

The Economic Impacts of Medicaid in North Carolina

Christopher Dumas, PhD; William Hall, PhD; Patricia Garrett, PhD

Abstract

Objective: The purpose of this study is to provide estimates of the economic impacts of Medicaid program expenditures in North Carolina in state fiscal year (SFY) 2003.

Study Design: The study uses input-output analysis to estimate the economic impacts of Medicaid expenditures.

Data Sources /Study Setting: The study uses North Carolina Medicaid program expenditure data for SFY 2003 as submitted by the North Carolina Division of Medical Assistance to the federal Centers for Medicare and Medicaid Services (CMS). Industry structure data from 2002 that are part of the IMPLAN input-output modeling software database are also used in the analysis.

Principal Findings: In SFY 2003 \$6.307 billion in Medicaid program expenditures occurred within the state of North Carolina—\$3.941 billion federal dollars, \$2.014 billion state dollars, and \$351 million in local government funds. Each dollar of state and local government expenditures brought \$1.67 in federal Medicaid cost-share to the state. The economic impacts within North Carolina of the 2003 Medicaid expenditures included the following: 182 000 jobs supported (including both full-time and some part-time jobs); \$6.1 billion in labor income (wages, salaries, sole proprietorship/partnership profits); and \$1.9 billion in capital income (rents, interest payments, corporate dividend payments). If the Medicaid program were shut down and the funds returned to taxpayers who saved/spent the funds according to typical consumer expenditure patterns, employment in North Carolina would fall by an estimated 67 400 jobs, and labor income would fall by \$2.83 billion, due to the labor-intensive nature of Medicaid expenditures.

Limitations: Medicaid expenditure and economic impact results do not capture the economic value of the improved health and well-being of Medicaid recipients. Furthermore, the results do not capture the savings to society from increased preventive care and reduced uncompensated care resulting from Medicaid.

Conclusions: State and local government expenditures do not fully capture the economic consequences of Medicaid in North Carolina. This study finds that Medicaid makes a large contribution to state and local economic activity by creating jobs, income, and profit in North Carolina. Any changes to the Medicaid program should be made with caution.

Relevance: The rising costs of health care and the appropriate role of government health insurance programs are the object of current policy debates. Informed discussion of these issues requires good information on the economic and health consequences of alternative policy choices. This is the first systematic study of the broader economic impacts of Medicaid expenditures in North Carolina.

Medicaid is a health insurance program for certain low-income individuals and families. The program covers children in low-income households; the aged, blind, and/or disabled; and people who are eligible to receive federally-assisted income maintenance payments.^a In North Carolina,

Medicaid is jointly funded by federal, state, and county governments. (In October 2007 the state began a 3-year phaseout of county funding with this share being assumed by the state.) The North Carolina Division of Medical Assistance manages the Medicaid program.¹ Approximately 1 out of 6 North

a For additional information on Medicaid, see <http://www.cms.hhs.gov/publications/overview-medicare-medicaid/default4.asp>.

Christopher Dumas, PhD, is an associate professor in the Department of Economics and Finance at the University of North Carolina at Wilmington. He can be reached at 910-962-4026, dumasc@uncw.edu, or 601 South College Road, Wilmington, NC 28403.

William Hall, PhD, is a professor in the Department of Economics and Finance and director of the Center for Business and Economic Services at the University of North Carolina at Wilmington.

Patricia Garrett, PhD, is a former project director at NC Covering Kids & Families for the North Carolina Pediatric Society Foundation in Raleigh, North Carolina.

Carolínians (1.4 million people) was eligible for Medicaid coverage at some time during state fiscal year (SFY) 2003. Although considerable information is available on Medicaid program services, recipients, and costs, relatively little information is available on the economic impacts of Medicaid expenditures, especially at the state or regional level. The purpose of this study is to estimate the economic impacts of Medicaid program expenditures in North Carolina in SFY 2003.

It is well-known that Medicaid program costs are large and growing.² In 2001 Medicaid financed \$5.32 billion of the \$31.6 billion spent on health care in North Carolina, or 17% of total health care spending in the state.³ From 1978 to 2003, Medicaid expenditures in North Carolina increased from \$307 million to \$6.3 billion.^{4,5} By 2003, average nationwide Medicaid costs (22.3% of state government expenditure) had displaced elementary and secondary education (21.4% of state government expenditure) as the largest state expenditure.⁶ In North Carolina Medicaid is a large and growing proportion of the state budget—currently about 16%.⁷ Moreover, because Medicaid is an entitlement program, state expenditures cannot be capped. This introduces unpredictability into the budgetary process, which is one factor that makes Medicaid a challenging program for states to administer.^{6,8}

