

MISSOURI FOUNDATION FOR HEALTH



Cover Missouri Project: Data Book 2

The Cost of Care for Missouri's Uninsured



About MFH

Established in 2000, the Missouri Foundation for Health is dedicated to its mission of empowering the people of the communities we serve to achieve equal access to quality health services that promote prevention and encourage healthy behaviors. In support of its mission, the Foundation undertakes policy research to educate the public and decision makers on effective health policies that will result in long-term, positive health system change in the state of Missouri. Formulating sound health policies advances the Foundation's efforts to increase access to high quality, cost-effective preventive and curative care, especially for the uninsured, underinsured, and underserved in our service region of 84 Missouri counties and the City of St. Louis.

The Missouri Foundation for Health does not take responsibility for any analysis, errors, or omissions of fact found in this report.

Cover Missouri Project

Preface

In an effort to inform the discussion regarding practical policy options to expand health care coverage for the uninsured in Missouri, the Missouri Foundation for Health (MFH) has established the Cover Missouri Project. Under this project, MFH has engaged The Urban Institute to produce a series of papers which considers strengths and weaknesses of the current health care system in Missouri and explores options for decreasing the number of uninsured. MFH offers these studies as a means to further understand and ultimately improve access to health care coverage.

Missouri currently faces considerable challenges related to creating an equitable and comprehensive system of health care for all Missourians. In 2005, between 635,000 and 707,000 Missouri residents were without health insurance. In addition, eligibility cuts and cost-sharing changes to Missouri's Medicaid program made in 2005 increased the number of uninsured. Ultimately, these changes may shift Missouri from being one of the 12 states with the lowest uninsurance rates to being among the 12 states with the highest rates of uninsurance.

Research broadly documents the serious health and financial consequences associated with being uninsured. The uninsured live sicker and die younger than those with insurance. They forego preventive care and seek health care at more advanced stages of disease. Society then bears these costs through lower productivity, increased rates of communicable diseases, and higher insurance premiums. Those without health insurance often must choose between visiting a doctor and paying for other essentials.

This Data Book, "The Cost of Care for Missouri's Uninsured," uses two different methods to provide estimates of the amount of uncompensated care the uninsured received in 2005. In addition, the report examines the financing of uncompensated care, for which data was drawn from federal, state, and local budget reports, as well as from trade association materials and a series of interviews with health insurance experts. Finally, this research derives estimates of the amount of care that the uninsured would use if they had health insurance for the entire year.

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About The Urban Institute

The Urban Institute is a nonprofit nonpartisan policy research and educational organization established to examine the social, economic, and governance problems facing the nation. It provides information and analysis to public and private decision makers to help them address these challenges and strives to raise citizen understanding of the issues and tradeoffs in policy making. The Urban Institute works to promote sound social policy and public debate on national priorities through gathering and analyzing data, conducting policy research, evaluating programs and services, and educating all Americans. More information about The Urban Institute may be found at www.urban.org.

The Cost of Care for Missouri's Uninsured

by Stephen Zuckerman, PhD; Randall R. Bovbjerg, JD; Jack Hadley, PhD;
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According to estimates based on the 2004 Current Population Survey (CPS), Missouri had more than 600,000 uninsured non-elderly residents. Many studies have shown that the uninsured do receive less care than people with insurance; however, evidence also suggests that the cost of health care services for the uninsured can be substantial. One such study showed that the 41 million Americans who were uninsured in 2001 received about \$35 billion in uncompensated care from hospitals, physicians, clinics, and a variety of publicly funded programs.¹ More recent estimates for the state of Massachusetts showed that the uninsured received between \$900 million and \$1.3 billion in uncompensated care in 2004.²

This data book focuses on the uninsured in Missouri and provides estimates of the amount of uncompensated care they received in 2005, as well as outlining the details of how that care was financed. Following previous studies of this nature, two alternative

approaches were used to estimate uncompensated care costs of the uninsured in Missouri. The first approach draws on data reported by health care providers and public programs. These data come from cost reports, surveys, and budget documents that can be viewed as an accounting-based estimate of uncompensated care. The second approach uses household survey data on health care expenditures and, as such, develops estimates based on information reported directly by the uninsured. In addition, this research derives estimates of the amount of care that the uninsured would use if they were actually insured for the full year.

Two different approaches are utilized in this study because these estimates of uncompensated care may be sensitive to the methods used in working with the available data. Providers may not keep track of specific costs being incurred on behalf of individual patients; therefore, linking costs to any particular class of patients is not straightforward. In the case of budget data, it can be difficult to know what portion of spending is actually used to provide uncompensated care to the uninsured. Household survey responses may understate the amount of care received as a result of recall problems. Additionally, in the case of provider data, it is difficult to assign a cost to the care reported in surveys. These types of data issues indicate that a number of assumptions and adjustments have to be made to produce estimates of uncompensated care in the state. Having two fundamentally different approaches allows for a comparison

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of the data as a way of assessing the plausibility of each set of findings.

In addition to providing estimates of the costs of uncompensated care for the uninsured in Missouri, this report explores how that care is financed and how much care the uninsured might use if they had insurance. The latter estimates are based on a comparison of

spending by those who are currently uninsured to those who have had health insurance for a full year, controlling for differences in their characteristics. The information on the financing of uncompensated care is drawn from federal, state, and local budget reports, as well as from trade association materials and a series of interviews with key respondents.

Uncompensated Care Costs Based on Provider Data

Hospitals

To estimate the cost of care provided by hospitals to Missouri's uninsured in 2005, data are used from the 2004 Annual Survey of Hospitals collected by the American Hospital Association (AHA).³ Total costs for uncompensated care are calculated as follows. First, the charges attributed to free care and bad debt are added together for each hospital. Although accounting techniques vary, free care generally consists of services for which the hospital did not expect to receive payment; bad debt occurs when the hospital expects payment, but does not receive it. Bad debt associated with both emergency and non-emergency services is included in this calculation. The sum of charges for free care and bad debt is multiplied by each hospital's cost-to-charge ratio, which is the ratio of total direct expense to gross patient service revenue (multiplying charges by a cost-to-charge ratio is a standard way of deriving the cost of resources used to provide care). The resulting uncompensated care costs for each hospital are aggregated, resulting in the total cost of free care and bad debt for Missouri in 2004.⁴

The 2004 data are then adjusted for inflation in health expenditures and estimated growth in the uninsured to derive 2005 estimates. The adjustment is fairly large (1.238), mainly due to the large estimated increase in the number of uninsured. This estimate is based on data

reflecting an average annualized growth rate in the number of uninsured in Missouri (2000-2004), plus an estimate of the growth in the uninsured population in 2005 due to new Medicaid eligibility restrictions enacted during the year.⁵ Based on this calculation, the growth in the uninsured population is estimated to be 16.6 percent between 2004 and 2005 (data not shown).

Finally, where possible, adjustments are made for calculations regarding the share of the uncompensated care in the state provided to individuals with insurance coverage. Because there is no data available on the share of free care provided to the insured in Missouri, and since free care provided to the insured may account for only a small portion of costs,⁶ no adjustment was made. Data on the share of bad debt charges attributable to insured persons is also not available. Although most bad debt is thought to be attributable to the uninsured, emerging evidence suggests that a significant portion of bad debt is owed by people with private health insurance.⁷ Therefore, the assumption is made that one-quarter (25%) of bad debt is attributable to those with insurance.

Table 1 provides a summary of these calculations. In 2004, total free care charges amounted to \$369.6 million and bad debt charges to an additional \$644.1 million. After adjusting by the cost-to-charge ratio for each

Table 1. Estimates of Costs of Hospital Care to the Uninsured in Missouri, 2005
(in millions)

Charges for Free Care (2004)		\$369.6
Charges for Emergency and Non-Emergency Bad Debt (2004)		\$644.1
Total Direct Expense (2004)	\$12,338.5	
Total Gross Patient Service Revenue (2004)	\$28,278.9	
Cost-to-Charge Ratio	0.44	
Free Care Costs (2004)		\$287.0
Bad Debt Provisions (2004)		\$180.4
Total – Free Care and Bad Debt (2004)		\$467.4
Inflation Adjustment and Estimated Uninsured Growth (2004-2005)	1.238	
Free Care Costs (2005)		\$355.2
Bad Debt Provision (2005)		\$223.3
Total – Free Care and Bad Debt (2005)		\$578.5
Minus Bad Debt Attributable to Insured Patients (25%)		\$ 55.8
Total – Free Care and Bad Debt (Adjusted Uninsured, 2005)		\$522.7

Sources: AHA Annual Survey of Hospitals, 2004, provided by the Missouri Hospital Association (MHA); and the CPS, March Supplement, 2001 and 2005.

hospital (direct expenses divided by gross patient service revenue), the resulting free care costs are \$287.0 million in free care and \$180.4 million in bad debts. The total cost of uncompensated care in 2004 was \$467.4 million. Adjusting for inflation and growth in the uninsured increases the total for 2005 to \$578.5 million (i.e., \$355.2 million in free care and \$223.3 million in bad debt). After netting out the share of bad debt attributable to insured patients, the cost of bad debt drops by \$55.8 million; and the total hospital uncompensated care costs provided to the uninsured in 2005 is estimated to be \$522.7 million.

Office-Based Physicians

Physicians practicing in their offices also provide a substantial amount of uncompensated care to uninsured patients. To quantify the cost of this care, data are drawn from unpublished tabulations of the Community Tracking Study (CTS) Physician Survey fielded by the Center for Studying Health System Change, the Area Resource File, and Medical Economics. The calculations use information on the number of hours physicians

report providing charity care in the previous month (defined as care provided to people for whom the physician received no payment or a reduced fee, excluding discounts from insurance plans), the number of hours worked per week and weeks worked per year, net income from medical practice in the prior year, practice expenses, the number of physicians in the state (by specialty), and out-of-pocket payments.

The CTS Physician Survey was conducted by telephone in 2000-2001. The data used in this calculation are limited to 1,545 office-based physicians in the Midwest Census Region. The survey excluded physicians in specialties that typically have minimal direct contact with patients, e.g., anesthesiology, radiology, and pathology; physicians who reported spending fewer than 20 hours per week in direct patient care; and physicians in residency training. Responses from physicians who work in institutions (i.e., hospitals, medical schools, and clinics) are excluded from the calculations because the charity care they provide is captured in the estimates of charity care provided by hospitals and clinics.

Data obtained from Medical Economics on practice expenses as a share of gross income by specialty was drawn on to inflate physicians' reported net income to an estimate of their gross billings.⁸ Since the question about charity care includes care to reduced-fee patients, who pay some of the cost of the care, adjustments were also made to the estimate to account for payments made by uninsured people.⁹

The details of the calculations are presented in Table 2. Summing across the totals for each specialty group, it is estimated that physicians provided \$85.3 million in charity care in 2005. This estimate may double-count some charity care because the hours reported by the physicians do not indicate whether the care occurred in an office setting or as a volunteer in a clinic or hospital.

Table 2. Value of Charity Care Provided by Office-Based Physicians in Missouri, by Specialty, 2005

	General Internal Medicine	Family Practitioners/ General Practitioners	Pediatricians	Medical Specialists	Surgical Specialists
Number of Survey Respondents	289	443	198	330	285
1. Hours per Month of Charity Care (CTS Physician Survey)	5.54	5.56	5.99	6.23	8.55
2. Number of Months Worked per Year (CTS Physician Survey)	10.70	11.01	11.01	10.75	10.94
3. Annual Hours of Charity Care per Year (product of row1 x row2)	59.28	61.22	65.95	66.97	93.54
4. Annual Hours Worked (CTS Physician Survey)	2583	2511	2346	2578	2735
5. Percent of Annual Effort Devoted to Charity Care (row3 ÷ row4)	2.30%	2.44%	2.81%	2.60%	3.42%
6. Net Income per Physician in 2000 (CTS Physician Survey)	\$135,177	\$136,170	\$135,792	\$231,264	\$273,331
7. Adjustment Factor for Converting Net Income to Gross Billings (Medical Economics)	1.85	1.85	1.82	2.21	1.95
8. Gross Billings (product of row6 x row7)	\$250,077	\$251,915	\$247,141	\$511,093	\$532,995
9. Gross Amount of Charity Care Provided per Physician (product of row5 x row8)	\$5,752	\$6,147	\$6,944	\$13,288	\$18,228
10. Assume That Uninsured Pay 35.2% of Charges Out-of-Pocket (Hadley and Holahan 2004, Table 3)	\$3,727	\$3,983	\$4,500	\$8,610	\$11,812
11. Inflate to 2005 Dollars by the Change in the CPI (1.13)	\$4,212	\$4,501	\$5,085	\$9,729	\$13,348
12. Number of Patient Care, Office-Based Physicians in Missouri (ARF)	1,688	996	739	4,077	2,260
13. Total Uncompensated Care Provided by Each Specialty (in millions)	\$7.1	\$4.5	\$3.8	\$39.7	\$30.2

Federally Qualified Health Centers

The ambulatory care portion of the safety net in Missouri includes Community Health Centers (CHCs) that provide health care for a reduced fee to medically underserved, uninsured, and predominantly low-income populations. Complex and overlapping categories of health centers characterize the network of CHCs in Missouri. Federally Qualified Health Centers (FQHCs) are health centers that receive some federal funding under Section 330 of the Public Health Service Act. FQHCs must meet certain statutory requirements, such as location in a federally designated medically underserved area, provision of comprehensive primary health care services, and provision of services to patients regardless of ability to pay.¹⁰

Statewide cost data on clinics in Missouri are readily available only for FQHCs. This study estimates the cost of care provided to the uninsured in FQHCs, using the Uniform Data System (UDS) maintained by the

Bureau of Primary Health Care (BPHC). The UDS contains medical cost and revenue data for each Missouri FQHC. In 2004, the FQHC network in Missouri provided care to over 270,000 patients through 17 federal grantees at approximately 101 delivery sites.¹¹ No data are available to estimate the cost of care provided by non-FQHC clinics, although these clinics may provide a significant volume of safety net care in Missouri.

