
45-49	11,183	1.016	11,465	1.349
50-54	10,966	1.339	11,399	1.587
55-59	9,580	1.740	10,199	1.835
60-64	8,159	2.233	8,829	2.184
65-74	***10,161***	***3.018***	***11,681***	***2.821***
65-69	5,892	2.786	6,623	2.618
70-74	4,269	3.338	5,057	3.087
75-84	***5,486***	***4.190***	***7,578***	***3.824***
75-79	3,184	3.943	4,130	3.585
80-84	2,302	4.532	3,448	4.110
85 and over	1,807	5.187	3,726	4.692
Average Index	231,039	1.204	240,458	1.537

Note: All 5-year age group figures are reported in Table 7 at [S5]. All 10-year summaries are calculated by authors as weighted averages.

Sources

[S1] **North Carolina Office of State Budget and Management.** *July 1, 2012 County Total Age Groups - Males*. Available at: http://www.osbm.state.nc.us/ncosbm/facts_and_figures/socioeconomic_data/population_estimates/demog/countytotals_agegroup_males_2012.html (accessed July 9, 2014).

[S2] **North Carolina Office of State Budget and Management.** *July 1, 2020 County Total Age Groups - Males*. Available at: http://www.osbm.state.nc.us/ncosbm/facts_and_figures/socioeconomic_data/population_estimates/demog/prmage.html (accessed July 9, 2014).

[S3] **North Carolina Office of State Budget and Management.** *July 1, 2012 County Total Age Groups - Females*. Available at: http://www.osbm.state.nc.us/ncosbm/facts_and_figures/socioeconomic_data/population_estimates/demog/countytotals_agegroup_females_2012.html (accessed July 9, 2014).

[S4] **North Carolina Office of State Budget and Management.** *July 1, 2012 County Total Age Groups - Females*. Available at: http://www.osbm.state.nc.us/ncosbm/facts_and_figures/socioeconomic_data/population_estimates/demog/prfage.html (accessed July 9, 2014).

[S5] **Yamamoto, Dale H.** *Health Care Costs—From Birth to Death*. Society of Actuaries, June 2013. Available at: http://www.healthcostinstitute.org/files/Age-Curve-Study_0.pdf (accessed July 22, 2014).

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Table B-2. Estimated Increase in Federal Health Expenditures Due to Federal Exchange Subsidies, by County

FIPS	COUNTY	2012 DISTRIBUTION OF UNINSURED					2012 DISTRIBUTION OF ACA EXCHANGE SUBSIDIES (FEDERAL FUNDS IN THOUSANDS)				NET INCREASE IN FEDERALLY-FUNDED HEALTH SPENDING	
		Total	<138% poverty	<200% poverty	<250% poverty	<400% poverty	100-138% poverty	138-200% poverty	200-300% poverty	300-400% poverty	Without Medicaid expansion	With Medicaid expansion
	North Carolina	1,556,925	724,494	1,009,676	1,168,833	1,415,737	718,272	778,555	246,932	48,494	1,792,253	1,073,981
37001	Alamance	25,815	11,981	16,959	19,593	23,684	11,704	13,590	4,087	804	30,184	18,480
37003	Alexander	5,749	2,657	3,692	4,318	5,302	2,483	2,826	971	193	6,473	3,990
37005	Alleghany	2,280	1,163	1,575	1,832	2,133	1,112	1,125	399	59	2,695	1,583
37007	Anson	3,771	1,881	2,589	3,007	3,538	1,889	1,933	649	104	4,574	2,686
37009	Ashe	5,109	2,568	3,529	4,087	4,757	2,455	2,624	866	132	6,076	3,621
37011	Avery	3,162	1,591	2,189	2,511	2,953	1,521	1,633	500	87	3,740	2,219
37013	Beaufort	7,601	3,697	4,987	5,731	6,962	2,978	3,522	1,154	242	7,896	4,918
37015	Bertie	2,727	1,365	1,865	2,142	2,547	1,435	1,365	430	80	3,309	1,874
37017	Bladen	6,584	3,452	4,574	5,220	6,133	3,603	3,063	1,002	179	7,848	4,245
37019	Brunswick	17,205	7,780	10,798	12,560	15,507	8,002	8,239	2,734	579	19,554	11,552
37021	Buncombe	40,505	18,883	26,542	30,835	37,041	18,054	20,909	6,661	1,219	46,843	28,789
37023	Burke	15,119	7,275	9,902	11,561	14,028	6,580	7,172	2,574	485	16,810	10,230
37025	Cabarrus	28,322	11,928	17,379	20,434	25,052	13,452	14,881	4,740	907	33,980	20,528
37027	Caldwell	12,463	5,730	8,010	9,317	11,508	5,183	6,224	2,028	430	13,865	8,683
37029	Camden	1,335	541	800	959	1,168	569	707	247	41	1,564	995
37031	Carteret	10,839	4,622	6,554	7,721	9,667	4,859	5,274	1,811	382	12,327	7,467
37033	Caswell	3,326	1,550	2,142	2,494	3,065	1,508	1,616	546	112	3,782	2,274
37035	Catawba	24,965	10,953	15,936	18,829	22,983	11,356	13,604	4,488	816	30,264	18,908
37037	Chatham	9,946	4,312	6,201	7,209	8,839	4,044	5,157	1,564	320	11,085	7,041
37039	Cherokee	4,364	2,143	2,966	3,391	4,038	2,049	2,247	659	127	5,082	3,033
37041	Chowan	2,103	979	1,350	1,581	1,929	1,029	1,013	358	68	2,469	1,440
37043	Clay	1,761	900	1,194	1,369	1,620	861	803	272	49	1,984	1,123
37045	Cleveland	14,632	7,195	9,643	11,085	13,500	6,508	6,683	2,237	474	15,903	9,395
37047	Columbus	9,723	4,646	6,304	7,340	8,833	4,779	4,526	1,607	293	11,205	6,427
37049	Craven	15,108	6,593	9,459	11,225	13,643	6,932	7,824	2,740	475	17,971	11,039
37051	Cumberland	48,583	21,383	31,338	36,499	44,240	23,424	27,177	8,007	1,520	60,129	36,705
37053	Currituck	3,675	1,458	2,109	2,500	3,273	1,533	1,777	607	152	4,069	2,536
37055	Dare	5,917	2,375	3,511	4,196	5,249	2,497	3,101	1,063	207	6,868	4,371

FIPS	COUNTY	2012 DISTRIBUTION OF UNINSURED					2012 DISTRIBUTION OF ACA EXCHANGE SUBSIDIES (FEDERAL FUNDS IN THOUSANDS)				NET INCREASE IN FEDERALLY-FUNDED HEALTH SPENDING	
		Total	<138% poverty	<200% poverty	<250% poverty	<400% poverty	100-138% poverty	138-200% poverty	200-300% poverty	300-400% poverty	Without Medicaid expansion	With Medicaid expansion
37057	Davidson	25,196	11,019	15,359	17,999	22,923	10,720	11,848	4,096	967	27,631	16,911
37059	Davie	6,094	2,568	3,710	4,416	5,428	2,673	3,118	1,095	199	7,085	4,412
37061	Duplin	13,367	7,003	9,582	10,946	12,639	6,437	7,041	2,116	333	15,926	9,490
37063	Durham	47,689	23,716	32,599	37,229	43,614	22,241	24,251	7,183	1,254	54,929	32,688
37065	Edgecombe	8,251	4,323	5,830	6,572	7,743	4,327	4,114	1,151	230	9,823	5,495
37067	Forsyth	58,360	29,048	39,946	45,657	53,571	27,428	29,752	8,861	1,554	67,595	40,167
37069	Franklin	10,755	4,949	6,824	8,004	9,726	5,366	5,119	1,831	338	12,654	7,288
37071	Gaston	34,279	15,356	21,270	24,887	31,135	14,174	16,145	5,612	1,227	37,158	22,984
37073	Gates	1,677	740	1,052	1,227	1,500	778	852	272	54	1,955	1,177
37075	Graham	1,524	703	997	1,146	1,404	672	803	231	51	1,757	1,084
37077	Granville	8,597	3,795	5,355	6,349	7,846	4,129	4,259	1,542	294	10,224	6,095
37079	Greene	3,815	1,911	2,656	3,043	3,537	1,743	2,034	600	97	4,474	2,731
37081	Guilford	82,549	40,160	55,654	63,794	75,636	37,443	42,299	12,629	2,326	94,697	57,254
37083	Halifax	8,178	3,871	5,325	6,154	7,560	4,007	3,969	1,286	276	9,539	5,532
37085	Harnett	21,007	9,764	13,609	15,749	19,126	10,111	10,497	3,320	663	24,591	14,480
37087	Haywood	8,581	3,799	5,356	6,334	7,753	3,632	4,251	1,517	279	9,679	6,047
37089	Henderson	17,871	7,875	11,154	13,005	16,264	7,529	8,952	2,872	640	19,993	12,464
37091	Hertford	3,590	1,839	2,470	2,824	3,343	1,904	1,723	549	102	4,277	2,374
37093	Hoke	10,321	4,857	6,647	7,741	9,483	5,321	4,887	1,697	342	12,247	6,926
37095	Hyde	1,020	512	703	795	947	412	521	143	30	1,106	694
37097	Iredell	25,903	11,057	15,927	18,844	23,328	13,287	13,295	4,526	881	31,989	18,702
37099	Jackson	7,902	3,720	5,096	5,868	7,259	3,557	3,757	1,198	273	8,784	5,227
37101	Johnston	32,446	14,961	20,704	24,042	29,210	16,276	15,679	5,179	1,015	38,149	21,873
37103	Jones	1,732	845	1,179	1,364	1,613	888	912	287	49	2,136	1,248
37105	Lee	11,004	5,400	7,419	8,513	10,127	5,875	5,512	1,697	317	13,401	7,526
37107	Lenoir	10,051	4,987	6,884	7,911	9,326	4,992	5,179	1,593	278	12,042	7,050
37109	Lincoln	12,315	5,256	7,615	8,952	11,076	4,851	6,440	2,074	417	13,783	8,932
37113	Macon	6,486	3,280	4,431	5,143	6,036	3,136	3,142	1,105	175	7,558	4,422
37115	Madison	3,072	1,483	2,007	2,334	2,842	1,418	1,431	507	100	3,456	2,038
37117	Martin	3,713	1,923	2,525	2,896	3,460	1,549	1,643	576	111	3,879	2,330
37111	McDowell	7,038	3,465	4,627	5,384	6,559	3,313	3,172	1,174	231	7,890	4,578

FIPS	COUNTY	2012 DISTRIBUTION OF UNINSURED					2012 DISTRIBUTION OF ACA EXCHANGE SUBSIDIES (FEDERAL FUNDS IN THOUSANDS)				NET INCREASE IN FEDERALLY-FUNDED HEALTH SPENDING	
		Total	<138% poverty	<200% poverty	<250% poverty	<400% poverty	100-138% poverty	138-200% poverty	200-300% poverty	300-400% poverty	Without Medicaid expansion	With Medicaid expansion
37119	Mecklenburg	157,893	72,793	101,515	117,106	142,571	70,551	78,412	24,189	5,001	178,154	107,603
37121	Mitchell	2,141	981	1,390	1,620	1,989	938	1,117	357	72	2,484	1,546
37123	Montgomery	5,192	2,771	3,685	4,221	4,857	2,696	2,495	832	125	6,148	3,452
37125	Moore	12,478	5,493	7,853	9,186	11,226	5,344	6,443	2,068	401	14,256	8,912
37127	Nash	15,125	7,073	9,824	11,348	13,780	7,080	7,510	2,364	478	17,433	10,352
37129	New Hanover	31,801	14,612	20,030	23,206	28,493	15,029	14,791	4,928	1,038	35,786	20,757
37131	Northampton	2,804	1,499	1,988	2,253	2,613	1,552	1,335	411	71	3,368	1,817
37133	Onslow	25,971	11,192	17,189	20,150	24,056	10,634	16,372	4,594	767	32,367	21,733
37135	Orange	16,755	8,267	11,286	12,798	15,025	7,753	8,242	2,346	437	18,778	11,025
37137	Pamlico	1,796	794	1,139	1,341	1,617	835	942	313	54	2,144	1,309
37139	Pasquotank	5,911	2,667	3,747	4,347	5,372	2,804	2,948	931	201	6,885	4,081
37141	Pender	9,382	4,309	6,043	7,038	8,500	4,432	4,734	1,544	287	10,997	6,565
37143	Perquimans	1,924	919	1,264	1,461	1,759	966	942	306	59	2,272	1,306
37145	Person	5,842	2,726	3,700	4,357	5,311	2,556	2,659	1,019	187	6,422	3,866
37147	Pitt	27,791	14,632	19,312	21,696	25,456	11,786	12,777	3,699	738	29,000	17,214
37149	Polk	3,075	1,418	2,029	2,352	2,811	1,356	1,668	501	90	3,615	2,259
37151	Randolph	26,031	12,406	17,120	19,748	23,963	12,277	12,869	4,077	828	30,051	17,775
37153	Richmond	8,297	4,186	5,658	6,472	7,738	4,073	4,019	1,263	249	9,603	5,530
37155	Robeson	31,020	15,599	20,891	23,717	28,758	16,283	14,447	4,385	990	36,105	19,822
37157	Rockingham	14,370	6,565	9,102	10,678	13,215	6,387	6,926	2,445	498	16,256	9,870
37159	Rowan	23,515	11,055	15,262	17,747	21,578	11,466	11,485	3,855	752	27,559	16,093
37161	Rutherford	10,602	5,353	7,168	8,266	9,883	4,842	4,955	1,704	318	11,818	6,976
37163	Sampson	12,458	6,278	8,633	9,860	11,571	5,770	6,429	1,904	336	14,439	8,669
37165	Scotland	5,840	2,947	3,821	4,422	5,419	2,867	2,386	932	196	6,381	3,514
37167	Stanly	8,757	3,821	5,446	6,400	7,994	3,717	4,436	1,480	313	9,947	6,230
37169	Stokes	6,805	2,876	4,061	4,831	6,163	2,994	3,235	1,195	262	7,685	4,691
37171	Surry	13,279	6,459	8,884	10,331	12,331	6,284	6,620	2,245	393	15,542	9,258
37173	Swain	2,839	1,269	1,757	2,096	2,591	1,213	1,332	526	97	3,169	1,955
37175	Transylvania	4,857	2,255	3,119	3,654	4,425	2,156	2,359	830	151	5,496	3,340
37177	Tyrrell	725	380	514	579	680	306	366	101	20	793	487
37179	Union	30,508	11,864	18,115	21,382	26,786	11,861	17,065	5,069	1,061	35,056	23,196

FIPS	COUNTY	2012 DISTRIBUTION OF UNINSURED					2012 DISTRIBUTION OF ACA EXCHANGE SUBSIDIES (FEDERAL FUNDS IN THOUSANDS)				NET INCREASE IN FEDERALLY-FUNDED HEALTH SPENDING	
		Total	<138% poverty	<200% poverty	<250% poverty	<400% poverty	100-138% poverty	138-200% poverty	200-300% poverty	300-400% poverty	Without Medicaid expansion	With Medicaid expansion
37181	Vance	7,571	3,955	5,329	6,053	7,110	4,303	3,751	1,123	208	9,385	5,082
37183	Wake	126,704	53,870	76,662	88,929	110,122	58,406	62,223	19,032	4,162	143,824	85,418
37185	Warren	3,377	1,699	2,227	2,562	3,100	1,848	1,441	520	106	3,915	2,067
37187	Washington	1,763	911	1,206	1,393	1,639	734	805	290	48	1,878	1,144
37189	Watauga	8,153	4,719	5,930	6,568	7,560	4,512	3,306	990	195	9,003	4,491
37191	Wayne	21,020	10,383	14,143	16,321	19,491	9,471	10,265	3,379	623	23,737	14,267
37193	Wilkes	12,071	6,220	8,313	9,510	11,325	6,051	5,714	1,857	356	13,979	7,928
37195	Wilson	14,260	7,190	9,696	11,145	13,204	7,197	6,841	2,248	404	16,691	9,494
37197	Yadkin	6,314	2,949	4,156	4,846	5,810	3,070	3,295	1,071	189	7,625	4,555
37199	Yancey	2,837	1,348	1,862	2,181	2,636	1,289	1,403	495	89	3,276	1,988
Notes		[A]					[B]	[C]	[D]	[E]	[F]	[G]

Update: 8/7/2014

Note: Figures represent simulated changes in health spending in 2012 assuming the Affordable Care Act had been fully implemented that year. In actuality, the expansion of coverage and attendant increase in federal expenditures is taking place more slowly.

Notes

[A] All figures are compiled by authors from Small Area Health Insurance Estimates for 2012 reported in [S2].

[B] Adults in this poverty category would be covered only if North Carolina adopted the ACA Medicaid expansion. All figures are calculated by authors: (ACA Subsidies for 138-200% Poverty) x (Number of Uninsured Below 138% Poverty)/(Number of Uninsured Below 200% Poverty - Number of Uninsured Below 138% Poverty)) x (1 - Share of Uninsured Adults 18-64 Below 100% Poverty)/(Share of Uninsured Adults 18-64 Below 138% Poverty). Figures on the share of uninsured adults below 100% and 138% of poverty are reported in [S3]. This calculation conservatively assumes that the per capita cost of subsidies for those with incomes from 100-138% is the same as for those between 138-200% of poverty.

[C] All figures are calculated by authors. The North Carolina figure is calculated from premium subsidy figures for 2011 reported in [P2.1] and cost-sharing subsidy figures reported in [P2.2], inflated to 2012 based on the increase in U.S. personal health spending per capita between 2011 and 2012 [P1]: [(Premium Subsidies, 2011) + (Cost-Sharing Subsidies, 2011)] x (1 + Percent Increase in PCHE from 2011 to 2012). The original 2011 figures were estimated by Urban Institute assuming that the ACA was fully implemented in that year. This estimated 2012 total is allocated back to counties in proportion to their share of the uninsured population with incomes between 138-200% of poverty using figures in adjacent columns, where each county's share is calculated as: [(County Uninsured <200% FPL) - (County Uninsured <138% FPL)]/[(State Uninsured <200% FPL) - (State Uninsured <138% FPL)].

[D] All figures are calculated by authors using the same logic as described in footnote [F]. The North Carolina total is allocated back to counties in proportion to their share of the uninsured population with incomes between 200-250% of poverty using figures in adjacent columns.

[E] All figures are calculated by authors using the same logic as described in footnote [F]. The North Carolina total is allocated back to counties in proportion to their share of the uninsured population with incomes between 250-400% of poverty using figures in adjacent columns.

[F] All figures are calculated by authors: (Total Exchange Subsidies in thousands for 100-400% Poverty)/[(Total Health Spending in millions) x 1,000].

[G] All figures are calculated by authors: (Total Exchange Subsidies in thousands for 138-400% Poverty)/[(Total Health Spending in millions) x 1,000].

Parameters

[P1]	3.1%	Percent increase in personal health spending per capita in US, 2011 to 2012 [S4]

	<200% Poverty	200-300% FPL	300-400% FPL	400%+ FPL	Total	Item	Notes
[P2.1]	$ 574,875	$ 224,528	$ 47,013	$ -	$ 846,416	Premium subsidies in NC (thousands of 2011 dollars)	[P2a]
[P2.2]	$ 179,909	$ 14,865	$ -	$ -	$ 194,774	Cost sharing subsidies in NC (thousands of 2011 dollars)	[P2b]

[P2a] All figures reported in Table 4 of [S1].

[P2b] All figures reported in Table 4 of [S1]. Note that cost-sharing subsidies only are provided to families below 250% of federal poverty level.

Sources

[S1] **Buettgens, Matthew, John Holahan and Caitlin Carroll.** *Health Reform Across the States: Increased Insurance Coverage and Federal Spending on the Exchanges and Medicaid*. Available at: http://www.urban.org/uploadedpdf/412310-Health-Reform-Across-the-States.pdf (accessed May 2, 2014).

[S2] **Bureau of the Census, Small Area Health Insurance (SAHIE) Program.** *Model-based Small Area Health Insurance Estimates (SAHIE) for Counties and States*. March 2014. Available at: http://www.census.gov/did/www/sahie/data/files/sahie2012.csv (accessed June 13, 2014).

[S3] **Conover, Christopher J.** and **Robert Richards**. Table B-2b.Low Income Nonelderly Uninsured Adults, by County, 2012. Duke University, Center for Health Policy and Inequalities Research, last updated August 7, 2014.

[S4] **Centers for Medicare and Medicaid Services.** *Table 1 National Health Expenditures; Aggregate and Per Capita Amounts, Annual Percent Change and Percent Distribution: Selected Calendar Years 1960-2012*. Available at: http://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/Downloads/tables.pdf (accessed July 20, 2014).

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Table B-2a. Uninsured Persons by Poverty Status, by County, 2012

FIPS	COUNTY	2012 DISTRIBUTION OF UNINSURED					MARGIN OF ERROR (MOE)				
		Total	<138% poverty	<200% poverty	<250% poverty	<400% poverty	Total	<138% poverty	<200% poverty	<250% poverty	<400% poverty
	North Carolina	1,556,925	724,494	1,009,676	1,168,833	1,415,737	22,174	14,615	17,559	18,702	20,744
37001	Alamance	25,815	11,981	16,959	19,593	23,684	1,658	1,023	1,254	1,394	1,551
37003	Alexander	5,749	2,657	3,692	4,318	5,302	463	277	341	384	434
37005	Alleghany	2,280	1,163	1,575	1,832	2,133	167	113	132	147	160
37007	Anson	3,771	1,881	2,589	3,007	3,538	332	216	261	290	316
37009	Ashe	5,109	2,568	3,529	4,087	4,757	377	247	297	331	359
37011	Avery	3,162	1,591	2,189	2,511	2,953	236	158	188	208	226
37013	Beaufort	7,601	3,697	4,987	5,731	6,962	568	368	436	480	531
37015	Bertie	2,727	1,365	1,865	2,142	2,547	239	157	189	209	226
37017	Bladen	6,584	3,452	4,574	5,220	6,133	492	334	393	432	470
37019	Brunswick	17,205	7,780	10,798	12,560	15,507	1,190	708	863	964	1,092
37021	Buncombe	40,505	18,883	26,542	30,835	37,041	2,501	1,528	1,872	2,092	2,324
37023	Burke	15,119	7,275	9,902	11,561	14,028	1,080	676	816	913	1,017
37025	Cabarrus	28,322	11,928	17,379	20,434	25,052	1,893	1,044	1,322	1,495	1,693
37027	Caldwell	12,463	5,730	8,010	9,317	11,508	964	574	712	799	903
37029	Camden	1,335	541	800	959	1,168	121	67	85	98	109
37031	Carteret	10,839	4,622	6,554	7,721	9,667	754	427	526	595	683
37033	Caswell	3,326	1,550	2,142	2,494	3,065	276	172	209	233	260
37035	Catawba	24,965	10,953	15,936	18,829	22,983	1,651	944	1,194	1,354	1,531
37037	Chatham	9,946	4,312	6,201	7,209	8,839	708	414	506	566	641
37039	Cherokee	4,364	2,143	2,966	3,391	4,038	347	221	269	298	327
37041	Chowan	2,103	979	1,350	1,581	1,929	189	119	144	161	178
37043	Clay	1,761	900	1,194	1,369	1,620	151	100	118	130	142
37045	Cleveland	14,632	7,195	9,643	11,085	13,500	1,049	668	799	882	981
37047	Columbus	9,723	4,646	6,304	7,340	8,833	697	444	531	590	649
37049	Craven	15,108	6,593	9,459	11,225	13,643	1,226	717	890	1,012	1,134
37051	Cumberland	48,583	21,383	31,338	36,499	44,240	3,069	1,895	2,342	2,586	2,825
37053	Currituck	3,675	1,458	2,109	2,500	3,273	300	160	203	231	272

FIPS	COUNTY	2012 DISTRIBUTION OF UNINSURED					MARGIN OF ERROR (MOE)				
		Total	<138% poverty	<200% poverty	<250% poverty	<400% poverty	Total	<138% poverty	<200% poverty	<250% poverty	<400% poverty
37055	Dare	5,917	2,375	3,511	4,196	5,249	465	255	319	365	421
37057	Davidson	25,196	11,019	15,359	17,999	22,923	1,687	974	1,194	1,343	1,546
37059	Davie	6,094	2,568	3,710	4,416	5,428	472	257	326	375	427
37061	Duplin	13,367	7,003	9,582	10,946	12,639	936	624	752	830	903
37063	Durham	47,689	23,716	32,599	37,229	43,614	3,015	1,959	2,365	2,603	2,835
37065	Edgecombe	8,251	4,323	5,830	6,572	7,743	685	457	550	598	650
37067	Forsyth	58,360	29,048	39,946	45,657	53,571	3,220	2,074	2,489	2,740	2,995
37069	Franklin	10,755	4,949	6,824	8,004	9,726	790	472	575	649	729
37071	Gaston	34,279	15,356	21,270	24,887	31,135	2,099	1,250	1,519	1,697	1,926
37073	Gates	1,677	740	1,052	1,227	1,500	147	88	109	122	136
37075	Graham	1,524	703	997	1,146	1,404	129	80	99	109	122
37077	Granville	8,597	3,795	5,355	6,349	7,846	660	374	467	536	610
37079	Greene	3,815	1,911	2,656	3,043	3,537	301	202	241	265	288
37081	Guilford	82,549	40,160	55,654	63,794	75,636	4,284	2,738	3,298	3,625	3,968
37083	Halifax	8,178	3,871	5,325	6,154	7,560	638	403	488	539	598
37085	Harnett	21,007	9,764	13,609	15,749	19,126	1,415	889	1,076	1,191	1,323
37087	Haywood	8,581	3,799	5,356	6,334	7,753	653	382	473	536	603
37089	Henderson	17,871	7,875	11,154	13,005	16,264	1,179	679	839	946	1,088
37091	Hertford	3,590	1,839	2,470	2,824	3,343	279	189	224	245	265
37093	Hoke	10,321	4,857	6,647	7,741	9,483	810	529	624	692	765
37095	Hyde	1,020	512	703	795	947	84	57	68	74	81
37097	Iredell	25,903	11,057	15,927	18,844	23,328	1,641	936	1,168	1,326	1,502
37099	Jackson	7,902	3,720	5,096	5,868	7,259	623	404	481	528	590
37101	Johnston	32,446	14,961	20,704	24,042	29,210	2,095	1,266	1,527	1,707	1,917
37103	Jones	1,732	845	1,179	1,364	1,613	147	96	115	128	140
37105	Lee	11,004	5,400	7,419	8,513	10,127	805	517	623	688	759
37107	Lenoir	10,051	4,987	6,884	7,911	9,326	758	495	596	657	716
37109	Lincoln	12,315	5,256	7,615	8,952	11,076	901	505	638	724	824
37113	Macon	6,486	3,280	4,431	5,143	6,036	453	296	351	393	431
37115	Madison	3,072	1,483	2,007	2,334	2,842	258	164	198	220	244

FIPS	COUNTY	2012 DISTRIBUTION OF UNINSURED					MARGIN OF ERROR (MOE)				
		Total	<138% poverty	<200% poverty	<250% poverty	<400% poverty	Total	<138% poverty	<200% poverty	<250% poverty	<400% poverty
37117	Martin	3,713	1,923	2,525	2,896	3,460	310	211	247	271	294
37111	McDowell	7,038	3,465	4,627	5,384	6,559	564	355	425	476	533
37119	Mecklenburg	157,893	72,793	101,515	117,106	142,571	6,857	4,297	5,126	5,606	6,193
37121	Mitchell	2,141	981	1,390	1,620	1,989	189	115	143	160	178
37123	Montgomery	5,192	2,771	3,685	4,221	4,857	379	260	307	339	363
37125	Moore	12,478	5,493	7,853	9,186	11,226	931	539	671	756	853
37127	Nash	15,125	7,073	9,824	11,348	13,780	1,120	685	837	930	1,040
37129	New Hanover	31,801	14,612	20,030	23,206	28,493	2,291	1,412	1,692	1,876	2,105
37131	Northampton	2,804	1,499	1,988	2,253	2,613	249	171	202	220	236
37133	Onslow	25,971	11,192	17,189	20,150	24,056	2,190	1,308	1,684	1,889	2,072
37135	Orange	16,755	8,267	11,286	12,798	15,025	1,388	952	1,118	1,210	1,298
37137	Pamlico	1,796	794	1,139	1,341	1,617	145	86	107	120	134
37139	Pasquotank	5,911	2,667	3,747	4,347	5,372	502	303	374	416	467
37141	Pender	9,382	4,309	6,043	7,038	8,500	687	407	502	565	634
37143	Perquimans	1,924	919	1,264	1,461	1,759	168	107	129	143	158
37145	Person	5,842	2,726	3,700	4,357	5,311	471	292	350	394	440
37147	Pitt	27,791	14,632	19,312	21,696	25,456	2,206	1,531	1,788	1,928	2,075
37149	Polk	3,075	1,418	2,029	2,352	2,811	247	152	187	209	231
37151	Randolph	26,031	12,406	17,120	19,748	23,963	1,643	1,024	1,243	1,381	1,541
37153	Richmond	8,297	4,186	5,658	6,472	7,738	623	411	491	539	592
37155	Robeson	31,020	15,599	20,891	23,717	28,758	1,703	1,179	1,377	1,484	1,616
37157	Rockingham	14,370	6,565	9,102	10,678	13,215	1,031	619	759	854	960
37159	Rowan	23,515	11,055	15,262	17,747	21,578	1,549	941	1,150	1,285	1,443
37161	Rutherford	10,602	5,353	7,168	8,266	9,883	825	527	634	705	780
37163	Sampson	12,458	6,278	8,633	9,860	11,571	834	548	662	729	795
37165	Scotland	5,840	2,947	3,821	4,422	5,419	454	310	358	392	429
37167	Stanly	8,757	3,821	5,446	6,400	7,994	658	388	481	540	612
37169	Stokes	6,805	2,876	4,061	4,831	6,163	548	302	378	432	501
37171	Surry	13,279	6,459	8,884	10,331	12,331	876	553	672	751	830
37173	Swain	2,839	1,269	1,757	2,096	2,591	223	139	166	187	209

FIPS	COUNTY	2012 DISTRIBUTION OF UNINSURED					MARGIN OF ERROR (MOE)				
		Total	<138% poverty	<200% poverty	<250% poverty	<400% poverty	Total	<138% poverty	<200% poverty	<250% poverty	<400% poverty
37175	Transylvania	4,857	2,255	3,119	3,654	4,425	386	232	282	318	358
37177	Tyrrell	725	380	514	579	680	62	43	51	55	60
37179	Union	30,508	11,864	18,115	21,382	26,786	1,975	1,063	1,353	1,529	1,747
37181	Vance	7,571	3,955	5,329	6,053	7,110	597	403	481	526	569
37183	Wake	126,704	53,870	76,662	88,929	110,122	6,535	3,795	4,605	5,081	5,679
37185	Warren	3,377	1,699	2,227	2,562	3,100	274	187	217	238	260
37187	Washington	1,763	911	1,206	1,393	1,639	160	108	127	140	152
37189	Watauga	8,153	4,719	5,930	6,568	7,560	817	627	701	741	783
37191	Wayne	21,020	10,383	14,143	16,321	19,491	1,510	974	1,169	1,295	1,427
37193	Wilkes	12,071	6,220	8,313	9,510	11,325	887	590	699	771	847
37195	Wilson	14,260	7,190	9,696	11,145	13,204	1,007	664	791	874	957
37197	Yadkin	6,314	2,949	4,156	4,846	5,810	490	290	362	409	458
37199	Yancey	2,837	1,348	1,862	2,181	2,636	233	146	178	200	221

Update: 7/24/2014

Note: All figures are 2012 estimates reported at [S1]. State totals are as reported and may not match the sum of county figures due to rounding.

