

Show Me Series: Report 8
**Comparison of Missouri Uninsurance
Survey Data Sources**



The Missouri Foundation for Health (MFH) was created in January 2000 as part of a negotiated agreement among Blue Cross/Blue Shield of Missouri (BCBSM), the Missouri Department of Insurance and the Missouri Attorney General following the for-profit conversion of BCBSM. The Foundation received a significant portion of the assets of RightChoice, the for-profit created by the conversion. MFH is dedicated to improving the health of the people in the BCBSM service area, which encompasses 84 Missouri counties and the City of St. Louis.

In support of its mission, MFH undertakes policy studies on topics of significance to the Foundation service area and beyond. MFH has created the Show Me Series and other publications to convey information about current health related issues of interest to a broad audience ranging from members of the general public to policymakers.

Show Me Series: Report 8

Comparison of Missouri Uninsurance Survey Data Sources

About This Study

Timothy D. McBride, PhD, Professor of Health Management and Policy, the School of Public Health at Saint Louis University, conducted the research and prepared this report with funding from the Missouri Foundation for Health. Courtney Andrews, MS, ABD, provided crucial data to and statistical assistance on this report, and Nancy Cheak provided valuable research assistance.

The MHCIA Survey project was completed by the Minnesota-based SHADAC (State Health Access Data Assistance Center) for the Missouri Department of Health and Human Services Administration. The survey results are known both as MHCIA and SHADAC numbers.

EXECUTIVE SUMMARY

The Missouri Health Care Insurance and Access (MHCIA) point-in-time survey found that 8.4 percent of all Missourians (or 463,000 persons) were uninsured at a point in time in 2004.¹ In general, this is lower than most other estimates of the uninsured in Missouri. For example, the Current Population Survey (CPS), also a point-in-time survey, collected data during roughly the same time period and showed that about 11 percent of all Missourians (or 620,000 persons) were uninsured.

Several factors account for the differences between the MHCIA survey estimates of the uninsured for Missouri and estimates from other surveys such as the CPS. A thorough comparison of the MHCIA survey results with outside survey data and analysis of sampling procedures and survey methodology points to several conclusions:

- ❖ The MHCIA survey appears to provide a low estimate of the uninsured in Missouri. In contrast, the CPS estimates appear to overestimate the uninsured because of an “undercount” of the population on Medicaid. As a result, this study estimates the number of uninsured in Missouri to be between 550,000 and 620,000 in 2004 (or about 10% -11% of the population) and between 635,000 and 707,000 (or 11% - 12.6% of the population) in 2005.²
- ❖ Although the MHCIA survey has a higher estimate of public coverage in Missouri in 2004, consistent with recent national findings of Medicaid undercounts in the CPS, these findings should be interpreted with caution. Both the CPS and MHCIA survey results differ significantly from administrative counts of Medicaid enrollment in Missouri. There is no resolution

EXECUTIVE SUMMARY

to the debate in the literature over the issue of Medicaid undercounts in the survey data.

- ❖ As a result of using a broader definition of the insured, the MHCIA survey finds that a lower percentage of Missourians are uninsured. While the MHCIA survey concludes that 8.4 percent of all persons are uninsured, a broader definition similar to the CPS definition would have led to an estimate of 9.4 percent uninsured, a figure which is closer to the CPS estimate of 11 percent.
- ❖ The MHCIA survey may lead to lower estimates of the uninsured because of its explicit focus on health insurance. In particular, the survey, which is designed specifically to address health insurance coverage, offers respondents a broad range of health insurance sources from which to choose and asks a sequence of questions which are explicitly about health insurance types. Since the persons interviewed might focus on identifying their insurance coverage, the survey's results may lead to a lower estimate of the number of people who are uninsured.
- ❖ There is possible bias in the MHCIA survey sample, as compared to the samples for other surveys. The MHCIA survey relies on a phone survey and uses random sampling to increase the sample size of certain population groups in the sample (e.g., rural residents, African Americans, Hispanics). Phone surveys are less reliable survey techniques than in-person interviews. Although considerable efforts are made to account for the biases inherent in phone surveys and from the stratified sampling, biases may remain in the final estimates.

The MHCIA survey found that 8.4 percent of all persons in Missouri were uninsured at a point in time in 2004.¹ In general, this is lower than most estimates of the uninsured in Missouri. For example, the CPS estimates that about 11 percent were uninsured in Missouri during roughly the same time period.