The individual and public health benefits of Medicaid are also well-known. Figure 1 provides a schematic summary of the health and economic benefits of Medicaid for individuals and communities. Health care professionals appropriately emphasize both the clinical benefits (see Figure 1.A) and public health benefits (see Figure 1.B) of the Medicaid program. By promoting access to timely and appropriate medical care, and with an emphasis on preventive care and best practice protocols, Medicaid improves health status and mitigates the possibility that chronic conditions will become disabilities. For example, a recent study finds that enrolling children in Medicaid before

they get sick promotes the use of preventive care, reduces the need for hospitalization, and improves health.⁹ In a recent review study of health insurance and access to prescription medicines, insurance coverage was found to be essential for access to prescription drugs with increased access consistently observed for insured compared to uninsured children.¹⁰ In another recent study of automobile accident victims receiving hospital care, victims without health insurance were found to receive less care and suffer a substantially higher mortality rate compared to victims with health insurance.¹¹ In terms of public health effects, Medicaid expenditures support health care infrastructure used by the general public (eg, community hospitals), contain communicable diseases, and promote general public health through health awareness and wellness campaigns.

In addition to health benefits, Medicaid indirectly confers economic benefits to recipients (see Figure 1.C.1-2) and to other patients in the health care system (see Figure 1.C.2-3). By improving health, Medicaid improves labor participation—an individual's capacity to stay employed and work productively. By facilitating timely and preventive care, Medicaid reduces costly emergency care,⁹ thus reducing the overall cost of health care to the individual and to the economy. Additionally, by reducing unpaid medical costs, Medicaid reduces cost-shifting. Cost-shifting occurs when unpaid medical costs are absorbed by hospitals, county health departments, or other safety net providers and/or passed on in the form of higher premiums to consumers with private health insurance. For example, a recent study by Families USA¹² finds that the uninsured cannot pay two-thirds of their health costs, and of this amount, two-thirds is passed on to those with private health insurance in the form of higher premiums. The Families USA study found that in 2005 the annual premium cost for a family health insurance policy provided by private employers was an average \$922 higher due to the cost of care for the uninsured.

Figure 1.
Major Health and Economic Benefits of Medicaid Expenditures for Individuals and Communities

Benefits	Beneficiaries	
	<i>Individual</i>	<i>Community</i>
Health	A. Clinical effects. By promoting access to timely and appropriate medical care, and with an emphasis on preventive care and best practice protocols, Medicaid improves health status and mitigates the possibility that chronic conditions will become disabilities.	B. Public health effects. Medicaid expenditures support health care infrastructure used by the general public (eg, community hospitals), contain communicable diseases, and promote general public health through health awareness and wellness campaigns.
Economic	C. 1. Improved labor participation. By improving health Medicaid improves an individual's capacity to stay employed and work productively. 2. Reduced cost of care. By facilitating timely and preventive care Medicaid reduces costly emergency care, reducing the overall cost of health care to the individual and the economy. 3. Reduced cost shifting. By reducing unpaid medical costs Medicaid reduces health care provider write-offs that are passed on to the insured in the form of higher insurance premiums.	C. Direct and multiplier effects. Medicaid expenditures stimulate the local economy through supporting jobs, labor income (wages, salaries, and sole proprietorship/partnership income), capital income (rents, interest payments, and corporate dividend payments), and taxes.

What is less well-known is that Medicaid has substantial, positive impacts on state business activity (see Figure 1.D). Medicaid expenditures stimulate the local economy, supporting jobs, labor income, business income, and taxes. Recent studies nationwide have begun to assess these impacts at the state level.¹³⁻³¹ For example, studies conducted in both Alaska¹⁴ and Texas¹⁵ found that Medicaid has substantial economic impacts in those states. The Alaska study found that Medicaid program expenditures supported over 9 000 jobs in the state and generated more than \$346 million in personal income (wages, salaries, and business income). Each dollar of Alaska state funds invested in Medicaid resulted in \$2.31 dollars of personal income to state residents due to the infusion of Medicaid cost share dollars from the federal government (ie, Alaska made money on Medicaid). As would be expected, the Medicaid program has larger impacts in states with larger economies and populations such as Texas. In Texas Medicaid supported 474 420 jobs and \$20 billion in personal income. Unlike Alaska, Texas didn't make money on Medicaid—each dollar of Texas state funds invested in Medicaid returned 91 cents of personal income to Texans due to the vagaries of the federal cost sharing formula. However, it is critical to remember that these figures do not include the economic value of the improved health and well-being of Medicaid recipients or the medical cost savings resulting from preventive care funded by Medicaid.