Sources

[S1] **Bureau of the Census, Small Area Health Insurance (SAHIE) Program.** *Model-based Small Area Health Insurance Estimates (SAHIE) for Counties and States*. March 2014. Available at: http://www.census.gov/did/www/sahie/data/files/sahie2012.csv (accessed June 13, 2014).

Table B-2b. Low Income Nonelderly Uninsured Adults, by County, 2012

FIPS	COUNTY	2012 UNINSURED NONELDERLY ADULTS BELOW 138% POVERTY		SHARE OF UNINSURED NONELDERLY ADULTS		AREA NAME
		Total	Margin of error	<100% FPL	<138% poverty	
	North Carolina	646,722	13,401	27.1%	42.6%	North Carolina
37001	Alamance	10,639	958	27.1%	42.2%	Alamance County (Burlington/ Graham/ Mebane)
37003	Alexander	2,415	267	31.7%	48.2%	Hickory-Lenoir Greater Metro Area
37005	Alleghany	1,041	107	29.5%	45.4%	Asheville/ Boone/ Hendersonville Area
37007	Anson	1,705	209	25.1%	39.7%	Charlotte-Concord Greater Metro Area
37009	Ashe	2,337	237	29.5%	45.4%	Asheville/ Boone/ Hendersonville Area
37011	Avery	1,436	151	29.5%	45.4%	Asheville/ Boone/ Hendersonville Area
37013	Beaufort	3,280	348	31.3%	44.4%	Pitt County (Greenville/ Winterville/ Ayden)
37015	Bertie	1,244	152	28.9%	47.0%	New Bern/ Havelock/ Elizabeth City Area
37017	Bladen	3,095	317	29.4%	47.6%	Robeson County (Lumberton/ Red Springs/ Pembroke)
37019	Brunswick	7,047	676	26.8%	43.0%	Wilmington/ Murraysville/ Leland Area
37021	Buncombe	17,219	1,465	29.5%	45.4%	Asheville/ Boone/ Hendersonville Area
37023	Burke	6,738	654	33.1%	49.5%	Shelby/ Lenoir/ Morganton Area
37025	Cabarrus	10,485	976	26.0%	44.3%	Cabarrus County (Concord/ Kannapolis/ Harrisburg)
37027	Caldwell	5,339	561	33.1%	49.5%	Shelby/ Lenoir/ Morganton Area
37029	Camden	452	61	28.9%	47.0%	New Bern/ Havelock/ Elizabeth City Area
37031	Carteret	4,175	406	28.9%	47.0%	New Bern/ Havelock/ Elizabeth City Area
37033	Caswell	1,397	165	28.9%	44.9%	Greensboro--Winston-Salem--High Point Greater Metro Area
37035	Catawba	10,078	911	27.6%	44.5%	Catawba County (Hickory/ Newton/ St. Stephens)
37037	Chatham	3,747	379	25.8%	39.3%	Durham/ Chapel Hill/ Carrboro Area
37039	Cherokee	1,891	209	29.5%	45.4%	Asheville/ Boone/ Hendersonville Area
37041	Chowan	887	115	28.9%	47.0%	New Bern/ Havelock/ Elizabeth City Area
37043	Clay	798	95	29.5%	45.4%	Asheville/ Boone/ Hendersonville Area
37045	Cleveland	6,570	641	33.1%	49.5%	Shelby/ Lenoir/ Morganton Area
37047	Columbus	4,100	417	26.8%	43.0%	Wilmington/ Murraysville/ Leland Area
37049	Craven	5,836	680	28.9%	47.0%	New Bern/ Havelock/ Elizabeth City Area
37051	Cumberland	18,825	1,774	28.5%	47.6%	Cumberland County (Fayetteville/ Hope Mills/ Spring Lake)
37053	Currituck	1,306	152	28.9%	47.0%	New Bern/ Havelock/ Elizabeth City Area

FIPS	COUNTY	2012 UNINSURED NONELDERLY ADULTS BELOW 138% POVERTY		SHARE OF UNINSURED NONELDERLY ADULTS		AREA NAME
		Total	Margin of error	<100% FPL	<138% poverty	
37055	Dare	2,091	239	28.9%	47.0%	New Bern/ Havelock/ Elizabeth City Area
37057	Davidson	10,078	935	28.9%	44.9%	Greensboro--Winston-Salem--High Point Greater Metro Area
37059	Davie	2,243	239	25.8%	41.7%	King/ Mocksville/ Yadkinville Area
37061	Duplin	6,136	567	26.4%	39.8%	Clinton/ Wallace/ Warsaw Area
37063	Durham	21,256	1,847	25.8%	39.3%	Durham/ Chapel Hill/ Carrboro Area
37065	Edgecombe	3,885	437	26.6%	42.0%	Rocky Mount/ Wilson/ Kinston Area
37067	Forsyth	25,996	1,940	26.1%	39.9%	Forsyth County (Winston-Salem/ Kernersville/ Clemmons)
37069	Franklin	4,370	442	21.1%	35.0%	Raleigh/ Cary/ Apex Area
37071	Gaston	13,848	1,183	27.8%	42.0%	Gastonia/ Mount Holly/ Lincolnton Area
37073	Gates	645	83	28.9%	47.0%	New Bern/ Havelock/ Elizabeth City Area
37075	Graham	624	76	29.5%	45.4%	Asheville/ Boone/ Hendersonville Area
37077	Granville	3,394	355	24.0%	39.9%	Sanford/ Clayton/ Henderson Area
37079	Greene	1,627	185	28.5%	42.8%	Wayne County (Goldsboro/ Mount Olive/ Elroy)
37081	Guilford	35,907	2,552	32.2%	48.9%	Guilford County (Greensboro/ High Point/ Summerfield)
37083	Halifax	3,548	390	28.0%	45.1%	Rocky Mount-Wilson-Roanoke Rapids Greater Metro Area
37085	Harnett	8,470	821	23.4%	37.7%	Raleigh-Durham-Chapel Hill Greater Metro Area
37087	Haywood	3,489	370	29.5%	45.4%	Asheville/ Boone/ Hendersonville Area
37089	Henderson	6,996	636	29.5%	45.4%	Asheville/ Boone/ Hendersonville Area
37091	Hertford	1,678	184	28.0%	45.1%	Rocky Mount-Wilson-Roanoke Rapids Greater Metro Area
37093	Hoke	4,253	496	28.5%	47.6%	Cumberland County (Fayetteville/ Hope Mills/ Spring Lake)
37095	Hyde	444	53	31.3%	44.4%	Pitt County (Greenville/ Winterville/ Ayden)
37097	Iredell	9,918	885	26.2%	46.8%	Iredell County (Mooresville/ Statesville/ Troutman)
37099	Jackson	3,366	390	29.5%	45.4%	Asheville/ Boone/ Hendersonville Area
37101	Johnston	12,840	1,125	24.0%	39.9%	Sanford/ Clayton/ Henderson Area
37103	Jones	755	92	28.9%	47.0%	New Bern/ Havelock/ Elizabeth City Area
37105	Lee	4,726	479	24.0%	39.9%	Sanford/ Clayton/ Henderson Area
37107	Lenoir	4,611	483	26.6%	42.0%	Rocky Mount/ Wilson/ Kinston Area
37109	Lincoln	4,590	468	27.8%	42.0%	Gastonia/ Mount Holly/ Lincolnton Area
37113	Macon	2,927	278	29.5%	45.4%	Asheville/ Boone/ Hendersonville Area
37115	Madison	1,349	158	29.5%	45.4%	Asheville/ Boone/ Hendersonville Area

FIPS	COUNTY	2012 UNINSURED NONELDERLY ADULTS BELOW 138% POVERTY		SHARE OF UNINSURED NONELDERLY ADULTS		AREA NAME
		Total	Margin of error	<100% FPL	<138% poverty	
37117	Martin	1,746	203	31.3%	44.4%	Pitt County (Greenville/ Winterville/ Ayden)
37111	McDowell	3,158	341	29.5%	45.4%	Asheville/ Boone/ Hendersonville Area
37119	Mecklenburg	65,584	4,021	23.8%	36.9%	Mecklenburg County (Charlotte/ Huntersville/ Matthews)
37121	Mitchell	898	112	29.5%	45.4%	Asheville/ Boone/ Hendersonville Area
37123	Montgomery	2,461	244	29.8%	46.3%	Laurinburg/ Albemarle/ Pinehurst Area
37125	Moore	4,834	506	29.8%	46.3%	Laurinburg/ Albemarle/ Pinehurst Area
37127	Nash	6,404	657	26.6%	42.0%	Rocky Mount/ Wilson/ Kinston Area
37129	New Hanover	13,455	1,375	26.8%	43.0%	Wilmington/ Murraysville/ Leland Area
37131	Northampton	1,369	165	28.0%	45.1%	Rocky Mount-Wilson-Roanoke Rapids Greater Metro Area
37133	Onslow	9,882	1,253	28.1%	43.1%	Onslow County (Jacksonville/ Piney Green/ Half Moon)
37135	Orange	7,401	919	25.8%	39.3%	Durham/ Chapel Hill/ Carrboro Area
37137	Pamlico	691	80	28.9%	47.0%	New Bern/ Havelock/ Elizabeth City Area
37139	Pasquotank	2,430	294	28.9%	47.0%	New Bern/ Havelock/ Elizabeth City Area
37141	Pender	3,757	376	26.8%	43.0%	Wilmington/ Murraysville/ Leland Area
37143	Perquimans	808	102	28.9%	47.0%	New Bern/ Havelock/ Elizabeth City Area
37145	Person	2,473	281	25.8%	39.3%	Durham/ Chapel Hill/ Carrboro Area
37147	Pitt	13,347	1,486	31.3%	44.4%	Pitt County (Greenville/ Winterville/ Ayden)
37149	Polk	1,241	143	29.5%	45.4%	Asheville/ Boone/ Hendersonville Area
37151	Randolph	11,054	956	29.9%	46.9%	Randolph County (Asheboro/ Archdale/ Trinity)
37153	Richmond	3,771	392	29.8%	46.3%	Laurinburg/ Albemarle/ Pinehurst Area
37155	Robeson	14,026	1,103	29.4%	47.6%	Robeson County (Lumberton/ Red Springs/ Pembroke)
37157	Rockingham	5,964	594	28.9%	44.9%	Greensboro--Winston-Salem--High Point Greater Metro Area
37159	Rowan	9,880	880	28.4%	45.8%	Rowan County (Salisbury/ Kannapolis/ China Grove)
37161	Rutherford	4,906	508	33.1%	49.5%	Shelby/ Lenoir/ Morganton Area
37163	Sampson	5,603	519	26.4%	39.8%	Clinton/ Wallace/ Warsaw Area
37165	Scotland	2,657	296	29.8%	46.3%	Laurinburg/ Albemarle/ Pinehurst Area
37167	Stanly	3,467	373	29.8%	46.3%	Laurinburg/ Albemarle/ Pinehurst Area
37169	Stokes	2,629	292	25.8%	41.7%	King/ Mocksville/ Yadkinville Area
37171	Surry	5,792	521	28.9%	44.9%	Greensboro--Winston-Salem--High Point Greater Metro Area
37173	Swain	1,127	131	29.5%	45.4%	Asheville/ Boone/ Hendersonville Area

FIPS	COUNTY	2012 UNINSURED NONELDERLY ADULTS BELOW 138% POVERTY		SHARE OF UNINSURED NONELDERLY ADULTS		AREA NAME
		Total	Margin of error	<100% FPL	<138% poverty	
37175	Transylvania	2,023	221	29.5%	45.4%	Asheville/ Boone/ Hendersonville Area
37177	Tyrrell	331	40	31.3%	44.4%	Pitt County (Greenville/ Winterville/ Ayden)
37179	Union	9,838	917	22.5%	35.5%	Union County (Indian Trail/ Monroe/ Stallings)
37181	Vance	3,548	384	24.0%	39.9%	Sanford/ Clayton/ Henderson Area
37183	Wake	45,821	3,420	21.1%	35.0%	Raleigh/ Cary/ Apex Area
37185	Warren	1,541	180	24.0%	39.9%	Sanford/ Clayton/ Henderson Area
37187	Washington	830	105	31.3%	44.4%	Pitt County (Greenville/ Winterville/ Ayden)
37189	Watauga	4,487	623	29.5%	45.4%	Asheville/ Boone/ Hendersonville Area
37191	Wayne	9,330	931	28.5%	42.8%	Wayne County (Goldsboro/ Mount Olive/ Elroy)
37193	Wilkes	5,710	568	28.9%	44.9%	Greensboro--Winston-Salem--High Point Greater Metro Area
37195	Wilson	6,508	633	26.6%	42.0%	Rocky Mount/ Wilson/ Kinston Area
37197	Yadkin	2,589	271	25.8%	41.7%	King/ Mocksville/ Yadkinville Area
37199	Yancey	1,210	140	29.5%	45.4%	Asheville/ Boone/ Hendersonville Area
	Notes	[A]		[B]		

Update: 8/7/2014

Notes

[A] All figures are 2012 estimates reported at [S1]. State totals are as reported and may not match the sum of county figures due to rounding.

[B] All figures are 2014 estimates reported in [S2]. The original source provided estimates for 11 Consolidated Statistical Areas (CSAs), 17 named counties and 10 geographic areas within CSAS. Estimates have been assigned by authors to the remaining 83 unnamed counties based on the descriptions of the geographic areas given in the original source (shown under Area Name) where feasible. Otherwise, assignment was based on geographic location, using the figures from the most proximate county within the same Health Service Area, CSA or region.

Sources

[S1] **Bureau of the Census, Small Area Health Insurance (SAHIE) Program.** *Model-based Small Area Health Insurance Estimates (SAHIE) for Counties and States*. March 2014. Available at: http://www.census.gov/did/www/sahie/data/files/sahie2012.csv (accessed June 13, 2014).

[S2] **Urban Institute, Health Policy Center**. *Uninsured Adults who Would be Newly Eligible for Medicaid Under the ACA Medicaid Expansion*. Urban Institute. Available at: http://datatools.metrotrends.org/Features/localMedicaid/UrbanInstituteLocalMedicaidExpansion.xlsx (accessed July 24, 2014).

Table B-3. Estimated Increase in Federal Health Expenditures Due to Medicaid Expansion, by County

FIPS	COUNTY	2012 DISTRIBUTION OF UNINSURED			SHARE OF UNINSURED <138% POVERTY WHO ARE AGE 18-64	2012 DISTRIBUTION OF NEW FEDERAL MEDICAID FUNDS UNDER THE AFFORDABLE CARE ACT (THOUSANDS)				NET INCREASE IN FEDERALLY-FUNDED HEALTH SPENDING	
						Without Medicaid expansion		With Medicaid expansion			
		Total	<100% poverty	<138% poverty		<100% poverty	100-138% poverty	<100% poverty	100-138% poverty	Without Medicaid expansion	With Medicaid expansion
	North Carolina	1,556,925	461,389	724,494	89.3%	203,927	116,289	1,797,631	1,025,093	320,214	2,822,704
37001	Alamance	25,815	7,694	11,981	88.8%	3,401	1,895	29,977	16,703	5,295	46,680
37003	Alexander	5,749	1,747	2,657	90.9%	772	402	6,808	3,544	1,174	10,352
37005	Alleghany	2,280	756	1,163	89.5%	334	180	2,944	1,587	514	4,531
37007	Anson	3,771	1,189	1,881	90.6%	526	306	4,633	2,695	831	7,329
37009	Ashe	5,109	1,669	2,568	91.0%	738	398	6,501	3,504	1,135	10,005
37011	Avery	3,162	1,034	1,591	90.3%	457	246	4,028	2,171	703	6,199
37013	Beaufort	7,601	2,606	3,697	88.7%	1,152	482	10,154	4,250	1,634	14,404
37015	Bertie	2,727	839	1,365	91.1%	371	232	3,270	2,048	603	5,318
37017	Bladen	6,584	2,132	3,452	89.7%	942	583	8,307	5,142	1,526	13,449
37019	Brunswick	17,205	4,849	7,780	90.6%	2,143	1,295	18,892	11,420	3,439	30,312
37021	Buncombe	40,505	12,270	18,883	91.2%	5,423	2,923	47,805	25,766	8,346	73,571
37023	Burke	15,119	4,865	7,275	92.6%	2,150	1,065	18,953	9,391	3,215	28,344
37025	Cabarrus	28,322	7,001	11,928	87.9%	3,094	2,178	27,275	19,198	5,272	46,473
37027	Caldwell	12,463	3,832	5,730	93.2%	1,694	839	14,928	7,397	2,533	22,325
37029	Camden	1,335	333	541	83.5%	147	92	1,296	812	239	2,108
37031	Carteret	10,839	2,842	4,622	90.3%	1,256	787	11,073	6,935	2,043	18,008
37033	Caswell	3,326	998	1,550	90.1%	441	244	3,887	2,152	685	6,039
37035	Catawba	24,965	6,793	10,953	92.0%	3,003	1,839	26,468	16,207	4,841	42,674
37037	Chatham	9,946	2,831	4,312	86.9%	1,251	655	11,029	5,771	1,906	16,800
37039	Cherokee	4,364	1,392	2,143	88.2%	615	332	5,425	2,924	947	8,349
37041	Chowan	2,103	602	979	90.6%	266	167	2,345	1,469	433	3,814
37043	Clay	1,761	585	900	88.7%	258	139	2,278	1,228	398	3,507
37045	Cleveland	14,632	4,811	7,195	91.3%	2,126	1,054	18,745	9,288	3,180	28,033
37047	Columbus	9,723	2,896	4,646	88.2%	1,280	774	11,282	6,820	2,053	18,101
37049	Craven	15,108	4,054	6,593	88.5%	1,792	1,122	15,795	9,892	2,914	25,687
37051	Cumberland	48,583	12,803	21,383	88.0%	5,659	3,792	49,882	33,429	9,451	83,311
37053	Currituck	3,675	897	1,458	89.6%	396	248	3,493	2,188	644	5,681

FIPS	COUNTY	2012 DISTRIBUTION OF UNINSURED			SHARE OF UNINSURED <138% POVERTY WHO ARE AGE 18-64	2012 DISTRIBUTION OF NEW FEDERAL MEDICAID FUNDS UNDER THE AFFORDABLE CARE ACT (THOUSANDS)				NET INCREASE IN FEDERALLY-FUNDED HEALTH SPENDING	
						Without Medicaid expansion		With Medicaid expansion			
		Total	<100% poverty	<138% poverty		<100% poverty	100-138% poverty	<100% poverty	100-138% poverty	Without Medicaid expansion	With Medicaid expansion
37055	Dare	5,917	1,460	2,375	88.0%	645	404	5,690	3,564	1,050	9,253
37057	Davidson	25,196	7,092	11,019	91.5%	3,135	1,735	27,633	15,299	4,870	42,931
37059	Davie	6,094	1,589	2,568	87.3%	702	433	6,190	3,815	1,135	10,005
37061	Duplin	13,367	4,645	7,003	87.6%	2,053	1,042	18,098	9,186	3,095	27,285
37063	Durham	47,689	15,569	23,716	89.6%	6,881	3,601	60,660	31,741	10,482	92,401
37065	Edgecombe	8,251	2,738	4,323	89.9%	1,210	701	10,667	6,176	1,911	16,843
37067	Forsyth	58,360	19,001	29,048	89.5%	8,398	4,440	74,032	39,143	12,839	113,175
37069	Franklin	10,755	2,984	4,949	88.3%	1,319	869	11,624	7,658	2,187	19,282
37071	Gaston	34,279	10,164	15,356	90.2%	4,492	2,295	39,601	20,228	6,787	59,829
37073	Gates	1,677	455	740	87.2%	201	126	1,773	1,110	327	2,883
37075	Graham	1,524	457	703	88.8%	202	109	1,780	959	311	2,739
37077	Granville	8,597	2,283	3,795	89.4%	1,009	668	8,894	5,892	1,677	14,786
37079	Greene	3,815	1,273	1,911	85.1%	562	282	4,958	2,488	845	7,446
37081	Guilford	82,549	26,445	40,160	89.4%	11,688	6,062	103,033	53,436	17,750	156,469
37083	Halifax	8,178	2,403	3,871	91.7%	1,062	649	9,364	5,718	1,711	15,082
37085	Harnett	21,007	6,060	9,764	86.7%	2,679	1,637	23,612	14,430	4,316	38,042
37087	Haywood	8,581	2,469	3,799	91.8%	1,091	588	9,618	5,184	1,679	14,801
37089	Henderson	17,871	5,117	7,875	88.8%	2,262	1,219	19,937	10,745	3,481	30,682
37091	Hertford	3,590	1,142	1,839	91.2%	505	308	4,448	2,717	813	7,165
37093	Hoke	10,321	2,908	4,857	87.6%	1,285	861	11,330	7,593	2,147	18,924
37095	Hyde	1,020	361	512	86.7%	160	67	1,406	589	226	1,995
37097	Iredell	25,903	6,190	11,057	89.7%	2,736	2,151	24,117	18,962	4,887	43,080
37099	Jackson	7,902	2,417	3,720	90.5%	1,068	576	9,418	5,076	1,644	14,494
37101	Johnston	32,446	8,999	14,961	85.8%	3,977	2,635	35,062	23,228	6,613	58,290
37103	Jones	1,732	520	845	89.3%	230	144	2,024	1,268	373	3,292
37105	Lee	11,004	3,248	5,400	87.5%	1,436	951	12,655	8,384	2,387	21,039
37107	Lenoir	10,051	3,158	4,987	92.5%	1,396	808	12,306	7,124	2,204	19,430
37109	Lincoln	12,315	3,479	5,256	87.3%	1,538	785	13,555	6,924	2,323	20,478
37113	Macon	6,486	2,131	3,280	89.2%	942	508	8,304	4,476	1,450	12,779

FIPS	COUNTY	2012 DISTRIBUTION OF UNINSURED			SHARE OF UNINSURED <138% POVERTY WHO ARE AGE 18-64	2012 DISTRIBUTION OF NEW FEDERAL MEDICAID FUNDS UNDER THE AFFORDABLE CARE ACT (THOUSANDS)				NET INCREASE IN FEDERALLY-FUNDED HEALTH SPENDING	
						Without Medicaid expansion		With Medicaid expansion			
		Total	<100% poverty	<138% poverty		<100% poverty	100-138% poverty	<100% poverty	100-138% poverty	Without Medicaid expansion	With Medicaid expansion
37115	Madison	3,072	964	1,483	91.0%	426	230	3,754	2,024	655	5,778
37117	Martin	3,713	1,356	1,923	90.8%	599	251	5,282	2,211	850	7,492
37111	McDowell	7,038	2,251	3,465	91.1%	995	536	8,772	4,728	1,531	13,500
37119	Mecklenburg	157,893	46,950	72,793	90.1%	20,751	11,422	182,925	100,686	32,173	283,611
37121	Mitchell	2,141	637	981	91.5%	282	152	2,484	1,339	434	3,822
37123	Montgomery	5,192	1,783	2,771	88.8%	788	436	6,949	3,847	1,225	10,796
37125	Moore	12,478	3,535	5,493	88.0%	1,563	865	13,775	7,627	2,428	21,401
37127	Nash	15,125	4,480	7,073	90.5%	1,980	1,146	17,453	10,104	3,126	27,557
37129	New Hanover	31,801	9,107	14,612	92.1%	4,025	2,433	35,482	21,448	6,458	56,930
37131	Northampton	2,804	931	1,499	91.3%	411	251	3,626	2,214	663	5,840
37133	Onslow	25,971	7,297	11,192	88.3%	3,225	1,722	28,430	15,176	4,947	43,606
37135	Orange	16,755	5,427	8,267	89.5%	2,399	1,255	21,145	11,064	3,654	32,209
37137	Pamlico	1,796	488	794	87.0%	216	135	1,902	1,191	351	3,094
37139	Pasquotank	5,911	1,640	2,667	91.1%	725	454	6,389	4,002	1,179	10,391
37141	Pender	9,382	2,686	4,309	87.2%	1,187	718	10,463	6,325	1,905	16,788
37143	Perquimans	1,924	565	919	87.9%	250	156	2,202	1,379	406	3,581
37145	Person	5,842	1,790	2,726	90.7%	791	414	6,972	3,648	1,205	10,621
37147	Pitt	27,791	10,315	14,632	91.2%	4,559	1,908	40,188	16,820	6,467	57,008
37149	Polk	3,075	921	1,418	87.5%	407	219	3,590	1,935	627	5,525
37151	Randolph	26,031	7,909	12,406	89.1%	3,496	1,988	30,815	17,520	5,483	48,335
37153	Richmond	8,297	2,694	4,186	90.1%	1,191	659	10,497	5,812	1,850	16,309
37155	Robeson	31,020	9,635	15,599	89.9%	4,258	2,636	37,538	23,238	6,895	60,776
37157	Rockingham	14,370	4,226	6,565	90.8%	1,868	1,034	16,463	9,115	2,902	25,578
37159	Rowan	23,515	6,855	11,055	89.4%	3,030	1,856	26,708	16,363	4,886	43,072
37161	Rutherford	10,602	3,579	5,353	91.6%	1,582	784	13,946	6,910	2,366	20,856
37163	Sampson	12,458	4,164	6,278	89.2%	1,841	934	16,225	8,235	2,775	24,460
37165	Scotland	5,840	1,897	2,947	90.2%	838	464	7,390	4,092	1,303	11,482
37167	Stanly	8,757	2,459	3,821	90.7%	1,087	602	9,582	5,305	1,689	14,887
37169	Stokes	6,805	1,779	2,876	91.4%	786	485	6,933	4,273	1,271	11,205

FIPS	COUNTY	2012 DISTRIBUTION OF UNINSURED			SHARE OF UNINSURED <138% POVERTY WHO ARE AGE 18-64	2012 DISTRIBUTION OF NEW FEDERAL MEDICAID FUNDS UNDER THE AFFORDABLE CARE ACT (THOUSANDS)				NET INCREASE IN FEDERALLY-FUNDED HEALTH SPENDING	
						Without Medicaid expansion		With Medicaid expansion			
		Total	<100% poverty	<138% poverty		<100% poverty	100-138% poverty	<100% poverty	100-138% poverty	Without Medicaid expansion	With Medicaid expansion
37171	Surry	13,279	4,157	6,459	89.7%	1,837	1,017	16,198	8,968	2,855	25,165
37173	Swain	2,839	825	1,269	88.8%	364	196	3,213	1,732	561	4,944
37175	Transylvania	4,857	1,465	2,255	89.7%	648	349	5,709	3,077	997	8,786
37177	Tyrrell	725	268	380	87.1%	118	50	1,044	437	168	1,481
37179	Union	30,508	7,519	11,864	82.9%	3,323	1,920	29,297	16,927	5,244	46,224
37181	Vance	7,571	2,379	3,955	89.7%	1,051	697	9,269	6,141	1,748	15,409
37183	Wake	126,704	32,476	53,870	85.1%	14,354	9,456	126,530	83,354	23,810	209,885
37185	Warren	3,377	1,022	1,699	90.7%	452	299	3,982	2,638	751	6,620
37187	Washington	1,763	642	911	91.1%	284	119	2,502	1,047	403	3,549
37189	Watauga	8,153	3,066	4,719	95.1%	1,355	730	11,947	6,439	2,086	18,386
37191	Wayne	21,020	6,914	10,383	89.9%	3,056	1,533	26,938	13,516	4,589	40,454
37193	Wilkes	12,071	4,004	6,220	91.8%	1,769	980	15,598	8,636	2,749	24,234
37195	Wilson	14,260	4,554	7,190	90.5%	2,013	1,165	17,742	10,272	3,178	28,013
37197	Yadkin	6,314	1,825	2,949	87.8%	806	497	7,109	4,381	1,303	11,490
37199	Yancey	2,837	876	1,348	89.8%	387	209	3,413	1,839	596	5,252
Notes		[A]	[B]	[A]	[C]	[D]	[E]	[F]	[G]	[H]	

Update: 8/10/2014

Notes

[A] All figures are compiled by authors from Small Area Health Insurance Estimates for 2012 reported in [S1].

[B] All figures are calculated by authors using figures on uninsured adults <138% poverty reported in [S2]: Number of Uninsured Below 138% Poverty x (Share of Uninsured Adults 18-64 Below 100% Poverty)/(Share of Uninsured Adults 18-64 Below 138% Poverty). North Carolina Medicaid currently covers all infants up to 185% poverty; all children 1-5 up to 133% of poverty and all children 6-19 up to 100% of poverty [S4]. Consequently, uninsured children are more likely to be concentrated in the 100-138% income group than adults. The formula therefore slightly exaggerates the total number of uninsured below poverty in each county, but no more precise figures were available. This small inaccuracy has no impact if North Carolina is assumed to pursue Medicaid expansion (since then everyone below 138% poverty will be covered and the split between below 100% and 100-138% will not affect the calculated cost).

[C] All figures are calculated by authors using figures on uninsured adults <138% poverty reported in [S2].

[D] All figures are calculated by authors. The North Carolina total figure is calculated from federal Medicaid spending figure for 2012 reported in [P1] and the estimated percentage increase in federal Medicaid spending without NC adoption of Medicaid expansion [P2]: (Federal Medicaid Spending in 2012, NC) x (Percentage Increase Over Baseline, ACA Without NC Adoption of Medicaid Expansion) x (County Uninsured <100% Poverty) / (NC Uninsured <100%).

[E] All figures are calculated by authors using the same logic as described in footnote [D]. The North Carolina total is allocated back to counties in proportion to their share of the uninsured population with incomes between 100-138% of poverty using figures in adjacent columns.

[F] All figures are calculated by authors. The North Carolina total figure is calculated from federal Medicaid spending figure for 2012 reported in [P1] and the estimated percentage increase in federal Medicaid spending including NC adoption of Medicaid expansion [P2]: (Federal Medicaid Spending in 2012, NC) x (Percentage Increase Over Baseline, ACA Including NC Adoption of Medicaid Expansion) x (County Uninsured <100% Poverty) / (NC Uninsured <100%).

[G] All figures are calculated by authors using the same logic as described in footnote [F]. The North Carolina total is allocated back to counties in proportion to their share of the uninsured population with incomes between 100-138% of poverty using figures in adjacent columns.

[H] All figures are calculated by authors by summing separate figures shown for <100% poverty and 100-138% poverty.

- All figures are calculated by authors: (Total Exchange Subsidies in thousands for 138-400% Poverty)/[(Total Health Spending in millions) x 1,000].

Parameters

[P1] $ 8,036 Federal share of Medicaid spending in NC, FFY2012 (millions) [S5]

[P2] Projected Federal Medicaid expenditures, 2013-2022

Projected spending	Scenario	Percentage increase over baseline	Notes
$ 127,286	No Affordable Care Act	NA	[P2]
$ 132,358	Affordable Care Act without NC adoption of Medicaid expansion	4.0%	[P2b]
$ 171,996	Affordable Care Act including NC adoption of Medicaid expansion	35.1%	[P2]

[P2] All projected spending figures reported in Table ES-1 of [S3]. Percentage increase calculated by authors using figures shown.

[P2] All projected spending figures reported in Table ES-2 of [S3]. Percentage increase calculated by authors using figures shown.

Sources

[S1] **Bureau of the Census, Small Area Health Insurance (SAHIE) Program.** *Model-based Small Area Health Insurance Estimates (SAHIE) for Counties and States*. March 2014. Available at: http://www.census.gov/did/www/sahie/data/files/sahie2012.csv (accessed June 13, 2014).

[S2] **Conover, Christopher J.** and **Robert Richards**. Table B-2b.Low Income Nonelderly Uninsured Adults, by County, 2012. Duke University, Center for Health Policy and Inequalities Research, last updated August 7, 2014.

[S3] **Holahan, John, Matthew Buettgens, Caitlin Carroll, Stan Dorn.** *The Cost and Coverage Implications of the ACA Medicaid Expansion: National and State-by-State Analysis*.Urban Institute, November 2012. Available at: http://kaiserfamilyfoundation.files.wordpress.com/2013/01/8384.pdf (accessed May 2, 2014).