The MHCIA survey estimates of the uninsured population in Missouri are about 2 to 3 percentage points lower than estimates that can be obtained from widely used and widely cited surveys such as the CPS or the Behavioral Risk Factor Surveillance Survey (BRFSS) for comparable population groups in Missouri (Table 1). Overall, the MHCIA survey concludes that about 463,000 Missourians were uninsured in 2004, whereas the CPS concluded that about 620,000 Missourians were uninsured. For comparison purposes, the recently released March 2005 CPS concluded that about 707,000 Missourians, or about 12.6 percent of the population, were uninsured (see Appendix).

Comparison of Missouri Uninsurance Survey Data Sources outlines findings from a detailed analysis of MHCIA survey results and compares these survey results with a range of outside survey and statistical data. This study evaluates MHCIA data in comparison to these outside survey data and draws conclusions about the sampling procedures, the survey methodology, the interpretations that can be drawn from the data, and the policy relevance of the findings.

INTRODUCTION

Table 1. Uninsurance Comparison: Missouri

	2004 MHCIA Survey	2003* CPS	2003 BRFSS Survey**
Percent uninsured, total population	8.4%	11.0%	–
Persons uninsured, total population	463,000	620,000	–
Percent uninsured, under age 65	10.7%	12.8%	–
Percent uninsured, adults age 18+	10.2%	12.3%	12.8%
Percent uninsured, adults age 18-64	12.2%	15.0%	15.3%

*Based on March 2004 CPS, referring to 2003 annual insurance coverage

**BRFSS estimates available only for adults, age 18 and older.

Sources: **MHCIA**: 2004 Missouri Health Care Insurance and Access Survey, http://www.dhss.mo.gov/DataAndStatisticalReports/Missouri_Final_Report.pdf. **CPS**: March 2004 Current Population Survey, of U.S. Census Bureau. **BRFSS**: Behavioral Risk Factor Surveillance Survey 2003, sponsored by The National Center for Chronic Disease Prevention and Health Promotion.

ISSUES AND COMPARISONS

This section discusses various technical aspects (e.g., sampling procedures and survey methodology) and differences between the MHCIA survey and other estimates of the uninsured in Missouri.

Is There a Medicaid Undercount?

Although Table 1 shows the total health insurance coverage rates for Missourians, when that coverage is broken down into specific types of coverage some key differences between the MHCIA survey and CPS results become evident. For the nonelderly, Table 2 shows that the reported uninsurance coverage rate is 10.7 percent from the MHCIA survey but 12.8 percent from the CPS for roughly comparable periods. The MHCIA survey reports about 102,000 fewer uninsured. Further comparisons show that the MHCIA survey reports about 118,000 more persons with Medicaid coverage in Missouri; 102,000 more with Medicare coverage; but 72,000 fewer with employer coverage and about 60,000 fewer with private nongroup coverage. The numbers for children under the age of 18 are similar in both the MHCIA and CPS surveys.

Prior to publishing of this study, attention has been given to the issue that the uninsured might be overstated in national surveys in particular because it is possible the CPS undercounts Medicaid coverage. A 2004 American Enterprise Institute (AEI) conference featured several presentations on this topic and concluded that some national estimates may undercount the number of individuals with Medicaid coverage by as many as three to nine million.³⁻⁷ Giannarelli points to some possible reasons for under-reporting of Medicaid coverage in self-reported surveys which include: reporting the wrong type of coverage, not realizing the individual was covered by Medicaid, the stigma associated with Medicaid coverage, and underweighting of low-income people.⁸ The AEI presentations built on earlier contributions to the literature and provided a good overview of the issues involved in counting the uninsured.⁹⁻¹¹ Do these findings ultimately lead to the conclusion that the CPS undercounts Medicaid coverage, and therefore, overcounts the uninsured? Although it might be tempting to reach that conclusion, several points should be drawn from the literature before reaching any conclusions:

Table 2. Insurance Coverage in Missouri, MHCIA Survey and CPS Comparison by Type of Insurance

Nonelderly Population (age <65 only)
(population numbers in thousands)