This study provides estimates of the economic impacts of Medicaid program expenditures in North Carolina in SFY 2003 including estimates of economic impacts on employment; labor income (wages and salaries); capital income (rents, interest payments, and corporate dividends); and government tax revenues at the federal, state, and local levels. These estimates do not include the economic value of the improved health and well-being of Medicaid recipients or the medical cost savings resulting from preventive care funded by Medicaid. Hence, the goal of this study is to provide results for the direct and multiplier effects in the community (see Figure 1.D). In addition, our data set allows us to investigate Medicaid expenditures at the county level and to determine whether urban or more affluent counties receive disproportionately larger expenditures relative to rural or less affluent counties. We also report the results of a policy simulation experiment in which we determine the economic impacts of shutting down the Medicaid program, returning the money (federal, state, and local) to taxpayers, and allowing the taxpayers to spend the funds according to typical consumer expenditure patterns.

Data

The study relies on North Carolina Medicaid program expenditure data for SFY 2003 as submitted by the North Carolina Division of Medical Assistance to the federal Centers for Medicare and Medicaid Services (CMS). The data included all SFY 2003 North Carolina Medicaid program expenditures including the following associated programs: Baby Love; Community Alternatives; Dental Program; Health Check; Early and Periodic Screening, Diagnosis, and Treatment (EPSDT) Services; Managed Care; Piedmont Behavioral Healthcare and Piedmont Innovations; and Transportation Program administration.^b The analysis does not include NC Health Choice for Children (SCHIP) program expenditures.^c The data used in this study are unique in that they provide Medicaid expenditures by county of health care provider location rather than by county of patient residency.

Methodology

This study uses input-output analysis to estimate the economic impacts of Medicaid.³² Input-output analysis is commonly used by economists to estimate the full economic impacts of an initial change in spending in a regional economy. Input-output models are not perfect; they are approximations of spending patterns in regional economies. Nonetheless, they are widely used as good, first-order approximations of regional economies, and their use by economists to estimate economic impacts is standard operating procedure. IMPLAN Professional[®] Input-Output Analysis computer software was used in this study to conduct input-output analysis.³³ IMPLAN is a leading input-output modeling software package used by university researchers, government agencies, and consultants nationwide. In a review of the literature, we identified 19 studies¹³⁻³¹ of the economic impacts of Medicaid at the state level, all of which used some form of input-output analysis to estimate economic impacts. Ten of the 19 studies used IMPLAN input-output modeling software. (Five studies used the RIMS II input-output model, which is fundamentally similar to IMPLAN, and the remaining studies used custom-built input-output models or did not report the type of input-output model used.) Carbaugh et al³⁴ reviewed 17 studies of the role of Medicaid in state economies. Of these, 11 used IMPLAN; 3 studies, including those of Families USA,^{35,36} used RIMS II. IMPLAN has also been used to estimate the economic impacts of hospital closures.^{37,38} Rickman and Schwer³⁹ compared benchmarked versions of IMPLAN, RIMS II, and a third leading input-output software package called REMI, and found that

b For additional information on the distribution of Medicaid expenditures across program areas in North Carolina, see: <http://www.dhhs.state.nc.us/dma/prog.htm>.

c Unfortunately, this study is limited to the economic impacts of Medicaid because comparable information was not available for SCHIP dollars. Substantively, this has limited consequences because the Medicaid budget is much larger than the SCHIP budget. Nevertheless, because SCHIP dollars are targeted exclusively at children, their absence limits a nuanced appreciation of how public spending on children's health impacts the economy.

the economic impact multipliers of the benchmarked models do not differ significantly. Duncombe and Wong⁴⁰ provide a good introduction to the differences between input-output models and other methods of regional economic analysis.

Input-output models are interconnected systems of linear equations that track the flow of dollars between and among households, businesses, and government in a specified geographic region as small as a county or as large as the United States. The IMPLAN input-output modeling system consists of 2 parts: a mathematical computer model and a database. The IMPLAN modeling system contains equations for over 500 industry categories plus additional equations that model household and government spending. In essence, there is one equation for each *industry* in a regional economy. (The equation for a given industry can be different in different geographic areas.) Each industry equation specifies the dollar amounts of *input* goods and services required to produce the dollar amount of industry *output* in the region. The equations are linked together such that the output dollar amount produced by one industry is the total of all the input dollar amounts required by all of the other industries in the system. For example, the dollar value of electricity output produced by the electricity industry feeds into all of the other industry equations as the (dollar-valued) electricity inputs to those industries. (The electricity industry also uses some of its own electricity, which feeds back into its own equation.) In addition, some of the outputs leave the system as *exports* from the region, and some inputs enter the system as *imports* into the region. Furthermore, households (workers) and taxes are treated as inputs in the industry equations in the sense that industries pay for (send money to) workers and taxes. Households are treated as separate industries that receive their own inputs (eg, wages, salaries, rental income, dividend payments, government program payments) and produce their own outputs (eg, household expenditures for food, clothing, electricity, rent, mortgage payments, taxes). (In fact, there are multiple household industries, each corresponding to a different household income level, because households of different income levels have different patterns of inputs and outputs.) Each level of government (federal, state, and local) is treated as a separate industry in that it receives input tax receipts from households, businesses, and other levels of government, and it produces outputs (eg, expenditures on the military, highway construction, public schools, health care programs, payments to other levels of government).