[S4] **Kaiser Family Foundation.** *Income Eligibility Limits for Children's Regular Medicaid and Children's CHIP-funded Medicaid Expansions as a Percent of Federal Poverty Level (FPL), January 2013*. Available at: http://kff.org/medicaid/state-indicator/income-eligibility-fpl-medicaid/ (accessed August 7, 2014).

[S5] **Kaiser Family Foundation.** *Federal and State Share of Medicaid Spending*. Available at: http://kff.org/medicaid/state-indicator/federalstate-share-of-spending/ (accessed August 7, 2014).

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Table B-4. Estimated Increase in Health Expenditures Due to Affordable Care Act, by County

FIPS	COUNTY	2012 TOTAL HEALTH SPENDING, ALL PAYMENT SOURCES				ESTIMATED INCREASE IN FEDERAL SPENDING DUE TO AFFORDABLE CARE ACT						PERCENTAGE INCREASE IN HEALTH SPENDING DUE TO FEDERAL ACA SPENDING		DEMAND INCREASE DUE TO DEMO-GRAPHIC CHANGES 2012-2019	RATIO: DEMAND INCREASE DUE TO ACA/DEMAND INCREASE DUE TO DEMOGRAPHICS	
						Without Medicaid expansion			With Medicaid expansion							
		Total health spending index	Medicare price adjuster	Total health spending per capita	Total health spending (millions)	Total	Exchange subsidies	Federal Medicaid spending	Total	Exchange subsidies	Federal Medicaid spending	Without Medicaid expansion	With Medicaid expansion		Without Medicaid expansion	With Medicaid expansion
	North Carolina	1.315	1.000	7,027	68,778	2,112,467	1,792,253	320,214	3,896,685	1,073,981	2,822,704	3.1%	5.7%	14.4%	21.3%	39.2%
37001	Alamance	1.366	0.996	7,270	1,112	35,479	30,184	5,295	65,160	18,480	46,680	3.2%	5.9%	7.8%	40.8%	75.0%
37003	Alexander	1.406	0.975	7,325	274	7,648	6,473	1,174	14,342	3,990	10,352	2.8%	5.2%	8.6%	32.5%	61.0%
37005	Alleghany	1.596	0.991	8,450	93	3,209	2,695	514	6,114	1,583	4,531	3.5%	6.6%	7.7%	45.0%	85.8%
37007	Anson	1.356	0.964	6,988	186	5,406	4,574	831	10,014	2,686	7,329	2.9%	5.4%	6.2%	47.1%	87.2%
37009	Ashe	1.579	0.985	8,312	228	7,211	6,076	1,135	13,626	3,621	10,005	3.2%	6.0%	6.8%	46.4%	87.6%
37011	Avery	1.470	0.952	7,477	133	4,443	3,740	703	8,418	2,219	6,199	3.3%	6.3%	8.6%	38.8%	73.5%
37013	Beaufort	1.525	1.005	8,184	392	9,530	7,896	1,634	19,322	4,918	14,404	2.4%	4.9%	7.2%	33.7%	68.3%
37015	Bertie	1.467	1.021	8,003	165	3,913	3,309	603	7,193	1,874	5,318	2.4%	4.3%	3.4%	70.3%	129.2%
37017	Bladen	1.432	1.010	7,728	272	9,374	7,848	1,526	17,694	4,245	13,449	3.4%	6.5%	8.2%	42.2%	79.7%
37019	Brunswick	1.638	0.985	8,617	970	22,992	19,554	3,439	41,864	11,552	30,312	2.4%	4.3%	31.1%	7.6%	13.9%
37021	Buncombe	1.442	0.995	7,672	1,882	55,189	46,843	8,346	102,359	28,789	73,571	2.9%	5.4%	15.8%	18.5%	34.3%
37023	Burke	1.429	0.984	7,518	676	20,026	16,810	3,215	38,575	10,230	28,344	3.0%	5.7%	3.5%	84.8%	163.3%
37025	Cabarrus	1.255	0.999	6,700	1,229	39,252	33,980	5,272	67,001	20,528	46,473	3.2%	5.5%	19.0%	16.8%	28.7%
37027	Caldwell	1.417	0.989	7,490	619	16,398	13,865	2,533	31,007	8,683	22,325	2.7%	5.0%	6.1%	43.7%	82.7%
37029	Camden	1.341	1.002	7,178	72	1,803	1,564	239	3,103	995	2,108	2.5%	4.3%	14.4%	17.4%	29.9%
37031	Carteret	1.559	0.999	8,319	569	14,369	12,327	2,043	25,475	7,467	18,008	2.5%	4.5%	16.6%	15.2%	27.0%
37033	Caswell	1.458	1.000	7,790	184	4,467	3,782	685	8,313	2,274	6,039	2.4%	4.5%	9.1%	26.8%	49.8%
37035	Catawba	1.366	0.982	7,169	1,115	35,105	30,264	4,841	61,582	18,908	42,674	3.1%	5.5%	6.2%	50.7%	88.9%
37037	Chatham	1.551	1.087	9,006	599	12,991	11,085	1,906	23,841	7,041	16,800	2.2%	4.0%	23.6%	9.2%	16.9%
37039	Cherokee	1.674	0.940	8,409	230	6,029	5,082	947	11,383	3,033	8,349	2.6%	4.9%	6.0%	43.9%	82.9%
37041	Chowan	1.558	1.060	8,828	130	2,902	2,469	433	5,254	1,440	3,814	2.2%	4.0%	5.9%	37.9%	68.5%
37043	Clay	1.706	0.937	8,544	92	2,382	1,984	398	4,630	1,123	3,507	2.6%	5.1%	5.9%	44.1%	85.8%
37045	Cleveland	1.396	1.000	7,454	728	19,083	15,903	3,180	37,427	9,395	28,033	2.6%	5.1%	4.5%	58.5%	114.8%
37047	Columbus	1.394	0.991	7,382	428	13,259	11,205	2,053	24,528	6,427	18,101	3.1%	5.7%	4.5%	68.9%	127.5%
37049	Craven	1.352	1.002	7,241	762	20,885	17,971	2,914	36,726	11,039	25,687	2.7%	4.8%	10.4%	26.3%	46.3%
37051	Cumberland	1.167	1.014	6,322	2,087	69,580	60,129	9,451	120,016	36,705	83,311	3.3%	5.7%	11.1%	29.9%	51.6%
37053	Currituck	1.350	0.990	7,144	173	4,713	4,069	644	8,216	2,536	5,681	2.7%	4.8%	10.5%	25.9%	45.2%
37055	Dare	1.458	1.037	8,077	282	7,918	6,868	1,050	13,624	4,371	9,253	2.8%	4.8%	14.8%	19.0%	32.7%

FIPS	COUNTY	2012 TOTAL HEALTH SPENDING, ALL PAYMENT SOURCES				ESTIMATED INCREASE IN FEDERAL SPENDING DUE TO AFFORDABLE CARE ACT						PERCENTAGE INCREASE IN HEALTH SPENDING DUE TO FEDERAL ACA SPENDING		DEMAND INCREASE DUE TO DEMO-GRAPHIC CHANGES 2012-2019	RATIO: DEMAND INCREASE DUE TO ACA/DEMAND INCREASE DUE TO DEMOGRAPHICS	
						Without Medicaid expansion			With Medicaid expansion							
		Total health spending index	Medicare price adjuster	Total health spending per capita	Total health spending (millions)	Total	Exchange subsidies	Federal Medicaid spending	Total	Exchange subsidies	Federal Medicaid spending	Without Medicaid expansion	With Medicaid expansion		Without Medicaid expansion	With Medicaid expansion
37057	Davidson	1.380	1.001	7,376	1,204	32,501	27,631	4,870	59,843	16,911	42,931	2.7%	5.0%	8.5%	31.7%	58.3%
37059	Davie	1.462	1.021	7,973	330	8,220	7,085	1,135	14,417	4,412	10,005	2.5%	4.4%	9.7%	25.7%	45.0%
37061	Duplin	1.356	0.974	7,053	423	19,022	15,926	3,095	36,774	9,490	27,285	4.5%	8.7%	10.4%	43.4%	83.9%
37063	Durham	1.203	1.080	6,940	1,952	65,411	54,929	10,482	125,089	32,688	92,401	3.4%	6.4%	20.8%	16.1%	30.8%
37065	Edgecombe	1.394	0.992	7,387	414	11,733	9,823	1,911	22,338	5,495	16,843	2.8%	5.4%	5.0%	56.5%	107.5%
37067	Forsyth	1.318	1.041	7,329	2,621	80,433	67,595	12,839	153,342	40,167	113,175	3.1%	5.9%	11.1%	27.6%	52.7%
37069	Franklin	1.333	0.995	7,088	438	14,841	12,654	2,187	26,570	7,288	19,282	3.4%	6.1%	18.5%	18.3%	32.7%
37071	Gaston	1.337	0.998	7,125	1,486	43,945	37,158	6,787	82,813	22,984	59,829	3.0%	5.6%	10.6%	28.0%	52.7%
37073	Gates	1.408	0.995	7,482	91	2,282	1,955	327	4,060	1,177	2,883	2.5%	4.5%	-1.7%	-145.6%	-259.0%
37075	Graham	1.551	0.957	7,929	70	2,067	1,757	311	3,823	1,084	2,739	2.9%	5.4%	9.8%	30.1%	55.6%
37077	Granville	1.329	1.006	7,143	414	11,901	10,224	1,677	20,881	6,095	14,786	2.9%	5.0%	11.2%	25.6%	44.8%
37079	Greene	1.303	1.045	7,276	155	5,319	4,474	845	10,177	2,731	7,446	3.4%	6.5%	8.0%	42.8%	81.8%
37081	Guilford	1.292	1.000	6,904	3,465	112,447	94,697	17,750	213,723	57,254	156,469	3.2%	6.2%	14.7%	22.1%	42.0%
37083	Halifax	1.444	0.999	7,701	418	11,250	9,539	1,711	20,614	5,532	15,082	2.7%	4.9%	1.6%	167.6%	307.2%
37085	Harnett	1.198	0.996	6,377	773	28,907	24,591	4,316	52,522	14,480	38,042	3.7%	6.8%	20.3%	18.4%	33.5%
37087	Haywood	1.604	0.976	8,367	496	11,358	9,679	1,679	20,848	6,047	14,801	2.3%	4.2%	9.7%	23.6%	43.3%
37089	Henderson	1.630	0.972	8,462	915	23,474	19,993	3,481	43,146	12,464	30,682	2.6%	4.7%	12.1%	21.3%	39.1%
37091	Hertford	1.421	0.979	7,432	182	5,090	4,277	813	9,539	2,374	7,165	2.8%	5.2%	6.0%	46.9%	87.9%
37093	Hoke	1.095	0.944	5,524	276	14,394	12,247	2,147	25,850	6,926	18,924	5.2%	9.4%	23.6%	22.1%	39.7%
37095	Hyde	1.411	1.014	7,645	44	1,333	1,106	226	2,689	694	1,995	3.0%	6.1%	14.4%	21.1%	42.5%
37097	Iredell	1.320	0.980	6,907	1,126	36,876	31,989	4,887	61,781	18,702	43,080	3.3%	5.5%	17.0%	19.2%	32.2%
37099	Jackson	1.357	0.978	7,091	288	10,428	8,784	1,644	19,721	5,227	14,494	3.6%	6.8%	9.7%	37.3%	70.6%
37101	Johnston	1.228	1.017	6,671	1,165	44,761	38,149	6,613	80,163	21,873	58,290	3.8%	6.9%	19.9%	19.3%	34.5%
37103	Jones	1.484	0.997	7,903	84	2,510	2,136	373	4,540	1,248	3,292	3.0%	5.4%	5.9%	50.6%	91.5%
37105	Lee	1.329	0.967	6,868	405	15,788	13,401	2,387	28,565	7,526	21,039	3.9%	7.0%	15.7%	24.7%	44.7%
37107	Lenoir	1.430	0.994	7,595	451	14,246	12,042	2,204	26,480	7,050	19,430	3.2%	5.9%	3.3%	95.3%	177.1%
37109	Lincoln	1.361	0.981	7,138	565	16,106	13,783	2,323	29,410	8,932	20,478	2.8%	5.2%	14.5%	19.6%	35.8%
37113	Macon	1.680	1.008	9,042	307	9,008	7,558	1,450	17,202	4,422	12,779	2.9%	5.6%	5.9%	49.3%	94.1%
37115	Madison	1.505	0.983	7,903	168	4,111	3,456	655	7,816	2,038	5,778	2.5%	4.7%	10.7%	22.8%	43.4%
37117	Martin	1.513	1.014	8,195	197	4,729	3,879	850	9,822	2,330	7,492	2.4%	5.0%	1.6%	152.6%	317.0%
37111	McDowell	1.451	0.984	7,630	345	9,422	7,890	1,531	18,078	4,578	13,500	2.7%	5.2%	7.4%	36.9%	70.8%

FIPS	COUNTY	2012 TOTAL HEALTH SPENDING, ALL PAYMENT SOURCES				ESTIMATED INCREASE IN FEDERAL SPENDING DUE TO AFFORDABLE CARE ACT						PERCENTAGE INCREASE IN HEALTH SPENDING DUE TO FEDERAL ACA SPENDING		DEMAND INCREASE DUE TO DEMO-GRAPHIC CHANGES 2012-2019	RATIO: DEMAND INCREASE DUE TO ACA/DEMAND INCREASE DUE TO DEMOGRAPHICS	
						Without Medicaid expansion			With Medicaid expansion							
		Total health spending index	Medicare price adjuster	Total health spending per capita	Total health spending (millions)	Total	Exchange subsidies	Federal Medicaid spending	Total	Exchange subsidies	Federal Medicaid spending	Without Medicaid expansion	With Medicaid expansion		Without Medicaid expansion	With Medicaid expansion
37119	Mecklenburg	1.175	1.007	6,323	6,086	210,327	178,154	32,173	391,214	107,603	283,611	3.5%	6.4%	25.4%	13.6%	25.3%
37121	Mitchell	1.593	0.944	8,036	124	2,917	2,484	434	5,368	1,546	3,822	2.4%	4.3%	2.9%	80.4%	147.9%
37123	Montgomery	1.426	0.958	7,301	204	7,372	6,148	1,225	14,248	3,452	10,796	3.6%	7.0%	6.6%	54.7%	105.7%
37125	Moore	1.636	0.955	8,349	757	16,684	14,256	2,428	30,313	8,912	21,401	2.2%	4.0%	14.1%	15.6%	28.4%
37127	Nash	1.380	1.014	7,480	714	20,559	17,433	3,126	37,910	10,352	27,557	2.9%	5.3%	4.8%	59.4%	109.6%
37129	New Hanover	1.342	1.001	7,176	1,506	42,244	35,786	6,458	77,688	20,757	56,930	2.8%	5.2%	20.9%	13.4%	24.6%
37131	Northampton	1.552	0.983	8,155	176	4,031	3,368	663	7,657	1,817	5,840	2.3%	4.4%	-5.2%	-44.1%	-83.7%
37133	Onslow	1.027	0.992	5,445	1,043	37,314	32,367	4,947	65,339	21,733	43,606	3.6%	6.3%	17.5%	20.4%	35.8%
37135	Orange	1.204	1.138	7,319	1,013	22,432	18,778	3,654	43,235	11,025	32,209	2.2%	4.3%	18.7%	11.9%	22.9%
37137	Pamlico	1.649	0.982	8,654	114	2,495	2,144	351	4,403	1,309	3,094	2.2%	3.9%	8.5%	25.6%	45.2%
37139	Pasquotank	1.310	0.991	6,940	279	8,063	6,885	1,179	14,472	4,081	10,391	2.9%	5.2%	0.7%	404.4%	725.7%
37141	Pender	1.400	0.971	7,262	395	12,901	10,997	1,905	23,353	6,565	16,788	3.3%	5.9%	22.2%	14.7%	26.6%
37143	Perquimans	1.616	1.031	8,903	122	2,678	2,272	406	4,887	1,306	3,581	2.2%	4.0%	17.0%	12.9%	23.6%
37145	Person	1.422	1.074	8,158	319	7,627	6,422	1,205	14,487	3,866	10,621	2.4%	4.5%	7.4%	32.1%	60.9%
37147	Pitt	1.181	1.081	6,820	1,177	35,467	29,000	6,467	74,222	17,214	57,008	3.0%	6.3%	14.0%	21.5%	44.9%
37149	Polk	1.731	0.992	9,177	186	4,242	3,615	627	7,784	2,259	5,525	2.3%	4.2%	9.2%	24.7%	45.3%
37151	Randolph	1.363	0.985	7,173	1,022	35,534	30,051	5,483	66,110	17,775	48,335	3.5%	6.5%	6.6%	52.7%	98.1%
37153	Richmond	1.360	0.930	6,760	312	11,453	9,603	1,850	21,839	5,530	16,309	3.7%	7.0%	3.6%	101.5%	193.5%
37155	Robeson	1.247	0.991	6,604	887	42,999	36,105	6,895	80,598	19,822	60,776	4.8%	9.1%	4.8%	100.3%	188.0%
37157	Rockingham	1.456	0.996	7,746	719	19,158	16,256	2,902	35,448	9,870	25,578	2.7%	4.9%	3.4%	79.4%	146.9%
37159	Rowan	1.365	0.971	7,083	978	32,445	27,559	4,886	59,165	16,093	43,072	3.3%	6.0%	8.5%	39.2%	71.6%
37161	Rutherford	1.476	0.994	7,834	532	14,184	11,818	2,366	27,832	6,976	20,856	2.7%	5.2%	2.6%	102.6%	201.3%
37163	Sampson	1.350	1.006	7,254	465	17,214	14,439	2,775	33,129	8,669	24,460	3.7%	7.1%	8.1%	46.0%	88.4%
37165	Scotland	1.349	0.967	6,968	253	7,684	6,381	1,303	14,996	3,514	11,482	3.0%	5.9%	3.4%	88.0%	171.7%
37167	Stanly	1.406	0.985	7,401	447	11,636	9,947	1,689	21,117	6,230	14,887	2.6%	4.7%	9.0%	28.8%	52.3%
37169	Stokes	1.454	1.021	7,937	373	8,956	7,685	1,271	15,897	4,691	11,205	2.4%	4.3%	2.1%	112.0%	198.8%
37171	Surry	1.440	1.006	7,740	570	18,397	15,542	2,855	34,423	9,258	25,165	3.2%	6.0%	4.1%	77.9%	145.8%
37173	Swain	1.424	0.981	7,459	108	3,730	3,169	561	6,900	1,955	4,944	3.5%	6.4%	11.0%	31.5%	58.4%
37175	Transylvania	1.743	1.006	9,372	309	6,493	5,496	997	12,126	3,340	8,786	2.1%	3.9%	11.1%	18.9%	35.2%
37177	Tyrrell	1.434	1.023	7,838	33	961	793	168	1,967	487	1,481	3.0%	6.1%	3.1%	96.8%	198.2%

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37179	Union	1.206	0.999	6,436	1,338	40,300	35,056	5,244	69,419	23,196	46,224	3.0%	5.2%	24.5%	12.3%	21.2%
37181	Vance	1.363	1.008	7,344	334	11,133	9,385	1,748	20,491	5,082	15,409	3.3%	6.1%	3.8%	88.0%	162.0%
37183	Wake	1.174	0.984	6,174	5,836	167,634	143,824	23,810	295,302	85,418	209,885	2.9%	5.1%	26.0%	11.1%	19.5%
37185	Warren	1.543	0.974	8,030	166	4,666	3,915	751	8,686	2,067	6,620	2.8%	5.2%	4.4%	63.7%	118.7%
37187	Washington	1.537	1.020	8,381	107	2,280	1,878	403	4,693	1,144	3,549	2.1%	4.4%	2.7%	77.9%	160.3%
37189	Watauga	1.227	1.044	6,840	359	11,088	9,003	2,086	22,877	4,491	18,386	3.1%	6.4%	11.3%	27.4%	56.6%
37191	Wayne	1.305	1.019	7,109	888	28,327	23,737	4,589	54,720	14,267	40,454	3.2%	6.2%	8.5%	37.5%	72.5%
37193	Wilkes	1.470	1.005	7,889	550	16,728	13,979	2,749	32,162	7,928	24,234	3.0%	5.8%	7.3%	41.8%	80.4%
37195	Wilson	1.365	0.991	7,225	590	19,869	16,691	3,178	37,507	9,494	28,013	3.4%	6.4%	14.6%	23.0%	43.5%
37197	Yadkin	1.432	0.994	7,608	291	8,928	7,625	1,303	16,045	4,555	11,490	3.1%	5.5%	3.6%	84.8%	152.5%
37199	Yancey	1.586	0.951	8,054	144	3,872	3,276	596	7,240	1,988	5,252	2.7%	5.0%	5.9%	45.6%	85.2%
Notes		[A]	[B]	[C]	[D]	[E]	[F]	[G]	[E]	[F]	[G]	[H]		[I]	[J]	

Update: 8/24/2014

Notes

[A] All figures are weighted averages calculated by authors in [S2].

[B] All figures are calculated by authors using Dartmouth Atlas compilations by county [S7] and state [S8] of Age, Sex and Race-Adjusted Medicare Spending per Enrollee (ASR Medicare Costs) and Price, Age, Sex and Race-Adjusted Medicare Spending per Enrollee (PASR Medicare Costs): Index = [(County ASR Medicare Costs)/(State ASR Medicare Costs)] / [(County PASR Medicare Costs)/(State PASR Medicare Costs)].

[C] Figure for North Carolina estimated from personal health spending per capita in NC in 2009 [P1] inflated to 2012 using the national increase in personal health spending per capita from 2009-2012 [P2]. All county figures are calculated by authors: (Health Spending Per Capita, NC) x (County Health Spending Index)/(NC Health Spending Index). A previous study of nine hospital referral regions (Asheville, Charlotte, Durham, Greensboro, Greenville, Hickory, Raleigh, Wilmington and Winston-Salem found very little difference in per capita medical care utilization/costs once differences in price and health status were taken into account (Table 4.8 in [S1]).

[D] All figures are calculated by authors using population figures reported in [S2] and health spending per capita figures in adjacent column. The figure for North Carolina is a summed total.

[E] All figures are calculated by summing adjacent columns.

[F] All figures are reported in [S3].

[G] All figures are reported in [S4].

[H] All figures are calculated from estimated increase in federal spending due to ACA divided by total health spending.

[I] All figures are reported in [S2].

[J] All figures are calculated by authors by dividing percentage increase in health spending due to federal ACA spending by the demand increase due to demographic changes.

Parameters

[P1]	$6,444	Personal health spending per capita in NC, 2009 [S5]
[P2]	9.0%	Percent increase in personal health spending per capita in US, 2009 to 2012 [S6]
[P3]	3.1%	Percent increase in personal health spending per capita in US, 2011 to 2012 [S6]

Sources

[S1] **Conover, Christopher J. & Mark A. Hall,** Section IV: Health Care Cost Profile of NC, in *Assessment of Potential Impact on Accessibility and Affordability of Health Care (Report to North Carolina Commissioner of Insurance, April 2003)*. Available at: http://ushealthpolicygateway.com/wp-content/uploads/2009/07/cr_4.pdf (accessed July 23, 2014).

[S2] **Conover, Christopher J.** and **Robert Richards**. Table B-1. Estimated Change in Health Expenditures Due to Population Growth and Aging from 2012 to 2020, by County. Duke University, Center for Health Policy and Inequalities Research, last updated July 23, 2014.

[S3] **Conover, Christopher J.** and **Robert Richards**. Table B-2. Estimated Increase in Federal Health Expenditures Due to Federal Exchange Subsidies, by County. Duke University, Center for Health Policy and Inequalities Research, last updated August 7, 2014.

[S4] **Conover, Christopher J.** and **Robert Richards**. Table B-3. Estimated Increase in Federal Health Expenditures Due to Medicaid Expansion, by County. Duke University, Center for Health Policy and Inequalities Research, last updated August 10, 2014.

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[S8] **The Dartmouth Atlas of Health Care**. *Selected Medicare Reimbursement Claims-based: Price, Age, Sex and Race-adjusted, State Level, 2010*. Available at: http://www.dartmouthatlas.org/downloads/tables/pa_reimb_state_2010.xls (accessed July 23, 2014).

Appendix C: Estimated APRN Supply Under Less Restrictive Regulation

The tables in this appendix section give information on the current supply and economic activity of APRNs, as well as the projected increases in APRN supply under less restrictive regulations. Table C-1 gives the total number of APRNs of various types currently practicing in each county in the state, based on the best available data.

Tables C-2 and C-3 give the average compensation received by nurse practitioners and other types of APRNs (respectively), including salary, social security, and other benefits. This data is imputed at the county level using data at the MSA level. Table C-4 gives gross compensation of APRNs by each county based on multiplying these averages by the estimated supply of full-time-equivalent APRNs in each respective category.

The next few tables give information on the activity of APRNs in the state. Table C-5 shows our derivation of the practice expenses of various types of practice expenses of APRNs based on specialty and size of the Metropolitan area. Using these calculations, Table C-6 then gives the estimated practice outlays of APRNs by county.

Table C-7 shows how supply and demand for APRNs in North Carolina may increase under different scenarios. Table C-8 gives information on how these supply increases may impact the overall shortage in the supply of physician-provided medical care that is expected by the year 2020.

Table C-1. Active Advanced Practice RNs by County, 2012

FIPS	COUNTY	NURSE PRACTITIONERS						CERTIFIED NURSE MIDWIVES		CERTIFIED REGISTERED NURSE ANESTHETISTS		CERTIFIED NURSE SPECIALISTS			
		Total active	FTE active	Primary care	Hospital emergency department	All other hospital-based	Long term care	Total active	FTE active	Total active	FTE active	Total active	FTE active	Home care	Non-home care
	North Carolina	4,244	4,006.3	2,700.1	143.3	1,075.4	87.6	258	238	2,035	1,981	951	908.8	60.7	848.2
37001	Alamance	31	26.6	21.0	0.5	4.8	0.0	7	6.5	7	6.3	10	9.0	2.0	7.0
37003	Alexander	5	3.0	2.5	0.0	1.0	0.0	1	0.9	0	0.0	0	0.0	0.0	0.0
37005	Alleghany	6	5.7	5.7	0.0	0.0	0.0	0	0.0	2	1.5	0	0.0	0.0	0.0
37007	Anson	1	0.8	0.8	0.0	0.0	0.0	0	0.0	0	0.0	1	1.0	0.0	1.0
37009	Ashe	15	12.4	10.6	0.0	1.9	0.0	0	0.0	3	3.3	3	2.5	0.5	2.0
37011	Avery	7	7.4	7.3	0.0	0.0	0.0	2	1.8	2	2.0	0	0.0	0.0	0.0
37013	Beaufort	23	25.4	22.6	1.8	0.7	0.0	1	0.9	8	9.0	1	1.0	0.0	1.0
37015	Bertie	3	2.4	2.4	0.0	0.0	0.0	0	0.0	1	1.0	1	1.0	0.0	1.0
37017	Bladen	12	11.4	10.5	0.0	1.0	0.0	0	0.0	2	3.0	1	1.0	0.0	1.0
37019	Brunswick	38	35.5	32.8	0.0	1.7	0.0	0	0.0	11	8.9	2	1.9	0.0	1.9
37021	Buncombe	184	173.1	124.0	2.5	39.9	4.9	13	12.0	117	112.7	47	42.5	6.8	35.7
37023	Burke	32	29.9	23.4	1.9	3.7	0.8	2	1.8	10	11.0	2	1.9	0.0	1.9
37025	Cabarrus	65	63.4	52.9	2.3	8.7	0.0	2	1.8	43	41.4	19	18.3	1.0	17.3
37027	Caldwell	14	12.1	11.0	0.0	1.1	0.0	1	0.9	8	8.2	3	3.0	0.0	3.0
37029	Camden	0	0.0	0.0	0.0	0.0	0.0	0	0.0	0	0.0	0	0.0	0.0	0.0
37031	Carteret	36	35.3	30.1	2.7	2.3	0.0	0	0.0	14	13.3	4	4.1	0.0	4.1
37033	Caswell	8	6.2	6.2	0.0	0.0	0.0	0	0.0	0	0.0	0	0.0	0.0	0.0
37035	Catawba	100	86.4	58.4	5.6	18.3	3.9	11	10.1	85	82.5	12	12.4	3.3	9.2
37037	Chatham	15	11.2	7.7	0.0	3.2	0.0	2	1.8	0	0.0	0	0.0	0.0	0.0
37039	Cherokee	8	7.0	6.0	1.0	0.0	0.0	0	0.0	1	1.0	2	1.4	0.0	1.4
37041	Chowan	11	9.2	9.3	0.0	0.5	0.0	0	0.0	5	4.4	1	1.0	0.0	1.0
37043	Clay	6	5.6	5.6	0.0	0.0	0.0	0	0.0	2	2.4	0	0.0	0.0	0.0
37045	Cleveland	41	38.2	34.6	2.6	1.0	0.0	2	1.8	18	16.5	2	1.9	1.0	0.9
37047	Columbus	15	15.9	15.6	0.0	1.0	0.0	0	0.0	8	7.8	1	0.8	0.0	0.8
37049	Craven	44	42.4	29.7	3.6	7.0	2.0	3	2.8	27	25.8	8	8.0	0.0	8.0
37051	Cumberland	115	111.8	66.1	1.5	42.9	0.8	19	17.5	62	64.7	12	10.8	0.0	10.8
37053	Currituck	0	0.0	0.0	0.0	0.0	0.0	0	0.0	0	0.0	0	0.0	0.0	0.0
37055	Dare	13	11.8	11.9	0.0	0.0	0.0	0	0.0	4	3.6	1	1.3	0.0	1.3

FIPS	COUNTY	NURSE PRACTITIONERS						CERTIFIED NURSE MIDWIVES		CERTIFIED REGISTERED NURSE ANESTHETISTS		CERTIFIED NURSE SPECIALISTS			
		Total active	FTE active	Primary care	Hospital emergency department	All other hospital-based	Long term care	Total active	FTE active	Total active	FTE active	Total active	FTE active	Home care	Non-home care
37057	Davidson	30	26.4	19.2	1.8	5.5	0.0	1	0.9	9	9.5	2	2.0	0.0	2.0
37059	Davie	15	13.7	13.6	0.0	0.0	0.0	0	0.0	1	1.3	1	1.0	0.0	1.0
37061	Duplin	19	18.9	15.0	0.0	3.9	0.0	0	0.0	3	3.5	2	1.5	0.0	1.5
37063	Durham	392	366.4	114.4	6.1	237.2	8.2	12	11.1	171	166.3	117	116.1	5.6	110.5
37065	Edgecombe	12	10.3	6.2	4.0	0.0	0.0	0	0.0	2	2.0	0	0.0	0.0	0.0
37067	Forsyth	264	245.6	124.0	7.2	106.1	9.1	5	4.6	157	151.4	86	81.7	6.1	75.6
37069	Franklin	7	6.4	2.4	0.0	4.0	0.0	0	0.0	0	0.0	1	0.9	0.0	0.9
37071	Gaston	63	63.0	51.1	1.8	9.9	0.0	14	12.9	30	26.6	22	22.5	0.0	22.5
37073	Gates	2	1.8	1.8	0.0	0.0	0.0	0	0.0	0	0.0	0	0.0	0.0	0.0
37075	Graham	3	2.8	2.8	0.0	0.0	0.0	0	0.0	0	0.0	0	0.0	0.0	0.0
37077	Granville	15	13.1	10.1	0.0	3.0	0.0	2	1.8	6	6.3	4	3.4	0.0	3.4
37079	Greene	8	7.1	6.8	0.0	1.0	0.0	0	0.0	0	0.0	1	1.0	0.0	1.0
37081	Guilford	231	223.7	160.4	7.2	32.6	24.2	17	15.7	153	142.9	73	68.7	4.3	64.5
37083	Halifax	13	13.5	10.0	3.5	0.0	0.0	0	0.0	6	6.2	0	0.0	0.0	0.0
37085	Harnett	15	14.3	13.4	0.0	1.0	0.0	1	0.9	3	2.8	2	2.0	0.0	2.0
37087	Haywood	19	18.1	14.6	0.0	3.1	0.8	1	0.9	0	0.0	1	0.6	0.0	0.6
37089	Henderson	42	37.7	27.5	0.7	8.4	1.5	4	3.7	11	11.1	9	7.7	0.8	6.9
37091	Hertford	11	11.0	11.0	0.0	0.0	0.0	1	0.9	4	4.0	0	0.0	0.0	0.0
37093	Hoke	2	2.0	1.0	0.0	1.0	0.0	0	0.0	0	0.0	2	2.0	0.0	2.0
37095	Hyde	5	4.3	3.4	0.9	0.0	0.0	1	0.9	0	0.0	0	0.0	0.0	0.0
37097	Iredell	65	59.6	51.4	0.9	4.8	1.7	5	4.6	38	38.8	7	6.4	0.8	5.6
37099	Jackson	19	16.0	11.0	0.3	3.7	1.2	5	4.6	11	9.5	3	3.0	0.0	3.0
37101	Johnston	24	23.0	19.9	1.9	1.0	0.0	1	0.9	9	9.4	2	2.3	0.0	2.3
37103	Jones	3	2.8	2.8	0.0	0.0	0.0	0	0.0	0	0.0	0	0.0	0.0	0.0
37105	Lee	13	11.3	10.4	0.0	1.0	0.0	4	3.7	0	0.0	4	3.1	0.0	3.1
37107	Lenoir	9	8.5	8.5	0.0	0.0	0.0	1	0.9	5	5.0	3	2.8	0.6	2.1
37109	Lincoln	17	14.6	12.8	0.0	1.0	0.8	0	0.0	6	5.6	1	0.2	0.0	0.2
37113	Macon	8	8.4	5.7	0.9	1.7	0.0	1	0.0	5	4.7	1	1.0	0.0	0.0
37115	Madison	10	6.3	5.8	0.0	0.0	0.0	0	0.0	0	0.0	0	0.0	1.0	0.0
37117	Martin	7	2.8	2.8	0.0	0.0	0.0	0	0.9	1	1.0	0	0.0	0.0	0.0
37111	McDowell	3	7.3	7.3	0.0	0.0	0.0	1	0.9	1	0.5	0	0.0	0.0	0.0