	INSURED*				UNINSURED	TOTALS
	Private		Public			
	Employer Group	Individual/ Other	Medicare	Medicaid		
MHCIA SURVEY						
Age 65 or less	3,340.2	225.3	164.0	569.4	513.7	4,812.6
	69.4%	4.7%	3.4%	11.8%	10.7%	100.0%
Children under age 18	913.7	58.7	38.7	323.3	53.7	1,388.0
	65.8%	4.2%	2.8%	23.3%	3.9%	100.0%
CPS						
Age 65 or less	3,413.4	285.3	61.6	451.7	616.1	4,828.0
	70.7%	5.9%	1.3%	9.4%	12.8%	100.0%
Children under age 18	957.0	57.2	6.6	282.1	103.2	1,406.1
	68.1%	4.1%	0.5%	20.1%	7.3%	100.0%
DIFFERENCE (MHCIA LESS CPS)**						
Age 65 or less	(73.2)	(60.1)	102.4	117.7	(102.3)	(15.4)
	(1.3%)	(1.2%)	2.1%	2.5%	(2.1%)	0.0%
Children under age 18	(43.3)	1.4	32.1	41.2	(49.5)	(18.1)
	(2.2%)	0.2%	2.3%	3.2%	(3.5%)	0.0%
* Insurance coverage based on hierarchy: Employer-Sponsored Insurance, Medicaid, Medicare, Direct Purchase.						
**Negative numbers are in parenthesis.						
Sources: MHCIA: 2004 Survey and CPS: March 2004.						

Recent contributions to this literature conclude that there is no resolution to this debate and that caution should be taken in believing simulations of coverage rates over survey data.^{6,10,12} Some Medicaid respondents, especially those in Medicaid managed care, may report that they have private coverage. Therefore, undercounts of Medicaid coverage may also be matched by overcounts of private coverage.¹²

ISSUES AND COMPARISONS

- ❖ Suspicion exists that Medicaid coverage rates in state administrative data may be inaccurate due to administrative overcounts and duplication.^{3,8}
- ❖ In 2005, Davern points out that people with Medicaid do report being uninsured in surveys, but infrequently. In four experimental studies a range of 0.6 - 5.8 percent of the insured population answered incorrectly that they were uninsured.³ Other surveys, such as the Survey of Income and Program Participation (SIPP), have reached similar conclusions. A possible explanation may be that sample respondents do not feel Medicaid to be an adequate source of insurance and report themselves as uninsured, even when administrative data would report they are covered by Medicaid.¹³
- ❖ Finally, Medicaid coverage can be very problematic because it is well known that Medicaid respondents “churn” on and off Medicaid coverage. Churning can be especially problematic because of differences in the time frame of the questions asked in key insurance surveys, especially the MHCIA and CPS surveys that could affect the interpretation of these findings.

Table 3 compares MHCIA survey data of public coverage with publicly available data sources on coverage rates. We find that:

- ❖ Official Missouri administrative data report that in 2004 almost one million persons (roughly 975,000) were covered by Medicaid. The MHCIA survey reports a much smaller number covered (roughly 655,000).

Table 3. Estimated Number of Persons Covered by Medicaid and SCHIP

Missouri, 2004

	Medicaid	SCHIP	TOTAL
Missouri Department of Social Services (DSS)	427,530	547,105	974,635
MHCIA Survey	277,971	376,601	654,572

Sources: Missouri Foundation for Health, “Missouri Medicaid Basics,” Winter 2005. MHCIA: 2004 Survey.

- ❖ While the MHCIA survey reports that about 376,601 children are covered by the SCHIP program (also known as MC+ or MC+ for Kids in the survey), this is a much lower number than the reported coverage of 547,105 for the SCHIP program in 2004.
- ❖ However, the data set furnished with the MHCIA data did not include a crucial question concerning Medicare recipients who are also Medicaid recipients (so called “dual eligibles”). Therefore, the estimates of Medicaid coverage provided from the MHCIA data are an underestimate even of the number of respondents who would have reported Medicaid coverage to the State Health Access Data Assistance Center (SHADAC) interviewers.
- ❖ According to Centers for Medicare and Medicaid Services (CMS) figures, in 2003 Medicare covered 884,449 Missourians.¹⁴ The MHCIA survey reports 896,843, a number only slightly higher than the CMS administrative estimate. Moreover, the MHCIA estimate of roughly 897,000 persons on Medicare is only slightly lower than the CPS estimate of 912,000 persons on Medicare, so the surveys are comparable on these administrative data.