The IMPLAN database is derived from federal and state employment and income data and government survey data of businesses and households.³³ The data are cleaned, organized, and transformed into consistent units. The industry equations, household receipts and expenditures, and government receipts and expenditures are all based on the employment, income, and survey data. The IMPLAN database is updated every few years as the government surveys are updated. The equations, receipts, and expenditures can be calculated at the national, state, or county level (or a collection of counties smaller than a state). When data are scarce for a particular industry in a particular geographic area, average results for that industry at the next level of aggregation are used (for example, if data are scarce for

the widget production industry in a particular state, the average results for the nationwide widget industry might be used for that state). In addition, the database contains information on imports and exports for each geographic region.

When conducting economic impact analysis, IMPLAN is used to calculate changes in the economy relative to the baseline condition of the economy when local and system wide data were collected. The present study of Medicaid expenditures in 2003 relied on the 2002 IMPLAN database (ie, the 2002 IMPLAN structural matrix was used in the analysis). The initial change to the economy must be specified by the user. This initial change is called the *direct impact*. For example, if the state of North Carolina is the region of analysis then Medicaid dollars initially spent in the state constitute the *direct impact*. These initial expenditures purchase output from various health care industries. For example, in this study Medicaid dollars purchase output from the following list of IMPLAN health care industry sectors in North Carolina in 2003:

- Pharmaceutical and medicine manufacturing
- Surgical and medical instrument manufacturing
- Surgical appliance and supplies manufacturing
- Ophthalmic goods manufacturing (eg, eyeglasses)
- Home health care services
- Doctors, dentists, and other health care professionals
- Other ambulatory health care services
- Hospitals
- Nursing and residential care facilities
- Office administrative services (eg, program administration, tracking patient records)

In order to produce the purchased health care products and services, health care industries must, in turn, pay workers and purchase various goods and services from other industries. Next, the industries producing these goods and services must, in turn, purchase other goods and services, and so on. However, the process does not go on forever. At each round of purchasing, the dollar amount of purchases becomes smaller, eventually becoming negligible. The second and subsequent rounds of purchases constitute the *indirect impacts* of the initial Medicaid expenditures. At each round of purchasing, some of the dollars received by the producing industries go toward paying workers and owners of the firms. The workers and owners pay taxes on this income, save some of the income, and spend the rest. This spending by workers and owners initiates additional, attenuating rounds of purchasing called the *induced impacts* of the initial Medicaid expenditures. The indirect and induced impacts are collectively known as *multiplier effects*. The sum of the direct, indirect, and induced impacts is called the *total impact*.

The direct, indirect, and induced impacts of the Medicaid expenditures lead to changes in business sales (also known as business activity or business output), employment, labor income (eg, wages and salaries), capital income (eg, rents, interest and dividend income), and taxes paid to various levels of government. IMPLAN tracks the changes in business sales, employment,

and other areas separately for the direct, indirect, and induced impacts and also cumulates them into total impacts.

Results

The Economic Impacts of Medicaid

In SFY 2003 \$6.307 billion in initial Medicaid program expenditures occurred within the state of North Carolina—\$3.941 billion federal dollars, \$2.014 billion state dollars, and \$351 million in local government funds. Each dollar of state and local government expenditures brought \$1.67 federal cost-share Medicaid dollars to the state. Of the \$6.307 billion in Medicaid expenditures, \$1.63 billion or 25.8% was spent on children ages 0-18. The economic impacts of these Medicaid expenditures are both deep and broad. The estimated statewide total economic impacts (including economic multiplier effects) of the \$6.307 billion in Medicaid expenditures within North Carolina in SFY 2003 are summarized in Table 1.

Table 1 provides impact estimates for 3 economic indicators of interest: employment (including full- and part-time jobs), labor income (including wages and salaries plus income from sole proprietorships or partnerships including many physicians' practices), and capital income (including rental income, interest income, and corporate dividend income). The economic impacts within North Carolina of the 2003 Medicaid expenditures in the state included 182 000 jobs supported (including both full-time and some part-time jobs), \$6.1 billion in labor income (wages, salaries, and sole proprietorship/partnership profits), and \$1.9 billion in capital income (rents, interest payments, and corporate dividend payments).