Table 3 shows cost figures derived from UDS data for Missouri FQHCs in 2004, the most recent data available. The calculation of cost estimates follows national estimates developed in a 2005 study.¹² In 2004, Missouri FQHCs reported a total of \$96.5 million in costs for medical care and clinical services, including allocations for facility and administrative overhead costs. In addition, costs for dental services and enabling services are not shown in Table 3 and are not included in the estimates.

Table 3. Estimates of Costs of Uncompensated Care to the Uninsured at FQHCs in Missouri, 2005
(in millions)

Medical and Clinical Service Costs (2004)		
a. Medical Staff	\$60.3	63%
b. Lab and X-ray	\$ 8.2	9%
c. Medical and Other Direct Medical Care Services	\$10.4	11%
d. Pharmacy and Pharmaceuticals	\$ 9.7	10%
e. Mental Health, Substance Abuse, and Other Professional	\$ 7.9	8%
Total	\$96.5	100%
Share of Charges* (Uninsured, 2004)	32.2%	
Medical and Clinical Service Costs (Uninsured, 2004)	\$31.1	
Self-Pay Collections (Uninsured, 2004)	\$ 2.6	
Total – Uncompensated Care Costs (Uninsured, 2004)	\$28.5	
Adjustment for Inflation in Health Expenditures (2004-2005)	1.0614	
Total – Uncompensated Care Costs (Uninsured, 2005)	\$30.2	

* Uninsured patients' charges / all patients' charges = \$39.1 / \$121.3 = 32.2 %
Source: BPHC, HRSA, Uniform Data System, Missouri Rollup Report (2004).

The share of costs attributable to the uninsured cannot be directly observed in the available data. However, information from the UDS indicates that the share of total charges attributable to the uninsured (uninsured patients' charges divided by total charges) is approximately 32 percent, and assumed to be equal to the share of costs attributable to the uninsured.¹³ Total costs for medical care and clinical services for the uninsured, including allocated facility and administration costs, are calculated by multiplying the share attributable to the uninsured by the total costs, which results in \$31.1 million in costs for the uninsured. To determine the uncompensated care costs, the \$8.1 million that FQHCs received in direct revenue from all patients must be factored into the equation. Assuming that the uninsured accounted for 32 percent of these payments, they would have paid FQHCs \$2.6 million for their care, resulting in \$28.5 million in total costs of uncompensated care to the uninsured by FQHCs in 2004.

It is assumed that between 2004 and 2005 FQHC provision of uncompensated care to the uninsured increased at the same rate as health care expenditures, roughly the rate of increase in federal revenues going to FQHCs.¹⁴ Federal sources comprise the largest category of revenue, accounting for an estimated 64 percent of non-patient revenue sources, while state and local sources account for approximately 28 percent, and other sources for the remaining 8 percent. After adjusting for inflation between 2004 and 2005, the total cost of uncompensated care provided to the uninsured in FQHCs by all non-patient revenue sources rises to an estimated \$30.2 million in 2005.

Other Government Programs

VETERANS ADMINISTRATION

The Department of Veterans Affairs (VA) provides a range of benefits to veterans that includes: health care, vocational training,

pensions, life insurance and indemnities, education, and disability compensation. Medical care accounts for over half of VA expenditures in Missouri each year.¹⁵ In FY 2004, VA expenditures for medical services in Missouri totaled \$910 million. An estimated \$728 million, or 80 percent of the total, represents direct or acute medical care spending.¹⁶ The remaining 20 percent of expenditures funds long-term rehabilitative, psychiatric, and nursing home care, which are excluded from the estimate of care to the uninsured.

Most veterans who use VA services have another source of health care coverage, and most receive the bulk of their care from non-VA sources.¹⁷ Because information on the services given specifically to uninsured VA users is not available, their spending is estimated by applying the share of uninsured VA users in the state to the statewide amount of direct medical care spending. In doing so, it is assumed that the VA-only (i.e., uninsured) individuals use direct medical services with the same frequency as those with other sources of insurance coverage. The estimates may understate uninsured veterans medical spending to the extent that those veterans rely more heavily on VA care or consume disproportionately expensive services.¹⁸ Table 4 shows that 12.6 percent of those in Missouri who reported being covered by the VA had no other source of health coverage in 2004.¹⁹

Applying the CPS percentage of uninsured users to direct medical expenditures produces an estimate of \$92 million in VA-provided care to the uninsured in 2004. Adjusting for growth in the VA medical services budget between 2004 and 2005 results in a total cost of \$98.2 million in VA direct care to the uninsured in Missouri in 2005.

RYAN WHITE CARE ACT

The Ryan White Comprehensive AIDS Resources Emergency (Ryan White CARE) Act,

Table 4. Veterans Health Administration Expenditures on Care to the Uninsured in Missouri, 2005
(in millions)

Total VA Medical Expenditures in Missouri, 2004 ^a	\$910
Direct/Acute Medical Care Expenditures (80% of total) ^b	\$728
Percent of VA Users with Only VA Coverage ^c	12.6%
Estimated Direct Medical Care Expenditures on Uninsured, 2004	\$ 92
Adjustment for Growth in VA Medical Services Budget, 2004-2005	1.071
Estimated Direct Medical Care Expenditures on Uninsured, 2005	\$ 98

^aFrom Department of Veterans Affairs, Geographic Distribution of VA Expenditures for FY 2004, www.va.gov/vetdata/GeographicInformation/index.htm (April 6, 2005).

^b80 percent derived from FY 2004 national VHA budget (in millions): acute hospital care services (\$4,791) + outpatient care services (\$11,229) + proportionate general operating expenses (\$513) = total direct medical (\$16,533) / total medical program budget (\$20,560) = 80.4 percent. See OMB, "Budget of the United States Government, Fiscal Year 2004 - Appendix."

^cTwo-year average of the 2004 and 2005 percentages in Missouri using the March Supplements of the CPS.

administered by the Health Resources and Services Administration (HRSA), is the largest source of federal discretionary funding for care to persons living with HIV/AIDS. States and cities use the grants to fund outpatient and inpatient services; medications; and support services to low-income, uninsured, and underinsured persons living with HIV/AIDS. In FY 2004, Missouri's total Ryan White CARE budget was \$22.5 million. There were an estimated 5,021 persons living with AIDS in Missouri in 2004.²⁰ Due to the structure of this program, the derivation of an estimate of the costs of uncompensated care to the uninsured is presented in Appendix A. Total Ryan White CARE spending on the uninsured in Missouri, through the AIDS Drug Assistance Program (ADAP), Title I, and Title II,²¹ is estimated to be \$11.7 million. An estimated \$1.5 million is paid for with state general revenue.

MATERNAL AND CHILD HEALTH BLOCK GRANT

The Title V Maternal and Child Health (MCH) Block Grant is the only federal program with the explicit and primary aim of improving the health of all mothers and children in the United States. Placing particular emphasis on low-income, uninsured, and underinsured persons, Title V programs in Missouri serve over 236,000 pregnant women and children each year.²² Most

MCH Block Grant spending in Missouri is directed to children with special health care needs and those between ages 1 and 22.²³ Underserved urban and rural areas are also specifically targeted. The Title V MCH Block Grant has operated as a federal-state partnership, with states required to spend \$3 for every \$4 in federal funding provided. Most states, including Missouri, contribute more than the required match.

Data indicate that children with special health care needs have the highest uninsurance rate among Title V patient groups in Missouri (Table 5). Approximately 19 percent of this group, and 6 percent of all other groups, were uninsured in 2004. Applying the percent uninsured to total non-infrastructure MCH Block Grant spending results in \$1.7 million in care for the uninsured. Because federal grants pay for most of the spending on special needs children, who represent the largest spending group, the federal amount paid is greater than the state amount.²⁴ Federal grants financed an estimated \$1.1 million in care for the uninsured; state revenue paid for an estimated \$0.7 million. MCH grant programs besides the MCH Block Grant, e.g., the Abstinence Education Program and Health Start, are not included in our estimate of care to the uninsured.

Table 5. MCH Block Grant Spending on Care for the Uninsured in Missouri, 2005
(in millions)

	Children with Special Health Needs	Others ^a	All Users
Total MCH Block Grant Expenditures ^b	\$8.0	\$16.0	\$24.0
Total, Subtracting Infrastructure Expenditures	\$5.5	\$11.0	\$16.4
Percent of Users Uninsured ^c	19%	6%	–
Estimated MCH Block Grant Spending on Uninsured	\$1.1	\$0.7	\$1.8

^aIncludes pregnant women, infants less than 1 year, children 1 to 22 years, and all others.

^bIncludes federal allocation, Missouri match and overmatch, and program income. Expenditures on administration are redistributed proportionately.

^c6% for the “others” category is the weighted average of 7.3% (children 1-22 yrs), 0% (pregnant women and infants), and 11% (all others).

Source: MCH Bureau, HRSA, Title V Information System (TVIS), FY 2004, <https://performance.hrsa.gov/mchb/mchreports>.

CLINICS STAFFED WITH NATIONAL HEALTH SERVICE CORPS PROFESSIONALS

The stated mission of the National Health Service Corps (NHSC) is to improve the health of medically underserved persons by recruiting health professionals to serve in communities with the greatest need. In return for commitments to serve in primary health care shortage areas, NHSC assists physicians with their education loans and training. The NHSC UDS reports detailed cost and charge information for the clinics in Missouri with a NHSC assignee.²⁵ In 2004, \$43.6 million in care was delivered at these sites (Table 6).²⁶ Uninsured patients’ unpaid charges represented 7 percent of charges for all patients. Applying this percentage to total expenses at NHSC sites and adjusting for growth in medical costs between 2004 and

2005, NHSC sites provided an estimated \$3.2 million in uncompensated care to the uninsured in Missouri in 2005. State, local, and other non-federal sources paid for \$3.1 million of this care.²⁷ Federal grants finance only a small amount of the direct care in these clinics, roughly \$0.1 million.

Summary of Provider Data

The largest provider of uncompensated care to the uninsured in Missouri is hospitals, accounting for \$522 million in 2005. Office-based physicians provided another \$85 million in uncompensated care. Among government programs and providers, the largest amount of uncompensated care to the uninsured came through VA hospitals and clinics (\$98 million). Other sources of uncompensated care were much smaller. In

Table 6. Cost of Uncompensated Care at NHSC Clinics in Missouri
(in millions)

Total Expenses at NHSC Sites ^a		\$43.6
Self-Pay Patients’ Unpaid Charges as a Percent of All Charges	7%	
Self-Pay Patients’ Uncompensated Expenses		\$ 3.0
Adjustment for Inflation in Health Expenditures 2004-2005	1.061	
Total - Uncompensated Care Costs (2005)		\$ 3.2

^aOnly NHSC sites that do not receive Section 330 grant support as FQHCs. 47 sites included. 14 are certified rural health clinics.

Source: NHSC Uniform Data System, Missouri Rollup Report, 2004.

total, community health centers, Ryan White CARE services, MCH Block Grants, and the NHSC accounted for about \$47 million in uncompensated care. Across all providers

and programs for which data were available, the uninsured in Missouri received an estimated \$753 million in uncompensated care in 2005.

Uncompensated Care Costs Based on Household Survey Data

This section presents estimates based on a methodology for constructing state specific estimates of the cost of medical care received by the uninsured using data from the Medical Expenditure Panel Survey (MEPS) in conjunction with the CPS. The MEPS, a nationally representative survey of individuals and households conducted by the Agency for Health Care Policy and Research, is the most detailed source of health care spending information available for this estimate. The CPS is the most widely used data source for determining the size and characteristics of the states' uninsured populations.