These data show that the MHCIA survey has an accurate count of persons on Medicare. However, the estimates of persons covered by Medicaid in the MHCIA and CPS surveys appear to be low when compared to administrative counts of persons on Medicaid.

The discrepancies in the estimates of the Medicaid population could lead to the conclusion that benchmarking Missouri data to national data sources, such as the CPS, could be problematic. There are problems with drawing this conclusion, however. First and foremost, as noted above, the counts of Medicaid recipients in both the CPS and MHCIA survey are lower, so if the CPS suffers from an undercount of Medicaid recipients, then the MHCIA survey does as well, at least to some extent, and questions remain about undercounting Medicaid in both surveys and perhaps overcounting private coverage. Second, estimates from the March 2005 CPS show a much higher estimate of Medicaid coverage in Missouri (607,000 persons as compared to only 452,000 in the March 2004 survey), much closer to the 2003 MHCIA survey estimate (roughly 569,000). This suggests either that Medicaid coverage grew

ISSUES AND COMPARISONS

ISSUES AND COMPARISONS

considerably in 2003 and 2004 or that the difference lies in sampling issues. Some of the differences between the MHCIA and CPS could derive from variation in the way each survey compares samples.

A review of the literature and discussions with other experts in the field, suggest that the MHCIA survey appears to be a low estimate of the uninsured in Missouri; in contrast, the CPS appears to overestimate the uninsured. MHCIA undercounts while CPS overcounts the state's Medicaid population. However, while the size of the undercount cannot be determined precisely for all the reasons described above, an estimate of this undercount (and therefore an estimate of the overcount of the uninsured in the CPS) was determined here to be about 70,000 persons. This estimate is based both on the confidence interval around the CPS estimates and the findings shown in Table 2.^{15, 16} Using this estimate, the number of uninsured in Missouri falls between 550,000 and 620,000 in 2004 (or about 10% - 11% of the population) and between 635,000 and 707,000 (or 11% - 12.6% of the population) in 2005.

Sources of Coverage

Table 1 displays the overall health insurance coverage rates for Missourians. When breaking down these rates into types of coverage, some additional differences between the MHCIA and CPS results become evident. Table 2 shows the reported uninsurance coverage rate for the nonelderly population from the MHCIA survey as 10.7 percent and as 12.8 percent from the CPS. As noted above, some key differences in insurance coverage rates exist between the MHCIA and CPS surveys in public and private coverage rates. Some of the differences in these coverage rates may result from response errors explored above. What was not clear, but shown in Table 4, is that the MHCIA survey asks about a broader range of insurance coverage sources than the CPS does, potentially leading to slightly higher insurance coverage rates. In particular, the MHCIA survey asks respondents specifically about the Missouri Health Insurance Pool, the Railroad Retirement Plan, the Indian Health Service, and COBRA, which takes its name from the federal Consolidated Omnibus Budget Reconciliation Act. The CPS does not explicitly inquire about the sources of coverage.¹⁷

Table 4. Definition of Uninsured

	CPS	MHCIA Survey
Insurance Coverage Question:	“At any time in 2003 (were you) covered by [type of coverage]?”	“Do you [does TARGET] CURRENTLY have: [type of coverage]?”
Types of health insurance coverage asked about explicitly:		
Employer-Sponsored	X	X
Direct Purchase	X	X
Spouse/ Dependent/ Someone else	X	X
COBRA		X
TRICARE/ CHAMPUS/ CHAMPVA/ VA/ Military	X	X
Railroad Retirement Plan		X
Missouri Health Insurance Pool		X
Medicare	X	X
Medicaid, Medical Assistance, or SCHIP	X	X
Sources: CPS, March 2004; MHCIA: 2004 Survey		

This broader range of insurance sources leads to a definition of insurance coverage that is broader than the U.S. Census Bureau’s definition of insurance coverage, or definitions typically used in other surveys. As a result of using a broader definition of the insured, the MHCIA survey finds that a lower percentage of Missourians are uninsured:

- ❖ While the MHCIA survey concludes that 8.4 percent of all Missourians are uninsured, a definition similar to the CPS definition would have led to an estimate of 9.4 percent uninsured, closer to the CPS estimate of 11 percent (Table 5),
- ❖ While the MHCIA survey concludes that 10.2 percent of adults age 18 and above are uninsured (Table 1), a definition similar to the one used by CPS would have yielded an estimate of 11.2 percent uninsured, closer to the CPS estimate of 12.3 percent.