We find that Medicaid expenditures directly support 92 489 jobs (including both full- and part-time jobs) in North Carolina. An additional 89 634 jobs are supported by the indirect and induced multiplier effects of Medicaid spending for a total of 182 124 jobs statewide supported by Medicaid. Of these jobs, Medicare directly supports the equivalent of approximately 85 000 health care industry jobs with multiplier

Table 1.
Economic Impacts of Medicaid Expenditures on Employment, Labor Income, and Capital Income:
North Carolina State Fiscal Year 2003

	Economic Impacts of Federal Expenditures	Economic Impacts of State & Local Expenditures	Economic Impacts of Total Expenditures
Employment¹			
Direct Impacts	57 738	34 751	92 489
Indirect Impacts	12 066	7 243	19 309
Induced Impacts	43 940	26 385	70 325
Total Impacts	113 744 jobs	68 380 jobs	182 124 jobs
Labor Income²			
Direct Impacts	\$1 857 157 998	\$1 115 689 427	\$2 972 847 425
Indirect Impacts	\$436 380 583	\$262 417 396	\$698 797 979
Induced Impacts	\$1 524 323 030	\$915 342 114	\$2 439 665 144
Total Impacts	\$3 817 861 699	\$2 292 842 764	\$6 110 704 463
Capital Income³			
Direct Impacts	\$310 423 367	\$186 369 112	\$496 792 479
Indirect Impacts	\$252 410 077	\$151 467 201	\$403 877 278
Induced Impacts	\$619 650 077	\$372 115 364	\$991 765 441
Total Impacts	\$1 182 483 521	\$709 951 650	\$1 892 435 171

SOURCE: Unless otherwise indicated all data reported in this article reflect the IMPLAN® analysis of data provided by the North Carolina Division of Medical Assistance for North Carolina State Fiscal Year 2003 as reported to the US Centers for Medicare and Medicaid Assistance.

NOTES:

1. Employment includes all jobs both full- and part-time.

2. Labor Income includes wages, salaries, sole proprietorship income, and partnership income. Values are 2003-year dollars.

3. Capital Income includes rental income, interest income, and corporate dividend income. Values are 2003-year dollars.

effects supporting an additional 6 000 health care jobs for a total of about 91 000 health care jobs supported. Estes³ estimated that 395 000 individuals were employed in the North Carolina health care sector in 2001. Allowing for moderate growth (8% per year) in the total number of health care jobs in North Carolina between 2001 and 2003, Medicare conservatively supports at least 20% of all health care jobs in the state.

The direct impact of Medicaid spending on capital income is \$497 million. The indirect and induced impacts of Medicaid spending on capital income are nearly 3 times larger than the direct effects. This means that the multiplier effects of Medicaid expenditures on capital income are very strong. It is not just the corporations in the health care industry that benefit from Medicaid; business quite broadly benefits as well.

The aggregate impact of Medicaid expenditures on labor income (\$6.1 billion) is much larger than the impact on capital income (\$1.9 billion). This is consistent with the fact that health care is a labor-intensive sector characterized at the service delivery level by many small firms with relatively high employment. While direct impacts occur predominantly in health care industries, Medicaid also produces substantial multiplier effects in nonhealth industries through business-to-business transactions (indirect impacts) and consumer purchasing (induced impacts). Industry-by-industry results produced by the IMPLAN model (not reported here for the sake of brevity) indicate that the construction, transportation, wholesale and warehousing, retail trade, finance and insurance, and hotel and restaurant industries each received over \$100 million in wages and salaries due to the indirect and induced impacts of Medicaid expenditures in 2003.

How does Medicaid job creation compare to economic development efforts that offer firms incentives to open or expand activities in North Carolina? In a November 9, 2004 press release,⁴¹ Governor Mike Easley announced that North Carolina offered Dell Computer an incentive package of \$242.5 million over 20 years to create, directly and indirectly, 8 000 jobs within the state or \$30 313 spending per job. By comparison North Carolina state and local governments invested \$2.371 billion in Medicaid in 2003, which when leveraged with federal cost share dollars, supported 182 000 jobs or \$13 000 in state/local spending per job. Although some Medicaid-supported health care jobs such as physician may pay higher salaries than the average Dell job, and other Medicaid-supported jobs such as hospital custodian may pay less, the average wage/salary of North Carolina health care workers in 2003 was \$39 660—similar to the state-average median household income in 2004 of \$40 863.⁴² Furthermore, Medicaid-supported jobs are

widely distributed geographically across the state, whereas the jobs created by specific industrial projects are typically concentrated in a relatively small geographic region.