FIPS	COUNTY	NURSE PRACTITIONERS						CERTIFIED NURSE MIDWIVES		CERTIFIED REGISTERED NURSE ANESTHETISTS		CERTIFIED NURSE SPECIALISTS			
		Total active	FTE active	Primary care	Hospital emergency department	All other hospital-based	Long term care	Total active	FTE active	Total active	FTE active	Total active	FTE active	Home care	Non-home care
37119	Mecklenburg	493	443.1	278.7	17.3	143.8	3.8	19	17.5	323	307.7	113	107.7	6.9	100.8
37121	Mitchell	6	5.6	4.5	0.0	1.0	0.0	2	1.8	3	3.0	0	0.0	0.0	0.0
37123	Montgomery	0	0.0	0.0	0.0	0.0	0.0	0	0.0	0	0.0	1	1.0	1.0	0.0
37125	Moore	42	41.1	31.8	0.9	8.0	0.9	0	0.0	40	39.8	9	8.1	0.0	8.1
37127	Nash	22	21.3	14.8	0.9	3.9	1.7	0	0.0	22	21.5	2	2.0	0.0	2.0
37129	New Hanover	134	130.0	101.5	0.9	26.7	1.5	7	6.5	73	69.8	21	20.4	2.5	17.9
37131	Northampton	2	2.3	1.0	1.4	0.0	0.0	0	0.0	0	0.0	0	0.0	0.0	0.0
37133	Onslow	54	53.1	33.9	10.5	6.8	0.8	10	9.2	18	18.5	6	5.6	0.5	5.1
37135	Orange	204	202.9	90.1	11.7	96.8	3.5	20	18.5	56	55.1	58	56.0	0.0	56.0
37137	Pamlico	5	4.6	4.2	0.0	0.0	0.0	0	0.0	0	0.0	1	0.8	0.8	0.0
37139	Pasquotank	13	13.0	12.0	0.0	1.0	0.0	3	2.8	3	3.1	3	2.7	0.0	2.7
37141	Pender	13	11.9	11.7	0.9	0.0	0.0	1	0.9	0	0.0	1	1.0	0.0	1.0
37143	Perquimans	0	0.0	0.0	0.0	0.0	0.0	0	0.0	0	0.0	0	0.0	0.0	0.0
37145	Person	16	14.7	9.7	4.1	0.9	0.0	0	0.0	1	1.5	0	0.0	0.0	0.0
37147	Pitt	152	155.3	72.9	4.5	78.1	0.0	19	17.5	68	67.9	69	69.3	0.0	69.3
37149	Polk	7	8.1	6.3	0.0	1.8	0.0	0	0.0	4	4.0	1	1.5	0.0	1.5
37151	Randolph	28	27.4	23.5	0.9	3.0	0.0	1	0.9	6	5.6	7	6.5	1.0	5.5
37153	Richmond	13	12.9	12.1	0.0	0.0	0.8	0	0.0	1	1.0	3	3.3	0.0	3.3
37155	Robeson	48	45.1	34.4	5.5	6.0	0.0	6	5.5	14	16.3	7	7.0	0.0	7.0
37157	Rockingham	20	18.9	18.0	0.0	0.9	0.0	1	0.9	9	7.2	2	2.0	0.0	2.0
37159	Rowan	35	36.4	22.0	0.9	9.3	4.7	1	0.9	19	21.0	9	9.2	0.0	9.2
37161	Rutherford	23	21.9	21.2	0.9	0.0	0.0	1	0.9	6	6.8	2	2.1	1.1	1.0
37163	Sampson	10	9.7	8.8	0.0	0.9	0.0	0	0.0	4	4.5	1	1.0	1.0	0.0
37165	Scotland	14	12.6	11.1	0.0	1.6	0.0	1	0.9	7	7.4	0	0.0	0.0	0.0
37167	Stanly	16	15.1	12.7	0.0	2.0	0.0	1	0.9	7	7.6	4	3.9	1.0	2.9
37169	Stokes	16	11.8	8.5	2.1	0.6	0.6	1	0.9	1	0.8	0	0.0	0.0	0.0
37171	Surry	43	44.2	37.9	2.9	3.0	0.0	0	0.0	10	9.6	4	4.1	0.0	4.1
37173	Swain	4	3.7	1.8	0.9	1.0	0.0	0	0.0	0	0.0	0	0.0	0.0	0.0
37175	Transylvania	11	9.9	9.0	0.0	0.0	0.8	0	0.0	4	3.4	0	0.0	0.0	0.0
37177	Tyrrell	1	0.6	0.6	0.0	0.0	0.0	0	0.0	0	0.0	0	0.0	0.0	0.0
37179	Union	38	36.1	25.7	1.8	6.7	1.7	1	0.9	18	18.8	9	9.0	1.0	8.0

FIPS	COUNTY	NURSE PRACTITIONERS						CERTIFIED NURSE MIDWIVES		CERTIFIED REGISTERED NURSE ANESTHETISTS		CERTIFIED NURSE SPECIALISTS			
		Total active	FTE active	Primary care	Hospital emergency department	All other hospital-based	Long term care	Total active	FTE active	Total active	FTE active	Total active	FTE active	Home care	Non-home care
37181	Vance	12	9.8	8.6	0.0	1.2	0.0	3	2.8	1	1.0	2	2.0	0.0	2.0
37183	Wake	436	417.5	313.6	9.1	89.3	5.3	13	12.0	208	202.0	121	110.6	9.2	101.4
37185	Warren	2	1.8	1.8	0.0	0.0	0.0	0	0.0	0	0.0	0	0.0	0.0	0.0
37187	Washington	1	0.1	0.1	0.0	0.0	0.0	1	0.9	0	0.0	0	0.0	0.0	0.0
37189	Watauga	25	23.9	22.8	0.0	1.0	0.0	3	2.8	6	6.8	5	5.1	1.0	4.1
37191	Wayne	36	41.5	34.8	0.0	6.5	0.0	0	0.0	18	18.2	8	7.8	0.0	7.8
37193	Wilkes	17	14.2	12.4	0.0	1.0	0.8	0	0.0	8	8.0	3	3.0	0.0	3.0
37195	Wilson	21	20.1	19.3	0.0	0.0	0.8	0	0.0	4	4.5	2	2.0	0.0	2.0
37197	Yadkin	7	5.5	4.6	0.9	0.0	0.0	0	0.0	1	1.0	0	0.0	0.0	0.0
37199	Yancey	10	8.2	5.8	0.9	2.0	0.0	0	0.0	0	0.0	0	0.0	0.0	0.0
Notes		[A]		[B]	[C]	[D]	[E]	[A]	[F]		[G]	[F]	[H]	[I]	[J]

Update: 8/12/2014

Note: Unless otherwise shown, all figures calculated by authors using Zip code level data obtained by special request through the North Carolina Health Professions Data System (HPDS). All practitioners are assigned to a county using business address county (or Zip code where county missing).

Notes

[A] Figures include those who are licensed and active within the profession as well as those with unknown activity status; inactives are excluded. All figures are reported in [S1].

[B] Includes all active practitioners in practice setting 06-Group Medical Practice/Physician Office Practice; 07-Group Nursing Practice; 08-HMO or insurance company; 09-home health care; 10-Public/Community health; 11-Mental Health; 12-School Health; 13-Nursing School; 14-Medical School; 15-Self Employed as Nurse Practitioner; 16-Industry/Occupational setting; 17-Retail clinic; 18-Other.

[C] Includes all active practitioners in practice setting 03-Hospital Emergency (ED).

[D] Includes all active practitioners in practice setting 01-Hospital Inpatient (IP); 02-Hospital Out-patient (OP); and 04-Hospital-other than IP, ED, OP.

[E] Includes all active practitioners in practice setting 05-Long Term Care.

[F] Figures are tabulations by authors using business address county (or Zip code where county missing) to determine location of active practitioners.

[G] All figures calculated by authors using 40 hours to define full-time nurse anethetists (this was the modal response to the hours of work question in the HPDS survey of RNs).

[H] All figures calculated by authors using 40 hours to define full-time nursing specialists (this was the modal response to the hours of work question in the HPDS survey of RNs).

[I] Includes all active practitioners in practice setting 05-Home care/hospice.

[J] Includes all active practitioners except those in practice setting 05-Home care/hospice.

Sources

[S1] **University of North Carolina at Chapel Hill, Cecil G. Sheps Center for Health Services Research**. *North Carolina Health Professions Data System, 2012 Nursing Professions*. Available at: http://www.shepscenter.unc.edu/hp/2012/2012_nurses_totals_county.xls (accessed July 7, 2014).

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Table C-2. Nurse Practitioner Compensation by County, July 2014

FIPS	COUNTY	MSA/REGION	PRIMARY CARE			HOSPITAL EMERGENCY DEPARTMENT			ALL OTHER HOSPITAL-BASED			LONG TERM CARE		
			Salary plus bonus	Social Security	All other benefits	Salary plus bonus	Social Security	All other benefits	Salary plus bonus	Social Security	All other benefits	Salary plus bonus	Social Security	All other benefits
37001	Alamance	Burlington	93,421	7,147	28,179	97,131	7,431	29,036	97,166	7,433	29,044	73,114	5,593	23,486
37003	Alexander	Hickory	87,690	6,708	26,856	91,172	6,975	27,659	91,205	6,977	27,667	68,628	5,250	22,451
37005	Alleghany	Marion	87,324	6,680	26,771	90,792	6,946	27,571	90,824	6,948	27,579	68,342	5,228	22,384
37007	Anson	Charlotte	96,109	7,352	28,800	99,925	7,644	29,682	99,961	7,647	29,690	75,217	5,754	23,972
37009	Ashe	Marion	87,324	6,680	26,771	90,792	6,946	27,571	90,824	6,948	27,579	68,342	5,228	22,384
37011	Avery	Marion	87,324	6,680	26,771	90,792	6,946	27,571	90,824	6,948	27,579	68,342	5,228	22,384
37013	Beaufort	Greenville	83,154	6,361	25,806	86,455	6,614	26,570	86,487	6,616	26,576	65,078	4,978	21,630
37015	Bertie	Clinton	86,255	6,599	26,523	89,680	6,861	27,314	89,712	6,863	27,322	67,505	5,164	22,191
37017	Bladen	Clinton	86,255	6,599	26,523	89,680	6,861	27,314	89,712	6,863	27,322	67,505	5,164	22,191
37019	Brunswick	Clinton	86,255	6,599	26,523	89,680	6,861	27,314	89,712	6,863	27,322	67,505	5,164	22,191
37021	Buncombe	Asheville	87,035	6,658	26,704	90,491	6,923	27,502	90,524	6,925	27,509	68,116	5,211	22,331
37023	Burke	Hickory	87,690	6,708	26,856	91,172	6,975	27,659	91,205	6,977	27,667	68,628	5,250	22,451
37025	Cabarrus	Charlotte	96,109	7,352	28,800	99,925	7,644	29,682	99,961	7,647	29,690	75,217	5,754	23,972
37027	Caldwell	Hickory	87,690	6,708	26,856	91,172	6,975	27,659	91,205	6,977	27,667	68,628	5,250	22,451
37029	Camden	Clinton	86,255	6,599	26,523	89,680	6,861	27,314	89,712	6,863	27,322	67,505	5,164	22,191
37031	Carteret	New Bern	83,038	6,352	25,780	86,335	6,605	26,542	86,366	6,607	26,549	64,987	4,972	21,609
37033	Caswell	Oxford	87,806	6,717	26,882	91,292	6,984	27,687	91,325	6,986	27,695	68,719	5,257	22,471
37035	Catawba	Hickory	87,690	6,708	26,856	91,172	6,975	27,659	91,205	6,977	27,667	68,628	5,250	22,451
37037	Chatham	Durham	95,935	7,339	28,761	99,745	7,630	29,640	99,781	7,633	29,648	75,081	5,744	23,941
37039	Cherokee	Marion	87,324	6,680	26,771	90,792	6,946	27,571	90,824	6,948	27,579	68,342	5,228	22,384
37041	Chowan	Clinton	86,255	6,599	26,523	89,680	6,861	27,314	89,712	6,863	27,322	67,505	5,164	22,191
37043	Clay	Marion	87,324	6,680	26,771	90,792	6,946	27,571	90,824	6,948	27,579	68,342	5,228	22,384
37045	Cleveland	Charlotte	96,109	7,352	28,800	99,925	7,644	29,682	99,961	7,647	29,690	75,217	5,754	23,972
37047	Columbus	Clinton	86,255	6,599	26,523	89,680	6,861	27,314	89,712	6,863	27,322	67,505	5,164	22,191
37049	Craven	New Bern	83,038	6,352	25,780	86,335	6,605	26,542	86,366	6,607	26,549	64,987	4,972	21,609
37051	Cumberland	Fayetteville	88,028	6,734	26,932	91,523	7,001	27,741	91,556	7,004	27,748	68,892	5,270	22,512
37053	Currituck	Clinton	86,255	6,599	26,523	89,680	6,861	27,314	89,712	6,863	27,322	67,505	5,164	22,191
37055	Dare	Clinton	86,255	6,599	26,523	89,680	6,861	27,314	89,712	6,863	27,322	67,505	5,164	22,191
37057	Davidson	Oxford	87,806	6,717	26,882	91,292	6,984	27,687	91,325	6,986	27,695	68,719	5,257	22,471
37059	Davie	Winston-Salem	93,421	7,147	28,179	97,131	7,431	29,036	97,166	7,433	29,044	73,114	5,593	23,486
37061	Duplin	Clinton	86,255	6,599	26,523	89,680	6,861	27,314	89,712	6,863	27,322	67,505	5,164	22,191

FIPS	COUNTY	MSA/REGION	PRIMARY CARE			HOSPITAL EMERGENCY DEPARTMENT			ALL OTHER HOSPITAL-BASED			LONG TERM CARE		
			Salary plus bonus	Social Security	All other benefits	Salary plus bonus	Social Security	All other benefits	Salary plus bonus	Social Security	All other benefits	Salary plus bonus	Social Security	All other benefits
37063	Durham	Durham	95,935	7,339	28,761	99,745	7,630	29,640	99,781	7,633	29,648	75,081	5,744	23,941
37065	Edgecombe	Rocky Mount	89,434	6,842	27,257	92,985	7,113	28,078	93,018	7,116	28,086	69,993	5,354	22,766
37067	Forsyth	Winston-Salem	93,421	7,147	28,179	97,131	7,431	29,036	97,166	7,433	29,044	73,114	5,593	23,486
37069	Franklin	Raleigh	95,935	7,339	28,761	99,745	7,630	29,640	99,781	7,633	29,648	75,081	5,744	23,941
37071	Gaston	Charlotte	96,109	7,352	28,800	99,925	7,644	29,682	99,961	7,647	29,690	75,217	5,754	23,972
37073	Gates	Clinton	86,255	6,599	26,523	89,680	6,861	27,314	89,712	6,863	27,322	67,505	5,164	22,191
37075	Graham	Marion	87,324	6,680	26,771	90,792	6,946	27,571	90,824	6,948	27,579	68,342	5,228	22,384
37077	Granville	Oxford	87,806	6,717	26,882	91,292	6,984	27,687	91,325	6,986	27,695	68,719	5,257	22,471
37079	Greene	Clinton	86,255	6,599	26,523	89,680	6,861	27,314	89,712	6,863	27,322	67,505	5,164	22,191
37081	Guilford	Greensboro	93,421	7,147	28,179	97,131	7,431	29,036	97,166	7,433	29,044	73,114	5,593	23,486
37083	Halifax	Rocky Mount	89,434	6,842	27,257	92,985	7,113	28,078	93,018	7,116	28,086	69,993	5,354	22,766
37085	Harnett	Oxford	87,806	6,717	26,882	91,292	6,984	27,687	91,325	6,986	27,695	68,719	5,257	22,471
37087	Haywood	Asheville	87,035	6,658	26,704	90,491	6,923	27,502	90,524	6,925	27,509	68,116	5,211	22,331
37089	Henderson	Asheville	87,035	6,658	26,704	90,491	6,923	27,502	90,524	6,925	27,509	68,116	5,211	22,331
37091	Hertford	Clinton	86,255	6,599	26,523	89,680	6,861	27,314	89,712	6,863	27,322	67,505	5,164	22,191
37093	Hoke	Fayetteville	88,028	6,734	26,932	91,523	7,001	27,741	91,556	7,004	27,748	68,892	5,270	22,512
37095	Hyde	Clinton	86,255	6,599	26,523	89,680	6,861	27,314	89,712	6,863	27,322	67,505	5,164	22,191
37097	Iredell	Charlotte	96,109	7,352	28,800	99,925	7,644	29,682	99,961	7,647	29,690	75,217	5,754	23,972
37099	Jackson	Marion	87,324	6,680	26,771	90,792	6,946	27,571	90,824	6,948	27,579	68,342	5,228	22,384
37101	Johnston	Raleigh	95,935	7,339	28,761	99,745	7,630	29,640	99,781	7,633	29,648	75,081	5,744	23,941
37103	Jones	New Bern	83,038	6,352	25,780	86,335	6,605	26,542	86,366	6,607	26,549	64,987	4,972	21,609
37105	Lee	Oxford	87,806	6,717	26,882	91,292	6,984	27,687	91,325	6,986	27,695	68,719	5,257	22,471
37107	Lenoir	Clinton	86,255	6,599	26,523	89,680	6,861	27,314	89,712	6,863	27,322	67,505	5,164	22,191
37109	Lincoln	Charlotte	96,109	7,352	28,800	99,925	7,644	29,682	99,961	7,647	29,690	75,217	5,754	23,972
37113	Macon	Marion	87,324	6,680	26,771	90,792	6,946	27,571	90,824	6,948	27,579	68,342	5,228	22,384
37115	Madison	Asheville	87,035	6,658	26,704	90,491	6,923	27,502	90,524	6,925	27,509	68,116	5,211	22,331
37117	Martin	Clinton	86,255	6,599	26,523	89,680	6,861	27,314	89,712	6,863	27,322	67,505	5,164	22,191
37111	McDowell	Marion	87,324	6,680	26,771	90,792	6,946	27,571	90,824	6,948	27,579	68,342	5,228	22,384
37119	Mecklenburg	Charlotte	96,109	7,352	28,800	99,925	7,644	29,682	99,961	7,647	29,690	75,217	5,754	23,972
37121	Mitchell	Marion	87,324	6,680	26,771	90,792	6,946	27,571	90,824	6,948	27,579	68,342	5,228	22,384
37123	Montgomery	Oxford	87,806	6,717	26,882	91,292	6,984	27,687	91,325	6,986	27,695	68,719	5,257	22,471
37125	Moore	Oxford	87,806	6,717	26,882	91,292	6,984	27,687	91,325	6,986	27,695	68,719	5,257	22,471

FIPS	COUNTY	MSA/REGION	PRIMARY CARE			HOSPITAL EMERGENCY DEPARTMENT			ALL OTHER HOSPITAL-BASED			LONG TERM CARE		
			Salary plus bonus	Social Security	All other benefits	Salary plus bonus	Social Security	All other benefits	Salary plus bonus	Social Security	All other benefits	Salary plus bonus	Social Security	All other benefits
37127	Nash	Rocky Mount	89,434	6,842	27,257	92,985	7,113	28,078	93,018	7,116	28,086	69,993	5,354	22,766
37129	New Hanover	Wilmington	82,489	6,310	25,653	85,764	6,561	26,410	85,795	6,563	26,418	64,558	4,939	21,509
37131	Northampton	Rocky Mount	89,434	6,842	27,257	92,985	7,113	28,078	93,018	7,116	28,086	69,993	5,354	22,766
37133	Onslow	Jacksonville	84,088	6,433	26,022	87,427	6,688	26,794	87,458	6,691	26,801	65,809	5,034	21,799
37135	Orange	Durham	95,935	7,339	28,761	99,745	7,630	29,640	99,781	7,633	29,648	75,081	5,744	23,941
37137	Pamlico	New Bern	83,038	6,352	25,780	86,335	6,605	26,542	86,366	6,607	26,549	64,987	4,972	21,609
37139	Pasquotank	Clinton	86,255	6,599	26,523	89,680	6,861	27,314	89,712	6,863	27,322	67,505	5,164	22,191
37141	Pender	Wilmington	82,489	6,310	25,653	85,764	6,561	26,410	85,795	6,563	26,418	64,558	4,939	21,509
37143	Perquimans	Clinton	86,255	6,599	26,523	89,680	6,861	27,314	89,712	6,863	27,322	67,505	5,164	22,191
37145	Person	Durham	95,935	7,339	28,761	99,745	7,630	29,640	99,781	7,633	29,648	75,081	5,744	23,941
37147	Pitt	Greenville	83,154	6,361	25,806	86,455	6,614	26,570	86,487	6,616	26,576	65,078	4,978	21,630
37149	Polk	Marion	87,324	6,680	26,771	90,792	6,946	27,571	90,824	6,948	27,579	68,342	5,228	22,384
37151	Randolph	Greensboro	93,421	7,147	28,179	97,131	7,431	29,036	97,166	7,433	29,044	73,114	5,593	23,486
37153	Richmond	Oxford	87,806	6,717	26,882	91,292	6,984	27,687	91,325	6,986	27,695	68,719	5,257	22,471
37155	Robeson	Fayetteville	88,028	6,734	26,932	91,523	7,001	27,741	91,556	7,004	27,748	68,892	5,270	22,512
37157	Rockingham	Greensboro	93,421	7,147	28,179	97,131	7,431	29,036	97,166	7,433	29,044	73,114	5,593	23,486
37159	Rowan	Charlotte	96,109	7,352	28,800	99,925	7,644	29,682	99,961	7,647	29,690	75,217	5,754	23,972
37161	Rutherford	Marion	87,324	6,680	26,771	90,792	6,946	27,571	90,824	6,948	27,579	68,342	5,228	22,384
37163	Sampson	Clinton	86,255	6,599	26,523	89,680	6,861	27,314	89,712	6,863	27,322	67,505	5,164	22,191
37165	Scotland	Fayetteville	88,028	6,734	26,932	91,523	7,001	27,741	91,556	7,004	27,748	68,892	5,270	22,512
37167	Stanly	Charlotte	96,109	7,352	28,800	99,925	7,644	29,682	99,961	7,647	29,690	75,217	5,754	23,972
37169	Stokes	Winston-Salem	93,421	7,147	28,179	97,131	7,431	29,036	97,166	7,433	29,044	73,114	5,593	23,486
37171	Surry	Marion	87,324	6,680	26,771	90,792	6,946	27,571	90,824	6,948	27,579	68,342	5,228	22,384
37173	Swain	Marion	87,324	6,680	26,771	90,792	6,946	27,571	90,824	6,948	27,579	68,342	5,228	22,384
37175	Transylvania	Asheville	87,035	6,658	26,704	90,491	6,923	27,502	90,524	6,925	27,509	68,116	5,211	22,331
37177	Tyrrell	Clinton	86,255	6,599	26,523	89,680	6,861	27,314	89,712	6,863	27,322	67,505	5,164	22,191
37179	Union	Charlotte	96,109	7,352	28,800	99,925	7,644	29,682	99,961	7,647	29,690	75,217	5,754	23,972
37181	Vance	Oxford	87,806	6,717	26,882	91,292	6,984	27,687	91,325	6,986	27,695	68,719	5,257	22,471
37183	Wake	Raleigh	95,935	7,339	28,761	99,745	7,630	29,640	99,781	7,633	29,648	75,081	5,744	23,941
37185	Warren	Oxford	87,806	6,717	26,882	91,292	6,984	27,687	91,325	6,986	27,695	68,719	5,257	22,471
37187	Washington	Clinton	86,255	6,599	26,523	89,680	6,861	27,314	89,712	6,863	27,322	67,505	5,164	22,191
37189	Watauga	Marion	87,324	6,680	26,771	90,792	6,946	27,571	90,824	6,948	27,579	68,342	5,228	22,384

FIPS	COUNTY	MSA/REGION	PRIMARY CARE			HOSPITAL EMERGENCY DEPARTMENT			ALL OTHER HOSPITAL-BASED			LONG TERM CARE		
			Salary plus bonus	Social Security	All other benefits	Salary plus bonus	Social Security	All other benefits	Salary plus bonus	Social Security	All other benefits	Salary plus bonus	Social Security	All other benefits
37191	Wayne	Goldsboro	84,907	6,495	26,212	88,278	6,753	26,991	88,310	6,756	26,997	66,450	5,083	21,947
37193	Wilkes	Marion	87,324	6,680	26,771	90,792	6,946	27,571	90,824	6,948	27,579	68,342	5,228	22,384
37195	Wilson	Rocky Mount	89,434	6,842	27,257	92,985	7,113	28,078	93,018	7,116	28,086	69,993	5,354	22,766
37197	Yadkin	Winston-Salem	93,421	7,147	28,179	97,131	7,431	29,036	97,166	7,433	29,044	73,114	5,593	23,486
37199	Yancey	Marion	87,324	6,680	26,771	90,792	6,946	27,571	90,824	6,948	27,579	68,342	5,228	22,384
Notes		[A]	[B]			[C]			[D]			[E]		

Update: 12/18/2014

Note that Social Security includes employee share of payroll taxes for Social Security (6.2 percent of the first $117,000 of a worker's annual pay) and Medicare (1.45 percent of all wages with no upper limit) [S3].

Notes

[A] Salary data from Clinton, NC were used to impute values for non-MSA counties in Eastern region; Oxford, NC was used for non-MSA counties in Piedmont region; Marion, NC was used for non-MSA counties in Piedmont region;

[B] All figures are compensation estimates obtained from [S2] and compiled at [S1] for the job title Nurse Practitioner.

[C] All figures are compensation estimates obtained from [S2] and compiled at [S1] for the job title Nurse Practitioner - Emergency Room.

[D] All figures are compensation estimates obtained from [S2] and compiled at [S1] for the job title Nurse Practitioner - Specialty Care.

[E] All figures are compensation estimates obtained from [S2] and compiled at [S1] for the job title Nurse Practitioner - Nursing Home.

Sources

[S1] **Conover, Christopher J.** and **Robert Richards**. Table C-2a. Average APRN Compensation, by Metropolitan Statistical Area and Selected Non-MSA Regions, July 2014. Duke University, Center for Health Policy and Inequalities Research, last updated July 22, 2014.

[S2] **Salary.com.** *Salary Wizard*. Available at: http://swz.salary.com/salarywizard/Nurse-Practitioner-Salary-Details-Asheville-NC.aspx?&hdcbxbonuse=on&isshowpiechart=false&isshowjobchart=false&isshowsalarydetailcharts=true&isshownextsteps=true&isshowcompanyfct=true&isshowaboutyou=true (accessed July 23, 2014).

[S3] **Salary.com.** *Compensation Glossary*. Available at: http://bayarea.salary.com/docs/salwizhtmls/swze_wizardhelp.asp#Glossary (accessed December 18, 2014).