ISSUES AND COMPARISONS

**Table 5. Uninsurance Comparison in Missouri,
Using Typical CPS Definition of Insurance Coverage**

	2004 MHCIA Survey	2003* CPS
Percent uninsured, total population	9.4%	11.0%
Percent uninsured, children, age <18	3.9%	7.3%
Percent uninsured, adults age 18+	11.2%	12.3%
Percent uninsured, adults age 18-64	13.4%	15.0%

*Based on March 2004 CPS, referring to 2003 annual insurance coverage.
Sources: MHCIA: 2004 Survey and CPS: March 2004

The main difference in the estimates appears to come from Missourians reporting coverage through COBRA and Railroad Retirement explicitly, since few persons report other insurance sources (Table 6). About 1.4 percent of Missourians have COBRA coverage according to the MHCIA survey. COBRA is considered – indirectly – in the CPS survey, since respondents are asked whether they have coverage from a “current or former employer.”¹⁸ COBRA coverage comes through a former employer. While it is technically true that a survey respondent answering both surveys would answer they have health insurance if their coverage was COBRA, the survey literature suggests that respondents do not have a sophisticated knowledge of their health insurance.⁹ The additional prompting in the MHCIA survey could identify more persons covered that the CPS would not have captured. This would also apply to the other sources listed above, which are not specifically addressed by the CPS. The process of asking about specific insurance sources may lead to the appearance of higher rates of insurance coverage.

Sequencing of Questions and Multiple Sources of Coverage

The sequencing of questions in surveys has an important impact on the number of uninsured.⁹ For this reason, the structure of the MHCIA survey is likely to have an impact on the survey respondents’ answers. In the MHCIA survey it is immediately clear to respondents that the survey focuses on health insurance coverage when the interviewer asks

to speak to the person most informed about the household’s health insurance coverage. After choosing a “target” person from among the individuals in the household and obtaining detailed information about that person’s insurance, a series of health insurance questions are asked, as outlined in Table 4. With this survey design, the respondents will be more likely to focus on health insurance than they would when answering a survey like the CPS.¹⁹

As noted above, the MHCIA survey includes several sources of coverage that are not typically part of health insurance surveys. Two of the insurance coverage sources in the MHCIA survey such as the Missouri Health Insurance Pool and the Indian Health Service might be described as inadequate health insurance coverage. For this reason researchers do not often include these as sources of health insurance coverage on the level of the others in Table 4. While COBRA coverage is included in the CPS coverage statistics, at least implicitly as noted above, it represents an expensive form of health insurance. The complex design of the MHCIA survey may result in higher estimates of the insured as compared to other health insurance coverage surveys.

Coverage Rates for Children

As shown in Tables 2 and 5, the MHCIA estimate of 3.9 percent uninsurance rates for children (under age 18) in Missouri is low when compared to the CPS estimate of 7.3 percent. This statistic for children represents a significantly larger gap between the two surveys than seen

ISSUES AND COMPARISONS

Table 6. Insurance Coverage in Missouri, Additional Sources Covered in MHCIA Survey

Coverage Type	Estimated Number of Persons Covered	Percent of Missouri Population
Railroad Retirement Plan	29,379	0.8%
Indian Health Service*	4,450	0.09%
COBRA or State Continuation Coverage	58,624	1.4%
Missouri Health Insurance Pool	7,722	0.3%

*CPS does ask whether respondents are covered by the Indian Health Service, but this is not considered a source of coverage when computing the insurance coverage rates, or uninsurance rates.

ISSUES AND COMPARISONS

in uninsurance categories for nonelderly adults. The low uninsurance among children results largely from high estimates of Medicaid and SCHIP coverage – over 23 percent, as reported in Table 2. While most national surveys conclude that Missouri has a low uninsurance rate for children, an uninsurance rate of 3.9 percent comes in lower than any previously reported estimate.

The MHCIA survey uses an unusual method to identify potential subjects. The interview begins by requesting that an adult respond to the survey. Once the household member capable of answering the question is identified, general information is collected about all household members (e.g., gender and age). Subsequently, a computer program randomly picks a “target” person about whom all the detailed questions on health insurance are asked.