Much of the labor income and capital income supported by Medicaid is taxable by federal, state, and local governments. The federal government collects personal income, corporate profit, and payroll taxes. There is a comparable set of taxes at the state level. In addition, households pay local property taxes plus state and local sales taxes.^d Table 2 summarizes tax receipts by governmental entity.

Panel 1 of Table 2 shows that the federal government collected approximately \$1.6 billion in taxes as a result of all Medicaid expenditures (by all levels of government) in North Carolina in 2003—most in the form of personal income taxes (53.6%) with another substantial proportion in payroll taxes (41%). Consequently, the federal government recouped approximately 42% of its \$3.9 billion in North Carolina Medicaid expenditures. State and county governments contributed \$2.365 billion in Medicaid expenditures and collected taxes of \$567 million. Consequently, state and local governments recouped approximately 24% of their Medicaid expenditures in the form of tax collections supported by Medicaid expenditures. The larger share of taxes (60.5%) went to the state, principally in the form of personal income (44.6%) and sales taxes (38.6%). State and federal Medicaid funds flowing into each county do not appear directly as line items on the budgets of county governments; they appear only indirectly in the sales tax and property tax revenue lines. Counties and localities realized \$224 million in sales and property tax receipts from Medicaid expenditures in 2003, which offset more than half (56%) of their \$400 million in Medicaid contributions.

A Policy Experiment: "What if We Gave the Medicaid Money Back to Taxpayers?"

Although the economic impacts of Medicaid spending are large, the economic impacts of spending on this scale would likely be significant if the money were spent on something other than Medicaid. The opportunity cost to society of spending money on Medicaid is that society gives up the economic impacts of spending money in other ways. To investigate the opportunity cost of Medicaid spending, we conduct a policy simulation experiment in which we assume the Medicaid program is shut down, and the federal, state, and local taxes paid by North Carolina taxpayers to support Medicaid are returned to the taxpayers. The taxpayers save and spend the returned funds based on observed patterns in federal consumer expenditure survey data. The expenditure patterns vary by household

d In North Carolina separate sales taxes are levied by the state and local governments.⁴³ In SFY 2003 the North Carolina state sales tax rate was 4.5% on retail sales (or rental) of tangible personal property, room/lodging/hotel rentals, and laundering services with some exceptions. The North Carolina state sales tax does not apply to unprepared food (eg, groceries) but does apply to prepared food and other items (eg, restaurant meals, food purchased in the deli sections of grocery stores, alcohol, tobacco products). Nor does the North Carolina state tax apply to drugs or medical equipment sold with a prescription. The tax does not apply to insulin or prosthetic devices sold with or without a prescription. Every county may charge an additional 2.5% sales tax on all items subject to the North Carolina state 4.5% tax rate. In addition to general sales taxes, some counties levy additional sales taxes on particular items or activities, such as hotel occupancy taxes. Specific policies vary by county. Hence, the allocation of sales taxes in this table is a rough but realistic estimate.

Table 2.
Economic Impacts of Medicaid Expenditures on Federal, State, and County/Local Tax Receipts:
North Carolina State Fiscal Year 2003

Government Entity	Tax Receipts Supported By		
	Federal Medicaid Expenditures	State & Local Medicaid Expenditures	Total Medicaid Expenditures
Federal Tax Receipts			
Personal Income	\$547 681 505	\$328 918 317	\$876 599 822
Corporate Profit	\$54 857 270	\$32 931 277	\$87 788 547
Payroll	\$418 640 859	\$251 423 317	\$670 064 176
Total Receipts	\$1 021 179 634	\$613 274 911	\$1 634 452 545
State Tax Receipts			
Personal Income	\$95 705 675	\$57 477 472	\$153 183 147
Corporate Profits	\$28 857 605	\$17 323 462	\$46 181 067
Payroll	\$7 285 231	\$4 375 321	\$11 660 552
Estimated Sales ¹	\$82 773 004	\$49 694 615	\$132 467 619
Total Receipts	\$214 621 515	\$128 870 870	\$343 492 385
County/Local Tax Receipts			
Property	\$93 337 918	\$56 037 732	\$149 375 650
Estimated Sales ¹	\$46 559 814	\$27 953 221	\$74 513 035
Total Receipts	\$139 897 732	\$83 990 953	\$223 888 685
All Entities	\$1 375 698 880	\$826 134 734	\$2 201 833 615

SOURCE: IMPLAN model calculations.