Table C-3. Certified Nurse Midwives, Certified Registered Nurse Anesthetist and Certified Nurse Specialist Compensation by County, July 2014

FIPS	COUNTY	MSA/REGION	CERTIFIED NURSE MIDWIVES			CERTIFIED REGISTERED NURSE ANESTHETISTS			CERTIFIED NURSE SPECIALISTS--HOME CARE			CERTIFIED NURSE SPECIALISTS--ALL OTHER		
			Salary plus bonus	Social Security	All other benefits	Salary plus bonus	Social Security	All other benefits	Salary plus bonus	Social Security	All other benefits	Salary plus bonus	Social Security	All other benefits
37001	Alamance	Burlington	91,813	7,024	27,807	158,938	9,354	43,319	65,415	5,004	21,708	92,814	7,100	28,039
37003	Alexander	Hickory	86,180	6,593	26,506	149,188	9,213	41,065	61,402	4,697	20,781	87,120	6,665	26,723
37005	Alleghany	Marion	85,821	6,565	26,423	148,565	9,204	40,921	61,146	4,678	20,721	86,757	6,637	26,639
37007	Anson	Charlotte	94,454	7,226	28,417	163,510	9,420	44,375	67,297	5,148	22,143	95,484	7,305	28,655
37009	Ashe	Marion	85,821	6,565	26,423	148,565	9,204	40,921	61,146	4,678	20,721	86,757	6,637	26,639
37011	Avery	Marion	85,821	6,565	26,423	148,565	9,204	40,921	61,146	4,678	20,721	86,757	6,637	26,639
37013	Beaufort	Greenville	81,722	6,252	25,475	141,469	9,101	39,282	58,226	4,454	20,046	82,613	6,320	25,682
37015	Bertie	Clinton	84,770	6,485	26,180	146,746	9,177	40,502	60,397	4,620	20,549	85,695	6,556	26,393
37017	Bladen	Clinton	84,770	6,485	26,180	146,746	9,177	40,502	60,397	4,620	20,549	85,695	6,556	26,393
37019	Brunswick	Clinton	84,770	6,485	26,180	146,746	9,177	40,502	60,397	4,620	20,549	85,695	6,556	26,393
37021	Buncombe	Asheville	85,537	6,544	26,356	148,073	9,196	40,809	60,944	4,662	20,674	86,470	6,615	26,572
37023	Burke	Hickory	86,180	6,593	26,506	149,188	9,213	41,065	61,402	4,697	20,781	87,120	6,665	26,723
37025	Cabarrus	Charlotte	94,454	7,226	28,417	163,510	9,420	44,375	67,297	5,148	22,143	95,484	7,305	28,655
37027	Caldwell	Hickory	86,180	6,593	26,506	149,188	9,213	41,065	61,402	4,697	20,781	87,120	6,665	26,723
37029	Camden	Clinton	84,770	6,485	26,180	146,746	9,177	40,502	60,397	4,620	20,549	85,695	6,556	26,393
37031	Carteret	New Bern	81,608	6,243	25,450	141,273	9,098	39,236	58,145	4,448	20,027	82,498	6,311	25,656
37033	Caswell	Oxford	86,294	6,601	26,533	149,384	9,215	41,112	61,483	4,703	20,800	87,235	6,673	26,750
37035	Catawba	Hickory	86,180	6,593	26,506	149,188	9,213	41,065	61,402	4,697	20,781	87,120	6,665	26,723
37037	Chatham	Durham	94,284	7,213	28,378	163,215	9,416	44,307	67,176	5,139	22,114	95,312	7,291	28,616
37039	Cherokee	Marion	85,821	6,565	26,423	148,565	9,204	40,921	61,146	4,678	20,721	86,757	6,637	26,639
37041	Chowan	Clinton	84,770	6,485	26,180	146,746	9,177	40,502	60,397	4,620	20,549	85,695	6,556	26,393
37043	Clay	Marion	85,821	6,565	26,423	148,565	9,204	40,921	61,146	4,678	20,721	86,757	6,637	26,639
37045	Cleveland	Charlotte	94,454	7,226	28,417	163,510	9,420	44,375	67,297	5,148	22,143	95,484	7,305	28,655
37047	Columbus	Clinton	84,770	6,485	26,180	146,746	9,177	40,502	60,397	4,620	20,549	85,695	6,556	26,393
37049	Craven	New Bern	81,608	6,243	25,450	141,273	9,098	39,236	58,145	4,448	20,027	82,498	6,311	25,656
37051	Cumberland	Fayetteville	86,512	6,618	26,582	149,761	9,221	41,198	61,638	4,715	20,836	87,455	6,690	26,801
37053	Currituck	Clinton	84,770	6,485	26,180	146,746	9,177	40,502	60,397	4,620	20,549	85,695	6,556	26,393
37055	Dare	Clinton	84,770	6,485	26,180	146,746	9,177	40,502	60,397	4,620	20,549	85,695	6,556	26,393
37057	Davidson	Oxford	86,294	6,601	26,533	149,384	9,215	41,112	61,483	4,703	20,800	87,235	6,673	26,750
37059	Davie	Winston-Salem	91,813	7,024	27,807	158,938	9,354	43,319	65,415	5,004	21,708	92,814	7,100	28,039

FIPS	COUNTY	MSA/REGION	CERTIFIED NURSE MIDWIVES			CERTIFIED REGISTERED NURSE ANESTHETISTS			CERTIFIED NURSE SPECIALISTS--HOME CARE			CERTIFIED NURSE SPECIALISTS--ALL OTHER		
			Salary plus bonus	Social Security	All other benefits	Salary plus bonus	Social Security	All other benefits	Salary plus bonus	Social Security	All other benefits	Salary plus bonus	Social Security	All other benefits
37061	Duplin	Clinton	84,770	6,485	26,180	146,746	9,177	40,502	60,397	4,620	20,549	85,695	6,556	26,393
37063	Durham	Durham	94,284	7,213	28,378	163,215	9,416	44,307	67,176	5,139	22,114	95,312	7,291	28,616
37065	Edgecombe	Rocky Mount	87,894	6,724	26,902	152,154	9,256	41,750	62,623	4,791	21,062	88,852	6,797	27,124
37067	Forsyth	Winston-Salem	91,813	7,024	27,807	158,938	9,354	43,319	65,415	5,004	21,708	92,814	7,100	28,039
37069	Franklin	Raleigh	94,284	7,213	28,378	163,215	9,416	44,307	67,176	5,139	22,114	95,312	7,291	28,616
37071	Gaston	Charlotte	94,454	7,226	28,417	163,510	9,420	44,375	67,297	5,148	22,143	95,484	7,305	28,655
37073	Gates	Clinton	84,770	6,485	26,180	146,746	9,177	40,502	60,397	4,620	20,549	85,695	6,556	26,393
37075	Graham	Marion	85,821	6,565	26,423	148,565	9,204	40,921	61,146	4,678	20,721	86,757	6,637	26,639
37077	Granville	Oxford	86,294	6,601	26,533	149,384	9,215	41,112	61,483	4,703	20,800	87,235	6,673	26,750
37079	Greene	Clinton	84,770	6,485	26,180	146,746	9,177	40,502	60,397	4,620	20,549	85,695	6,556	26,393
37081	Guilford	Greensboro	91,813	7,024	27,807	158,938	9,354	43,319	65,415	5,004	21,708	92,814	7,100	28,039
37083	Halifax	Rocky Mount	87,894	6,724	26,902	152,154	9,256	41,750	62,623	4,791	21,062	88,852	6,797	27,124
37085	Harnett	Oxford	86,294	6,601	26,533	149,384	9,215	41,112	61,483	4,703	20,800	87,235	6,673	26,750
37087	Haywood	Asheville	85,537	6,544	26,356	148,073	9,196	40,809	60,944	4,662	20,674	86,470	6,615	26,572
37089	Henderson	Asheville	85,537	6,544	26,356	148,073	9,196	40,809	60,944	4,662	20,674	86,470	6,615	26,572
37091	Hertford	Clinton	84,770	6,485	26,180	146,746	9,177	40,502	60,397	4,620	20,549	85,695	6,556	26,393
37093	Hoke	Fayetteville	86,512	6,618	26,582	149,761	9,221	41,198	61,638	4,715	20,836	87,455	6,690	26,801
37095	Hyde	Clinton	84,770	6,485	26,180	146,746	9,177	40,502	60,397	4,620	20,549	85,695	6,556	26,393
37097	Iredell	Charlotte	94,454	7,226	28,417	163,510	9,420	44,375	67,297	5,148	22,143	95,484	7,305	28,655
37099	Jackson	Marion	85,821	6,565	26,423	148,565	9,204	40,921	61,146	4,678	20,721	86,757	6,637	26,639
37101	Johnston	Raleigh	94,284	7,213	28,378	163,215	9,416	44,307	67,176	5,139	22,114	95,312	7,291	28,616
37103	Jones	New Bern	81,608	6,243	25,450	141,273	9,098	39,236	58,145	4,448	20,027	82,498	6,311	25,656
37105	Lee	Oxford	86,294	6,601	26,533	149,384	9,215	41,112	61,483	4,703	20,800	87,235	6,673	26,750
37107	Lenoir	Clinton	84,770	6,485	26,180	146,746	9,177	40,502	60,397	4,620	20,549	85,695	6,556	26,393
37109	Lincoln	Charlotte	94,454	7,226	28,417	163,510	9,420	44,375	67,297	5,148	22,143	95,484	7,305	28,655
37113	Macon	Marion	85,821	6,565	26,423	148,565	9,204	40,921	61,146	4,678	20,721	86,757	6,637	26,639
37115	Madison	Asheville	85,537	6,544	26,356	148,073	9,196	40,809	60,944	4,662	20,674	86,470	6,615	26,572
37117	Martin	Clinton	84,770	6,485	26,180	146,746	9,177	40,502	60,397	4,620	20,549	85,695	6,556	26,393
37111	McDowell	Marion	85,821	6,565	26,423	148,565	9,204	40,921	61,146	4,678	20,721	86,757	6,637	26,639
37119	Mecklenburg	Charlotte	94,454	7,226	28,417	163,510	9,420	44,375	67,297	5,148	22,143	95,484	7,305	28,655
37121	Mitchell	Marion	85,821	6,565	26,423	148,565	9,204	40,921	61,146	4,678	20,721	86,757	6,637	26,639
37123	Montgomery	Oxford	86,294	6,601	26,533	149,384	9,215	41,112	61,483	4,703	20,800	87,235	6,673	26,750

FIPS	COUNTY	MSA/REGION	CERTIFIED NURSE MIDWIVES			CERTIFIED REGISTERED NURSE ANESTHETISTS			CERTIFIED NURSE SPECIALISTS--HOME CARE			CERTIFIED NURSE SPECIALISTS--ALL OTHER		
			Salary plus bonus	Social Security	All other benefits	Salary plus bonus	Social Security	All other benefits	Salary plus bonus	Social Security	All other benefits	Salary plus bonus	Social Security	All other benefits
37125	Moore	Oxford	86,294	6,601	26,533	149,384	9,215	41,112	61,483	4,703	20,800	87,235	6,673	26,750
37127	Nash	Rocky Mount	87,894	6,724	26,902	152,154	9,256	41,750	62,623	4,791	21,062	88,852	6,797	27,124
37129	New Hanover	Wilmington	81,069	6,202	25,324	140,339	9,084	39,021	57,760	4,419	19,939	81,953	6,269	25,529
37131	Northampton	Rocky Mount	87,894	6,724	26,902	152,154	9,256	41,750	62,623	4,791	21,062	88,852	6,797	27,124
37133	Onslow	Jacksonville	82,640	6,322	25,688	143,059	9,124	39,649	58,880	4,504	20,198	83,541	6,391	25,896
37135	Orange	Durham	94,284	7,213	28,378	163,215	9,416	44,307	67,176	5,139	22,114	95,312	7,291	28,616
37137	Pamlico	New Bern	81,608	6,243	25,450	141,273	9,098	39,236	58,145	4,448	20,027	82,498	6,311	25,656
37139	Pasquotank	Clinton	84,770	6,485	26,180	146,746	9,177	40,502	60,397	4,620	20,549	85,695	6,556	26,393
37141	Pender	Wilmington	81,069	6,202	25,324	140,339	9,084	39,021	57,760	4,419	19,939	81,953	6,269	25,529
37143	Perquimans	Clinton	84,770	6,485	26,180	146,746	9,177	40,502	60,397	4,620	20,549	85,695	6,556	26,393
37145	Person	Durham	94,284	7,213	28,378	163,215	9,416	44,307	67,176	5,139	22,114	95,312	7,291	28,616
37147	Pitt	Greenville	81,722	6,252	25,475	141,469	9,101	39,282	58,226	4,454	20,046	82,613	6,320	25,682
37149	Polk	Marion	85,821	6,565	26,423	148,565	9,204	40,921	61,146	4,678	20,721	86,757	6,637	26,639
37151	Randolph	Greensboro	91,813	7,024	27,807	158,938	9,354	43,319	65,415	5,004	21,708	92,814	7,100	28,039
37153	Richmond	Oxford	86,294	6,601	26,533	149,384	9,215	41,112	61,483	4,703	20,800	87,235	6,673	26,750
37155	Robeson	Fayetteville	86,512	6,618	26,582	149,761	9,221	41,198	61,638	4,715	20,836	87,455	6,690	26,801
37157	Rockingham	Greensboro	91,813	7,024	27,807	158,938	9,354	43,319	65,415	5,004	21,708	92,814	7,100	28,039
37159	Rowan	Charlotte	94,454	7,226	28,417	163,510	9,420	44,375	67,297	5,148	22,143	95,484	7,305	28,655
37161	Rutherford	Marion	85,821	6,565	26,423	148,565	9,204	40,921	61,146	4,678	20,721	86,757	6,637	26,639
37163	Sampson	Clinton	84,770	6,485	26,180	146,746	9,177	40,502	60,397	4,620	20,549	85,695	6,556	26,393
37165	Scotland	Fayetteville	86,512	6,618	26,582	149,761	9,221	41,198	61,638	4,715	20,836	87,455	6,690	26,801
37167	Stanly	Charlotte	94,454	7,226	28,417	163,510	9,420	44,375	67,297	5,148	22,143	95,484	7,305	28,655
37169	Stokes	Winston-Salem	91,813	7,024	27,807	158,938	9,354	43,319	65,415	5,004	21,708	92,814	7,100	28,039
37171	Surry	Marion	85,821	6,565	26,423	148,565	9,204	40,921	61,146	4,678	20,721	86,757	6,637	26,639
37173	Swain	Marion	85,821	6,565	26,423	148,565	9,204	40,921	61,146	4,678	20,721	86,757	6,637	26,639
37175	Transylvania	Asheville	85,537	6,544	26,356	148,073	9,196	40,809	60,944	4,662	20,674	86,470	6,615	26,572
37177	Tyrrell	Clinton	84,770	6,485	26,180	146,746	9,177	40,502	60,397	4,620	20,549	85,695	6,556	26,393
37179	Union	Charlotte	94,454	7,226	28,417	163,510	9,420	44,375	67,297	5,148	22,143	95,484	7,305	28,655
37181	Vance	Oxford	86,294	6,601	26,533	149,384	9,215	41,112	61,483	4,703	20,800	87,235	6,673	26,750
37183	Wake	Raleigh	94,284	7,213	28,378	163,215	9,416	44,307	67,176	5,139	22,114	95,312	7,291	28,616
37185	Warren	Oxford	86,294	6,601	26,533	149,384	9,215	41,112	61,483	4,703	20,800	87,235	6,673	26,750
37187	Washington	Clinton	84,770	6,485	26,180	146,746	9,177	40,502	60,397	4,620	20,549	85,695	6,556	26,393

FIPS	COUNTY	MSA/REGION	CERTIFIED NURSE MIDWIVES			CERTIFIED REGISTERED NURSE ANESTHETISTS			CERTIFIED NURSE SPECIALISTS--HOME CARE			CERTIFIED NURSE SPECIALISTS--ALL OTHER		
			Salary plus bonus	Social Security	All other benefits	Salary plus bonus	Social Security	All other benefits	Salary plus bonus	Social Security	All other benefits	Salary plus bonus	Social Security	All other benefits
37189	Watauga	Marion	85,821	6,565	26,423	148,565	9,204	40,921	61,146	4,678	20,721	86,757	6,637	26,639
37191	Wayne	Goldsboro	83,445	6,384	25,873	144,452	9,144	39,971	59,453	4,548	20,330	84,355	6,453	26,084
37193	Wilkes	Marion	85,821	6,565	26,423	148,565	9,204	40,921	61,146	4,678	20,721	86,757	6,637	26,639
37195	Wilson	Rocky Mount	87,894	6,724	26,902	152,154	9,256	41,750	62,623	4,791	21,062	88,852	6,797	27,124
37197	Yadkin	Winston-Salem	91,813	7,024	27,807	158,938	9,354	43,319	65,415	5,004	21,708	92,814	7,100	28,039
37199	Yancey	Marion	85,821	6,565	26,423	148,565	9,204	40,921	61,146	4,678	20,721	86,757	6,637	26,639
Notes		[A]	[B]			[C]			[D]			[E]		

Update: 8/12/2014

Note that Social Security includes employee share of payroll taxes for Social Security (6.2 percent of the first $117,000 of a worker's annual pay) and Medicare (1.45 percent of all wages with no upper limit) [S3].

Notes

[A] Salary data from Clinton, NC were used to impute values for non-MSA counties in Eastern region; Oxford, NC was used for non-MSA counties in Piedmont region; Marion, NC was used for non-MSA counties in Piedmont region;

[B] All figures are median compensation estimates obtained from [S2] and compiled at [S1] for the job title Certified Nurse Midwife.

[C] All figures are median compensation estimates obtained from [S2] and compiled at [S1] for the job title Certified Nurse Anesthetist.

[D] All figures are median compensation estimates obtained from [S2] and compiled at [S1] for the job title Certified Nurse Specialist - Home Care.

[E] All figures are median compensation estimates obtained from [S2] and compiled at [S1] for the job title Certified Nurse Specialist.

Sources

[S1] **Conover, Christopher J.** and **Robert Richards**. Table 6a. Median APRN Compensation, by Metropolitan Statistical Area and Selected Non-MSA Regions, July 2014. Duke University, Center for Health Policy and Inequalities Research, last updated July 22, 2014.

[S2] **Salary.com.** *Salary Wizard*. Available at: http://swz.salary.com/salarywizard/Nurse-Practitioner-Salary-Details-Asheville-NC.aspx?&hdcbxbonuse=on&isshowpiechart=false&isshowjobchart=false&isshowsalarydetailcharts=true&isshownextsteps=true&isshowcompanyfct=true&isshowaboutyou=true (accessed July 23, 2014).

[S3] **Salary.com.** *Compensation Glossary*. Available at: http://bayarea.salary.com/docs/salwizhtmls/swze_wizardhelp.asp#Glossary (accessed December 18, 2014).

Table C-4. APRN Gross Compensation, by County (thousands of 2014 dollars), 2012

FIPS	COUNTY	MSA/REGION	TOTAL APRNS				NURSE PRACTITIONERS			CERTIFIED NURSE MIDWIVES			CERTIFIED REGISTERED NURSE ANESTHETISTS			CERTIFIED NURSE SPECIALISTS		
			Total Comp-ensation	Salary plus bonus	Social Security	All other benefits	Salary plus bonus	Social Security	All other benefits	Salary plus bonus	Social Security	All other benefits	Salary plus bonus	Social Security	All other benefits	Salary plus bonus	Social Security	All other benefits
	State Total		1,065,207	782,686	54,632	227,889	369,886	28,296	111,881	21,202	1,622	6,468	309,828	18,459	84,654	81,770	6,255	24,886
37001	Alamance	Burlington	6,657	4,862	354	1,441	2,485	190	748	593	45	180	1,005	59	274	778	60	239
37003	Alexander	Hickory	545	394	30	120	314	24	96	80	6	24	-	-	-	-	-	-
37005	Alleghany	Marion	984	719	52	214	496	38	152	-	-	-	223	14	61	-	-	-
37007	Anson	Charlotte	231	168	13	50	72	6	22	-	-	-	-	-	-	95	7	29
37009	Ashe	Marion	2,448	1,785	130	533	1,098	84	336	-	-	-	483	30	133	204	16	64
37011	Avery	Marion	1,496	1,092	79	326	636	49	195	158	12	49	297	18	82	-	-	-
37013	Beaufort	Greenville	4,834	3,527	254	1,053	2,096	160	650	75	6	24	1,273	82	354	83	6	26
37015	Bertie	Clinton	603	440	32	131	208	16	64	-	-	-	147	9	41	86	7	26
37017	Bladen	Clinton	2,090	1,524	110	455	999	76	307	-	-	-	440	28	122	86	7	26
37019	Brunswick	Clinton	6,102	4,452	322	1,328	2,983	228	917	-	-	-	1,306	82	360	163	12	50
37021	Buncombe	Asheville	49,308	36,187	2,528	10,594	14,971	1,145	4,589	1,026	78	316	16,692	1,037	4,600	3,498	268	1,088
37023	Burke	Hickory	6,250	4,574	326	1,350	2,616	200	801	159	12	49	1,634	101	450	166	13	51
37025	Cabarrus	Charlotte	20,115	14,849	1,008	4,258	6,184	473	1,850	174	13	52	6,773	390	1,838	1,717	131	517
37027	Caldwell	Hickory	3,583	2,632	183	768	1,065	81	326	80	6	24	1,223	76	337	264	20	81
37029	Camden	Clinton	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
37031	Carteret	New Bern	7,057	5,149	371	1,536	2,941	225	912	-	-	-	1,872	121	520	336	26	105
37033	Caswell	Oxford	747	541	41	165	541	41	165	-	-	-	-	-	-	-	-	-
37035	Catawba	Hickory	29,513	21,746	1,482	6,285	7,560	578	2,315	875	67	269	12,312	760	3,389	999	76	313
37037	Chatham	Durham	1,695	1,232	94	369	1,058	81	316	174	13	52	-	-	-	-	-	-
37039	Cherokee	Marion	1,212	881	65	265	613	47	188	-	-	-	149	9	41	119	9	37
37041	Chowan	Clinton	2,146	1,571	111	463	844	65	259	-	-	-	642	40	177	86	7	26
37043	Clay	Marion	1,144	839	59	246	486	37	149	-	-	-	353	22	97	-	-	-
37045	Cleveland	Charlotte	9,119	6,718	463	1,938	3,689	282	1,104	174	13	52	2,702	156	733	153	12	48
37047	Columbus	Clinton	3,601	2,639	186	775	1,430	109	439	-	-	-	1,141	71	315	69	5	21
37049	Craven	New Bern	10,984	8,037	571	2,377	3,513	269	1,091	226	17	70	3,638	234	1,010	660	50	205
37051	Cumberland	Fayetteville	30,069	22,077	1,544	6,448	9,938	760	3,030	1,517	116	466	9,682	596	2,663	940	72	288
37053	Currituck	Clinton	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
37055	Dare	Clinton	2,278	1,663	120	495	1,024	78	315	-	-	-	532	33	147	107	8	33
37057	Davidson	Oxford	5,490	4,018	286	1,185	2,353	180	718	80	6	24	1,412	87	389	174	13	54

FIPS	COUNTY	MSA/REGION	TOTAL APRNS				NURSE PRACTITIONERS			CERTIFIED NURSE MIDWIVES			CERTIFIED REGISTERED NURSE ANESTHETISTS			CERTIFIED NURSE SPECIALISTS		
			Total Comp-ensation	Salary plus bonus	Social Security	All other benefits	Salary plus bonus	Social Security	All other benefits	Salary plus bonus	Social Security	All other benefits	Salary plus bonus	Social Security	All other benefits	Salary plus bonus	Social Security	All other benefits
37059	Davie	Winston-Salem	2,139	1,559	116	464	1,267	97	382	-	-	-	199	12	54	93	7	28
37061	Duplin	Clinton	3,132	2,281	167	684	1,638	125	503	-	-	-	514	32	142	129	10	40
37063	Durham	Durham	101,849	74,958	5,224	21,667	35,867	2,744	10,700	1,044	80	314	27,143	1,566	7,368	10,905	834	3,285
37065	Edgecombe	Rocky Mount	1,688	1,233	90	366	929	71	282	-	-	-	304	19	84	-	-	-
37067	Forsyth	Winston-Salem	74,898	55,164	3,796	15,939	23,267	1,780	7,001	424	32	128	24,055	1,416	6,556	7,418	567	2,253
37069	Franklin	Raleigh	985	716	55	214	633	48	189	-	-	-	-	-	-	83	6	25
37071	Gaston	Charlotte	18,801	13,811	974	4,015	6,089	466	1,822	1,220	93	367	4,353	251	1,181	2,148	164	645
37073	Gates	Clinton	219	158	12	49	158	12	49	-	-	-	-	-	-	-	-	-
37075	Graham	Marion	336	243	19	74	243	19	74	-	-	-	-	-	-	-	-	-
37077	Granville	Oxford	3,485	2,552	181	752	1,163	89	355	159	12	49	934	58	257	297	23	91
37079	Greene	Clinton	1,053	761	58	234	675	52	207	-	-	-	-	-	-	86	7	26
37081	Guilford	Greensboro	69,298	51,027	3,503	14,768	20,611	1,577	6,241	1,440	110	436	22,716	1,337	6,191	6,260	479	1,899
37083	Halifax	Rocky Mount	2,945	2,164	151	630	1,228	94	373	-	-	-	936	57	257	-	-	-
37085	Harnett	Oxford	2,661	1,938	142	580	1,266	97	387	80	6	24	418	26	115	174	13	54
37087	Haywood	Asheville	2,409	1,741	133	535	1,606	123	493	79	6	24	-	-	-	56	4	17
37089	Henderson	Asheville	8,109	5,915	429	1,766	3,314	253	1,016	316	24	97	1,640	102	452	645	49	200
37091	Hertford	Clinton	2,204	1,611	115	477	946	72	291	78	6	24	587	37	162	-	-	-
37093	Hoke	Fayetteville	486	351	27	107	177	14	54	-	-	-	-	-	-	175	13	54
37095	Hyde	Clinton	628	454	35	139	376	29	115	78	6	24	-	-	-	-	-	-
37097	Iredell	Charlotte	17,607	13,009	875	3,722	5,637	431	1,690	436	33	131	6,348	366	1,723	589	45	178
37099	Jackson	Marion	4,753	3,482	246	1,025	1,411	108	433	396	30	122	1,415	88	390	260	20	80
37101	Johnston	Raleigh	5,491	4,043	280	1,168	2,203	169	660	87	7	26	1,538	89	418	214	16	64
37103	Jones	New Bern	325	235	18	73	235	18	73	-	-	-	-	-	-	-	-	-
37105	Lee	Oxford	2,197	1,589	122	487	1,002	77	307	318	24	98	-	-	-	268	21	82
37107	Lenoir	Clinton	2,417	1,769	125	522	736	56	226	78	6	24	734	46	203	221	17	69
37109	Lincoln	Charlotte	3,159	2,327	161	672	1,388	106	417	-	-	-	920	53	250	19	1	6
37113	Macon	Marion	1,946	1,430	99	416	740	57	226	-	-	-	691	43	190	-	-	-
37115	Madison	Asheville	789	569	44	176	508	39	156	-	-	-	-	-	-	61	5	21
37117	Martin	Clinton	637	465	34	138	240	18	74	78	6	24	147	9	41	-	-	-
37111	McDowell	Marion	1,087	789	59	240	635	49	195	79	6	24	74	5	20	-	-	-
37119	Mecklenburg	Charlotte	142,419	105,227	7,099	30,093	43,175	3,303	12,901	1,656	127	498	50,312	2,899	13,654	10,084	771	3,040
37121	Mitchell	Marion	1,485	1,088	77	320	484	37	148	158	12	49	446	28	123	-	-	-

FIPS	COUNTY	MSA/REGION	TOTAL APRNS				NURSE PRACTITIONERS			CERTIFIED NURSE MIDWIVES			CERTIFIED REGISTERED NURSE ANESTHETISTS			CERTIFIED NURSE SPECIALISTS		
			Total Comp-ensation	Salary plus bonus	Social Security	All other benefits	Salary plus bonus	Social Security	All other benefits	Salary plus bonus	Social Security	All other benefits	Salary plus bonus	Social Security	All other benefits	Salary plus bonus	Social Security	All other benefits
37123	Montgomery	Oxford	87	61	5	21	-	-	-	-	-	-	-	-	-	61	5	21
37125	Moore	Oxford	13,987	10,313	701	2,973	3,663	280	1,120	-	-	-	5,942	367	1,635	709	54	217
37127	Nash	Rocky Mount	7,212	5,329	357	1,526	1,888	144	576	-	-	-	3,264	199	896	178	14	54
37129	New Hanover	Wilmington	31,139	22,757	1,626	6,756	10,836	829	3,365	524	40	164	9,789	634	2,722	1,609	123	506
37131	Northampton	Rocky Mount	295	214	16	65	214	16	65	-	-	-	-	-	-	-	-	-
37133	Onslow	Jacksonville	11,359	8,282	600	2,477	4,423	338	1,365	763	58	237	2,639	168	732	458	35	143
37135	Orange	Durham	48,837	35,807	2,570	10,461	19,739	1,510	5,894	1,740	133	524	8,993	519	2,441	5,335	408	1,602
37137	Pamlico	New Bern	541	389	30	122	346	26	107	-	-	-	-	-	-	44	3	15
37139	Pasquotank	Clinton	2,811	2,046	150	615	1,126	86	346	235	18	72	459	29	127	227	17	70
37141	Pender	Wilmington	1,662	1,198	92	372	1,041	80	324	75	6	23	-	-	-	82	6	26
37143	Perquimans	Clinton	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
37145	Person	Durham	2,289	1,673	123	493	1,428	109	427	-	-	-	245	14	66	-	-	-
37147	Pitt	Greenville	41,109	29,965	2,175	8,969	13,203	1,010	4,076	1,433	110	447	9,602	618	2,666	5,727	438	1,780
37149	Polk	Marion	1,961	1,438	101	422	713	55	218	-	-	-	594	37	164	130	10	40
37151	Randolph	Greensboro	5,649	4,128	300	1,221	2,577	197	776	85	6	26	890	52	243	576	44	176
37153	Richmond	Oxford	2,141	1,553	117	472	1,120	86	344	-	-	-	149	9	41	284	22	87
37155	Robeson	Fayetteville	10,398	7,604	545	2,249	4,083	312	1,246	479	37	147	2,434	150	669	608	46	186
37157	Rockingham	Greensboro	4,326	3,177	223	925	1,771	135	534	85	6	26	1,136	67	310	186	14	56
37159	Rowan	Charlotte	10,703	7,891	539	2,272	3,495	267	1,051	87	7	26	3,434	198	932	876	67	263
37161	Rutherford	Marion	4,350	3,177	228	945	1,933	148	593	79	6	24	1,010	63	278	154	12	49
37163	Sampson	Clinton	2,119	1,551	110	458	838	64	257	-	-	-	653	41	180	60	5	21
37165	Scotland	Fayetteville	3,137	2,306	160	671	1,122	86	343	80	6	25	1,104	68	304	-	-	-
37167	Stanly	Charlotte	4,209	3,100	214	895	1,424	109	426	87	7	26	1,247	72	338	342	26	105
37169	Stokes	Winston-Salem	1,791	1,304	98	390	1,100	84	332	85	6	26	119	7	32	-	-	-
37171	Surry	Marion	7,715	5,626	410	1,679	3,846	294	1,177	-	-	-	1,423	88	392	358	27	110
37173	Swain	Marion	451	327	25	100	327	25	100	-	-	-	-	-	-	-	-	-
37175	Transylvania	Asheville	1,832	1,340	95	397	840	64	259	-	-	-	500	31	138	-	-	-
37177	Tyrrell	Clinton	66	47	4	15	47	4	15	-	-	-	-	-	-	-	-	-
37179	Union	Charlotte	10,096	7,439	511	2,145	3,453	264	1,035	87	7	26	3,066	177	832	834	64	252
37181	Vance	Oxford	1,973	1,432	107	434	869	66	266	239	18	73	149	9	41	174	13	54
37183	Wake	Raleigh	114,998	84,681	5,858	24,458	40,299	3,083	12,063	1,131	87	340	32,969	1,902	8,950	10,282	787	3,105
37185	Warren	Oxford	214	155	12	47	155	12	47	-	-	-	-	-	-	-	-	-

FIPS	COUNTY	MSA/REGION	TOTAL APRNS				NURSE PRACTITIONERS			CERTIFIED NURSE MIDWIVES			CERTIFIED REGISTERED NURSE ANESTHETISTS			CERTIFIED NURSE SPECIALISTS		
			Total Comp-ensation	Salary plus bonus	Social Security	All other benefits	Salary plus bonus	Social Security	All other benefits	Salary plus bonus	Social Security	All other benefits	Salary plus bonus	Social Security	All other benefits	Salary plus bonus	Social Security	All other benefits
37187	Washington	Clinton	114	83	6	25	4	0	1	78	6	24	-	-	-	-	-	-
37189	Watauga	Marion	5,128	3,739	271	1,117	2,082	159	638	238	18	73	1,003	62	276	417	32	130
37191	Wayne	Goldsboro	9,318	6,813	487	2,018	3,534	270	1,089	-	-	-	2,625	166	726	654	50	202
37193	Wilkes	Marion	3,649	2,677	187	785	1,225	94	376	-	-	-	1,192	74	328	260	20	80
37195	Wilson	Rocky Mount	3,625	2,646	192	787	1,784	136	545	-	-	-	685	42	188	178	14	54
37197	Yadkin	Winston-Salem	922	675	49	199	516	39	155	-	-	-	159	9	43	-	-	-
37199	Yancey	Marion	1,058	766	59	234	766	59	234	-	-	-	-	-	-	-	-	-
Notes			[A]				[B]											

Update: 8/28/2014

Notes

[A] All figures are calculated by authors as summed totals using figures in adjacent columns.

[B] All figures are calculated by multiplying estimates of the number of active FTE APRNs in 2012 [S1] times compensation estimates per APRN reported in [S2] for NPs and in [S3] for CNMs, CRNAs and CNSs.

Sources

[S1] **Conover, Christopher J.** and **Robert Richards**. Table C-1. Active Advanced Practice RNs by County, 2012. Duke University, Center for Health Policy and Inequalities Research, last updated August 12, 2014.

[S2] **Conover, Christopher J.** and **Robert Richards**. Table C-2. Nurse Practitioner Compensation by County, July 2014. Duke University, Center for Health Policy and Inequalities Research, last updated July 22, 2014.

[S3] **Conover, Christopher J.** and **Robert Richards**. Table C-3. Certified Nurse Midwives, Certified Registered Nurse Anesthetist and Certified Nurse Specialist Compensation by County, July 2014. Duke University, Center for Health Policy and Inequalities Research, last updated August 12, 2014.