Spending data for this analysis come from the MEPS Household Component for the years 2000 through 2003. The MEPS collects information on health care use and expenditures, insurance coverage, health status, sources of payment, income, employment, and other sociodemographic characteristics for the civilian, non-institutionalized population of the United States. Respondents' information is also adjusted and supplemented with data from medical providers, pharmacies, and insurance providers. The analysis sample for this study is limited to persons who live in the Midwest Census Region. Newborns, people who pass away during the year, and those who are institutionalized for part of the year are included for the portion of the year that they satisfied the MEPS criteria for inclusion. The final MEPS sample includes 14,672 non-elderly people.²⁸

CPS data are from the 2003 and 2004 March Supplement surveys (years correspond to the

year of insurance status and not the year interviewed). Conducted by the U.S. Census Bureau, the CPS uses information from over 50,000 households to provide estimates for the civilian, non-institutionalized population. Insurance coverage in the CPS is defined for the full calendar year prior to interview. However, benchmark analysis using other nationally representative surveys suggests that the CPS provides more of a point-in-time than a full-year coverage estimate, and likely miscounts some part-year uninsured as full-year uninsured.²⁹ To produce comparable definitions of coverage in the CPS and MEPS, this study considers MEPS respondents to be uninsured if they have seven or more months of uninsurance.³⁰

Missouri specific spending estimates cannot be determined using only the MEPS because this survey is not designed to produce state-level spending estimates, i.e., the only geographic variables are the Census-defined regions of Northeast, Midwest, South, and West, as well as a metropolitan statistical area indicator. Therefore, this study uses an approach that allows for the reweighting of MEPS observations for the Midwest region so that they correspond to the characteristics of observations from the CPS in Missouri. Appendix B presents details of this approach, and also includes a discussion of other adjustments that are required to produce estimates based on the MEPS data, as well as a detailed definition of how uncompensated care was identified.

The upper portion of Table 7 reports the estimates of actual spending by the uninsured in

Missouri by source of payment. Uninsured adults received an average of \$2,240 in care and uninsured children received \$1,535 in care. For all uninsured, average per person spending is estimated to be \$2,145.

Applying these per capita spending figures to the estimated numbers of uninsured adults and children in Missouri produces a total cost estimate of \$1.3 billion for the medical care received by the uninsured. Of this amount, adults account for over 90 percent of the costs.

The largest source of payment for care received by the uninsured is their own out-of-pocket spending, which accounts for 33 percent of their total care. Since some uninsured have health insurance coverage for a portion of the year, private insurance and Medicaid pay 12 percent of the cost of their care. Workers' compensation funds pay for about 4 percent of care for the uninsured. Other public sources account for 15 percent of care to the uninsured and include care provided by the VA, other federal programs, and other state and local programs. Additional sources, including other private payments and payments from unknown sources, account for 19 percent of care to the uninsured. Uncompensated care from private providers is the final category and represents 18 percent of care to the uninsured. This estimate is based on a MEPS survey question regarding the likely payment providers would have received from private insurers for care provided to the uninsured.

From these data on the sources of payment, an estimate is derived for the amount of uncompensated care that the uninsured receive. Clearly, uncompensated care from private providers is a component of this estimate. Equally clear is the fact that out-of-pocket spending, private insurance, Medicaid, and workers' compensation do not represent uncompensated care. The two

remaining categories, other public sources and other sources, are not directly linked to any identified insurer. These categories include, for example, philanthropic payments, payments from a wide range of publicly financed (non-insurance) programs, and care for which no payer was identified. Following previous research,³¹ both "other public sources" and "other sources" are treated as components of uncompensated care. The three categories of spending that comprise uncompensated care totaled \$666 million in 2005, or 53 percent of the care received by Missouri's uninsured.

Provider Data Versus Survey Data

The estimates of uncompensated care received by the uninsured detailed in this study are not identical, but are reasonably close. The provider/program data suggest that the uninsured received about \$753 million in care in 2005, while estimates from household surveys suggest about \$666 million. The MEPS data upon which the household survey estimates are based are known to understate spending relative to national health accounts and, although adjustments were made to account for this, it is possible that the MEPS estimates could be viewed as a lower threshold.³² Moreover, the MEPS data are from all surveyed households in the Midwest region as opposed to only Missouri. Again, estimates were adjusted to reflect the characteristics of the uninsured in Missouri, but the possibility exists that these adjustments were imperfect. In fact, it could be that the provider/program estimates also somewhat understate uncompensated care for the uninsured because not all providers who care for the uninsured were included, e.g., clinics other than FQHCs and clinics providing services not funded through the federal programs. However, given the similarity between these two independent sets, they can be viewed as relatively credible estimates

Table 7. Medical Care Expenditures for the Non-Elderly Uninsured in Missouri, by Source, 2005

Estimated Actual Expenditures and Predicted Expenditures if Fully Insured

	Adults (N=518,000)		Children (N=81,000)		All-Non-Elderly (N=599,000)		
	Per Capita	Total (millions)	Per Capita	Total (millions)	Per Capita	Total (millions)	Percent
Actual Spending, by Source							
Out-of-Pocket	\$ 758	\$ 392.7	\$ 309	\$ 25.0	\$ 697	\$ 417.7	33%
Private	\$ 157	\$ 81.3	\$ 105	\$ 8.5	\$ 150	\$ 89.8	7%
Medicaid	\$ 114	\$ 59.0	\$ 95	\$ 7.7	\$ 111	\$ 66.7	5%
Workers' Compensation	\$ 84	\$ 43.7	\$ 7	\$ 0.5	\$ 74	\$ 44.2	3%
Other Public	\$ 397	\$ 205.5	\$ 28	\$ 2.3	\$ 347	\$ 207.8	16%
Other Sources	\$ 332	\$ 172.2	\$ 688	\$ 55.7	\$ 380	\$ 227.9	18%
Uncompensated Care (Private Providers)	\$ 398	\$ 206.1	\$ 303	\$ 24.5	\$ 385	\$ 230.6	18%
All Sources	\$2,240	\$1,160.5	\$1,535	\$124.3	\$2,145	\$1,284.8	100%
Predicted Spending if Fully Insured*							
Out-of-Pocket	\$ 638	\$ 330.6	\$ 250	\$ 20.3	\$ 586	\$ 350.8	14%
Total Expenditures	\$4,403	\$2,280.8	\$1,933	\$156.6	\$4,069	\$2,437.4	100%

*Fully insured with either private or public coverage.

Notes: Per capita spending estimated using 2000-2003 MEPS data, reweighted to represent Missouri.

Uninsured population totals derived from 2003-2004 CPS data (two-year average).

of the amount of uncompensated care to Missouri's uninsured.

Potential Effects of Providing Insurance

The lower portion of Table 7 reports predicted out-of-pocket and total spending by the uninsured under the assumption of full-year insurance coverage. The basic approach of this study is to use multivariate models to estimate the relationship between health care spending and various personal characteristics including several measures of health status as well as the share of the year that the individual had insurance. To predict health care spending for the uninsured as if they had insurance coverage, characteristics of this population are used and an assumption is made that they had health insurance for the entire year, i.e., models were used to predict likely health care usage if this population had

insurance in order to estimate the increase in spending that would result. The details of these methods are contained in Appendix C. If fully insured, uninsured adults would receive roughly twice as much medical care as they do currently, or \$4,403 per year. Additionally, spending for uninsured children would increase by about 25 percent to \$1,933 per child if fully insured. Since adults make up 86 percent of Missouri's uninsured, total spending nearly doubles as well, increasing to \$2.4 billion. In spite of the increase in total spending if insured, out-of-pocket spending for this group would actually decrease, from \$697 per person to \$586 per person. This represents 14 percent of the projected total spending.

The difference between projected total spending if insured and current spending by

the uninsured represents the incremental resource cost of extending insurance coverage to all Missouri residents. This amount is estimated to be roughly \$1.2 billion. The estimate is not based on any particular benefit package, but rather assumes an “average” of the range of benefits held by low- and lower-

middle income people with insurance coverage. The \$1.2 billion estimate is simply the additional health care costs that would be spent by those who are currently uninsured if they had insurance. This estimate should not be treated as an estimate of the costs of providing universal coverage in Missouri.

Sources of Public Revenues to Support Uncompensated Care

This section reviews a range of funding that is available to providers to offset the costs of providing uncompensated care to the uninsured in Missouri. Funds for this purpose come from Medicaid, Medicare, federal grants, other federal programs, the state, and local municipalities. In some instances, it is hard to quantify the amount of funding precisely. However, using existing data sources and interviews, an assessment of the amounts available to support uncompensated care can be provided.

Medicaid Funding Through Disproportionate Share Hospital (DSH) Payments

Funding for safety net institutions that care for uninsured Missourians comes heavily from Medicaid through hospital payments and waiver funding for St. Louis outpatient safety net providers.

HOSPITAL DSH ALLOWANCES

Every hospital's Medicaid payment rate contains an allowance for uncompensated care, including charity care and bad debt, as projected from the hospital's previous years' cost reports.³³ Certain large safety net hospitals (i.e., tier 1 facilities) receive 100 percent of the projected amount, while most facilities receive 90 percent. These DSH payments are funded by state, local, and federal monies as the way that the state helps fund hospital uncompensated care. For state fiscal year 2005, hospital DSH payments totaled \$416.8 million.³⁴ Of this total, some \$122 million went to five tier 1 safety net

hospitals,³⁵ and \$295 million went to all other hospitals around the state. Revenues to support these payments stemmed from both federal funds (\$256.1 million) and state and local funds (\$160.7 million).³⁶ Therefore, the DSH payments constitute a major share of hospitals' Medicaid payments (Appendix D).³⁷

The state share of DSH comes mainly from the state's Federal Reimbursement Allowance (FRA), a special state tax on most Missouri hospitals.³⁸ The function of the FRA is to generate state funds to raise reimbursements and otherwise augment Missouri's Medicaid program by bringing in additional federal funds.³⁹ The FRA is important for safety net funding because so much of it is used to draw down federal DSH dollars, allowing Missouri to maximize the amount of federal DSH support it can draw down from the amount allowable each year under the ceiling on federal DSH support.

Another share of the state match for DSH is provider-generated. The tier 1 hospitals make “certified public expenditures” (CPEs) for health care services that the federal government accepts as a valid component of the state's share of Medicaid spending. The amount of CPEs “available” for purposes of state matching varies by year (this is not broken out in Table 8).

The FRA has its roots in a 1991 program of voluntary contributions that drew down enough new federal funding to help the state cope with a budget crisis.⁴⁰ It was converted into a broader,

mandatory tax in 1993, following a 1992 federal enactment that disallowed voluntary methods. In the latter 1990s, along with SCHIP, this mandatory FRA tax helped make affordable a large expansion of Medicaid enrollment. Additional modifications have occurred over time, partly in response to federal concerns. Most recently, a late 2002 Partnership Agreement between federal authorities and the state resolved a federal challenge to the state's mechanisms of provider assessment and reimbursement.⁴¹ The precise tax rate for each year is set by regulation from the Department of Social Services (DSS) and varies by year depending on the revenues needed. For 2006, the FRA rate is about 5.5 percent.⁴² Missouri's approach to DSH-based reimbursement to hospitals appears unique in that every hospital in the state receives some DSH allotment to help cover the uninsured. The Partnership Agreement also appears unique in that it gives federal authorities advance notice of planned Medicaid spending and of any policy change expected in this state-federal program.

Missouri uses FRA revenues to enhance its spending on many parts of Medicaid. Beyond uncompensated care hospital allowances, the FRA funds other components of hospital payment as well as other parts of Medicaid, including managed care spending (Appendix D). The tax and its federal match are essential for maintaining the overall current scope of Medicaid spending, including the size of hospital and non-hospital payouts alike.⁴³

Given that the federal share of Medicaid spending is just over 61 percent, every dollar of provider-based funding (FRA or CPE) brings in almost \$1.58 in additional federal funds. Missouri's success at raising revenues from providers has greatly reduced the state's reliance upon conventional general fund revenues and the various other general fund analogs used to fund other parts of Medicaid. The state's

general fund contribution to Medicaid has dropped to below half of the state share,⁴⁴ even as Missouri runs one of the country's largest state-federal DSH programs, as measured by its share of Medicaid spending.⁴⁵

ST. LOUIS REGIONAL DSH FUNDING

Since 2002, Missouri has also used DSH funds to support outpatient care in St. Louis under a federal Section 1115 waiver. According to interviews conducted for this study, \$38.4 million in DSH revenues were spent for the St. Louis Regional DSH Funding Authority in state fiscal year 2005. Of this amount, \$14.8 million were locally generated CPEs, while the rest came from \$23.6 million in federal matching payments. This funding supports uncompensated care at a network of outpatient providers. Support through this mechanism has risen somewhat over time, but not steadily, and the total available is capped under the waiver. Furthermore, the waiver will need to be renewed to continue this support into the future.