NOTES: Because of the way data are reported estimates are necessary to apportion sales taxes between state and county governments. For the purposes of this exercise, we assume a state sales tax rate of 4.5% and a local sales tax rate of 2.5%. Under these assumptions the state receives 64% ($4.5\% / [4.5\% + 2.5\%] = 64\%$) of combined state and local sales tax revenues with counties/localities receiving the remaining 36%.

income level (eg, higher income households save a larger proportion of each dollar returned). Because most Medicaid dollars are spent on labor-intensive, instate health care services rather than goods imported into the state, Medicaid spending has a relatively large instate economic multiplier effect. By contrast, a large proportion of the typical consumer's spending pays for goods imported into the state (eg, gasoline, food, clothing, entertainment, electronics). If the Medicaid program was shut down, funds returned to taxpayers, and taxpayers allowed to spend these monies according to typical consumer spending patterns, the instate economic impacts of these expenditures would be smaller than the instate economic impacts of Medicaid. In fact, our simulation indicated that employment in North Carolina would fall by an estimated 67 400 jobs and labor income would fall by \$2.83 billion if Medicaid funds were returned to taxpayers. The reason for this perhaps surprising result is that most Medicaid dollars are spent on labor-intensive, instate

health care services rather than goods imported into the state. In contrast, a far larger proportion of typical consumer spending buys goods and services imported into the state. In comparison to typical consumer spending, Medicaid dollars stay in the state, supporting employment and businesses within North Carolina.

The County Cost Share Issue

The rapid growth in Medicaid payments in recent years has put pressure on county government budgets in North Carolina, causing counties to lobby the state to assume the county portion of Medicaid payments. One issue of concern has been that some rural or less affluent counties may be more reliant on Medicaid and may be paying a disproportionate share of Medicaid costs. Another issue has been that Medicaid funds allocated to residents of a given county may not support businesses and tax collections in that county since residents travel across

county lines to access health care services not available in the county of residence. As a temporary measure, the state government agreed in 2006 to cap county Medicaid expenditures.⁴⁴ On July 31, 2007, the governor of North Carolina signed into law a measure requiring the state to assume the county portion of Medicaid expenditures.⁴⁵ The transfer would be phased in over 3 years beginning October 1, 2007. In partial compensation, counties would be required to give up a portion of their sales tax revenues to the state.

To address the issue of whether some counties may be more reliant on Medicaid, we consider two measures of Medicaid reliance: county Medicaid expenditures⁵ as a percentage of county budget⁴⁶ in 2003 and Medicaid eligibles⁵ as a percentage of county population⁴⁶ in 2004. We regressed each of these measures on (1) per capita county income⁴⁶ (\$1 000s) in 2003; (2) county population⁴⁶ (10 000s) in 2003; and (3) the United States Department of Agriculture Economic Research Service (USDA-ERS) Rural-Urban Continuum Codes⁴⁷, 2003, an index of county rural character (larger code numbers indicate a more rural character). County Medicaid expenditures as a percentage of county budget in 2003 are negatively related to per capita county income at the 0.05 level of significance, indicating that wealthier counties spend a smaller percentage of the county budget on Medicaid. County population and USDA-ERS Rural-Urban Continuum Codes are not statistically significant determinants of county Medicaid expenditures as a percentage of county budget in 2003, indicating that rural/urban status does not appear to be a significant determinant of county Medicaid expenditures as a percentage of county budgets. Medicaid eligibles as a percentage of county population, 2004, is negatively related to per capita county income (\$1 000s) in 2003 at the 0.05 level of significance. It is also positively related to both county population in 2003 and USDA-ERS Rural-Urban Continuum Codes at the 0.05 level of significance. Hence, wealthier counties tend to have fewer Medicaid eligibles as a percentage of county population while more populous counties and more rural counties have more Medicaid eligibles as a percentage of county population. We conclude that reliance on Medicaid does vary by county type with more affluent counties spending a smaller percentage of the county budget on Medicaid and having a smaller percentage of the population eligible for Medicaid, while more populous and more rural counties have a larger percentage of the population eligible for Medicaid.

To investigate the issue of whether Medicaid funds allocated to residents of a given county actually support businesses and tax collections in the county, we analyze the Medicaid expenditure data by county of health care provider location. The analysis shows that for every North Carolina county, the state and federal government cost share expenditures paid to health care providers located in the county were far greater than the county contribution to Medicaid. For example, relatively populous, urban, and affluent Wake County spent approximately \$20 million in local government funds on Medicaid in SFY 2003, but the federal government paid over \$200 million in Medicaid expenditures to health care providers located in Wake County. Similar results hold for rural, less populous, or less affluent

counties. Even small Yancey County, which spent only \$500 000 in local funds on Medicaid in 2003, received over \$5 million in federal Medicaid expenditures paid to health care providers located in the county. (Results for all North Carolina counties are available on request from the authors.) One reason that Medicaid expenditures are significant even in rural locations is that a relatively large share of Medicaid expenditures in rural counties goes to nursing and residential care services that are provided in the rural counties themselves. We conclude that even after accounting for Medicaid expenditures that cross county lines, every county in North Carolina has far more state and federal Medicaid money spent in the county than the county itself collects and spends on Medicaid.