[S4] **Salary.com.** *Salary Wizard*. Available at: http://swz.salary.com/salarywizard/Nurse-Practitioner-Salary-Details-Asheville-NC.aspx?&hdcbxbonuse=on&isshowpiechart=false&isshowjobchart=false&isshowsalarydetailcharts=true&isshownextsteps=true&isshowcompanyfct=true&isshowaboutyou=true (accessed July 23, 2014).

Table C-5. Derivation of APRN Estimated Practice Expenses

	NURSE PRACTITIONERS				CERTIFIED NURSE MIDWIVES				CERTIFIED REGISTERED NURSE ANESTHETISTS				CERTIFIED NURSE SPECIALISTS			
	MD baseline	Non-metro	Small metro (<1 million)	Large metro (1 million +)	MD baseline	Non-metro	Small metro (<1 million)	Large metro (1 million +)	MD baseline	Non-metro	Small metro (<1 million)	Large metro (1 million +)	MD baseline	Non-metro	Small metro (<1 million)	Large metro (1 million +)
Physician comparator	Family Medicine				Obstetrics/Gynecology				Anesthesiologists				Internal Medicine			
Mean MD patient care hours per year [A]	2223.7	***2353.2***	***2353.2***	***2117.9***	2259.10	***2390.7***	***2390.7***	***2151.6***	2419.10	***2560.0***	***2560.0***	***2304.0***	2385.80	***2524.7***	***2524.7***	***2272.3***
Non-physician compensation	***$131.72***	***$146.76***	***$121.38***	***$134.53***	***$161.46***	***$182.47***	***$147.61***	***$164.30***	***$58.43***	***$63.56***	***$54.08***	***$60.31***	***$120.77***	***$135.70***	***$111.20***	***$122.93***
Non-physician payroll	***$54.17***	***$62.43***	***$49.94***	***$55.49***	***$75.82***	***$87.37***	***$69.90***	***$77.66***	***$35.45***	***$40.85***	***$32.68***	***$36.31***	***$45.80***	***$52.78***	***$42.22***	***$46.92***
Clinical payroll, can bill independently	***$7.13***	***$8.22***	***$6.58***	***$7.31***	***$9.09***	***$10.48***	***$8.38***	***$9.31***	***$22.42***	***$25.84***	***$20.67***	***$22.97***	***$4.34***	***$5.00***	***$4.00***	***$4.44***
Clinical payroll, cannot bill independently	***$19.58***	***$22.57***	***$18.05***	***$20.06***	***$33.14***	***$38.19***	***$30.55***	***$33.95***	***$5.65***	***$6.51***	***$5.20***	***$5.78***	***$15.80***	***$18.21***	***$14.57***	***$16.19***
Clerical wages	***$27.46***	***$31.65***	***$25.32***	***$28.13***	***$33.59***	***$38.71***	***$30.96***	***$34.40***	***$7.38***	***$8.50***	***$6.80***	***$7.56***	***$25.66***	***$29.57***	***$23.66***	***$26.28***
Other practice expenses	***$57.53***	***$58.05***	***$52.51***	***$60.05***	***$60.23***	***$63.33***	***$53.70***	***$62.11***	***$12.17***	***$12.13***	***$11.18***	***$12.74***	***$55.71***	***$56.36***	***$50.78***	***$58.11***
Office expenses	***$54.34***	***$53.03***	***$50.50***	***$57.26***	***$52.62***	***$51.36***	***$48.91***	***$55.46***	***$11.74***	***$11.46***	***$10.91***	***$12.37***	***$52.37***	***$51.11***	***$48.68***	***$55.19***
Professional liability insurance	***NR***	***NA***	***NA***	***NA***	***NR***	***NA***	***NA***	***NA***	***NR***	***NA***	***NA***	***NA***	***NR***	***NA***	***NA***	***NA***
Medical equipment	***$3.19***	***$5.02***	***$2.01***	***$2.79***	***$7.60***	***$11.97***	***$4.79***	***$6.65***	***$0.43***	***$0.67***	***$0.27***	***$0.37***	***$3.34***	***$5.25***	***$2.10***	***$2.92***
Medical materials and supplies	***$6.48***	***$10.20***	***$6.12***	***$5.67***	***$8.52***	***$13.42***	***$8.05***	***$7.46***	***$0.34***	***$0.53***	***$0.32***	***$0.30***	***$6.31***	***$9.93***	***$5.96***	***$5.52***
Medical supplies, separately billable	***$1.74***	***$2.75***	***$1.05***	***$1.61***	***$1.68***	***$2.64***	***$1.01***	***$1.55***	***$0.07***	***$0.11***	***$0.04***	***$0.06***	***$1.06***	***$1.66***	***$0.63***	***$0.98***
All other medical supplies	***$4.74***	***$7.46***	***$2.84***	***$4.38***	***$6.84***	***$10.78***	***$4.11***	***$6.33***	***$0.27***	***$0.42***	***$0.16***	***$0.25***	***$5.25***	***$8.27***	***$3.15***	***$4.86***
Drugs	***$5.20***	***$8.18***	***$4.91***	***$4.55***	***$3.78***	***$5.96***	***$3.57***	***$3.31***	***$0.23***	***$0.36***	***$0.22***	***$0.20***	***$6.96***	***$10.96***	***$6.58***	***$6.09***
Drugs, separately billable	***$3.66***	***$5.76***	***$2.19***	***$3.39***	***$1.67***	***$2.63***	***$1.00***	***$1.54***	***$0.10***	***$0.16***	***$0.06***	***$0.09***	***$4.75***	***$7.49***	***$2.85***	***$4.40***
All other drugs	***$1.54***	***$2.42***	***$0.92***	***$1.43***	***$2.12***	***$3.33***	***$1.27***	***$1.96***	***$0.13***	***$0.20***	***$0.08***	***$0.12***	***$2.21***	***$3.47***	***$1.32***	***$2.04***
Other professional expenses	***$8.35***	***$7.89***	***$7.89***	***$8.77***	***$13.11***	***$12.39***	***$12.39***	***$13.77***	***$10.25***	***$9.68***	***$9.68***	***$10.76***	***$6.00***	***$5.67***	***$5.67***	***$6.29***
Inflation adjustment, 2006 to 2013 [B]	1.208															
Ratio of PE to MD compensation, total [C]	1.586	1.767	1.461	1.620	1.702	1.924	1.556	1.732	0.545	0.593	0.505	0.563	1.335	1.501	1.230	1.359
Ratio of PE to MD compensation, excluding clinical payroll [D]	1.264	1.396	1.165	1.290	1.257	1.411	1.146	1.276	0.283	0.291	0.263	0.295	1.113	1.244	1.024	1.131
Notes	[E]	[F]			[E]	[F]			[E]	[F]			[E]	[F]		

Update: 12/4/2014

Note: Figures in bold italics estimated by authors using sources and methods described in Notes. All other figures are reported at sources shown.

Notes

[A] All figures for MD baseline are mean patient care hours per year estimates for respondents included in the practice expense per hour (PE/HR) calculations, as reported in [S2]. All figures based on metro size are calculated by authors assuming that differences in hours worked by location are the same across all specialty types, e.g. Non-metro Annual Patient Care Hours, Family Medicine = (MD Baseline, Annual Patient Care Hours, Family Medicine) x (Non-metro Weekly Patient Care Hours)/(Weekly Patient Care Hours, All Physicians), using weekly hours reported in [P1].

[B] The figure shown is calculated from annual growth rates in 2006-based Medicare Economic Index prior to productivity adjustment from CY2006 through CY2012, as reported in [S8].

[C] All figures calculated by authors for each physician comparator group: (Non-physician Compensation) x (Inflation Adjustment, 2006-2013)/[(Hourly Mean Wage/(43.88/48.266)] using hourly mean wage data shown in [P2] and where 43.88=cost weight for wages and salaries in current 2006-based MEI and 48.266=cost weight for physician compensation in MEI, as reported in [S7].

[D] All figures calculated by authors: (Ratio of PE to MD compensation, Total) x (Non-physician Compensation - Clinical payroll, can bill independently-Clinical payroll, cannot bill independently)/(Non-physician Compensation).

[E] All figures are practice expense per hour estimates reported in [S1] for the physician specialty comparator category shown. The methodology used by AMA to calculate these estimates is reported in [S3]. Note that the costs of professional liability insurance (PLI) are not reported in the PPIS. For the average physician, PLI amounts to 8.3% of total practice expenses according to the current 2006-based Medicare Economic Index [S7]. PLI costs likely are lower for APRNs. A recent analysis of 17 years of data compiled in the United States National Practitioner Data Bank (NPDB) found that there was one PLI payment report for every 2.7 active physicians and only one for every 65.8 active and inactive APRNs [S6].

[F] All figures for non-physician payroll are calculated by authors using the following formula: (Non-physician Payroll, Non-metro) = (Non-physician Payroll, All Physicians) x [(Median PE, Non-physician payroll, Non-metro)/(Median PE, Non-physician payroll, All physicians)] x (Mean Annual Patient Care Hours, MD Baseline) x (Mean Annual Patient Care Hours, Non-Metro). The first adjustment accounts for differences in practice expenses by location, using figures reported in Parameters [P1]; thus, it is identical for all specialties shown. The second adjustment accounts for differences in hours worked by location, using figures shown in main table; thus, this adjustment differs by specialty. This method was used to derive figures for a) Non-physician payroll; b) Office expenses; c) Medical equipment; d) Medical materials and supplies; e) Drugs (using the medical supplies PE estimates in [P1]); and Other professional expenses. Sub-components of these categories (e.g., Clinical payroll, can bill independently, were derived for each specialty assuming that the distribution of sub-components in each geographic location mirrored that reported in the MD baseline for that specialty.

Parameters

[P1] **Median practice expense per physician for 2006 by metro/nonmetro location**

Expense Category	All physicians	Non-metro	Small metro (<1 million)	Large metro (1 million +)	Notes
Total expenses	$ 221,000	$ 240,000	$ 236,000	$ 213,000	
Office expense	$ 81,333	$ 84,000	$ 80,000	$ 81,633	
Non-physician payroll	$ 82,000	$ 100,000	$ 80,000	$ 80,000	
Medical supplies	$ 6,000	$ 10,000	$ 6,000	$ 5,000	[P1a]
Equipment	$ 3,000	$ 5,000	$ 2,000	$ 2,500	
Other	$ 10,000	$ 10,000	$ 10,000	$ 10,000	
Number of observations	2,137	202	759	1,176	
Weekly patient care hours	47.2	50	50	45	[P1b]

[P1a] All figures reported in Table 1 at [S5]

[P1b] All figures reported in Table 3 at [S5]

[P2] **Hourly Wage Differentials, Selected MD Specialties and APRNs, May 2013**

Occupation (SOC code)	Hourly mean wage	Occupation (SOC code)	Hourly mean wage	Ratio: APRN/MD
Family and General Practitioners(291062)	$ 91.25	Nurse Practitioners(291171)	$ 45.35	0.497
Obstetricians and Gynecologists(291064)	$ 104.20	Nurse Midwives(291161)	$ 44.79	0.430
Anesthesiologists(291061)	$ 117.68	Nurse Anesthetists(291151)	$ 74.08	0.630
Internists, General(291063)	$ 99.35			

Note: All hourly wage figures reported in [S4].

Sources

[S1] **American Medical Association.** *Practice Expense Per Hour, 2007/2008 PPIS Survey*. Available at: http://www.ama-assn.org/resources/doc/rbrvs/x-pub/ppi-pe-per-hour-spreadsheet.xls (accessed August 28, 2014).

[S2] **American Medical Association.** *Supplement to the PPIS Specialty Reports, mean patient care hours per year, by Specialty for respondents included in the PE/HR calculations*. Available at: http://www.ama-assn.org/resources/doc/rbrvs/x-pub/ppi-patient-care-hours.pdf (accessed August 28, 2014).

[S3] **American Medical Association.** *Practice Expense per Hour Formula*. Available at: http://www.ama-assn.org/resources/doc/rbrvs/x-pub/ppi-pe-per-hour-formula.pdf (accessed August 28, 2014).

[S4] **Bureau of Labor Statistics**. Occupational Employment Statistics Query System. Available at: http://data.bls.gov/oes/datatype.do. Data extracted on December 8, 2014.

[S5] **Gillis, Kurt D.** *Physician Practice Expenses by Location*. American Medical Association, Policy Research Perspectives. Chicago, IL: 2009. Available at: http://www.ama-assn.org/resources/doc/rbrvs/x-pub/practice-expense-by-location.pdf (accessed August 28, 2014).

[S6] **Hooker, Roderick S.**, **Jeffrey G. Nicholson**, **Tuan Le**. Does the Employment of Physician Assistants and Nurse Practitioners Increase Liability? *Journal of Medical Licensure and Discipline* 95 (2) 2009: 6-16. Available at: http://www.paexperts.com/Nicholson%20-%20Hooker%20Article.pdf (accessed December 1, 2014).

[S7] **2012 Medicare Economic Index Technical Advisory Panel**. Table 1-Current 2006-based Medicare Economic Index in *Report to the HHS Secretary: Review of the Medicare Economic Index*. Available at: http://www.cms.gov/Regulations-and-Guidance/Guidance/FACA/Downloads/MEI-Review-Report-to-HHS.pdf (accessed August 28, 2014.

[S8] **2012 Medicare Economic Index Technical Advisory Panel**. Table 2-Annual Growth Rates in 2006-based MEI, 2006-based MEI Prior to Productivity Adjustment, and CPI-U All Items Less Food and Energy, 2000-2012, in *Report to the HHS Secretary: Review of the Medicare Economic Index*. Available at: http://www.cms.gov/Regulations-and-Guidance/Guidance/FACA/Downloads/MEI-Review-Report-to-HHS.pdf (accessed August 28, 2014.

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Table C-6. APRN Practice Outlays, by County (thousands of 2014 dollars), 2012

FIPS	COUNTY	MSA/REGION	TOTAL APRNS			NURSE PRACTITIONERS			CERTIFIED NURSE MIDWIVES			CERTIFIED REGISTERED NURSE ANESTHETISTS			CERTIFIED NURSE SPECIALISTS		
			Total practice outlays	Total compen-sation	Practice expenses	Total compen-sation	PE to comp-ensation ratio	Practice expenses	Total compen-sation	PE to comp-ensation ratio	Practice expenses	Total compen-sation	PE to comp-ensation ratio	Practice expenses	Total compen-sation	PE to comp-ensation ratio	Practice expenses
	State Total		1,973,266	1,065,207	908,059	510,063		635,358	29,293		35,893	412,940		114,745	112,912		122,063
37001	Alamance	Burlington	13,037	6,657	6,380	3,423	1.165	3,988	818	1.146	937	1,338	0.263	352	1,077	1.024	1,103
37003	Alexander	Hickory	1,177	545	632	434	1.165	506	110	1.146	126	-	0.263	-	-	1.024	-
37005	Alleghany	Marion	2,030	984	1,045	686	1.396	958	-	1.411	-	298	0.291	87	-	1.244	-
37007	Anson	Charlotte	507	231	277	99	1.290	128	-	1.276	-	-	0.295	-	131	1.131	149
37009	Ashe	Marion	5,108	2,448	2,660	1,518	1.396	2,120	-	1.411	-	646	0.291	188	283	1.244	352
37011	Avery	Marion	3,149	1,496	1,653	880	1.396	1,228	219	1.411	309	397	0.291	116	-	1.244	-
37013	Beaufort	Greenville	9,679	4,834	4,845	2,906	1.396	4,057	105	1.411	148	1,709	0.291	497	115	1.244	143
37015	Bertie	Clinton	1,209	603	606	288	1.396	401	-	1.411	-	196	0.291	57	119	1.244	148
37017	Bladen	Clinton	4,338	2,090	2,248	1,382	1.396	1,929	-	1.411	-	589	0.291	171	119	1.244	148
37019	Brunswick	Clinton	11,602	6,102	5,500	4,128	1.165	4,810	-	1.146	-	1,748	0.263	460	225	1.024	231
37021	Buncombe	Asheville	85,901	49,308	36,592	20,705	1.165	24,121	1,421	1.146	1,628	22,328	0.263	5,872	4,854	1.024	4,971
37023	Burke	Hickory	11,526	6,250	5,275	3,617	1.165	4,214	220	1.146	252	2,184	0.263	574	229	1.024	234
37025	Cabarrus	Charlotte	36,726	20,115	16,611	8,507	1.290	10,974	240	1.276	306	9,002	0.295	2,656	2,365	1.131	2,675
37027	Caldwell	Hickory	6,228	3,583	2,645	1,473	1.165	1,716	110	1.146	126	1,636	0.263	430	365	1.024	373
37029	Camden	Clinton	-	-	-	-	1.396	-	-	1.411	-	-	0.291	-	-	1.244	-
37031	Carteret	New Bern	14,060	7,057	7,004	4,078	1.396	5,693	-	1.411	-	2,512	0.291	731	466	1.244	580
37033	Caswell	Oxford	1,791	747	1,043	747	1.396	1,043	-	1.411	-	-	0.291	-	-	1.244	-
37035	Catawba	Hickory	48,829	29,513	19,316	10,453	1.165	12,178	1,211	1.146	1,387	16,461	0.263	4,329	1,388	1.024	1,421
37037	Chatham	Durham	3,665	1,695	1,970	1,455	1.165	1,695	240	1.146	275	-	0.263	-	-	1.024	-
37039	Cherokee	Marion	2,659	1,212	1,447	848	1.396	1,184	-	1.411	-	199	0.291	58	165	1.244	205
37041	Chowan	Clinton	4,173	2,146	2,028	1,168	1.396	1,630	-	1.411	-	859	0.291	250	119	1.244	148
37043	Clay	Marion	2,220	1,144	1,076	672	1.396	938	-	1.411	-	472	0.291	137	-	1.244	-
37045	Cleveland	Charlotte	17,853	9,119	8,734	5,075	1.396	7,085	240	1.411	339	3,591	0.291	1,045	213	1.244	265
37047	Columbus	Clinton	6,926	3,601	3,325	1,979	1.396	2,762	-	1.411	-	1,527	0.291	444	95	1.244	118
37049	Craven	New Bern	20,789	10,984	9,805	4,873	1.396	6,802	314	1.411	443	4,882	0.291	1,421	916	1.244	1,139
37051	Cumberland	Fayetteville	53,203	30,069	23,134	13,729	1.165	15,994	2,099	1.146	2,405	12,942	0.263	3,404	1,300	1.024	1,331
37053	Currituck	Clinton	-	-	-	-	1.165	-	-	1.146	-	-	0.263	-	-	1.024	-
37055	Dare	Clinton	4,648	2,278	2,370	1,417	1.396	1,978	-	1.411	-	712	0.291	207	148	1.244	184
37057	Davidson	Oxford	11,033	5,490	5,543	3,251	1.396	4,538	110	1.411	155	1,887	0.291	549	241	1.244	300

FIPS	COUNTY	MSA/REGION	TOTAL APRNS			NURSE PRACTITIONERS			CERTIFIED NURSE MIDWIVES			CERTIFIED REGISTERED NURSE ANESTHETISTS			CERTIFIED NURSE SPECIALISTS		
			Total practice outlays	Total compen-sation	Practice expenses	Total compen-sation	PE to comp-ensation ratio	Practice expenses	Total compen-sation	PE to comp-ensation ratio	Practice expenses	Total compen-sation	PE to comp-ensation ratio	Practice expenses	Total compen-sation	PE to comp-ensation ratio	Practice expenses
37059	Davie	Winston-Salem	4,374	2,139	2,235	1,746	1.165	2,034	-	1.146	-	265	0.263	70	128	1.024	131
37061	Duplin	Clinton	6,718	3,132	3,586	2,267	1.396	3,164	-	1.411	-	687	0.291	200	178	1.244	221
37063	Durham	Durham	185,817	101,849	83,967	49,311	1.165	57,447	1,438	1.146	1,648	36,077	0.263	9,488	15,024	1.024	15,384
37065	Edgecombe	Rocky Mount	3,289	1,688	1,600	1,282	1.165	1,494	-	1.146	-	406	0.263	107	-	1.024	-
37067	Forsyth	Winston-Salem	131,811	74,898	56,913	32,048	1.165	37,336	584	1.146	670	32,027	0.263	8,423	10,239	1.024	10,484
37069	Franklin	Raleigh	2,237	985	1,252	870	1.290	1,123	-	1.276	-	-	0.295	-	115	1.131	130
37071	Gaston	Charlotte	36,803	18,801	18,002	8,377	1.290	10,806	1,681	1.276	2,144	5,786	0.295	1,707	2,957	1.131	3,345
37073	Gates	Clinton	524	219	305	219	1.396	305	-	1.411	-	-	0.291	-	-	1.244	-
37075	Graham	Marion	805	336	469	336	1.396	469	-	1.411	-	-	0.291	-	-	1.244	-
37077	Granville	Oxford	6,913	3,485	3,427	1,607	1.396	2,243	220	1.411	311	1,248	0.291	363	410	1.244	510
37079	Greene	Clinton	2,262	1,053	1,210	934	1.165	1,088	-	1.146	-	-	0.263	-	119	1.024	121
37081	Guilford	Greensboro	121,495	69,298	52,196	28,429	1.165	33,120	1,986	1.146	2,277	30,245	0.263	7,954	8,638	1.024	8,845
37083	Halifax	Rocky Mount	5,676	2,945	2,731	1,696	1.396	2,367	-	1.411	-	1,249	0.291	364	-	1.244	-
37085	Harnett	Oxford	5,722	2,661	3,062	1,750	1.396	2,443	110	1.411	155	559	0.291	163	241	1.244	300
37087	Haywood	Asheville	5,202	2,409	2,793	2,222	1.165	2,588	109	1.146	125	-	0.263	-	78	1.024	80
37089	Henderson	Asheville	15,443	8,109	7,334	4,584	1.165	5,340	437	1.146	501	2,194	0.263	577	895	1.024	916
37091	Hertford	Clinton	4,413	2,204	2,210	1,310	1.396	1,828	108	1.411	153	786	0.291	229	-	1.244	-
37093	Hoke	Fayetteville	1,017	486	532	244	1.165	284	-	1.146	-	-	0.263	-	242	1.024	248
37095	Hyde	Clinton	1,506	628	878	520	1.396	726	108	1.411	153	-	0.291	-	-	1.244	-
37097	Iredell	Charlotte	32,748	17,607	15,142	7,758	1.396	10,830	600	1.411	847	8,437	0.291	2,455	812	1.244	1,010
37099	Jackson	Marion	9,251	4,753	4,498	1,952	1.396	2,725	548	1.411	773	1,893	0.291	551	360	1.244	448
37101	Johnston	Raleigh	10,491	5,491	5,000	3,031	1.290	3,910	120	1.276	153	2,045	0.295	603	295	1.131	334
37103	Jones	New Bern	779	325	454	325	1.396	454	-	1.411	-	-	0.291	-	-	1.244	-
37105	Lee	Oxford	5,214	2,197	3,017	1,385	1.396	1,934	441	1.411	622	-	0.291	-	371	1.244	462
37107	Lenoir	Clinton	4,660	2,417	2,243	1,018	1.396	1,422	108	1.411	153	982	0.291	286	308	1.244	383
37109	Lincoln	Charlotte	6,215	3,159	3,056	1,911	1.396	2,667	-	1.411	-	1,222	0.291	356	26	1.244	33
37113	Macon	Marion	3,642	1,946	1,696	1,022	1.396	1,427	-	1.411	-	924	0.291	269	-	1.244	-
37115	Madison	Asheville	1,695	789	907	702	1.165	818	-	1.146	-	-	0.263	-	86	1.024	88
37117	Martin	Clinton	1,311	637	674	332	1.396	464	108	1.411	153	196	0.291	57	-	1.244	-
37111	McDowell	Marion	2,497	1,087	1,410	878	1.396	1,226	110	1.411	155	99	0.291	29	-	1.244	-
37119	Mecklenburg	Charlotte	257,368	142,419	114,949	59,378	1.290	76,598	2,281	1.276	2,910	66,865	0.295	19,725	13,896	1.131	15,716
37121	Mitchell	Marion	2,903	1,485	1,418	670	1.396	935	219	1.411	309	596	0.291	173	-	1.244	-

FIPS	COUNTY	MSA/REGION	TOTAL APRNS			NURSE PRACTITIONERS			CERTIFIED NURSE MIDWIVES			CERTIFIED REGISTERED NURSE ANESTHETISTS			CERTIFIED NURSE SPECIALISTS		
			Total practice outlays	Total compen-sation	Practice expenses	Total compen-sation	PE to comp-ensation ratio	Practice expenses	Total compen-sation	PE to comp-ensation ratio	Practice expenses	Total compen-sation	PE to comp-ensation ratio	Practice expenses	Total compen-sation	PE to comp-ensation ratio	Practice expenses
37123	Montgomery	Oxford	195	87	108	-	1.396	-	-	1.411	-	-	0.291	-	87	1.244	108
37125	Moore	Oxford	24,587	13,987	10,599	5,063	1.396	7,068	-	1.411	-	7,944	0.291	2,312	980	1.244	1,220
37127	Nash	Rocky Mount	11,648	7,212	4,436	2,608	1.165	3,039	-	1.146	-	4,358	0.263	1,146	246	1.024	251
37129	New Hanover	Wilmington	55,230	31,139	24,092	15,029	1.165	17,509	727	1.146	833	13,144	0.263	3,457	2,239	1.024	2,292
37131	Northampton	Rocky Mount	707	295	412	295	1.396	412	-	1.411	-	-	0.291	-	-	1.244	-
37133	Onslow	Jacksonville	21,289	11,359	9,931	6,126	1.165	7,137	1,058	1.146	1,212	3,539	0.263	931	635	1.024	651
37135	Orange	Durham	93,870	48,837	45,033	27,142	1.165	31,621	2,397	1.146	2,747	11,953	0.263	3,144	7,345	1.024	7,521
37137	Pamlico	New Bern	1,287	541	746	479	1.396	669	-	1.411	-	-	0.291	-	62	1.244	77
37139	Pasquotank	Clinton	6,015	2,811	3,204	1,558	1.396	2,175	325	1.411	459	614	0.291	179	314	1.244	391
37141	Pender	Wilmington	3,580	1,662	1,918	1,444	1.165	1,683	104	1.146	119	-	0.263	-	114	1.024	116
37143	Perquimans	Clinton	-	-	-	-	1.396	-	-	1.411	-	-	0.291	-	-	1.244	-
37145	Person	Durham	4,663	2,289	2,374	1,964	1.165	2,288	-	1.146	-	325	0.263	86	-	1.024	-
37147	Pitt	Greenville	76,220	41,109	35,111	18,289	1.165	21,306	1,989	1.146	2,279	12,886	0.263	3,389	7,946	1.024	8,136
37149	Polk	Marion	3,793	1,961	1,832	986	1.396	1,377	-	1.411	-	795	0.291	231	180	1.244	224
37151	Randolph	Greensboro	11,046	5,649	5,397	3,551	1.165	4,137	117	1.146	134	1,185	0.263	312	796	1.024	815
37153	Richmond	Oxford	4,850	2,141	2,709	1,549	1.396	2,163	-	1.411	-	200	0.291	58	392	1.244	488
37155	Robeson	Fayetteville	21,202	10,398	10,803	5,642	1.396	7,876	663	1.411	935	3,253	0.291	947	841	1.244	1,046
37157	Rockingham	Greensboro	7,962	4,326	3,637	2,440	1.165	2,843	117	1.146	134	1,513	0.263	398	256	1.024	262
37159	Rowan	Charlotte	20,419	10,703	9,717	4,813	1.396	6,719	120	1.411	169	4,563	0.291	1,328	1,206	1.244	1,500
37161	Rutherford	Marion	8,898	4,350	4,548	2,674	1.396	3,733	110	1.411	155	1,351	0.291	393	215	1.244	268
37163	Sampson	Clinton	4,098	2,119	1,979	1,159	1.396	1,618	-	1.411	-	874	0.291	254	86	1.244	106
37165	Scotland	Fayetteville	5,887	3,137	2,750	1,550	1.396	2,164	110	1.411	156	1,476	0.291	430	-	1.244	-
37167	Stanly	Charlotte	7,912	4,209	3,704	1,959	1.290	2,527	120	1.276	153	1,657	0.295	489	472	1.131	534
37169	Stokes	Winston-Salem	3,733	1,791	1,941	1,516	1.165	1,766	117	1.146	134	159	0.263	42	-	1.024	-
37171	Surry	Marion	16,308	7,715	8,593	5,317	1.396	7,423	-	1.411	-	1,902	0.291	554	495	1.244	616
37173	Swain	Marion	1,081	451	630	451	1.396	630	-	1.411	-	-	0.291	-	-	1.244	-
37175	Transylvania	Asheville	3,651	1,832	1,819	1,164	1.396	1,624	-	1.411	-	669	0.291	195	-	1.244	-
37177	Tyrrell	Clinton	157	66	92	66	1.396	92	-	1.411	-	-	0.291	-	-	1.244	-
37179	Union	Charlotte	18,881	10,096	8,785	4,752	1.290	6,130	120	1.276	153	4,074	0.295	1,202	1,149	1.131	1,300
37181	Vance	Oxford	4,474	1,973	2,501	1,201	1.396	1,677	331	1.411	466	200	0.291	58	241	1.244	300
37183	Wake	Raleigh	217,467	114,998	102,469	55,445	1.290	71,524	1,558	1.276	1,988	43,821	0.295	12,927	14,173	1.131	16,030
37185	Warren	Oxford	512	214	299	214	1.396	299	-	1.411	-	-	0.291	-	-	1.244	-

FIPS	COUNTY	MSA/REGION	TOTAL APRNS			NURSE PRACTITIONERS			CERTIFIED NURSE MIDWIVES			CERTIFIED REGISTERED NURSE ANESTHETISTS			CERTIFIED NURSE SPECIALISTS		
			Total practice outlays	Total compen-sation	Practice expenses	Total compen-sation	PE to comp-ensation ratio	Practice expenses	Total compen-sation	PE to comp-ensation ratio	Practice expenses	Total compen-sation	PE to comp-ensation ratio	Practice expenses	Total compen-sation	PE to comp-ensation ratio	Practice expenses
37187	Washington	Clinton	276	114	161	6	1.396	8	108	1.411	153	-	0.291	-	-	1.244	-
37189	Watauga	Marion	10,722	5,128	5,594	2,880	1.396	4,020	329	1.411	464	1,341	0.291	390	579	1.244	720
37191	Wayne	Goldsboro	16,873	9,318	7,554	4,894	1.165	5,702	-	1.146	-	3,518	0.263	925	906	1.024	928
37193	Wilkes	Marion	6,927	3,649	3,278	1,695	1.396	2,366	-	1.411	-	1,594	0.291	464	360	1.244	448
37195	Wilson	Rocky Mount	7,638	3,625	4,013	2,465	1.396	3,442	-	1.411	-	914	0.291	266	246	1.244	305
37197	Yadkin	Winston-Salem	1,806	922	884	711	1.165	828	-	1.146	-	212	0.263	56	-	1.024	-
37199	Yancey	Marion	2,535	1,058	1,477	1,058	1.396	1,477	-	1.411	-	-	0.291	-	-	1.244	-
Notes			[A]			[B]	[C]	[D]	[C]			[D]			[E]		

Update: 12/8/2014

Notes

[A] All figures are calculated by authors as summed totals using figures in adjacent columns.

[B] All figures are calculated by authors as summed totals using gross compensation figures reported in [S2].

[C] All figures represent the ratio of practice expenses to compensation, as reported in [S4] and allocated to counties based on urbanization status and population size.

[D] All figures are calculated by authors using figures in adjacent columns: (PE to Compensation Ratio) x (Total Compensation).

Sources

[S1] **Conover, Christopher J.** and **Robert Richards**. Table C-2a. Average APRN Compensation, by Metropolitan Statistical Area and Selected Non-MSA Regions, July 2014. Duke University, Center for Health Policy and Inequalities Research, last updated July 22, 2014.