A regional private-public consortium called the Regional Health Commission (RHC) analyzes the local safety net and advises the St. Louis Regional DSH Funding Authority on how to allocate the DSH funds. The RHC seeks to promote an organized network of referrals among regional sources of primary, specialty, and inpatient care.⁴⁶

This waiver was initiated in order to continue the annual flow of DSH funds for St. Louis' safety net care after the 1997 closure of St. Louis Regional Medical Center (a quasi-public hospital) threatened to end access to state support. After this hospital closed, its successor, St. Louis ConnectCare, received the DSH payments for four years. ConnectCare is headquartered at the old hospital location but uses a number of sites to provide a mix of urgent and specialty care, as well as primary care services (and, initially, a small amount of inpatient care).⁴⁷

The DSH regional network provides both primary and specialty care. It has recently reorganized to shift several primary clinic sites from ConnectCare and other organizations to FQHC control, so as to tap into funding streams available to FQHCs. According to an analysis by RHC, the Medicaid Section 1115 waiver provides an essential component of safety net support, yet this remains only one-tenth of what Medicaid provides in direct payments for services.⁴⁸

Summary of Medicaid Funding Through DSH

For 2005, Missouri Medicaid DSH funding related to uncompensated care was \$455.2 million (Table 8). It should be noted that the state share of this amount comes from providers through the FRA and CPEs and hence may not be viewed as new support coming into the health care system to support uncompensated care. Additionally, the total amount of federal DSH support available to a state is limited in any given federal fiscal year, and the federal DSH ceiling nationally has grown more slowly than medical costs in recent years.⁴⁹ Federal DSH rules have changed over time, and DSH support for individual states has gone both up and down over the years.⁵⁰ The 2006 ceiling for Missouri, federal and state shares combined, has fallen to \$720 million, down from the \$729.7 million available in 2005.⁵¹

Moreover, Missouri often cannot even draw down all of the federal support available in a given year. Hospital DSH funding under state provider payment rules is tied to levels of uncompensated care as estimated from prior years' cost reports, along with documented CPEs meeting federal standards. The state comes as close to the ceiling as the cost data justify, but some federal revenue goes unclaimed. Interviewees explained that in 2005 there was room under the federal ceiling for the state to raise hospital DSH payments. A state Medicaid plan amendment was proposed to alter hospital payment methods in part to achieve higher DSH payments (federal approval is pending).⁵²

Medicare Payments to Hospitals

Medicare provides hospitals with payments that can be used to offset some of the costs of uncompensated care. Under the Prospective Payment System (PPS), Medicare adjusts basic payment rates for hospitals that serve a large share of low-income beneficiaries. These payments are also called DSH payments and, as a group, Missouri hospitals received about \$105 million in 2003 (the most recent year for which data are available).⁵³ Medicare also pays hospitals for the costs of indirect medical education (IME). Although most of these payments reimburse hospitals for actual costs incurred for intensity of care that is not fully reflected in base PPS payments, a portion of the payment is intended to compensate for the teaching hospitals' social mission, including the

Table 8. Medicaid DSH Support for Uncompensated Care, 2005
(in millions)

	Total	Federal Match	State/Local Funds
Medicaid Hospital DSH Revenue	\$416.8	\$256.1	\$160.7
Medicaid Waiver for St. Louis Outpatient Care	\$ 38.4	\$ 23.6	\$ 14.8
Statewide Total	\$455.2	\$279.7	\$175.5

Notes: CPEs from local outpatient providers are the state funds for St. Louis. Most funds for hospital DSH payments come from the FRA hospital tax; CPEs from large safety net hospitals account for a portion as well.
Source: Personal Interviews.

Table 9. Public Funding for Direct Care Programs to Support Care for the Uninsured in Missouri, by Source
(in millions)

	All Sources	Federal		State, Local, and Other	
VA	\$ 98.2	\$ 98.2	100%	\$ 0.0	0%
FQHCs	\$ 30.2	\$ 19.3	64%	\$10.9	36%
Ryan White CARE Act	\$ 11.7	\$ 8.8	75%	\$ 2.9	25%
NHSC Clinics	\$ 3.2	\$ 0.1	3%	\$ 3.1	96%
MCH Block Grant	\$ 1.8	\$ 1.1	61%	\$ 0.7	37%
Total	\$145.1	\$127.5	88%	\$17.5	12%

provision of uncompensated care to the uninsured. However, research suggests that only about one-third to one-half of IME payments should be viewed as subsidies for teaching hospitals' social mission work.⁵⁴ In 2003, Missouri teaching hospitals received \$98 million in IME payments, with between \$32 and \$46 million available to subsidize uncompensated care. Therefore, through DSH and IME payments, Medicare provided between \$139 and \$153 million in payments in 2003 to potentially offset some of the costs of uncompensated care to the uninsured.

Public Support for the VA, FQHCs, and Other Government Programs

Earlier in the paper, estimates were presented for the cost incurred on behalf of the uninsured for uncompensated care by each of the five programs listed in Table 9. These estimates were derived using the assumption that providers will spend up to, but no more than, the revenues available to them through public funding. As such, the revenues used to support the previously cited costs are exactly equal to those costs. Table 9 shows the amount of revenue available to five specific sources of uncompensated care to the uninsured, as well as the distribution of those revenues between federal and other sources. These five programs received about \$145 million in 2005 to support uncompensated care, with the largest source of

funding (\$98 million) going to the VA. With the exception of the NHSC, the majority of funding comes from the federal government. However, both FQHCs and MCH programs receive substantial state funding.

Several additional forms of federal support for FQHCs go beyond Section 330 grants. One is free FQHC malpractice coverage for all patients, regardless of health insurance status. Claims are handled under the Federal Tort Claims Act in federal court, defended by federal lawyers, and payouts come from the federal government. In addition, FQHCs are entitled to preferred access for recruiting NHSC practitioners; participation in the Section 340b drug program that provides access to low, VA-level prices; and certain loan guarantees. The value of these cost-reducing benefits is difficult to quantify, but substantial.

Other State and Local Level Funding

STATE SUPPLEMENTAL FUNDING FOR FQHCs Missouri also provides state grants to FQHCs on a discretionary basis. Funding comes from state-only funds as a line item in the DSS budget. Grants totaled \$6.8 million for 2005, up from the recent past. The amount of state-only funds rose to a budgeted \$8 million for 2006 and are expected to rise to \$8.7 million for 2007. This funding is discretionary and has varied substantially from year to year.⁵⁵

Furthermore, by federal rule, the state Medicaid program must assure that FQHCs are paid on a cost reimbursement basis for services provided to Medicaid enrollees. This provision applies even to centers only qualified for, but not actually receiving, Section 330 grant support, i.e., the “look-alike” health centers. If services are provided under managed care contracts at a lower rate of payment, the state must make a supplemental “wraparound” payment to bring total reimbursement to full allowable cost. This study does not attempt to quantify the extent of these Medicaid payments, as they do not directly provide resources designated to meet costs of uncompensated care. However, the value of these payments probably exceeds that of direct grants alone. FQHCs also benefit from special Medicare payment rules.

OTHER PUBLIC SUPPORT FOR HOSPITAL CARE

Missouri hospitals receive most of their funding from revenues related to patient care. Some hospitals also receive funds from “tax revenues” or “other governmental appropriations.” However, a review of selected data suggests that such support is extremely minimal except in the case of VA hospitals and a few hospitals in Columbia, Kansas City, and St. Louis (only during some years in St. Louis). The four non-VA facilities with relatively consistent support averaged about \$100 million a year in public revenues as a group during 1998-2003, with small and unsteady growth over time (Table 10).

Not all such support is meant to help hospitals

cover the costs of uncompensated care. Examination of budgets in Kansas City and Jackson County found that, in part, their governmental support was designated for particular services (e.g., prisoner care or public health programs) or debt relief rather than for uncompensated care.⁵⁶ Detailed investigation of hospital accounting was beyond the scope of this study. However, the authors estimate a 2005 statewide total of tax revenues for non-VA general hospitals of \$160 million, assuming an allowance for some growth and some unobserved revenues in other hospitals. Furthermore, estimates show that half of these funds are available to help pay for uncompensated care. Therefore, the resulting estimate for 2005 uncompensated care support is \$80 million statewide.

CITY AND COUNTY LOCAL HEALTH DEPARTMENTS

Local health departments (LHDs) seem to play only a small role in providing medical services to the uninsured. At one time, LHDs frequently provided clinical services (e.g., dental clinics, home-visit nursing, etc.) to needy residents, if only on a part-time basis. Such LHD medical care is now uncommon, based upon examination of a convenience sampling of standardized LHD descriptions posted on the state website,⁵⁷ as well as interviews with directors of one urban LHD and one rural LHD.

Most LHDs in Missouri are quite small, lack a dedicated source of local tax revenue, are funded mainly by federal and state grants, and almost exclusively list population-oriented public health

Table 10. Comparative Financial and Utilization Data, 1998-2003

Tax Revenue/Other Government Appropriations Received
(in millions)

	1998	1999	2000	2001	2002	2003
Four Hospitals in Boone and Jackson Counties	\$81.7	\$118.2	\$122.0	\$118.0	\$142.6	\$114.7

Source: DHSS 2005b

services as activities rather than clinical medical care. The advent of Medicaid managed care reduced the ability of LHDs to finance clinical care because it made billing Medicaid on a fee-for-service basis harder. LHD services also became less necessary because FQHCs were receiving federal support and providing direct clinical care services.

St. Louis and Kansas City LHDs, in contrast, fund some clinical services, as shown by their health budgets and noted by interviewees. Their local support is tax funded, based on their access to dedicated revenues, rather than heavily reliant on collection of fees and donations. The St. Louis County Department of Health is currently running three clinics, labs, and a drug program. The St. Louis County Department of Health also makes a \$15 million contribution to the DSH regional network, for a total of some \$23 million to this network. This has changed little from prior years.⁵⁸ The St. Louis City Department of Health and Hospitals, despite its name, no longer funds hospital care or directly provides medical services. It does make a \$5 million annual contribution to ConnectCare (the regional consortium).⁵⁹ In Kansas City, a review of both the city's and Jackson County's budgets reveal that both provide some support for the two-hospital Truman Medical Center that is the state's largest safety net provider. These local funds would appear to be included within the previous subcategory of public funding for hospitals, and the jurisdictions seem to provide few clinical services otherwise. Based on these findings, this study estimates a statewide level of LHD support for services to the uninsured of \$50 million, approximately double the level in St. Louis alone.

FREE-STANDING CLINICS OTHER THAN FQHCs

As in other states, Missouri has an unknown number of other types of clinics. These include rural, faith-based, and free clinics. According to the 2003 RHC study, most St. Louis clinics are

FQHCs or hospital-based. According to interviewees, non-FQHCs generally are smaller than FQHCs, offer less comprehensive services, and lack the same obligation to serve all presenting patients.

Rural health clinics are the most numerous (over 130) of the non-FQHC clinics in Missouri and by federal law must be located in rural, underserved areas. They benefit from special Medicare and Medicaid payment rules, much like FQHCs, but lack the same safety net focus. The federal goal in assisting rural health clinics is to keep basic health care accessible in rural areas to all patients, including Medicare and Medicaid enrollees among other insured clients. Dollar figures for these clinics' public revenues (and uncompensated care costs) are not readily available.

Hospital-based clinics also provide safety net care, as documented for St. Louis by the 2003 RHC study. Their costs and revenues are conjoined with those of hospitals, and this project did not seek to separate their funding from that of the hospitals in which they function.

A plausible estimate is that clinics serving the uninsured attract about a quarter of the local governmental and philanthropic support that goes to FQHCs. This study estimates the amount of support was about \$15 million statewide in 2005.

Summary of Sources of Public Revenues

The total public revenues available in 2005 to support uncompensated care to the uninsured in Missouri were estimated to be \$723 million, with funding flowing through multiple channels (Table 11). The actual revenues may be somewhat higher, with the highest possible estimate derived equal to \$898 million in 2005. However, since the hospital FRA and local CPEs used to match federal DSH payments were paid from revenue sources already in the

Table 11. Total Public Support for the Missouri Safety Net, 2005
(in millions)

	Total	Federal Match	State/Local Funds
Medicaid Hospital DSH Revenue	\$416.8	\$256.1	\$160.7
Medicaid Waiver St. Louis Outpatient Care	\$ 38.4	\$ 23.6	\$ 14.8
Medicare (DSH + IME)	\$146.0	\$146.0	\$ 0.0
VA System	\$ 98.2	\$ 98.2	\$ 0.0
Federal Grant Programs with State Contributions	\$ 46.9	\$ 29.3	\$ 17.6
Other State and Local Revenues	\$151.8	\$ 0.0	\$151.8
Total	\$898.1	\$553.2	\$344.9

Note: For sources, estimations, see corresponding sections of this report.

Missouri health care system, they may not all be viewed as new net monies flowing to providers to fund uncompensated care.⁶⁰ The total amount of FRA and CPE payments shown in Table 11 that fund DSH payments was \$176 million in 2005 (the state-local component funds the two types of DSH payments). Some portion of this should be deducted from the \$898 million to provide a more accurate picture of the new monies provided by the sources in Table 11. However, it would almost certainly take a comprehensive audit of the state, hospitals,

and other providers to estimate this portion precisely. If these payments were netted out, the estimated public support for uncompensated care would be \$723 million for 2005. About 76 percent (\$553 million) of this amount comes from federal sources, while the remainder comes from state and local governments. This \$723 million estimate can be viewed as a potentially low estimate of the amount of public support for uncompensated care, but the \$898 million as an overestimate given that FRA payments are returned to the hospitals.

Conclusion

This paper presents 2005 estimates of the costs of uncompensated care for the more than 600,000 uninsured Missourians from three different perspectives: (1) the providers and programs designed to support this care; (2) the households with uninsured individuals who are using health care services; and (3) the public sector that provides revenues to offset the uncompensated care costs of the uninsured. All three sets of estimates indicate that the uninsured are receiving large amounts of health care in Missouri, although the amount of care is much lower than it would

be if they had insurance. Despite relying on substantially different sources of data, the three estimates of the costs of uncompensated care are roughly consistent with each other. The range of estimates is from \$666 million, based on the MEPS household surveys, to \$753 million, based on provider and program data. Both of these estimates could be low for the reasons cited earlier in this report. The estimate of public sector revenue available to support uncompensated care to the uninsured is between \$723 and \$898 million, with the lower estimate likely being closer to the

amount of new monies flowing into the system. About 76 percent of the expenditures in the lower estimate comes from the federal government.