Discussion And Conclusions

The rising costs of health care and the appropriate role of government health insurance programs in the health care system are the source of current policy debates. Informed discussion of these issues requires good information on the economic as well as the health consequences of alternative policy choices. The purpose of this study is to estimate the economic impacts of Medicaid program expenditures in North Carolina in SFY 2003 (see Figure 1.D.). In SFY 2003 \$6.307 billion in Medicaid program expenditures occurred within the state of North Carolina—\$3.941 billion federal dollars, \$2.014 billion state dollars, and \$351 million in local government funds. Each dollar of state and local government expenditures brought \$1.67 federal Medicaid cost-share dollars to the state. The total economic impacts (including direct, indirect, and induced impacts) in North Carolina of Medicaid expenditures in 2003 included (see Table 1):

- 182 000 jobs supported (including both full-time and some part-time jobs)
- \$6.1 billion in wages, salaries, and sole proprietorship/partnership income
- \$1.9 billion in rents, interest payments, and corporate dividend payments

State and local governments recouped approximately 24% of their Medicaid expenditures in the form of various tax collections on Medicaid expenditures and the economic ripple effects of Medicaid expenditures.

Our unique data set allows us to estimate Medicaid expenditures and economic impacts by health care provider location at the county level. Although we find that reliance on Medicaid does vary by rural/urban and rich/poor county type, the data also show that every North Carolina county received far more in state and federal government cost share expenditures paid to health care providers located in the county than they paid in county-share Medicaid expenditures.

Although Medicaid spending generates large economic impacts, it should be recognized that the Medicaid program diverts spending away from other potential uses that would have generated other economic impacts. In a policy simulation

experiment we answer the question, “What would be the net economic impacts of giving the Medicaid money back to taxpayers?” In the experiment we assume that the Medicaid program is shut down, that federal, state and local taxes paid by North Carolina taxpayers to support Medicaid are returned to the taxpayers, and that the taxpayers save and spend the returned funds based on typical consumer expenditure patterns. We find that the in-state economic impacts of these expenditures are substantially smaller than the in-state economic impacts of Medicaid. In fact, our simulation indicates that employment in North Carolina would fall by an estimated 67 400 jobs and labor income would fall by \$2.83 billion. The reason for this perhaps surprising result is that most Medicaid dollars are spent on labor-intensive, in-state health care services rather than on goods imported into the state. In contrast, a far larger proportion of typical consumer spending buys goods and services imported into the state. In comparison to typical consumer spending, Medicaid dollars stay in the state, supporting employment and businesses within North Carolina.

It is important to keep in mind that the Medicaid expenditure and economic impact results do not capture the economic value of the improved health and well-being of Medicaid recipients. Furthermore, the results do not capture the savings to society in general of emphasizing preventive care and reducing uncompensated care nor the long-term benefits of promoting wellness. Health insurance like Medicaid provides access to routine medical care, thereby promoting preventive care and timely and appropriate medical interventions and minimizing the necessity of relying on costly emergency services. Medicaid also reduces uncompensated care, which in turn reduces health care providers’ need to shift costs to patients with private insurance. Additionally, comprehensive Medicaid services may allow covered adults to obtain or return to employment more quickly. Medicaid services for children—especially Early and Periodic Screening, Diagnosis, and Treatment (EPSDT) services—support both the typical child as well as children with special health care needs. This investment in human capital should improve the capacity of young Medicaid beneficiaries to become productive members of society in the future.

Another caveat is that Medicaid plays a role in supporting

the health care infrastructure available to the general population. Medicaid cuts could threaten the financial health of key facilities such as hospitals, or at least shift a larger share of the infrastructure support costs to those with private insurance. Further, to the extent that health care facilities provide amenity effects—such as those associated with living near an ocean—that boost community property values, facility closures could reduce property values. Similarly, a factory may choose to relocate elsewhere if the only hospital in a community closes. These effects are not captured by standard economic impact analysis.

This article poses a basic question: “What are the economic impacts of Medicaid on the North Carolina economy?” Medicaid is a large program with complex implications for its beneficiaries and the communities in which they live. The program is important for the health of many North Carolina citizens. In addition, the economic impacts of the program are substantial and felt statewide from urban research hospitals to rural nursing home facilities. Budgetary costs do not fully capture the economic consequences of Medicaid in North Carolina. This study finds that Medicaid makes a large contribution to state and local economic activity by creating jobs, income, and profit in North Carolina. Any substantial changes to the Medicaid program should be made with caution. **NCMJ**

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