[S2] **Conover, Christopher J.** and **Robert Richards**. Table C-4. APRN Gross Compensation, by County (thousands of 2014 dollars), 2012. Duke University, Center for Health Policy and Inequalities Research, last updated August 28, 2014.

Table C-7. Potential Changes in Supply and Demand for APRNs, by County (thousands of 2014 dollars), 2012

FIPS	COUNTY	MSA/REGION	POTENTIAL INCREASE IN SUPPLY DUE TO LESS RESTRICTIVE REGULATION		DEMOGRAPHIC INCREASE IN CURRENT APRN DEMAND WITHOUT ACA	ACA-RELATED INCREASE IN CURRENT APRN DEMAND		RATIO: ACA DEMAND INCREASE/ SUPPLY INCREASE		RATIO: TOTAL DEMAND INCREASE/ SUPPLY INCREASE	
			Lower bound (based on APRN compensation)	Upper bound (based on APRN practice outlays)		Without Medicaid expansion	With Medicaid expansion	Without Medicaid expansion	With Medicaid expansion	Without Medicaid expansion	With Medicaid expansion
	State Total		259,741	481,162	176,646	32,838	60,982	13%	23%	81%	91%
37001	Alamance	Burlington	1,623	3,179	520	212	390	13%	24%	45%	56%
37003	Alexander	Hickory	133	287	47	15	29	11%	21%	47%	57%
37005	Alleghany	Marion	240	495	75	34	65	14%	27%	46%	58%
37007	Anson	Charlotte	56	124	14	7	12	12%	22%	37%	47%
37009	Ashe	Marion	597	1,245	167	78	147	13%	25%	41%	53%
37011	Avery	Marion	365	768	129	50	95	14%	26%	49%	61%
37013	Beaufort	Greenville	1,179	2,360	349	118	238	10%	20%	40%	50%
37015	Bertie	Clinton	147	295	20	14	26	10%	18%	23%	32%
37017	Bladen	Clinton	510	1,058	171	72	136	14%	27%	48%	60%
37019	Brunswick	Clinton	1,488	2,829	1,900	145	263	10%	18%	137%	145%
37021	Buncombe	Asheville	12,023	20,946	7,814	1,446	2,681	12%	22%	77%	87%
37023	Burke	Hickory	1,524	2,810	218	185	356	12%	23%	26%	38%
37025	Cabarrus	Charlotte	4,905	8,955	3,817	642	1,096	13%	22%	91%	100%
37027	Caldwell	Hickory	874	1,519	217	95	180	11%	21%	36%	45%
37029	Camden	Clinton	-	-	-	-	-	NA	NA	NA	NA
37031	Carteret	New Bern	1,721	3,429	1,171	178	316	10%	18%	78%	86%
37033	Caswell	Oxford	182	437	68	18	34	10%	19%	47%	56%
37035	Catawba	Hickory	7,196	11,906	1,834	929	1,630	13%	23%	38%	48%
37037	Chatham	Durham	413	894	400	37	67	9%	16%	106%	113%
37039	Cherokee	Marion	295	648	72	32	60	11%	20%	35%	45%
37041	Chowan	Clinton	523	1,018	127	48	87	9%	17%	33%	41%
37043	Clay	Marion	279	541	67	30	58	11%	21%	35%	45%
37045	Cleveland	Charlotte	2,224	4,353	408	239	469	11%	21%	29%	39%
37047	Columbus	Clinton	878	1,689	162	111	206	13%	23%	31%	42%
37049	Craven	New Bern	2,678	5,069	1,144	301	530	11%	20%	54%	63%
37051	Cumberland	Fayetteville	7,332	12,973	3,347	1,002	1,729	14%	24%	59%	69%
37053	Currituck	Clinton	-	-	-	-	-	NA	NA	NA	NA

FIPS	COUNTY	MSA/REGION	POTENTIAL INCREASE IN SUPPLY DUE TO LESS RESTRICTIVE REGULATION		DEMOGRAPHIC INCREASE IN CURRENT APRN DEMAND WITHOUT ACA	ACA-RELATED INCREASE IN CURRENT APRN DEMAND		RATIO: ACA DEMAND INCREASE/ SUPPLY INCREASE		RATIO: TOTAL DEMAND INCREASE/ SUPPLY INCREASE	
			Lower bound (based on APRN compensation)	Upper bound (based on APRN practice outlays)		Without Medicaid expansion	With Medicaid expansion	Without Medicaid expansion	With Medicaid expansion	Without Medicaid expansion	With Medicaid expansion
37055	Dare	Clinton	555	1,133	337	64	110	12%	20%	72%	81%
37057	Davidson	Oxford	1,339	2,690	468	148	273	11%	20%	46%	55%
37059	Davie	Winston-Salem	522	1,066	208	53	93	10%	18%	50%	58%
37061	Duplin	Clinton	764	1,638	324	141	272	18%	36%	61%	78%
37063	Durham	Durham	24,835	45,310	21,169	3,413	6,528	14%	26%	99%	112%
37065	Edgecombe	Rocky Mount	412	802	85	48	91	12%	22%	32%	43%
37067	Forsyth	Winston-Salem	18,263	32,141	8,322	2,299	4,382	13%	24%	58%	70%
37069	Franklin	Raleigh	240	546	183	33	60	14%	25%	90%	101%
37071	Gaston	Charlotte	4,584	8,974	1,990	556	1,048	12%	23%	56%	66%
37073	Gates	Clinton	53	128	(4)	6	10	10%	18%	3%	11%
37075	Graham	Marion	82	196	33	10	18	12%	22%	52%	63%
37077	Granville	Oxford	850	1,686	392	100	176	12%	21%	58%	67%
37079	Greene	Clinton	257	552	84	36	69	14%	27%	47%	60%
37081	Guilford	Greensboro	16,898	29,625	10,168	2,249	4,275	13%	25%	73%	85%
37083	Halifax	Rocky Mount	718	1,384	47	79	145	11%	20%	18%	27%
37085	Harnett	Oxford	649	1,395	540	99	181	15%	28%	99%	111%
37087	Haywood	Asheville	587	1,268	234	55	101	9%	17%	49%	57%
37089	Henderson	Asheville	1,977	3,766	979	208	383	11%	19%	60%	69%
37091	Hertford	Clinton	537	1,076	131	62	115	11%	21%	36%	46%
37093	Hoke	Fayetteville	118	248	114	25	45	21%	38%	118%	135%
37095	Hyde	Clinton	153	367	90	19	38	12%	25%	71%	84%
37097	Iredell	Charlotte	4,293	7,985	3,001	577	966	13%	23%	83%	92%
37099	Jackson	Marion	1,159	2,256	460	172	325	15%	28%	55%	68%
37101	Johnston	Raleigh	1,339	2,558	1,094	211	378	16%	28%	97%	110%
37103	Jones	New Bern	79	190	19	10	18	12%	22%	37%	46%
37105	Lee	Oxford	536	1,271	346	86	155	16%	29%	81%	93%
37107	Lenoir	Clinton	589	1,136	80	76	142	13%	24%	27%	38%
37109	Lincoln	Charlotte	770	1,516	459	90	164	12%	21%	71%	81%
37113	Macon	Marion	475	888	116	57	109	12%	23%	36%	47%

FIPS	COUNTY	MSA/REGION	POTENTIAL INCREASE IN SUPPLY DUE TO LESS RESTRICTIVE REGULATION		DEMOGRAPHIC INCREASE IN CURRENT APRN DEMAND WITHOUT ACA	ACA-RELATED INCREASE IN CURRENT APRN DEMAND		RATIO: ACA DEMAND INCREASE/ SUPPLY INCREASE		RATIO: TOTAL DEMAND INCREASE/ SUPPLY INCREASE	
			Lower bound (based on APRN compensation)	Upper bound (based on APRN practice outlays)		Without Medicaid expansion	With Medicaid expansion	Without Medicaid expansion	With Medicaid expansion	Without Medicaid expansion	With Medicaid expansion
37115	Madison	Asheville	192	413	85	19	37	10%	19%	54%	63%
37117	Martin	Clinton	155	320	10	15	32	10%	20%	16%	27%
37111	McDowell	Marion	265	609	80	30	57	11%	21%	42%	52%
37119	Mecklenburg	Charlotte	34,728	62,757	36,127	4,922	9,155	14%	26%	118%	130%
37121	Mitchell	Marion	362	708	44	35	64	10%	18%	22%	30%
37123	Montgomery	Oxford	21	48	6	3	6	15%	29%	42%	56%
37125	Moore	Oxford	3,411	5,995	1,971	308	560	9%	16%	67%	74%
37127	Nash	Rocky Mount	1,759	2,840	349	208	383	12%	22%	32%	42%
37129	New Hanover	Wilmington	7,593	13,467	6,515	873	1,606	12%	21%	97%	107%
37131	Northampton	Rocky Mount	72	172	(15)	7	13	9%	18%	-12%	-3%
37133	Onslow	Jacksonville	2,770	5,191	1,989	406	712	15%	26%	86%	98%
37135	Orange	Durham	11,909	22,889	9,118	1,082	2,085	9%	18%	86%	94%
37137	Pamlico	New Bern	132	314	46	12	21	9%	16%	44%	51%
37139	Pasquotank	Clinton	686	1,467	20	81	146	12%	21%	15%	24%
37141	Pender	Wilmington	405	873	370	54	98	13%	24%	105%	116%
37143	Perquimans	Clinton	-	-	-	-	-	NA	NA	NA	NA
37145	Person	Durham	558	1,137	170	55	104	10%	19%	40%	49%
37147	Pitt	Greenville	10,024	18,586	5,775	1,239	2,593	12%	26%	70%	83%
37149	Polk	Marion	478	925	181	45	82	9%	17%	47%	55%
37151	Randolph	Greensboro	1,377	2,693	372	196	365	14%	27%	41%	54%
37153	Richmond	Oxford	522	1,183	77	79	150	15%	29%	30%	44%
37155	Robeson	Fayetteville	2,535	5,170	502	504	945	20%	37%	40%	57%
37157	Rockingham	Greensboro	1,055	1,942	145	115	213	11%	20%	25%	34%
37159	Rowan	Charlotte	2,610	4,979	904	355	647	14%	25%	48%	59%
37161	Rutherford	Marion	1,061	2,170	113	116	227	11%	21%	22%	32%
37163	Sampson	Clinton	517	999	171	78	151	15%	29%	48%	62%
37165	Scotland	Fayetteville	765	1,435	108	95	186	12%	24%	27%	38%
37167	Stanly	Charlotte	1,026	1,929	380	109	199	11%	19%	48%	56%
37169	Stokes	Winston-Salem	437	910	38	43	76	10%	17%	19%	26%
37171	Surry	Marion	1,881	3,976	319	249	466	13%	25%	30%	42%

FIPS	COUNTY	MSA/REGION	POTENTIAL INCREASE IN SUPPLY DUE TO LESS RESTRICTIVE REGULATION		DEMOGRAPHIC INCREASE IN CURRENT APRN DEMAND WITHOUT ACA	ACA-RELATED INCREASE IN CURRENT APRN DEMAND		RATIO: ACA DEMAND INCREASE/ SUPPLY INCREASE		RATIO: TOTAL DEMAND INCREASE/ SUPPLY INCREASE	
			Lower bound (based on APRN compensation)	Upper bound (based on APRN practice outlays)		Without Medicaid expansion	With Medicaid expansion	Without Medicaid expansion	With Medicaid expansion	Without Medicaid expansion	With Medicaid expansion
37173	Swain	Marion	110	264	49	16	29	14%	26%	59%	71%
37175	Transylvania	Asheville	447	890	204	38	72	9%	16%	54%	62%
37177	Tyrrell	Clinton	16	38	2	2	4	12%	25%	25%	37%
37179	Union	Charlotte	2,462	4,604	2,474	304	524	12%	21%	113%	122%
37181	Vance	Oxford	481	1,091	75	66	121	14%	25%	29%	41%
37183	Wake	Raleigh	28,041	53,027	29,867	3,303	5,819	12%	21%	118%	127%
37185	Warren	Oxford	52	125	9	6	11	12%	21%	30%	40%
37187	Washington	Clinton	28	67	3	2	5	9%	18%	20%	29%
37189	Watauga	Marion	1,250	2,615	578	158	327	13%	26%	59%	72%
37191	Wayne	Goldsboro	2,272	4,114	791	297	574	13%	25%	48%	60%
37193	Wilkes	Marion	890	1,689	265	111	213	12%	24%	42%	54%
37195	Wilson	Rocky Mount	884	1,863	530	122	230	14%	26%	74%	86%
37197	Yadkin	Winston-Salem	225	440	33	28	51	13%	23%	27%	37%
37199	Yancey	Marion	258	618	62	28	53	11%	21%	35%	45%
Notes			[A]	[B]	[C]	[D]	[E]	[F]		[G]	

Update: 12/8/2014

Note: All figures are based on 2012 estimates of the number of APRNs by county (the latest available figures) but are monetized using 2014 compensation estimates. All projections of changes in supply and demand assume that all changes shown (which actually would occur gradually between 2012 and 2019) had counterfactually been fully in place by 2012. Thus, they represent the permanent annual increase in supply/demand that would be expected as a consequence of these policy and population changes.

Notes

[A] All figures are calculated by authors by multiplying gross APRN compensation in 2012, as reported in [S4], times the estimated increase in the growth rate of APRNs between 2012 and 2019 if North Carolina were to follow the lead of states that impose the least restrictions on scope of practice, as reported in [P1]. This estimated increase is based on an empirical analysis of state differences in scope of practice regulations for nurse practitioners [S3]. For purposes of analysis, it is assumed that similar effects would be observed were parallel scope of practice restrictions reduced for Certified Registered Nurse Anesthetists, Certified Nurse Midwives and Certified Nurse Specialists.

[B] All figures are calculated by authors by multiplying APRN practice outlays in 2012, as reported in [S5], times the estimated increase in the growth rate of APRNs between 2012 and 2019 if North Carolina were to follow the lead of states that impose the least restrictions on scope of practice, as reported in [P1].

[C] All figures are calculated by authors by multiplying gross APRN compensation in 2012, as reported in [S4], times the estimated increase in demand for APRNs between 2012 and 2019 based purely on changes in total population and a changing age mix, as reported in [S3].

[D] All figures are calculated by authors by multiplying gross APRN compensation in 2012, as reported in [S4], times the estimated increase in demand for APRNs between 2012 and 2019 based the estimated increase in federal expenditures in North Carolina under the Affordable Care Act (assuming no Medicaid expansion), as reported in [S3].

[E] All figures are calculated by authors by multiplying gross APRN compensation in 2012, as reported in [S4], times the estimated increase in demand for APRNs between 2012 and 2019 based the estimated increase in federal expenditures in North Carolina under the Affordable Care Act (assuming Medicaid expansion or its equivalent prior to 2019), as reported in [S3].

[F] All figures are calculated by authors by dividing figures shown in adjacent columns for ACA-related increase in demand by the potential increase in supply due to deregulation.

[G] All figures are calculated by authors using identical method described in footnote [E] except that the increase in demand includes the demographic increase in demand without ACA.

Parameters

[P1] Estimated Increase in APRN Supply If NC Adopted Least Restrictive Scope-of-Practice Regulations

Parameter	Description	Note
43.5	2012 NPs/100,000 in North Carolina	[P1a]
10.6	Potential increase in NPs/100,000 under least restrictive scope-of-practice regulations [S6].	[P1b]
24.4%	Estimated percentage increase in APRNs under least restrictive SOP regulations	[P1c]

[P1a]	Figure calculated from total active NPs in 2012 reported in [S1] and total population figures reported in [S2].
[P1b]	Figure shown is the net increase in NPs/100,000 in states with least restrictive SOP regulations, as reported in Model 3 results reported in [S6].
[P1c]	Figure shown is calculated by authors: 10.6/43.5. This is a conservative estimate since the baseline supply of NPs/100,000 in states with no restrictions was 26.92, as reported in Table 2 of [S6]. Thus, the incremental growth in supply in such states relative to this baseline = 40.5%.

Sources

[S1] **Conover, Christopher J.** and **Robert Richards**. Table C-1. Active Advanced Practice RNs by County, 2012. Duke University, Center for Health Policy and Inequalities Research, last updated August 12, 2014.

[S2] **Conover, Christopher J.** and **Robert Richards**. Table B-1. Estimated Change in Health Expenditures Due to Population Growth and Aging from 2012 to 2020, by County. Duke University, Center for Health Policy and Inequalities Research, last updated July 23, 2014.

[S3] **Conover, Christopher J.** and **Robert Richards**. Table B-4. Estimated Increase in Health Expenditures Due to Affordable Care Act, by County. Duke University, Center for Health Policy and Inequalities Research, last updated August 24, 2014.

[S4] **Conover, Christopher J.** and **Robert Richards**. Table C-4. APRN Gross Compensation, by County (thousands), 2012. Duke University, Center for Health Policy and Inequalities Research, last updated August 28, 2014.

[S5] **Conover, Christopher J.** and **Robert Richards**. Table C-6. APRN Practice Outlays, by County (thousands of 2014 dollars), 2012. Duke University, Center for Health Policy and Inequalities Research, last updated December 8, 2014.

[S6] **Reagan, Patricia B. and Pamela J. Salsberry.** *The Effects of State-Level Scope-of-Practice Regulations on the Number and Growth of Nurse Practitioners. Nursing Outlook* 61 (2013): 392-399.

Table C-8. Potential Impact of Less Restrictive Regulation of APRNs on North Carolina Physician Shortages

TYPE OF PHYSICIAN	NUMBER OF ACTIVE MDS IN NORTH CAROLINA, 2012	PHYSICIAN SHORTAGE IN 2020				APRN COMP-ARATOR	FTE APRNS IN NORTH CAROLINA, 2012		MD SUB-STITUTION RATIO	INCREASE IN MD EQUIVALENTS UNDER LESS RESTRICTIVE APRN REGULATION			
		As a percentage of supply		Number needed to eliminate shortage			Current number	Increase under less restrictive regulation of APRNs		Total number	As a percentage of 2012 MD supply	As a percentage of MD shortage	
		Lower-bound estimate	Upper-bound estimate	Lower-bound estimate	Upper-bound estimate							Lower-bound estimate	Upper-bound estimate
All primary care MDs excluding OB/GYNs	6,511	4.9%	14.2%	319	922	NPs	4,006	977	75%	733	11.3%	229.9%	79.5%
						CNSs	909	222	50%	111	1.7%	34.8%	12.0%
						Subtotal	4,915	1,199	70%	843	13.0%	264.7%	91.5%
OB/GYNs	891	22.9%	33.2%	204	295	CNMs	258	63	80%	50	5.7%	24.7%	17.1%
Anesthesiologists	1,371	12.1%	31.3%	166	428	CRNAs	1,981	483	76%	365	26.6%	220.0%	85.1%
All nonfederal physicians	21,788	4.9%	14.2%	1,066	3,085	All APRNs	7,154	1,745	72%	1,259	5.8%	118.0%	40.8%
Notes	[A]	[B]	[C]	[D]		[D]	[E]	[F]	[G]	[H]	[I]		

Update: 12/20/2014

Notes

[A] With the exception of anesthesiologists, all figures are counts of physicians active in profession, as reported in [S1]. Because anesthesiologists are not separately reported in the *North Carolina Health Professions Data Book*, the 2012 number of anesthesiologists was calculated using the 2002 level and assuming the same annual growth in that number as actually occurred between 1992-2002 (see Parameters [P2]).

[B] **Primary Care MDs Excluding OB/GYNs**. The figure for primary care physicians is the sum of the lower-bound estimate the projected 2020 physician shortage in North Carolina and the projected lower-bound estimate of the increase in demand due to the Affordable Care Act (see Parameters [P1]). **OB/GYNs**. The reported national shortage of OB/GYNs in 2020 will be 19%, a lower-bound estimate that assumes the average career of an OB/GYN lasts 30 years, as reported in Table 3 at [S2]. **Anesthesiologists**. The reported shortage of anesthesiologists in North Carolina in 2007 was 8.2%, as reported in Table 4.8 at [S4]. Nationally, the shortage of anesthesiologists is expected to grow by 0.94% a year between 2007 and 2020 (see [C]). However, the actual growth rate of anesthesiologists is uncertain, so if it is 0.94% faster than the national average, this would imply that the shortage estimated for 2007 has remained unchanged. However, since increased demand under the ACA, the figure shown for anesthesiologists is the sum of 8.2% plus the same projected lower-bound estimate of the increase in demand due to the ACA that was used for primary care physicians. **All Nonfederal Physicians**. These figures were derived in the identical fashion as for primary care MDS excluding OB/GYNs.

[C] **Primary Care MDs Excluding OB/GYNs**. The figure for primary care physicians is derived using the same methods and sources described in [B], but substituting upper-bound estimates in each step. **OB/GYNs**. The figure for OB-GYNs also is constructed in a parallel fashion, starting with a national upper-bound estimate of a 27% shortage in 2020 that assumes OB/GYNs have a 25-year career, as reported in [S2]. **Anesthesiologists**. The figure for anesthesiologists is based on the projection that the shortage will grow by annually 0.94% (1.61% annual growth in demand for surgeries minus 0.67% net growth in supply of anesthesiologists) between 2007 and 2020: 21.2% = 8.2% + (13 x .94%). To this authors added the upper-bound estimate of demand increases due to the ACA. **All Nonfederal Physicians**. These figures were derived in the identical fashion as for primary care MDS excluding OB/GYNs.

[D] All figures are calculated by authors: (Number of Active MDs, 2012) x (MD Shortage as a Percentage of Supply). This understates the actual number of additional MDs would be needed in 2020. However, because the projected APRN supply expansion also is pegged to the 2012 count of APRNs, the figures are a more appropriate gauge of determining the extent to which less restrictive regulation of APRNs would reduce pending physician shortages.

[E] All figures are reported in [S8].

[F] All figures are calculated by authors: (FTE APRNs, 2012) x (Percentage Increase Under Less Restrictive Regulation of APRNs). The latter parameter (24.4%) is reported in [S9], based on analysis of the estimated reduction in NP supply in states (including North Carolina) with the most restrictive regulations regarding NP scope of practice [S11].

[G] All figures are calculated in Parameters [P3].

[H] All figures are calculated by authors: (Increase in FTE APRNs) x (MD Substitution Ratio).

[I] All figures are calculated by authors using figures in adjacent columns.

Parameters

[P1] Estimated shortage of anesthesiologists in NC

Lower-bound estimate	Upper-bound estimate	
1.0%	8.0%	Estimated shortage in North Carolina provider supply in 2020, as reported in [S5]. No separate estimates were provided for either primary care physicians or individual specialties.
3.1%	5.7%	Percentage increase in health spending under the ACA due to increased federal spending [S6].
84.8%	27.6%	Share of increase due to Exchange subsidies (calculated by authors from figures reported in [S6]).
76.0%	76.0%	Federal share of premiums paid for Exchange coverage [S7].
3.9%	6.2%	Net additional shortage attributable to ACA [P1a].

[P1a] The percentage increase due to increased federal spending does not account for spending borne by households that qualify for federal Exchange subsidies. This figure was imputed by authors based on the federal share of premiums for Exchange coverage, i.e., total costs of Exchange-subsidized plans = 1.32 x federal Exchange subsidies, where 1.32 = 1/.76. Thus, the figure shown = (Percentage Increase in Health Spending Due to Increased ACA Spending) x (1 + (Share of Increase Due to Exchange Subsidies)/(Federal Share of Premiums Paid for Exchange Coverage) - (Percentage Increase in Health Spending Due to Increased ACA Spending) x (Share of Increase Due to Exchange Subsidies)).

[P2] Estimated shortage of anesthesiologists in NC

770	Number of anesthesiologists in NC, 2002 [S3]
1220	Number of anesthesiologists in NC, 2007 [P2a]
4.0%	Annual growth in anesthesiologists in North Carolina from 1992-2002 [P2b]
0.67%	Projected growth in anesthesiologists in U.S. from 1999-2007 [P2c]
2.4%	Assumed growth in anesthesiologists in North Carolina from 2007-2012 [P2d]

[P2a] Figure shown is calculated by authors based on reported shortage of 109 anesthesiologists representing an 8.2% shortage (Table 4.8 in [S4]): 1220=109/8.2%-109.

[P2b] Figure shown is calculated by authors based on the number of anesthesiologists in 1992 (518) and 2002 (770), as reported in [S3].

[P2c] Nationally, the net annual growth in anesthesiologists between 1999 and 2007 was only .67% (entry rate 1.82% minus exit rate of 1.15%, as reported in Table 5.1 at [S4]).

[P2d] While net growth in anesthesiologists nationally averaged only 0.67% from 1999 to 2007 [P2c], Fig. 5.3 in [S4] shows the net growth rate rose rapidly between 2001 and 2006 to a level of close to 2.0% by 2006. Since the actual growth in North Carolina since 2002 is unknown, averaging the actual growth in North Carolina from 1992-2002 and the actual growth in U.S. from 1999-2007 seemed more accurate than using one or the other of these figures.

[P3] MD Substitution Ratios

Substitution Ratio	Type of APRN	Physician Comparator	Notes
75.0%	NPs	Primary care MDs	[P3a]
50.0%	CNSs	Primary care MDs	[P3b]
80.2%	CNMs	OB/GYNs	[P3c]
75.5%	CRNAs	Anesthesiologists	[P3d]

[P3a]	A recent HRSA report [S10: p.28] employs a 0.75 weighting to NPs and PAs relative to primary care physicians. This weighting reflects the consensus of the Negotiated Rulemaking Committee on the Designation of Medically Underserved Populations and Health Professional Shortage Areas. The ratio reflects differences in both the demographic make-up of each profession and practice styles. That is, a higher fraction of NPs are female, who in turn, tend to work fewer hours than their counterparts who are male; for example, in 2005 the average number of work hours per week reported by female physicians in North Carolina was about 91% of the average hours reported by males [S5:16]. NPs typically spend more time per visit with patients, doing more patient education, for example. As HRSA cautioned in reporting this ratio, "It is important to note that the Committee did not intend for this weighting to represent the general relative cost or value of NP and PA services compared with physician services. The Committee also acknowledged that these providers often deliver a different set of services than a physician, and that weighting them at 1.0 would overstate the assessment of primary care capacity."
[P3b]	There is no commonly accepted equivalency standard for CNSs. "CNSs are engaged in direct clinical practice; function as consultants in their area of expertise; provide expert coaching and guidance; interpret, evaluate, and participate in research; provide clinical and professional leadership; collaborate; and employ ethical decisionmaking" [S12]. In light of the solid evidence that CNSs reduce the need for inpatient care, as one example, the reduction in patient needs for various medical services may have at least as important in alleviating physician shortages as any direct substitution of CNS for MD services. Thus, depending on their training, the services CNSs perform can reduce the need for a variety of specialists ranging from OB/GYN physicians to general internists. But in light of the lack of solid evidence regarding how many fewer physicians might be required for every 100 CNSs, authors conservatively use a weighting of .5, which is the ratio HRSA formerly applied to NPs when determining the number of FTE primary care providers for purposes of designating Health Professional Shortage Areas [S5: 117].
[P3c]	Current Medicare payment rules imply that CNMs have the equivalent productivity as physicians who deliver the identical services. However, AMA survey data show that average weekly hours of patient care were nearly identical for OB-GYNs and MDAs in 1998. These 1998 figures are from an annual survey conducted by the AMA annually (but which ceased in 1999), as reported in Exhibit 10 at [S13]. Average weekly hours have unquestionably declined in the interim (MDAs reported 57 patient care hours weekly in 1998 compared to 49 hours reported in in [S4], while OB-GYNs reported 58 patient care hours. For purposes of analysis, it was assumed that current OB-GYN hours = 58 x 49/57, implying OB-GYN hours declined at the identical rate as for MDAs. Assuming weekly work hours declined at the same rate in both professions, the equivalent figure currently would be 50 hours. In North Carolina, the typical workweek for CNMs is 40 hours, implying one FTE CNM would substitute for about 80 percent of an OB-GYN. The figure shown is calculated by authors: 40/(58*49/57).
[P3d]	A RAND Corporation study showed that CRNAs spend 37 hours weekly on procedures while the parallel figure for anesthesiologists (MDAs) is 49 hours [S4]. Thus, even though productivity of CRNAs and MDAs are equivalent in terms of productivity per case (as reflected by Medicare payment rules), one FTE CRNA only can substitute for 75 percent of an MDA due to the latter's longer clinical workweek. The figure shown is calculated by authors: 37/49.

Sources

[S1] **Minnotte, Matthew, Julie C. Spero, Victoria McGee, Jane Darter, Hazel L. Hadley, Jennifer S. Groves, Stephanie Pierson, Robert Schwartz, Katie Gaul and Erin P. Fraher.** *A Report on Health Care Resources in North Carolina: North Carolina Health Professions 2012 Data Book***.** Chapel Hill, NC: The North Carolina Health Professions Data System, Program on Health Workforce Research and Policy, Cecil G. Sheps Center for Health Services Research, 2014.

[S2] **Satiani, Bhagwan**. "A Critical Deficit of Obgyn Surgeons in the U.S by 2030." *Surgical Science* 02, no. 02 (2011): 95-101.

[S3] **Dyson, Susan, Trish Tempio** and **Thomas C. Ricketts**. *Trends in the Supply of Certified Registered Nurse Anesthetists in North Carolina, 1992-2002*. (2004). Available at: www.shepscenter.unc.edu/hp/.

[S4] **Daugherty, Lindsay, Raquel Fonseca, Krishna B. Kumar** and **Pierre-Carl Michaud**. *An Analysis of the Labor Markets for Anesthesiology*. Santa Monica, CA: RAND Health, RAND Corporation, 2010.

[S5] **North Carolina Institute of Medicine**. *Providers in Demand: North Carolina's Primary Care and Specialty Supply*. Durham, NC: NCIOM Task Force on Primary Care and Specialty Supply, 2007.

[S6] **Conover, Christopher J.** and **Robert Richards**. Table B-4. Estimated Increase in Health Expenditures Due to Affordable Care Act, by County. Duke University, Center for Health Policy and Inequalities Research, last updated August 24, 2014.

[S7] **Burke, Amy, Arpit Misra, and** Steven Sheingold**.** *Premium Affordability, Competition, and Choice in the Health Insurance Marketplace*, ASPE Research Brief, June 18, 2014. Available at: http://aspe.hhs.gov/health/reports/2014/Premiums/2014MktPlacePremBrf.pdf (accessed December 20, 2014).

[S8] **Conover, Christopher J.** and **Robert Richards**. Table C-1. Active Advanced Practice RNs by County, 2012. Duke University, Center for Health Policy and Inequalities Research, last updated August 12, 2014.

[S9] **Conover, Christopher J.** and **Robert Richards**. Table C-7. Potential Changes in Supply and Demand for APRNs, by County (thousands of 2014 dollars), 2012. Duke University, Center for Health Policy and Inequalities Research, last updated December 8, 2014.

[S10] **HRSA (Health Resources and Services Administration), National Center for Health Workforce Analysis**. *Projecting the Supply and Demand for Primary Care Practitioners through 2020*. Rockville, MD: U.S. Department of Health and Human Services, 2013.

[S11] **Reagan, Patricia B. and Pamela J. Salsberry.** *The Effects of State-Level Scope-of-Practice Regulations on the Number and Growth of Nurse Practitioners. Nursing Outlook* 61 (2013): 392-399.

[S12] **O'Grady, Eleanor T**. "Advanced Practice Registered Nurses: The Impact on Patient Safety and Quality." In *Patient Safety and Quality: An Evidence-Based Handbook for Nurses*, edited by Hughes R.G. Rockville (MD): Agency for Healthcare Research and Quality, 2008.

[S13] **HRSA (Health Resources Services Administration), Bureau of Health Professions**. *The Physician Workforce: Projections and Research into Current Issues Affecting Supply and Demand*. Washington, DC, 2008.