In aggregate, these estimates suggest that the 2005 revenues in the system to support care to the uninsured are roughly sufficient to cover the costs of the care they receive. However, there are several cautionary notes that warrant consideration. First, not every provider who cares for an uninsured patient receives compensation. For example, there is no program that pays private physicians for the cost of treating uninsured patients in their offices. Second, it is possible that revenues in excess of costs for privately insured patients may be used to cross-subsidize care to the uninsured, but the extent of this cross-subsidy is hard to measure. Third, the FRA and DSH arrangement means that some hospitals may get a greater share of their uncompensated care costs covered than other hospitals. Fourth, the rough balance between aggregate costs of uncompensated care and available public revenues in 2002 may not continue into the future. In particular, state funding for clinics and local support for health departments has been unstable in recent years and may continue to be unstable in the future. The continuation of St. Louis DSH payments is also uncertain unless the current waiver is extended. If the substantial cuts in Medicaid enrollment that took place in 2005 are maintained, the demand for uncompensated care will continue to grow. At the same time, available uncompensated care subsidies will not likely increase in

proportion to the increased demand for services.

Beyond the magnitude of the estimates presented, the major point of this study is that the presence of large numbers of uninsured and their inevitable need to receive health care has resulted in a complex mosaic of government programs to defray the costs of that care. The analysis presented here suggests that the monies spent by these programs are large relative to the estimated costs of uncompensated care for the uninsured. If Missouri were to consider expanding its current eligibility rules for public coverage, it is possible that some of the current outlays on behalf of the uninsured could be redirected to cover those costs. This is an approach spelled out in greater detail in research related to Massachusetts.⁶¹ The analysis for that state showed that some revenues were more easily redirected than others. For example, state and local spending including CPEs could be directly transferred to cover the costs of an eligibility expansion; however, federal DSH spending would require a Medicaid waiver and VA spending would not be available. Of course, experience suggests that some recipients of state and local spending may strongly resist giving them up, especially if a coverage expansion does not achieve universal coverage. However, if Missouri continues on its present course of cutting back on public coverage, it is possible that the demand for uncompensated care by the uninsured will increase as will the need to provide further subsidies for these costs.



Appendices

Appendix A. Costs of Uncompensated Care Provided Through the Ryan White CARE Act

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Appendix A. Costs of Uncompensated Care Provided Through the Ryan White CARE Act

Most direct medical care delivered via the Ryan White CARE Act originates from its Titles I and II.⁶² Title I provides emergency assistance to the metropolitan areas most affected by the HIV/AIDS epidemic. Both St. Louis and Kansas City receive Title I funding. Title II grants support ambulatory health care, insurance coverage continuation, home-based care, medications, and support services for people living with HIV/AIDS across the state. The majority of Title II funds are earmarked for the ADAP, which provides medication to individuals without insurance coverage or who cannot get all of their medication needs met through their insurance payer. In general, the Ryan White program is intended to be the payer of last resort and to only fill in current gaps in the financing of HIV/AIDS care.

To estimate the cost of medical care delivered to the uninsured through the Ryan White program, spending is divided into three categories: ADAP, which represents the largest and fastest growing piece of the budget; Title I direct care spending in St. Louis and Kansas City; and Title II, non-ADAP, direct care spending. “Direct care spending” excludes the cost of home health services, enabling and support services, and program evaluation. Missouri is one of the 26 states to use a portion of its ADAP earmark to purchase health insurance and pay premiums for individuals eligible for ADAP, provided the insurance has comparable formulary benefits to the Missouri ADAP. All such spending is included in the estimate of care to the uninsured.⁶³

Data on the insurance status of individuals served by the broader Ryan White CARE Act are not systematically collected. However, the National ADAP Monitoring Project consistently reports the percentage of ADAP patients in each state who are covered by Medicaid, Medicare, or private insurance. The remaining share of patients, 69 percent, are counted as the share of uninsured for ADAP (Table A1).⁶⁴ Applying the percent uninsured to total Missouri ADAP spending, and adjusting for growth in the ADAP budget between 2004 and 2005,⁶⁵ yields a total of \$9.8 million in ADAP spending on the uninsured. Of this amount, \$1.5 million was estimated to come from state general revenue.

The share of patients who are uninsured and who receive direct medical services from Title I and II grantees is somewhat lower than for patients receiving medications through ADAP. In 2003, the share of duplicated clients served by Title I and II grantees who reported being uninsured was 45 percent, and half of those with unknown coverage.⁶⁶ The HIV/AIDS Bureau (HAB) estimates that most clients with unknown coverage are uninsured.⁶⁷ Applying this percentage to the cost of direct medical care results in total federal Ryan White spending in Missouri of \$1 million through Title I, and \$0.9 million through Title II. The budgets for these titles, excluding all ADAP amounts, shrank slightly between 2004 and 2005 (by 0.8%), so the 2005 trended-forward amounts are similar.

Table A1. Ryan White CARE Act Spending on Medical Care to the Uninsured in Missouri
(in millions)

AIDS Drug Assistance Program (ADAP)	
Total ADAP Budget, Federal and State Sources ^a	\$13.5
Percent of ADAP Patients Uninsured ^b	69%
ADAP Spending on Uninsured, 2004	\$9.3
Growth in Budget from 2004 to 2005	1.052
ADAP Spending on Uninsured, 2005	\$9.8
Title I	
Federal Grants to St. Louis and Kansas City (excluding ADAP)	\$6.2
Amount for Direct Medical Care ^c	\$2.3
Percent of Title I Patients Uninsured ^d	45%
Title I Spending on Uninsured^e	\$1.0
Title II	
Federal Grants to Missouri (excluding ADAP)	\$2.8
Amount for Direct Medical Care ^c	\$1.9
Percent of Title II Patients Uninsured ^d	45%
Title II Spending on Uninsured^e	\$0.9
Total, Ryan White Care to Uninsured, 2005	\$11.7

^a The ADAP budget is spent almost entirely on medications. In Missouri in FY 2004, an estimated \$852,000 paid for health insurance coverage with drug benefits.

^b Average of percent uninsured in Missouri in June 2002, 2003, and 2004 (among ADAP patients).

^c Excludes support services, outreach and education, early intervention and home health. Includes a proportionate amount of administration and planning monies. Also includes spending for health insurance that covers medications.

^d Percent of duplicated clients served by Title I/II providers in 2003 who reported being uninsured, and half of those with unknown coverage. (2003 CARE Act Data Report, Section 2, Items 32).

^e Adjusts for slight decline (0.8%) in the national budget for that Title, excluding ADAP allocations, from 2004 and 2005.

Sources: National ADAP Monitoring Project 2005 Annual Report, National Alliance of State and Territorial AIDS Directors, Kaiser Family Foundation, April 2005; HIV/AIDS Bureau, Planned 2004 Program Allocations by Service Type, Titles I & II; Kaiser State Health Facts Online, Ryan White CARE Act Budget, www.statehealthfacts.org.

Appendix B. Methodology for Estimating Medical Care Costs of the Uninsured

Using data from the MEPS and the CPS, the cost of medical care for the uninsured in Missouri is estimated in three stages:

- The Midwest Census Region population in the MEPS is first “reweighted” to mirror the characteristics of Missouri residents represented by the CPS.
- Using the Missouri-reweighted MEPS sample, per capita spending on medical care by age for the uninsured can be calculated, including a separate estimate of donated care to the uninsured from private providers.
- The estimates of per capita spending by age (for the uninsured in the MEPS sample) are applied to the estimated number of uninsured persons in Missouri from the CPS.

Several uniform adjustments are made to the MEPS expenditure data. First, medical care payments and charges are inflated to 2005 dollar values using data on per capita growth in health expenditures.⁶⁸ Because the methods of measuring expenditures in MEPS produces estimates of national health expenditures that are significantly and systematically lower than those reported in the National Health Accounts compiled by CMS, an additional upward adjustment of 1.25 is applied to all spending and charge values.⁶⁹ Finally, the value of prescription drug expenditures is added to total charges because total charges in MEPS do not include charges for prescription drugs.

Reweight the MEPS to Resemble Missouri

Because the MEPS is not designed for state-level spending estimates (the only geographic variables are the Census-defined regions of Northeast, Midwest, South, and West, as well as a metropolitan statistical area indicator), spending in Missouri cannot be determined using the MEPS alone. Consequently, a probit model, or an econometric model, was constructed to estimate the probability of residence in Missouri (equals 1 if the person lives in Missouri)

among CPS respondents in the Midwest. The model also applied the parameters to identically defined variables for MEPS respondents in the Midwest to predict the probability of living in Missouri for each MEPS observation.⁷⁰

The controls for insurance status in the reweighting models, i.e., variables for employer-sponsored health insurance (ESI), Medicaid or SCHIP, non-group coverage, and the residual coverage group, are defined in MEPS based on the type of coverage the person has for the most months in the given year. The number-of-months threshold used to assign Medicaid and ESI is higher than the threshold used to assign non-group coverage, uninsurance, and the residual/other insurance category. This is based on the assumption that the CPS understates insurance coverage, especially Medicaid participation, relative to the MEPS. Also to account for the Medicaid and insurance undercount, state Medicaid enrollment data are used to adjust the count of uninsured persons in Missouri.⁷¹ The total number of uninsured is used in Table 7 in the main text to calculate total expenditures.

Separate models for children and non-elderly adults are estimated, controlling for age, gender, race and ethnicity, marital status, household composition, education, insurance coverage, urban residence, employment status, and family income relative to poverty (Tables B1 and B2 report the parameters of the probit model for “Missouri residence”).

The final Missouri-adjusted person weight in MEPS is defined as:

$$MO_{perwt} = perwt * [(1 - P_{cps}) / P_{cps}] * [P_{meps} / (1 - P_{meps})],$$

where

perwt = the non-adjusted person weight in MEPS,

P_{cps} = the actual probability of living in MO among persons in the CPS Midwest,

P_{meps} = the predicted probability of living in MO among persons in the MEPS Midwest.

Table B3 displays the means of selected sociodemographic variables in MEPS, before and after the reweighting process, and in the actual CPS Missouri population.

Computing Uncompensated Care and Current Spending

Following prior methods used to estimate the cost of the uninsured nationally and in Massachusetts and Connecticut, the uninsured's total expenditures in MEPS was adjusted to include the cost of care donated from private providers⁷² (donated care from public hospitals and clinics is already imputed by MEPS and included in total expenditures). This study defines “donated” or “uncompensated” care as the difference between payments actually received from uninsured patients and payments providers would expect to receive for the same services from privately insured payers. The expected payment is the ratio of payments to charges for the full-year privately insured (the discount rate) applied to total charges for care received by the uninsured, excluding care paid for by private insurance, public insurance, or other public sources. The private discount rate used is 71.7 percent for adults and 73.9 percent for children. The expected payment is set to $(prv_discnt * totchgs)$ for uninsured people

with charges but no payments. Calculated separately for each uninsured person, donated care is set to zero when negative. Overall, $doncare = payments\ expected\ if\ privately\ insured - actual\ payments\ received; = [prv_discnt * totchgs * (slf+opr+osr)/totexp] - (slf+opr+osr)$,

where

prv_discnt = total payments / total charges, for the full-year privately insured (excluding people with payments from Medicare, workers' compensation, other state and local, other public, and VA),

slf = total out-of-pocket payments,

opr = total payments from other private sources,

osr = total payments from other unclassified sources.

After including donated/uncompensated care in the uninsured's total spending, the study calculates mean per capita expenditures in MEPS using the Missouri person weights and assigns them to uninsured Missouri residents in the CPS sample by age group. Means of total expenditures and expenditures by source, i.e., out-of-pocket, private insurance, Medicaid, workers' compensation, VA, other public, other private, and uncompensated care, are generated separately for children and non-elderly adults ages 19-64.

Table B1. Reweighting Model for Likelihood of Living in Missouri, Among Non-Elderly Adults (Ages 19-64) in Midwest

	Coefficients
Gender, Race/Ethnicity	
Female	-0.004
Asian	-0.125 ^b
American Indian	0.099
Black	0.221
Hispanic, Any Race	-0.572 ^b
Living Arrangement	
Metropolitan Area	0.037 ^b
Married, not Living With Spouse	0.027
Widowed, Divorced, or Separated	0.049 ^c
Never Married	-0.054 ^b
Number Adults in Household	-0.065 ^a
Total Household Size	0.001
Veteran Living in Household	0.183 ^a
Education	
HS Diploma or Associate's Degree	-0.111 ^a
College Degree	-0.054
Graduate Degree	-0.026
Income & Labor Force Status	
100-200% of FPL	0.025
200-400% of FPL	0.039
Greater than 400% of FPL	0.006
Unemployed	-0.023
Not in Labor Force	0.003
Insurance Coverage	
Medicaid	0.188 ^a
Non-Group	0.059
Other Insurance Type	-0.020
Uninsured	0.043 ^c
Age Group	
19-24	0.049
25-29	0.071 ^b
30-34	-0.019
40-44	-0.087 ^a
45-49	-0.102 ^a
50-54	-0.044
55-59	-0.033
60-64	-0.073 ^c
Constant	-1.216 ^a
Observations	58,690

^a p < .01

^b .01 < p < .05

^c .05 < p < .10

Note: Coefficients for the interactions between race variables and all other independent variables not shown.