Appendix D: Economic Impact of Less Restrictive APRN Regulation

Appendix D gives our calculations of the annual economic impact of removing current restrictions on the scope of APRN practice in the state. Specifically, the tables project increases in total economic output, value added, payroll, and employment for lower- and upper-bound estimates of the increases in APRN demand. These demand shocks were calculated and displayed in Appendix C, and are also reproduced in the tables below. We also report the multipliers used in making these calculations.

We present results at the state and regional levels (Table D-1); the Sheps HSA, MSA, and NCI-modified HSA levels (Table D-2); and the county level (Table D-3). Maps and tables in the main body of the report draw directly from the data in these tables.

Table D-1. Annual Economic Impact of Less Restrictive APRN Regulations, 2012, State of North Carolina and Major Regions (thousands of 2014 dollars)

REGION	POTENTIAL INCREASE IN SPENDING ON APRNS DUE TO LESS RESTRICTIVE REGULATION (THOUSANDS OF 2014 DOLLARS)		TOTAL OUTPUT MULTIPLIERS				NET ECONOMIC IMPACT IN NORTH CAROLINA (THOUSANDS OF 2014 DOLLARS)							
							Lower-bound estimates				Upper-bound estimates			
	Lower bound (based on APRN compensation)	Upper bound (based on APRN practice outlays)	Output	Value-added	Labor income	Employment	Total expenditures (output)	Value added (gross product)	Labor income (wages and benefits)	Employment (permanent jobs)	Total expenditures (output)	Value added (gross product)	Labor income (wages and benefits)	Employment (permanent jobs)
Statewide	**259,741**	**481,162**	**1.83598**	**1.21010**	**0.93961**	**14.81505**	**476,878**	**314,311**	**244,056**	**3,848**	**883,404**	**582,252**	**452,107**	**7,128**
Eastern	53,292	100,244	1.55607	1.00566	0.78989	13.87515	82,926	53,594	42,095	739	155,986	100,811	79,181	1,391
Piedmont	178,776	328,695	1.84116	1.23646	0.97443	14.35309	329,155	221,049	174,205	2,566	605,178	406,416	320,289	4,718
Western	27,672	52,224	1.59403	1.04387	0.82077	14.01897	44,110	28,886	22,712	388	83,246	54,515	42,864	732
Memorandum: Amount per New FTE APRN (thousands of 2014 dollars)	149	276	NA	NA	NA	NA	273	180	140	2.21	506	334	259	4.09
Notes	[A]		[B]				[C]							

Update: 12/18/2014

Note: All figures are based on 2012 estimates of the number of APRNs by county (the latest available figures) but are monetized using 2014 compensation estimates. All projections of changes in supply and demand assume that all changes shown (which actually would occur gradually between 2012 and 2019) had counterfactually been fully in place by 2012. Thus, they represent the permanent annual increase in supply/demand that would be expected as a consequence of these policy and population changes.

Notes

[A] All figures are calculated by authors using [S1].

[B] Figures shown are total output multipliers inclusive of direct, indirect and induced effects for industry group 394, Offices of physicians, dentists, and other health practitioners, as compiled by authors using [S1].

[C] All figures are calculated by authors using multipliers shown. These reflect the direct, indirect and induced effects of the increase in APRN supply that would result from lowering practice restrictions. The state total exceeds the sum of individual regional estimates because it includes leakages across regional borders that are excluded from the individual region results but nevertheless represent economic activity within the state's borders.

Sources

[S1] **IMPLAN Group, LLC.** *IMPLAN System* (data and software), 16740 Birkdale Commons Pkwy, Suite 206, Huntersville, NC 28078 www.implan.com

Table D-2. Annual Economic Impact of Less Restrictive APRN Regulations, 2012, Regional Breakdowns (thousands of 2014 dollars)

REGION	POTENTIAL INCREASE IN SPENDING ON APRNS DUE TO LESS RESTRICTIVE REGULATION (THOUSANDS OF 2014 DOLLARS)		TOTAL OUTPUT MULTIPLIERS				NET ECONOMIC IMPACT IN NORTH CAROLINA (THOUSANDS OF 2014 DOLLARS)							
							Lower-bound estimates				Upper-bound estimates			
	Lower bound (based on APRN compen-sation)	Upper bound (based on APRN practice outlays)	Output	Value-added	Labor income	Employ-ment	Total expend-itures (output)	Value added (gross product)	Labor income (wages and benefits)	Employ-ment (permanent jobs)	Total expend-itures (output)	Value added (gross product)	Labor income (wages and benefits)	Employ-ment (permanent jobs)
Sheps Health Service Areas														
Capital	69,254	130,534	1.75918	1.16973	0.92500	14.15649	121,830	81,008	64,060	980	229,632	152,689	120,744	1,848
Cardinal	26,800	49,486	1.53786	1.00191	0.79216	13.71462	41,215	26,851	21,230	368	76,103	49,580	39,201	679
Eastern	29,163	55,549	1.53268	0.99845	0.79210	13.55581	44,698	29,118	23,100	395	85,138	55,462	44,000	753
Piedmont	43,801	79,100	1.78336	1.18420	0.93306	14.80904	78,114	51,870	40,869	649	141,064	93,670	73,805	1,171
South Piedmont	55,378	101,699	1.74973	1.21018	0.97207	13.13203	96,897	67,017	53,831	727	177,947	123,074	98,859	1,336
Western	35,344	64,794	1.61534	1.06565	0.83992	14.01025	57,092	37,664	29,686	495	104,665	69,048	54,422	908
Metropolitan Statistical Areas														
0480 Asheville	21,359	1.70855	1.15483	0.90540	14.66452	20,871	14,107	11,060	179	36,494	24,666	19,339	313	21,359
1520 Charlotte	93,714	1.74551	1.21132	0.97515	12.98196	89,169	61,880	49,815	663	163,579	113,518	91,385	1,217	93,714
2560 Fayetteville	12,973	1.38449	0.89017	0.73696	12.97905	10,151	6,527	5,403	95	17,961	11,548	9,561	168	12,973
2980 Goldsboro	4,114	1.46693	0.94274	0.76153	13.33002	3,333	2,142	1,730	30	6,035	3,879	3,133	55	4,114
3120 Greensboro	72,746	1.78123	1.18959	0.94184	14.68361	72,466	48,396	38,317	597	129,577	86,538	68,515	1,068	72,746
3150 Greenville	18,586	1.52891	1.03769	0.84694	12.97868	15,326	10,402	8,490	130	28,416	19,286	15,741	241	18,586
3290 Hickory	16,523	1.56306	1.06299	0.85579	12.98076	15,204	10,340	8,324	126	25,826	17,563	14,140	214	16,523
3605 Jacksonville	5,191	1.32801	0.83955	0.68360	12.86917	3,678	2,325	1,893	36	6,894	4,358	3,549	67	5,191
5720 Norfolk	-	1.37904	0.82643	0.65029	13.93031	-	-	-	-	-	-	-	-	-
6640 Raleigh	125,224	1.74968	1.17080	0.93058	13.99628	116,838	78,182	62,141	935	219,101	146,612	116,530	1,753	125,224
6895 Rocky Mount	3,642	1.47716	0.98168	0.80063	12.88800	3,206	2,130	1,738	28	5,380	3,575	2,916	47	3,642
9200 Wilmington	16,297	1.61811	1.06885	0.83415	14.07388	14,694	9,706	7,575	128	26,369	17,418	13,594	229	16,297
NCI-Modified Health Service Areas														
006 Currituck	-	-	1.37904	0.82643	0.65029	13.93031	-	-	-	-	-	-	-	0.0

REGION		POTENTIAL INCREASE IN SPENDING ON APRNS DUE TO LESS RESTRICTIVE REGULATION (THOUSANDS OF 2014 DOLLARS)		TOTAL OUTPUT MULTIPLIERS				NET ECONOMIC IMPACT IN NORTH CAROLINA (THOUSANDS OF 2014 DOLLARS)							
								Lower-bound estimates				Upper-bound estimates			
		Lower bound (based on APRN compen-sation)	Upper bound (based on APRN practice outlays)	Output	Value-added	Labor income	Employ-ment	Total expend-itures (output)	Value added (gross product)	Labor income (wages and benefits)	Employ-ment (permanent jobs)	Total expend-itures (output)	Value added (gross product)	Labor income (wages and benefits)	Employ-ment (permanent jobs)
073	Alleghany	240	495	1.38876	0.81359	0.64146	14.20068	333	195	154	3	687	403	317	7.0
132	Caswell	182	437	1.23629	0.73595	0.61949	12.44681	225	134	113	2	540	321	270	5.4
149	Winston-Salem	21,328	38,534	1.67226	1.12570	0.90263	13.99846	35,665	24,008	19,251	299	64,439	43,378	34,782	539.4
167	Charlotte	37,246	67,484	1.65717	1.16590	0.95927	11.94172	61,722	43,424	35,728	445	111,833	78,680	64,736	805.9
168	Wilmington	9,486	17,169	1.62887	1.07233	0.83242	14.23590	15,452	10,172	7,896	135	27,967	18,411	14,292	244.4
170	Durham	26,776	49,348	1.48714	0.97517	0.80620	12.69506	39,820	26,111	21,587	340	73,388	48,123	39,785	626.5
186	Greensboro	20,669	36,951	1.70996	1.14324	0.90898	14.07501	35,342	23,629	18,787	291	63,184	42,243	33,587	520.1
191	Polk	478	925	1.33589	0.74172	0.57453	14.75469	639	355	275	7	1,236	686	531	13.6
192	Statesville	4,426	8,272	1.48300	0.99295	0.81540	12.83144	6,564	4,395	3,609	57	12,268	8,214	6,745	106.1
194	Watauga	1,847	3,860	1.55495	0.98033	0.76391	14.59090	2,872	1,811	1,411	27	6,002	3,784	2,949	56.3
195	Pitt	11,555	21,738	1.51438	1.00143	0.80992	13.41960	17,499	11,572	9,359	155	32,920	21,769	17,606	291.7
198	Raleigh	30,504	57,993	1.70139	1.15267	0.91855	13.59591	51,899	35,161	28,020	415	98,669	66,847	53,270	788.5
203	Chapel Hill	13,506	26,450	1.43562	0.92737	0.74500	12.95654	19,390	12,525	10,062	175	37,972	24,529	19,705	342.7
205	Moore	4,072	7,474	1.46647	0.99038	0.81437	12.20475	5,972	4,033	3,316	50	10,960	7,402	6,086	91.2
207	Robeson	4,688	9,352	1.42798	0.92188	0.74589	13.20821	6,694	4,322	3,497	62	13,354	8,621	6,975	123.5
209	Jackson	1,825	3,604	1.46159	0.92272	0.72330	13.90794	2,668	1,684	1,320	25	5,267	3,325	2,607	50.1
214	Nash	2,960	5,198	1.46549	0.96417	0.78193	12.96985	4,338	2,854	2,315	38	7,618	5,012	4,065	67.4
218	Gaston	8,639	17,013	1.47242	0.99019	0.80398	12.48435	12,720	8,554	6,946	108	25,050	16,846	13,678	212.4
225	Asheville	15,227	27,284	1.70039	1.13844	0.89091	14.77714	25,892	17,335	13,566	225	46,393	31,061	24,307	403.2
229	Hickory	9,594	16,236	1.56038	1.06410	0.86039	12.90271	14,971	10,209	8,255	124	25,334	17,276	13,969	209.5
235	Concord	8,541	15,864	1.48770	1.00890	0.82286	12.43543	12,706	8,617	7,028	106	23,600	16,005	13,054	197.3
238	Wayne	3,882	7,440	1.45003	0.93432	0.76186	13.16367	5,629	3,627	2,957	51	10,789	6,952	5,668	97.9
240	Yancey	985	2,094	1.39129	0.83291	0.66490	14.00865	1,370	820	655	14	2,913	1,744	1,392	29.3
242	Onslow	7,380	14,193	1.41497	0.93729	0.75682	12.60946	10,443	6,917	5,585	93	20,082	13,303	10,741	179.0

REGION		POTENTIAL INCREASE IN SPENDING ON APRNS DUE TO LESS RESTRICTIVE REGULATION (THOUSANDS OF 2014 DOLLARS)		TOTAL OUTPUT MULTIPLIERS				NET ECONOMIC IMPACT IN NORTH CAROLINA (THOUSANDS OF 2014 DOLLARS)							
								Lower-bound estimates				Upper-bound estimates			
		Lower bound (based on APRN compen-sation)	Upper bound (based on APRN practice outlays)	Output	Value-added	Labor income	Employ-ment	Total expend-itures (output)	Value added (gross product)	Labor income (wages and benefits)	Employ-ment (permanent jobs)	Total expend-itures (output)	Value added (gross product)	Labor income (wages and benefits)	Employ-ment (permanent jobs)
243	Hertford	1,261	2,516	1.37962	0.85205	0.68858	13.11904	1,739	1,074	868	17	3,472	2,144	1,733	33.0
256	Wilkes	890	1,689	1.39323	0.86377	0.69060	13.24122	1,240	769	615	12	2,353	1,459	1,167	22.4
258	Cherokee	574	1,190	1.40037	0.83594	0.65956	14.47701	804	480	379	8	1,666	994	785	17.2
261	McDowell	265	609	1.31475	0.79800	0.65148	13.37568	349	212	173	4	801	486	397	8.1
262	Fayetteville	7,849	13,972	1.39151	0.89208	0.73505	13.01884	10,922	7,002	5,769	102	19,443	12,464	10,270	181.9
264	Pasquotank	1,241	2,600	1.54624	0.99285	0.77117	14.24249	1,919	1,232	957	18	4,020	2,581	2,005	37.0
267	Alamance	1,623	3,179	1.55802	1.01911	0.81209	14.28985	2,529	1,654	1,318	23	4,953	3,240	2,582	45.4
	Notes	[A]		[B]				[C]							

Update: 1/5/2015

Note: All figures are based on 2012 estimates of the number of APRNs by county (the latest available figures) but are monetized using 2014 compensation estimates. All projections of changes in supply and demand assume that all changes shown (which actually would occur gradually between 2012 and 2019) had counterfactually been fully in place by 2012. Thus, they represent the permanent annual increase in supply/demand that would be expected as a consequence of these policy and population changes.

Notes

[A] All figures are calculated by authors using [S1].

[B] Figures shown are total output multipliers inclusive of direct, indirect and induced effects for industry group 394, Offices of physicians, dentists, and other health practitioners, as compiled by authors using [S1].

[C] All figures are calculated by authors using multipliers shown. These reflect the direct, indirect and induced effects of the increase in APRN supply that would result from lowering practice restrictions. The state total exceeds the sum of individual regional estimates because it includes leakages across regional borders that are excluded from the individual region results but nevertheless represent economic activity within the state's borders.

Sources

[S1] **IMPLAN Group, LLC.** *IMPLAN System* (data and software), 16740 Birkdale Commons Pkwy, Suite 206, Huntersville, NC 28078 www.implan.com

Table D-3. Annual Economic Impact of Less Restrictive Regulation of APRNs, by County, 2012 (thousands of 2014 dollars)

FIPS	COUNTY	MSA/ REGION	POTENTIAL INCREASE IN SPENDING ON APRNS DUE TO LESS RESTRICTIVE REGULATION (THOUSANDS OF DOLLARS)		TOTAL OUTPUT MULTIPLIERS				NET ECONOMIC IMPACT IN NORTH CAROLINA (THOUSANDS OF 2014 DOLLARS)							
									Lower-bound estimates				Upper-bound estimates			
			Lower bound (based on APRN compensation)	Upper bound (based on APRN practice outlays)	Employment	Labor income	Output	Value-added	Employ-ment (permanent jobs)	Wages and benefits (labor income)	Total expend-itures (output)	Gross product (value-added)	Employ-ment (permanent jobs)	Wages and benefits (labor income)	Total expend-itures (output)	Gross product (value-added)
	State Total		**259,741**	**481,162**	**14.81505**	**0.93961**	**1.83598**	**1.21010**	**3,848**	**244,056**	**476,878**	**314,311**	**7,128**	**452,107**	**883,404**	**495,370**
37001	Alamance	Burlington	1,623	3,179	14.28985	0.81209	1.55802	1.01911	23	1,318	2,529	1,654	45	2,582	4,953	3,240
37003	Alexander	Hickory	133	287	13.28375	0.66345	1.34223	0.82910	2	88	178	110	4	190	385	238
37005	Alleghany	Marion	240	495	14.20068	0.64146	1.38876	0.81359	3	154	333	195	7	317	687	403
37007	Anson	Charlotte	56	124	12.33873	0.65035	1.28059	0.79279	1	37	72	45	2	80	158	98
37009	Ashe	Marion	597	1,245	13.35488	0.68364	1.40498	0.86977	8	408	839	519	17	851	1,750	1,083
37011	Avery	Marion	365	768	14.54197	0.66215	1.41853	0.84196	5	242	518	307	11	508	1,089	647
37013	Beaufort	Greenville	1,179	2,360	15.35248	0.65730	1.42230	0.83688	18	775	1,677	986	36	1,551	3,357	1,975
37015	Bertie	Clinton	147	295	12.54851	0.62503	1.26246	0.75683	2	92	186	111	4	184	372	223
37017	Bladen	Clinton	510	1,058	11.97109	0.66046	1.27322	0.79724	6	337	649	406	13	699	1,347	843
37019	Brunswick	Clinton	1,488	2,829	14.63410	0.68291	1.46337	0.89208	22	1,016	2,177	1,327	41	1,932	4,140	2,524
37021	Buncombe	Asheville	12,023	20,946	14.53054	0.90791	1.70128	1.15422	175	10,916	20,455	13,878	304	19,017	35,635	24,176
37023	Burke	Hickory	1,524	2,810	11.94892	0.83492	1.47817	1.02883	18	1,272	2,253	1,568	34	2,346	4,154	2,891
37025	Cabarrus	Charlotte	4,905	8,955	11.82830	0.84231	1.47135	1.02508	58	4,131	7,217	5,028	106	7,543	13,176	9,180
37027	Caldwell	Hickory	874	1,519	12.72161	0.70896	1.36105	0.86408	11	619	1,189	755	19	1,077	2,067	1,312
37029	Camden	Clinton	-	-	15.82855	0.48784	1.27630	0.63475	-	-	-	-	-	-	-	-
37031	Carteret	New Bern	1,721	3,429	14.13049	0.75279	1.49051	0.96224	24	1,295	2,565	1,656	48	2,581	5,110	3,299
37033	Caswell	Oxford	182	437	12.44681	0.61949	1.23629	0.73595	2	113	225	134	5	270	540	321
37035	Catawba	Hickory	7,196	11,906	12.13491	0.85216	1.48415	1.02476	87	6,132	10,681	7,375	144	10,146	17,671	12,201
37037	Chatham	Durham	413	894	13.29029	0.70371	1.39785	0.88688	5	291	578	367	12	629	1,249	793
37039	Cherokee	Marion	295	648	14.52889	0.65603	1.39000	0.82129	4	194	411	243	9	425	901	532
37041	Chowan	Clinton	523	1,018	14.03444	0.70460	1.44855	0.88248	7	369	758	462	14	717	1,474	898
37043	Clay	Marion	279	541	13.19119	0.66064	1.34367	0.83864	4	184	375	234	7	358	727	454
37045	Cleveland	Charlotte	2,224	4,353	12.33780	0.79159	1.43813	0.96603	27	1,760	3,198	2,148	54	3,446	6,261	4,205
37047	Columbus	Clinton	878	1,689	13.12203	0.72548	1.39927	0.89620	12	637	1,229	787	22	1,225	2,363	1,514
37049	Craven	New Bern	2,678	5,069	11.75951	0.80432	1.43044	0.98507	31	2,154	3,831	2,638	60	4,077	7,251	4,993

37051	Cumberland	Fayetteville	7,332	12,973	12.97905	0.73696	1.38449	0.89017	95	5,403	10,151	6,527	168	9,561	17,961	11,548
37053	Currituck	Clinton	-	-	13.93031	0.65029	1.37904	0.82643	-	-	-	-	-	-	-	-
37055	Dare	Clinton	555	1,133	14.33620	0.72708	1.49375	0.93829	8	404	830	521	16	824	1,693	1,063
37057	Davidson	Oxford	1,339	2,690	13.32612	0.73209	1.41121	0.91164	18	980	1,889	1,220	36	1,970	3,796	2,453
37059	Davie	Winston-Salem	522	1,066	13.50839	0.70458	1.40733	0.88674	7	367	734	462	14	751	1,501	946
37061	Duplin	Clinton	764	1,638	12.22798	0.69679	1.32477	0.84471	9	532	1,012	645	20	1,141	2,170	1,384
37063	Durham	Durham	24,835	45,310	12.37919	0.81251	1.46630	0.97008	307	20,179	36,416	24,092	561	36,815	66,438	43,954
37065	Edgecombe	Rocky Mount	412	802	12.52984	0.71496	1.36870	0.87926	5	294	563	362	10	573	1,098	705
37067	Forsyth	Winston-Salem	18,263	32,141	13.30107	0.90967	1.62627	1.11221	243	16,613	29,701	20,312	428	29,238	52,270	35,747
37069	Franklin	Raleigh	240	546	14.05726	0.64794	1.34493	0.79886	3	156	323	192	8	353	734	436
37071	Gaston	Charlotte	4,584	8,974	12.01574	0.82928	1.45744	1.00677	55	3,802	6,681	4,615	108	7,442	13,079	9,035
37073	Gates	Clinton	53	128	11.15797	0.65632	1.22464	0.78193	1	35	65	42	1	84	156	100
37075	Graham	Marion	82	196	13.74197	0.60058	1.33465	0.78234	1	49	109	64	3	118	262	154
37077	Granville	Oxford	850	1,686	11.12859	0.70858	1.27894	0.84195	9	602	1,087	716	19	1,194	2,156	1,419
37079	Greene	Clinton	257	552	12.10328	0.65150	1.25163	0.77837	3	167	321	200	7	359	690	429
37081	Guilford	Greensboro	16,898	29,625	13.12558	0.92060	1.65449	1.12930	222	15,556	27,957	19,083	389	27,273	49,015	33,456
37083	Halifax	Rocky Mount	718	1,384	12.91082	0.72892	1.39461	0.89881	9	523	1,001	645	18	1,009	1,930	1,244
37085	Harnett	Oxford	649	1,395	13.84594	0.67199	1.41059	0.86471	9	436	915	561	19	938	1,968	1,207
37087	Haywood	Asheville	587	1,268	11.56969	0.81118	1.41810	0.98561	7	476	833	579	15	1,029	1,799	1,250
37089	Henderson	Asheville	1,977	3,766	13.84669	0.74577	1.45938	0.93273	27	1,475	2,886	1,844	52	2,808	5,495	3,512
37091	Hertford	Clinton	537	1,076	12.60216	0.71531	1.39071	0.87922	7	384	747	472	14	770	1,497	946
37093	Hoke	Fayetteville	118	248	15.02617	0.54215	1.22951	0.66050	2	64	146	78	4	134	305	164
37095	Hyde	Clinton	153	367	13.40417	0.61450	1.32671	0.78202	2	94	203	120	5	226	487	287
37097	Iredell	Charlotte	4,293	7,985	12.82817	0.82955	1.49327	1.00428	55	3,561	6,411	4,312	102	6,624	11,924	8,020
37099	Jackson	Marion	1,159	2,256	13.34068	0.74235	1.45013	0.94367	15	860	1,681	1,094	30	1,674	3,271	2,129
37101	Johnston	Raleigh	1,339	2,558	12.89345	0.70822	1.35635	0.86587	17	948	1,816	1,159	33	1,812	3,470	2,215
37103	Jones	New Bern	79	190	7.83360	0.83665	1.28082	0.96825	1	66	102	77	1	159	243	184
37105	Lee	Oxford	536	1,271	13.17046	0.73298	1.40967	0.90214	7	393	755	483	17	932	1,792	1,147
37107	Lenoir	Clinton	589	1,136	12.66048	0.78955	1.43614	0.94762	7	465	846	558	14	897	1,632	1,077
37109	Lincoln	Charlotte	770	1,516	12.95112	0.67047	1.31146	0.81114	10	517	1,010	625	20	1,016	1,988	1,229
37113	Macon	Marion	475	888	14.53267	0.68761	1.42474	0.86197	7	326	676	409	13	611	1,265	765
37115	Madison	Asheville	192	413	13.66880	0.60593	1.31686	0.76783	3	117	253	148	6	250	544	317
37117	Martin	Clinton	155	320	13.57793	0.66870	1.36176	0.82832	2	104	212	129	4	214	435	265
37111	McDowell	Marion	265	609	13.37568	0.65148	1.31475	0.79800	4	173	349	212	8	397	801	486
37119	Mecklenburg	Charlotte	34,728	62,757	11.38453	0.95208	1.60577	1.14183	395	33,063	55,764	39,653	714	59,749	100,773	71,658
37121	Mitchell	Marion	362	708	13.30588	0.71008	1.39653	0.87457	5	257	506	317	9	503	988	619
37123	Montgomery	Oxford	21	48	13.33450	0.63916	1.31905	0.78862	0	14	28	17	1	30	63	38

37125	Moore	Oxford	3,411	5,995	12.67811	0.87759	1.57235	1.08450	43	2,993	5,363	3,699	76	5,261	9,427	6,502
37127	Nash	Rocky Mount	1,759	2,840	12.56489	0.80733	1.45970	0.97841	22	1,420	2,567	1,721	36	2,293	4,146	2,779
37129	New Hanover	Wilmington	7,593	13,467	13.55976	0.84739	1.59170	1.06621	103	6,434	12,086	8,096	183	11,412	21,436	14,359
37131	Northampton	Rocky Mount	72	172	14.32856	0.55701	1.25628	0.68596	1	40	90	49	2	96	216	118
37133	Onslow	Jacksonville	2,770	5,191	12.86917	0.68360	1.32801	0.83955	36	1,893	3,678	2,325	67	3,549	6,894	4,358
37135	Orange	Durham	11,909	22,889	11.78817	0.77497	1.39739	0.93264	140	9,229	16,641	11,106	270	17,739	31,985	21,347
37137	Pamlico	New Bern	132	314	11.91477	0.69543	1.30901	0.83551	2	92	173	110	4	218	411	262
37139	Pasquotank	Clinton	686	1,467	12.88938	0.77071	1.43414	0.93833	9	528	983	643	19	1,130	2,103	1,376
37141	Pender	Wilmington	405	873	13.20745	0.62351	1.30211	0.78023	5	253	528	316	12	544	1,137	681
37143	Perquimans	Clinton	-	-	13.32926	0.61570	1.31533	0.78024	-	-	-	-	-	-	-	-
37145	Person	Durham	558	1,137	14.59742	0.67030	1.42550	0.85569	8	374	796	478	17	762	1,621	973
37147	Pitt	Greenville	10,024	18,586	12.97868	0.84694	1.52891	1.03769	130	8,490	15,326	10,402	241	15,741	28,416	19,286
37149	Polk	Marion	478	925	14.75469	0.57453	1.33589	0.74172	7	275	639	355	14	531	1,236	686
37151	Randolph	Greensboro	1,377	2,693	12.63680	0.71742	1.35831	0.87472	17	988	1,871	1,205	34	1,932	3,659	2,356
37153	Richmond	Oxford	522	1,183	12.83083	0.71768	1.38370	0.87590	7	375	722	457	15	849	1,637	1,036
37155	Robeson	Fayetteville	2,535	5,170	13.64957	0.75762	1.45668	0.94432	35	1,921	3,693	2,394	71	3,917	7,531	4,882
37157	Rockingham	Greensboro	1,055	1,942	14.67323	0.67070	1.42986	0.85599	15	707	1,508	903	28	1,302	2,776	1,662
37159	Rowan	Charlotte	2,610	4,979	12.05709	0.74765	1.36835	0.89952	31	1,951	3,571	2,348	60	3,723	6,813	4,479
37161	Rutherford	Marion	1,061	2,170	13.42447	0.70720	1.43891	0.89717	14	750	1,526	952	29	1,534	3,122	1,947
37163	Sampson	Clinton	517	999	13.07998	0.66896	1.34644	0.82486	7	346	696	426	13	668	1,345	824
37165	Scotland	Fayetteville	765	1,435	12.36510	0.76031	1.38742	0.90872	9	582	1,061	695	18	1,091	1,992	1,304
37167	Stanly	Charlotte	1,026	1,929	12.02035	0.77200	1.40862	0.94419	12	792	1,446	969	23	1,489	2,718	1,822
37169	Stokes	Winston-Salem	437	910	9.93924	0.73850	1.26611	0.86200	4	323	553	377	9	672	1,152	785
37171	Surry	Marion	1,881	3,976	14.02283	0.74084	1.48984	0.94370	26	1,394	2,803	1,775	56	2,946	5,924	3,753
37173	Swain	Marion	110	264	10.71667	0.73140	1.29792	0.87039	1	80	143	96	3	193	342	229
37175	Transylvania	Asheville	447	890	12.92398	0.77008	1.48010	0.96993	6	344	661	433	12	686	1,318	863
37177	Tyrrell	Clinton	16	38	13.63735	0.61489	1.29666	0.77663	0	10	21	12	1	24	50	30
37179	Union	Charlotte	2,462	4,604	12.84409	0.67607	1.33055	0.82258	32	1,664	3,275	2,025	59	3,113	6,126	3,787
37181	Vance	Oxford	481	1,091	13.42261	0.75052	1.45955	0.92798	6	361	702	446	15	819	1,592	1,012
37183	Wake	Raleigh	28,041	53,027	13.28350	0.93364	1.69042	1.16055	372	26,180	47,401	32,543	704	49,508	89,638	61,541
37185	Warren	Oxford	52	125	11.98485	0.62747	1.24089	0.75349	1	33	65	39	1	78	155	94
37187	Washington	Clinton	28	67	13.19428	0.61526	1.29344	0.76385	0	17	36	21	1	41	87	51
37189	Watauga	Marion	1,250	2,615	14.85573	0.78702	1.59258	1.01012	19	984	1,991	1,263	39	2,058	4,164	2,641
37191	Wayne	Goldsboro	2,272	4,114	13.33002	0.76153	1.46693	0.94274	30	1,730	3,333	2,142	55	3,133	6,035	3,879
37193	Wilkes	Marion	890	1,689	13.24122	0.69060	1.39323	0.86377	12	615	1,240	769	22	1,167	2,353	1,459
37195	Wilson	Rocky Mount	884	1,863	12.19102	0.77140	1.41072	0.94308	11	682	1,247	834	23	1,437	2,628	1,757
37197	Yadkin	Winston-	225	440	13.57972	0.67480	1.34629	0.82397	3	152	303	185	6	297	593	363

37199	Yancey	Salem Marion	258	618	13.45437	0.59706	1.28858	0.73600	3	154	332	190	8	369	797	455
Notes			[A]		[B]				[C]							

Update: 12/18/2014

Note: All figures are based on 2012 estimates of the number of APRNs by county (the latest available figures) but are monetized using 2014 compensation estimates. All projections of changes in supply and demand assume that all changes shown (which actually would occur gradually between 2012 and 2019) had counterfactually been fully in place by 2012. Thus, they represent the permanent annual increase in supply/demand that would be expected as a consequence of these policy and population changes.

Notes

[A] All figures are reported in [S1].

[B] Figures shown are total output multipliers inclusive of direct, indirect and induced effects for industry group 394, Offices of physicians, dentists, and other health practitioners, as compiled by authors using [S2].

[C] All figures are calculated by authors using multipliers shown. These reflect the direct, indirect and induced effects of the increase in APRN supply that would result from lowering practice restrictions. The state total exceeds the sum of individual county estimates because it includes leakages across county borders that are excluded from the individual county results but nevertheless represent economic activity within the state's borders.

Sources

[S1] **Conover, Christopher J.** and **Robert Richards**. Table C-7. Potential Changes in Supply and Demand for APRNs, by County (thousands), 2012 (2014 dollars). Duke University, Center for Health Policy and Inequalities Research, last updated December 8, 2014.

[S2] **IMPLAN Group, LLC.** *IMPLAN System* (data and software), 16740 Birkdale Commons Pkwy, Suite 206, Huntersville, NC 28078 www.implan.com