Source: Estimated from pooled CPS data, 2003-2004.

Table B2. Reweighting Model for Likelihood of Living in Missouri, Among Children (Ages 0-18) in Midwest

	Coefficients
Gender, Race/Ethnicity	
Female	0.011
Asian	-0.319 ^a
American Indian	-0.104
Black	1.147 ^a
Hispanic, Any Race	-0.345
Living Arrangement	
Metropolitan Area	0.111 ^a
Married, Not Living With Spouse	-0.143
Widowed, Divorced, or Separated	0.194 ^a
Never Married	0.018
Number Adults in Household	0.031
Total Household Size	-0.015
Veteran Living in Household	0.205 ^a
Parent Highest Degree	
HS Diploma or Associate's Degree	-0.104 ^b
College Degree	-0.004
Graduate Degree	-0.205 ^a
Income & Parent Labor Force Status	
100-200% of FPL	-0.008
200-400% of FPL	0.049
Greater than 400% of FPL	-0.013
Unemployed	-0.072
Not in Labor Force	0.043
Insurance Coverage	
Medicaid	0.195 ^a
Non-Group	0.052
Other Insurance Type	-0.434 ^a
Uninsured	0.005
Age Group	
2-4	0.062
5-9	0.104 ^b
10-12	0.093 ^b
13-18	0.064
Constant	-1.519 ^a
Observations	33,644

^a p < .01
^b .01 < p < .05
^c .05 < p < .10

Note: Coefficients for the interactions between race variables and all other independent variables not shown.
Source: Estimated from pooled CPS data, 2003-2004.

Table B3. Means of Selected Characteristics Before and After Reweighting the MEPS Midwest to Represent CPS' Missouri, Among Non-Elderly Adults and Children

	MEPS, Before Reweighting	MEPS, After Reweighting	CPS, Actual MO Population	Difference (CPS Minus Reweighted MEPS)
Gender, Race/Ethnicity				
Female	50.0%	50.6%	50.6%	0.1%
White	85.6%	84.7%	85.0%	0.2%
Black	11.1%	12.6%	12.1%	-0.5%
Asian	2.5%	1.7%	1.9%	0.1%
American Indian	0.8%	0.9%	1.0%	0.1%
Hispanic, Any Race	5.3%	3.1%	3.6%	0.5%
Living Arrangements				
Metropolitan Area	76.2%	77.1%	77.5%	0.4%
Married, Living With Spouse	62.7%	60.5%	59.8%	-0.7%
Married, Not Living With Spouse	0.8%	0.7%	0.9%	0.2%
Widowed, Divorced, or Separated	15.0%	17.3%	17.6%	0.3%
Never Married	21.1%	21.0%	21.7%	0.7%
Veteran in Household	19.7%	24.8%	23.0%	-1.8%
Number Adults in Household	2.24	2.16	2.06	-0.10
Total household size	3.69	3.55	3.38	-0.17
Family Income				
Less than 100% of FPL	10.2%	10.7%	12.2%	1.5%
100-200% of FPL	14.7%	14.6%	15.5%	1.0%
200-400% of FPL	33.7%	35.9%	34.4%	-1.5%
Greater than 400% of FPL	41.4%	38.8%	37.9%	-0.9%
Insurance Coverage				
Employer-Sponsored Insurance	69.7%	67.6%	66.3%	-1.3%
Medicaid	9.8%	11.7%	11.7%	-0.1%
Non-Group	2.5%	2.8%	4.2%	1.4%
Other Insurance	4.6%	4.2%	4.2%	0.0%
Uninsured	13.4%	13.6%	13.6%	0.0%
Age Group				
0-4	7.7%	7.2%	7.3%	0.1%
5-9	7.9%	8.2%	7.8%	-0.4%
10-18	14.9%	15.5%	15.4%	-0.2%
19-29	16.8%	17.0%	17.1%	0.1%
30-39	16.2%	17.0%	16.4%	-0.7%
40-49	17.9%	15.8%	15.9%	0.1%
50-64	18.7%	19.2%	20.2%	1.0%

Appendix C. Computing Predicted Expenditures, if Fully Insured

This study estimates a two-part statistical model of medical care spending to calculate how much more medical care the uninsured would use if they had full-year insurance coverage. The two-part model consists of a logistic regression model of the probability of having any medical spending, and a model of the amount of medical spending for people with positive expenditures.⁷³ This approach is often used when estimating a statistical model on spending data that are not normally distributed because a large share of people have no spending and a small share have very high spending.

The sample is restricted to the non-elderly (ages 0 to 64), and excludes persons with any Medicare coverage and persons with private coverage (for 11 or 12 months) who have family incomes greater than 400 percent of FPL. Non-elderly Medicare beneficiaries are either disabled or have end-stage renal disease; therefore, their medical care is not likely to be typical of either the uninsured or those with private coverage. The high-income privately insured are excluded on the assumption that their spending behavior is not as comparable to the uninsured population, unlike the privately insured with low- and lower-middle incomes who are included. The models control for age, gender, urban/rural residence, race and ethnicity, marital status, education, family income relative to poverty, self-reported health and mental health status,

Activities of Daily Living (ADL)/Independent Activities of Daily Living (IADL) assistance received, a range of functional and activity limitations, and the presence of many chronic health conditions.⁷⁴

Separate models are fit for total expenditures and out-of-pocket expenditures. Total expenditures include donated care if the person is uninsured. The models are estimated separately for non-elderly adults and children. Tables C1 and C2 report the model coefficients for adults and children.

Insurance status is measured using a continuous variable for the percentage of the year the person is insured (with either private or public insurance). To simulate the impact of full-year insurance coverage on the uninsured's spending, the insurance measure is set to 1 and the models' coefficients are used to predict the probability of having any expenditures, as well as the amount of expenditures for people with positive spending, assuming full-year coverage. The per capita predictions are multiplied by the number of non-elderly uninsured adults and children in Missouri to determine total statewide expenditures for the uninsured, as if they were fully insured. The amount of this spending, over and above total current spending for the uninsured in Missouri, represents the estimated incremental medical care cost of complete insurance coverage.

**Table C1. Coefficients for Two-Part Expenditure Models,
Non-Elderly Adults**

	Any Expenditures	Total Expenditures, If Any	Any Out-Of-Pocket Expenditures	Total Out-Of-Pocket, If Any
Percent of Year Insured	1.169 ^a	0.895 ^a	0.450 ^a	-0.303 ^a
Health Status				
Very Good	0.034	0.066	0.200 ^a	-0.048
Good	0.275 ^b	0.161	0.304 ^a	0.000
Fair	0.562 ^a	0.470 ^a	0.534 ^a	0.272 ^a
Poor	0.969 ^b	1.366 ^a	0.849 ^a	1.025 ^a
Mental Fair or Poor	-0.453 ^b	-0.362 ^b	0.069	0.073
Deceased or Institution	-0.224	-0.141	0.830 ^b	0.084
Medical Conditions				
Diabetes	2.548 ^a	1.702 ^a	0.414 ^a	0.272 ^a
Hypertension	2.602 ^a	2.344 ^a	0.375 ^a	0.211 ^a
Asthma	1.733 ^a	1.562 ^a	0.220 ^b	0.291 ^a
Back Disorder	1.284 ^a	0.896 ^a	0.172 ^b	0.181 ^a
Infectious	0.812 ^a	0.670 ^a	0.065	-0.003
Endocrine	2.813 ^a	2.244 ^a	0.208 ^a	0.257 ^a
Blood	1.285 ^c	1.660 ^a	0.971 ^a	0.256
Heart	2.000 ^a	1.396 ^a	0.763 ^a	0.237 ^c
Bronchitis	0.564 ^a	0.575 ^a	-0.011	0.120
Digestive	1.807 ^a	1.426 ^a	0.347 ^a	0.212 ^a
Genitourinary	2.462 ^a	1.805 ^a	0.318 ^a	0.120 ^b
Skin	2.114 ^a	2.035 ^a	0.181 ^a	0.186 ^a
Musculoskeletal	1.126 ^a	0.986 ^a	0.186 ^a	0.067
Fracture	2.044 ^a	0.882 ^b	0.539 ^a	0.181
Otitis Media	2.367 ^a	2.382 ^a	0.138	0.187
Malignant Neoplasm	1.613 ^b	1.611 ^a	0.890 ^a	0.592 ^a
Limitations				
ADL or IADL	1.003 ^b	0.045	0.312	-0.125
Difficulty Lift, Step, Walk	-0.613	-0.531 ^c	0.331 ^b	0.180
Social or Cognitive Limitation	0.670 ^c	0.467 ^c	0.362 ^a	0.176
Work, Housework, or School Limitation	0.148	-0.112	0.189	0.037
Unable Work, Housework, School	1.306 ^a	0.895 ^b	0.333 ^b	-0.206
Assistive Technology Needed	-1.025 ^b	-0.487	0.697 ^b	-0.136

(Table C1 continued)

Table C1. (continued)

	Any Expenditures	Total Expenditures, If Any	Any Out-Of-Pocket Expenditures	Total Out-Of-Pocket, If Any
Gender, Race/Ethnicity				
Female	1.146 ^a	1.086 ^a	0.420 ^a	0.308 ^a
Asian	-0.598 ^a	-0.484 ^a	-0.354 ^a	-0.221 ^c
American Indian	0.101	-0.445	-0.199	-0.646 ^a
Black	-0.715 ^a	-0.648 ^a	-0.266 ^a	-0.370 ^a
Hispanic	-0.387 ^a	-0.351 ^b	-0.010	0.075
Age Group				
19-24	0.541 ^b	0.143	-0.289 ^b	-0.809 ^a
25-29	0.065	-0.178	-0.341 ^a	-0.774 ^a
30-34	0.169	-0.220	-0.253 ^b	-0.708 ^a
35-39	-0.167	-0.385 ^c	-0.423 ^a	-0.782 ^a
40-44	-0.060	-0.270	-0.175	-0.605 ^a
45-49	-0.156	-0.301	-0.410 ^a	-0.503 ^a
50-54	-0.299	-0.378 ^c	-0.174 ^c	-0.346 ^a
55-59	0.319	-0.011	-0.268 ^a	-0.272 ^b
Education				
No HS Diploma	-0.801 ^a	-0.880 ^a	-0.004	-0.235
HS Diploma or Associate's Degree	-0.339	-0.407 ^c	0.114	-0.077
College Degree	0.489 ^c	0.447 ^c	0.132	0.036
Living Arrangements				
Metropolitan Area	0.001	-0.034	0.024	-0.020
Married, Not Living With Spouse	-0.523 ^c	-0.118	0.203	0.191
Widowed, Divorced, or Separated	-0.178	-0.162	-0.104 ^c	-0.027
Never Married	-0.354 ^a	-0.279 ^a	-0.101	-0.022
Family Income				
100-200% of FPL	-0.098	0.143	-0.115	0.092
200-400% of FPL	0.055	0.469 ^a	-0.104	0.178 ^b
Greater than 400% of FPL	0.395 ^b	0.770 ^a	-0.095	0.529 ^a
Constant	-0.213	-0.295	7.228 ^a	7.016 ^a

^a p < .01
^b .01 < p < .05
^c .05 < p < .10

Source: Estimated from pooled and reweighted MEPS data, 2000-2003.

Table C2. Coefficients for Two-Part Expenditure Models, Children

	Any Expenditures	Total Expenditures, If Any	Any Out-Of-Pocket Expenditures	Total Out-Of-Pocket, If Any
Percent of Year Insured	0.913 ^a	0.233	0.223	-0.434 ^a
Health Status				
Very Good	0.424 ^a	0.182 ^c	0.071	0.146
Good	0.043	0.106	0.316 ^a	0.326 ^b
Fair	1.825 ^a	0.520 ^c	0.636 ^a	0.109
Poor	-0.392	0.409	1.499 ^a	-0.308
Mental Fair or Poor	-0.100	0.165	0.360 ^b	0.239
Newborn	-1.425 ^b	-0.548 ^c	0.856 ^b	0.216
Special Education/Therapy	0.652 ^b	0.458 ^b	0.278 ^b	0.040
Any Activity Limitation	1.490 ^c	1.071 ^a	1.647 ^a	0.681 ^a
Deceased or Institution	1.643	0.245	-1.773 ^a	-2.638 ^b
Medical Conditions				
Asthma	1.254 ^a	0.934 ^a	0.548 ^a	0.536 ^a
Infectious	0.968 ^a	0.590 ^a	0.109	0.011
Bronchitis	0.736 ^a	0.560 ^a	0.213 ^b	0.111
Digestive	1.226 ^a	0.846 ^a	0.736 ^a	0.464 ^b
Skin	2.466 ^a	1.348 ^a	0.312 ^a	0.481 ^a
Musculoskeletal	0.526	0.262	0.651 ^a	0.245 ^c
Fracture	3.049 ^a	1.214 ^a	1.145 ^a	0.132
Genitourinary	1.012 ^b	0.887 ^a	0.698 ^a	0.079
Gender, Race/Ethnicity				
Female	0.180 ^c	0.013	0.208 ^a	-0.095
Asian	-0.692 ^a	-0.781 ^a	0.126	-0.129
American Indian	-0.394	-0.830 ^a	-0.536 ^b	-0.530 ^b
Black	-0.640 ^a	-0.490 ^a	-0.182 ^c	-0.407 ^a
Hispanic	-0.049	-0.226 ^c	-0.215 ^c	-0.193
Age Group				
0-1	2.427 ^a	0.540 ^b	0.380	-0.735 ^a
2-4	-0.145	-0.200	-0.592 ^a	-1.053 ^a
5-9	-0.107	-0.442 ^a	-0.456 ^a	-0.790 ^a
10-12	-0.262 ^c	-0.204	-0.202 ^b	-0.113

(Table C2 continued)

Table C2. (continued)

	Any Expenditures	Total Expenditures, If Any	Any Out-Of-Pocket Expenditures	Total Out-Of-Pocket, If Any
Parent Education				
No HS Diploma	-2.395 ^a	-1.764 ^a	-0.094	-0.211
HS Diploma or Associate's Degree	-1.794 ^a	-1.259 ^a	0.037	-0.084
College Degree	-0.974 ^b	-0.088	0.249	0.042
Living Arrangements				
Metropolitan Area Married, Not Living With Spouse	0.010	-0.124	0.012	-0.168 ^c
Widowed, Divorced, or Separated	0.079	-0.210	-0.034	-0.073
Never Married	-0.352 ^b	-0.323 ^a	-0.139 ^c	-0.395 ^a
Family Income				
100-200% of FPL	-0.237	0.307 ^b	-0.041	0.083
200-400% of FPL	0.103	1.010 ^a	0.065	0.393 ^a
Greater than 400% of FPL	-0.031	0.655 ^a	0.442	0.163
Constant	2.313 ^a	1.137 ^a	6.908 ^a	6.557 ^a
R ²	0.162	0.154	–	–
Observations	5,800	5,800	4,857	3,813

^a p < .01
^b .01 < p < .05
^c .05 < p < .10

Source: Estimated from pooled and reweighted MEPS data, 2000-2003.

Appendix D. The Hospital FRA and Its Uses, Including DSH

Most of the FRA and associated federal funds are returned to hospitals, as explained in the text. Some of these revenues support other aspects of Medicaid. FRA tax assessments totaled \$636.1 million in 2005.⁷⁵

Uses of the FRA

The Missouri Hospital Association (MHA) has explained the uses of FRA-generated financing for 2005 (Table D1).⁷⁶ The top three listed uses are all aggregations of components within Medicaid's hospital payment methodology,⁷⁷ which is complex and has changed over time.⁷⁸ The first component listed is payouts under the basic per diem rate given to each hospital; in this way, the FRA supplements general fund monies. Over time this amount has risen much more slowly than actual hospital costs; the per diem is still based on mid-1990 costs. Accordingly, the second element is an "add-on" amount that mainly makes up for this shortfall but Table D1 also includes payments for graduate medical education. Third is DSH payments, which reimburse hospitals for the cost of treating the uninsured. The state has proposed further amendments to its Medicaid hospital payment methods, which would allow higher DSH payments, but has not yet received federal approval.⁷⁹

Safety Net Impacts

Safety net institutions that supply more Medicaid and uncompensated care services benefit disproportionately from DSH funding. One reason is that the payment rules provide that a few "tier 1" hospitals are to be paid 100 percent of their documented amount for uncompensated care.⁸⁰ Other institutions receive 90 percent designated for uncompensated care, although they

separately get the 10 percent through an upper payment limit (UPL) allowance. The FRA also does not apply to revenues from government appropriations, much of which presumably supports safety net care, and payment methodology gives hospitals allowances in recognition of the FRA they have paid on Medicaid revenues. (The tier 1 safety net hospitals also benefit from being able to attract federal Medicaid DSH monies through CPEs, separate from the FRA for all hospitals, as explained in the text.)

Hospital Uses of Medicaid Allotments

Although the DSH allotment is made in recognition of uncompensated care, once payment dollars are received by hospitals, the funds serve whatever purpose hospitals decide, regardless of the rationale used by state payment methods to generate them. Thus, for example, hospitals may be able to cross-subsidize uninsured care by the relative generosity of the add-on approach. Thus, this study cannot say with precision how funds are actually used "in the field."

Another reason that it is not analytically possible to identify just how DSH, add-on, or other dollars are used within hospitals is that after the state pays hospitals, a certain amount of reallocation across hospitals occurs privately.⁸¹ This private process was accepted in December 2002 under what is known as the state's Partnership Agreement with CMS,⁸² but the type of auditing needed to track dollar flows goes beyond the scope of this paper. These reallocations may change the effective level of support for uncompensated hospital care by hospital, but the total amount involved is the \$416.8 million found in the text, counting federal, FRA, and CPE amounts combined.

Table D1. Use of FRA and Associated Federal Funds, 2005
(in millions)

Hospital Care (part of basic per diem)	\$367.5
Direct Payments (add-on for per diem shortfall)	\$534.3
DSH Payments (uncompensated care allowance)	\$416.8
Managed Care (MC+) program	\$299.5
Section 1115 Waiver	\$31.2
Administrative and Support Pool	\$0.3
Total	\$1,649.6

Sources: Dollars and explanations from MHA 2005 publication and chart (see footnote); matching revenues come from FRA of \$636.1 million, plus federal match of \$1.0135 billion.

ENDNOTES

- ¹ J Hadley and J Holahan, “How Much Medical Care Do the Uninsured Use and Who Pays for It?” *Health Affairs - web exclusive*, W366-81, 2003.
- ² J Holahan, R Bovbjerg, and J Hadley, *Caring for the Uninsured in Massachusetts: What Does It Cost, Who Pays and What Would Full Coverage Add to Medical Spending?* (Boston, MA: Blue Cross Blue Shield of Massachusetts (BCBSMA) Foundation, 2004).
- ³ Data provided by the MHA.
- ⁴ This figure may exclude some costs borne by hospitals for uncompensated care. For example, hospital-based clinics and hospital-affiliated faculty practice plans provide a significant amount of uncompensated care. However, due to differences in accounting methodologies between hospital systems, the total cost of uncompensated care provided in these settings may not be captured by the data provided through the AHA’s Annual Survey.
- ⁵ Data reflecting the percentage of uninsured in Missouri and the percentage of the population enrolled in Medicaid in Missouri were obtained from The Urban Institute analysis of the 2001 and 2005 CPS, March Supplements. The annualized growth rate in the uninsured averaged over 2000 to 2004 is estimated to be 7.8 percent. An estimate of the percentage of the population uninsured due to new Medicaid eligibility restrictions effective in July 2005 is a prorated figure based on an estimated decrease of 15 percent in the population enrolled in Medicaid; the growth rate in the uninsured due to enrollment cuts is estimated to be 8.8 percent.
- ⁶ J Holahan, R Bovbjerg, and J Hadley, 2004.
- ⁷ N Kane, “Medical Bad Debt, A Growing Public Health Crisis,” Presentation to House Subcommittee on Oversight, Committee on Ways and Means, U.S. House of Representatives, Washington, DC, June 22, 2004.
- ⁸ G Weiss, “Practice Expenses,” *Medical Economics* 80:31(2003), available at www.memag.com/memag/article/articleDetail.jsp?id=111586.
- ⁹ J Hadley and J Holahan, *The Cost of Care for the Uninsured: What Do We Spend, Who Pays, and What Would Full Coverage Add to Medical Spending?* (Washington, DC: Kaiser Commission on Medicaid and the Uninsured, 2004), available at www.kff.org/uninsured/upload/The-Cost-of-Care-for-the-Uninsured-What-Do-We-Spend-Who-Pays-and-What-Would-Full-Coverage-Add-to-Medical-Spending.pdf.
- ¹⁰ J Taylor, “Fundamentals of Community Health Centers,” National Health Policy Forum, George Washington University, 2004, available at www.phsi.harvard.edu/quality/clinical_it_safety_net/NHPF_CHC_Fundamentals.pdf.
- ¹¹ Approximate delivery site count from UDS data provided by Joseph Pierle at Missouri Primary Care Association. However, a 2005 report from the General Accounting Office (GAO) concluded that the UDS data may significantly underestimate the number of health delivery sites supported by each grant. In “Health Centers: Competition for Grants and Efforts to Measure Performance Have Increased,” GAO-05-645, July 13, 2005.
- ¹² J Hadley et al, *Federal Spending on the Health Care Safety Net: 2001–2004* (Washington, DC: Kaiser Commission on Medicaid and the Uninsured, 2005).

¹³ This approach is analogous to the approach used to analyze uncompensated care costs in hospitals.

¹⁴ Federal discretionary spending on grants to FQHCs increased by 7.4 percent between 2004 and 2005, while health care expenditures grew by 6.1 percent.

¹⁵ Between 55.0 percent and 55.6 percent of VA expenditures in Missouri were devoted to medical care in FY 2002, 2003, and 2004. See Department of Veterans Affairs, “Geographic Distribution of VA Expenditures,” 2002-2004, available at www.va.gov/vetdata/GeographicInformation/index.htm.

¹⁶ 80 percent represents the share of national VA appropriations budgeted for acute hospital and outpatient care services, along with a proportionate amount of general operating expenses (administration and oversight). See Office of Management and Budget, “Budget of the United States Government, Fiscal Year 2004 – Appendix,” available at www.whitehouse.gov/omb.

¹⁷ Congressional Budget Office (CBO), “The Potential Cost of Meeting Demand for Veterans’ Health Care,” CBO, 2005.

¹⁸ Nationally, VA enrollees with more serious service-connected disabilities – especially those in Priority Groups 1, 4, and 5 – tend to rely more heavily on VA care and are sicker, on average. Estimates of reliance on VA care and spending by Priority Group are not available for Missouri.

¹⁹ Calculated as a two-year average of the 2004 and 2005 percentages. “Other sources” include CHAMPUS/Tricare, CHAMPVA, Medicare, Medicaid, SCHIP, and all private plans. Although VA is the main payer for CHAMPVA, it is a form of insurance rather than direct care; services may be received at non-VA facilities. As such, budget

appropriations for CHAMPVA are excluded in estimating care provided to the uninsured.

²⁰ Kaiser State Health Facts Online, “Missouri: Persons Living with AIDS,” The Henry J Kaiser Family Foundation, available at www.statehealthfacts.org.

²¹ Most direct medical care delivered via the Ryan White Act originates from its Titles I and II. Title I provides emergency assistance to the metropolitan areas most affected by the HIV/AIDS epidemic. Title II grants support ambulatory health care, insurance coverage continuation, home-based care, medications, and support services for people with HIV/AIDS. The majority of Title II funds are earmarked for ADAP, which provides medication to individuals without insurance coverage or who cannot get all of their medication needs met through their insurance payer.

²² MCH Bureau, Title V Information System (TVIS), “Program Data: Number of Individuals Served by Title V, by Class of Individuals: Missouri,” available at <https://performance.hrsa.gov/mchb/mchreports>.

²³ About 70 percent of all MCH Block Grant expenditures in FY 2004 go to CSHCN and children ages 1-22. Analysis of TVIS budget by class of individuals served.

²⁴ For specific federal-state allocation distributions in the earmarked budget for children with special needs, see TVIS, “Budget Earmarked for Children with Special Health Care Needs (CSHCN), FY 2006, Missouri,” available at https://performance.hrsa.gov/mchb/mchreports/Search/financial/finsch04_result.asp.

²⁵ Although many NHSC clinicians serve in FQHCs, the NHSC data system only reports on sites that are not FQHCs. This

avoids double-counting uncompensated care from FQHCs.

²⁶ NHSC Uniform Data System, Missouri Rollup Report, CY 2004.

²⁷ Estimated by applying the share of non-patient income from state, local, and other non-federal sources (97.1%) to total uncompensated care.

²⁸ Some people appear in the sample twice because interviews are conducted over multiple years. The person-level weight is different for each year's record. Because of MEPS' sample design, and to increase the number of observations, we leave in all persons who appear in multiple years' data files.

²⁹ CBO, "How Many People Lack Health Insurance and For How Long?" (Economic and Budget Issue Brief), CBO, 2003, available at www.cbo.gov/showdoc.cfm?index=4211&sequence=0; J Holahan, G Kenney, and L Nichols, "Towards a Federal Survey of Health Insurance Coverage and Access" (Working Paper), The Urban Institute, 2004; National Institute for Health Care Management Research and Educational Foundation, "Health Insurance Coverage in the U.S.: The New Census Bureau Numbers for 2000 and The Trend into 2001," NIHCM Foundation, 2001, available at www.nihcm.org/insurance.pdf.

³⁰ The seven-month threshold is applied as a percentage of available months of insurance data, or 58.3 percent, for those who enter or leave the survey part way through a year.

³¹ J Hadley and J Holahan, 2003; J Hadley et al, 2005.

³² J Hadley and J Holahan, 2003; T Selden et al, "Reconciling Medical Expenditure Estimates from the MEPS and the NHA,

1996," *Health Care Financing Review* 23:1 (2001): 161-78.

³³ DSS, Rules of DSS, Division of Medical Services, Hospital Program, Missouri Code of State Regulations, Tit. 13, Division 70, Chapter 15.

³⁴ Personal communications, 2006.

³⁵ These were the Truman Medical Centers in Kansas City and the University of Missouri-Columbia facilities in mid-Missouri.

³⁶ The respective shares presented in text come from the ratio of state and federal funds shown by an MHA summary of the derivation of hospital DSH funds – that is, 38.56 percent to 61.44 percent – during state fiscal year 2005; see discussion in Appendix D. The Federal Medical Assistance Percentage (FMAP) for federal fiscal 2005 was 61.15 percent. State and federal fiscal years differ. USDHHS 2003. Federal Register, "Federal Financial Participation in State Assistance Expenditures for Oct 1, 2004, through Sept 30, 2005," Federal Register: Dec 3, 68(232):67676-78, available at <http://aspe.os.dhhs.gov/health/fmap05.htm>.

³⁷ Just over 28 percent of total federal DSH dollars available is set aside for institutions for mental disease (IMDs) – which are excluded from conventional Medicaid payment. For 2005, IMDs accounted for over \$200 million in DSH funding (federal plus state) above the \$416.8 million reported in the text. These payments are excluded from the discussion because mental health is not a focus of this study.

³⁸ Missouri Revised Statute, T.12, section 208-453.

³⁹ Similar assessments are made on nursing homes and pharmacies; these generate

smaller amounts and are not discussed here because they do not aim to improve uninsured access to care. MHA, “Missouri’s Federal Reimbursement Allowance Program,” MHA, 2005, available at web.mhanet.com/asp/Governmental_Relations/pdf/FRA.pdf; Missouri DSS, “Appropriation Summaries, Health Care,” DSS, 2005, available at www.dss.mo.gov/mis/apprpsum/hlthcare06/dms1pgap.pdf.

⁴⁰ M Friar, *Discovering Leadership that Matters: Understanding Variations in State Medicaid Spending*, (Cambridge, MA: Kennedy School of Government, 1999); MHA, 2005.

⁴¹ Kaiser Daily Health Policy Report, “Federal Audit Says Missouri ‘Improperly Reaped’ \$1.6B from Medicaid Program,” The Henry J. Kaiser Family Foundation, Dec 5, 2001; Kaiser Daily Health Policy Report, “Missouri, CMS Reach Agreement on State Hospital Tax, Medicaid Payments,” The Henry J. Kaiser Family Foundation, Dec 13, 2002.

⁴² DSS, Rules of DSS.

⁴³ From a national perspective, it is notable that Missouri’s FRA arrangements keep all of the funds generated within the health system. In many states, much of the revenue raised through such fiscal transfers has been used for other state purposes. See, for example, T Coughlin and S Zuckerman, “States’ Use of Medicaid Maximization Strategies to Tap Federal Revenues” (Assessing the New Federalism Discussion Paper 02–09), The Urban Institute, 2002, available at http://urbaninstitute.org/UploadedPDF/310525_DP0209.pdf. From a Missouri perspective, the overall FRA process has been summarized “each hospital in the State contributes money into a state fund designated for health care, and the federal government matches that fund. The pool of Medicaid and DSH funds are then

distributed to Missouri hospitals based on the volume and cost of Medicaid and uncompensated inpatient care provided by each hospital. In this way, those hospitals in Missouri that serve a ‘disproportionate share’ of safety net patients are compensated in part for this service,” (RHC, 183p).

⁴⁴ MHA, 2005.

⁴⁵ S Anthony and J Meyer, “Health Policy for Low-Income People in Missouri” (Assessing the New Federalism), The Urban Institute, 1999; V Wachino, A Schneider and D Rousseau, “Financing the Medicaid Program: The Many Roles of Federal and State Matching Funds” (Policy Brief), Kaiser Commission on Medicaid and the Uninsured, 2004.

⁴⁶ St. Louis RHC, *Building a Healthier Saint Louis: Report on the Integrity of Saint Louis’ Health Care Safety Net* (St. Louis, MO: RHC, 2003).

⁴⁷ ConnectCare, “About Saint Louis ConnectCare,” ConnectCare, 2006, available at <http://stlconnectcare.org/about.html>; RHC, 2003.

⁴⁸ RHC, 2003.

⁴⁹ The only exception to this was in 2004 when DSSH allotments were increased by 16 percent under provisions included in the Medicare Modernization Act of 2003.

⁵⁰ Federal law and regulations have changed DSH provisions over time. For example, Pub. Law 106-554, Jan 3, 2001, modified earlier modifications made by the Balanced Budget Act of 1997. See J Hearne, “Medicaid Disproportionate Share Payments” (No. 97-483), Congressional Research Service, Library of Congress, 2005, available at www.law.umaryland.edu/marshall/crsreports/crsdocuments/97-48301102005.pdf.

⁵¹ The federal share of Medicaid has risen, so the fixed federal DSH allowance is available to be drawn down by a lower level of state-local support. It may be noted that the DSH total of \$455 million discussed in this section is less than the available federal-state allowable total of \$729 million. The main explanation is the set-aside for IMDs of over \$200 million mentioned in an earlier footnote. In addition, in 2005, somewhat under \$5 million was also used for waiver coverage expansions for adults and non-SCHIP children. The latter uses of DSH were larger in earlier years. See Missouri DSS, 2005. Moreover, as noted in text, some available DSH revenue cannot be drawn down in any given year.

⁵² Missouri Register, “Proposed Rule – Hospital Program (amending DSS, ‘Rules of Department of Social Services’),” Missouri Register 30(14):1549-53, 2005, available at www.sos.mo.gov/adrules/moreg/previous/2005/v30n14/v30n14c.pdf.

⁵³ Data on Medicare payments were provided by MedPAC, Oct 4 2004.

⁵⁴ Prospective Payment Assessment Commission, *Medicare and the American Health Care System* (Washington, DC: Prospective Payment Assessment Commission, 1997) and Prospective Payment Assessment Commission, “Report and Recommendations to Congress,” Washington, DC, March, 1997.

⁵⁵ Missouri DSS, 2005.

⁵⁶ Jackson County, Missouri, “2005 Adopted Budget, Truman Medical Centers Department Overview,” Jackson County, MO, 2005, available at www.jacksongov.org/CoBudget05/PDFLib%5CDept%5C2600.pdf; City of Kansas City, Missouri, “Adopted Budget, Fiscal Year 2005–2006,” Kansas City, MO, 2006, available at www.kcmo.org/manager/bdgt06/AdoptedBudget05-06.pdf.

⁵⁷ Missouri Department of Health and Senior Services (DHSS), “Index of /LPHA/Financial_Review04/” (links to budgetary data on 114 local health departments, with 2004 financial data), DHSS, 2005, available at www.dhss.mo.gov/LPHA/Financial_Review04/; Missouri DHSS, “Index of /profiles/CountyInfo” (links to descriptions of 119 local health departments, variously dated during 2005 & 2006), DHSS, 2005-2006, available at www.dhss.mo.gov/profiles/CountyInfo/.

⁵⁸ St. Louis County, 2006 Annual Budget, “Fiscal Year Ending Dec 31, 2006, Health Fund,” St. Louis County, 2005, available at www.stlouisco.com/budget//Budget2006_final/Approved%202006%20Health%20Fund%20Section.pdf. See also RHC, 2003.

⁵⁹ St. Louis City, FY 2006 Annual Operating Plan, “Department of Health and Hospitals,” St. Louis City, 2005, available at <http://stlouis.missouri.org/government/budget06/12Health.pdf>; RHC, 2003.

⁶⁰ We recognize that the potential to attract federal DSH payments may result in some spending that might not have otherwise taken place, especially in the case of CPEs.

⁶¹ J Holahan, R Bovbjerg and J Hadley, 2004.

⁶² Some Title III and IV allocations pay for primary care (early intervention services with Title III and services to women and children with Title IV). However, to avoid funds double-counting in our estimate of care to the uninsured, we exclude these Titles. A share of Title III allocations support Federally Qualified Health Centers, which are counted in the section on community health centers; and Title IV funds some maternal and child health services.

⁶³ In Missouri in FY 2004, an estimated \$852,000 was spent on insurance

continuation and maintenance. For a full discussion of health insurance purchasing under CARE, see HIV/AIDS Bureau, “Ryan White CARE Act 2001 Data Report,” HIV/AIDS Bureau, 2001, available at <http://hab.hrsa.gov/reports/saar2001/saar2001report.htm>.

⁶⁴ Average of percent uninsured among ADAP patients in Missouri in June 2002, 2003, and 2004. J Kates et al, *National ADAP Monitoring Project: 2005 Annual Report*, (Washington, DC: The Henry J. Kaiser Family Foundation and the National Alliance of State and Territorial AIDS Directors, 2005).

⁶⁵ In current and inflation-adjusted terms, every category of the national Ryan White budget declined in FY 2004 and FY 2005 except ADAP. ADAP’s more rapid growth has partly been a response to significant increases in program costs, enrollment, and increasing demand for antiretroviral medications.

⁶⁶ 2003 CARE Act Data Report, Section 2, Items 32, available at <http://hab.hrsa.gov/reports/TII2003DB/default.htm#9TOC>.

⁶⁷ HIV/AIDS Bureau (HAB), “Who the CARE Act Serves: 1999 Annual Program Data,” HAB, 1999, available at <http://hab.hrsa.gov/reports/rp22.htm>.

⁶⁸ Comparing the projected 2005 total expenditures to actual expenditures, an inflation factor of 1.130 is used for 2003, 1.2033 for 2002, and 1.3037 for 2001, and 1.4017 for 2000. CMS, “Health Accounts,” CMS, 2006, available at www.cms.hhs.gov/statistics/nhe.

⁶⁹ J Hadley and J Holahan, 2003; T Selden et al, 2001.

⁷⁰ We follow the reweighting procedure described by R Barsky et al (“Accounting for

the Black-White Wealth Gap: A Nonparametric Approach,” *Journal of the American Statistical Association*, 97.459 (2002):663-73) who applied the methodology developed by Rosenbaum and Rubin (“The Central Role of the Propensity Score in Observational Studies for Causal Effects,” *Biometrika*, 70:1 (1983):41-55. 1983); “Reducing Bias in Observational Studies Using Subclassification on the Propensity Score,” *Journal of the American Statistical Association*, 79.387(1984):516-24.

⁷¹ The CPS estimate of the number of uninsured in Missouri, calculated as a two-year average of 2003 and 2004 estimates, is reduced by 7 percent of total state Medicaid enrollment.

⁷² J Hadley and J Holahan, 2003; J Holahan, R Bovbjerg, and J Hadley, 2004; J Hadley and M Cravens, “Estimating the Cost of the Uninsured in Connecticut,” *The Economic and Social Research Initiative*, 2005.

⁷³ The second model is estimated as a generalized linear model using Newton-Raphson (maximum likelihood) optimization. For specifics see StataCorp LP, “Stata help for glm,” 2005, available at <http://www.stata.com/help.cgi?glm>.

⁷⁴ The 17 chronic conditions (eight in the children’s models) are aggregations of the 3-digit ICD-9-CM codes into similar and clinically meaningful categories. The ICD-9-CM codes and accompanying data are stored in each year’s MEPS-HC Medical Conditions file.

⁷⁵ The amount has changed annually in recent years. Recent assessments were: 2002 = \$463.1 million, 2003 = \$571.2 million, and 2004 - \$552.3 million, according to interviewees. See also Missouri Department of Social Services (DSS), 2005.

⁷⁶ MHA, “How the FRA Works - State Fiscal Year 2005” (flowchart diagram), personal communication 2005. For corresponding 2004 figures with explanations of the chart, see Missouri Hospital Association (MHA), “Missouri’s FRA Program,” 2005. Two discrepancies are notable between these documents and descriptions from MHA and DSS interviewees in 2006. First, although 2005 hospital payments total \$416.8 million in both MHA’s chart (App. Table D1) and as supplied by 2006 interviewees (text Table 8), in the former all state support is said to come from the FRA, while in the latter part is said to come from local CPEs. Second, in App. Table D1 the state and federal Medicaid shares are 38.56 percent and 61.44 percent. The corresponding shares cited by 2006 interviewees were 38.77 percent and 61.23 percent. Text Table 8 also uses the shares of App. Table D1, in order to maintain consistency; using the other percentage shares would shift less than \$1 million between federal and state funding.

⁷⁷ MHA, “Missouri’s FRA Program,” MHA, 2006.

⁷⁸ DSS, Rules of DSS, 2005.

⁷⁹ DSS, “Proposed Rule – Hospital Program,” DSS, 2005; See also text at note 50 above.

⁸⁰ Tier 1 institutions include some mental hospitals, not relevant here, and some very large safety net hospitals in Kansas City and Columbia.

⁸¹ MHA, “FRA History And Background,” MHA, 2003, available at web.mhanet.com/asp/Governmental_Relations/FRA/history.asp

⁸² Kaiser Daily Health Policy Report, 2001; Kaiser Daily Health Policy Report, 2002.

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