Since few examples of using this methodology exist in the literature, it is not clear how this procedure biases the results, especially for the estimated coverage rates of children. However, there are reasons to believe that the proxy process might contribute to the lower estimates of uninsurance for children. In particular, several MHCIA survey respondents (the equivalent of about 200,000 sample persons when weighted) apparently completed the round of questions on uninsurance and had not identified a source of insurance coverage for the children. When prompted by a verification question, stating, “According to the information you have provided, [the target] does not have health insurance coverage. Does anyone else pay for [the target’s] bills when they go to a doctor or hospital?” This prompting apparently led to respondents identifying an additional 203,983 children as having insurance coverage (199,619 saying they were covered by SCHIP). If at least some portion of these children had instead been counted as uninsured, the uninsurance rate would have been considerably higher, since 203,983 children represent approximately 14 percent of all Missouri’s children.

Whether these children should be counted as uninsured or not presents a difficult question. For years, users wondered whether the sequence of questions in the CPS accurately measured insurance coverage rates and for this reason verification questions were added to the CPS.⁹ The use of the verification question has become standard practice in the CPS and

other surveys. The unusual process of choosing a proxy interviewer in the MHCIA survey and then asking that person only about the coverage of one randomly selected individual in the household may lead to some biases when the “target” is a child.

Point-In-Time Versus Longitudinal Measure

The MHCIA survey explicitly asks respondents about their insurance coverage at a point in time between March 2004 and July 2004. Table 4 shows how this question contrasts to other questions from other surveys (the CPS and BRFSS), especially on the dimension of time period covered by the question. In particular, while the MHCIA survey explicitly asks respondents about their current insurance coverage (“Do you currently have [type of coverage]?”), the CPS seeks insurance status for the previous year: “At any time in 2003 [were you] covered by [source]...?”

After obtaining these point-in-time estimates, the MHCIA survey explicitly asks respondents how long they held this coverage in the past year and computes a longitudinal measure of coverage (Table 7). This leads to the following conclusion: The MHCIA finds that while 8.4 percent of respondents are uninsured at a point in time, 11 percent of respondents are uninsured over the course of a year.

ISSUES AND COMPARISONS

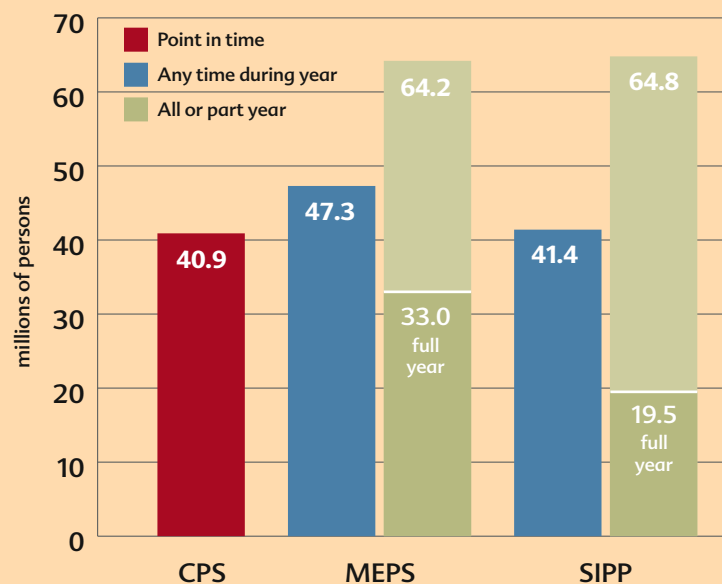
Table 7. SHADAC Migration from Point-In-Time to Longitudinal Uninsurance Estimate

Step 1:	Verify insurance status and type (See Table 4).
Step 2:	Verify uninsurance status: “According to the information you provided, you do not have health insurance coverage. Does anyone else pay for your bills when you go to a doctor or hospital?”
Step 3:	Length uninsured: “Have you had insurance coverage for all of the past 12 months?”
Step 4:	If not entire year verify months uninsured: “How many months during the past year were you without coverage?”
Step 5:	Verify partial year coverage: “Have you been covered by any health insurance in the past 12 months?”

ISSUES AND COMPARISONS

The CPS estimate of the uninsured in Missouri over the course of the same year is 11 percent (Table 2). One could conclude from this comparison that since the CPS provides a longitudinal estimate, that there is in fact a very close match between the CPS and MHCIA data. Correspondingly, CPS should report a lower proportion of the uninsured than the MHCIA survey. However, the CPS estimate is closer to a point-in-time measure of uninsurance than it is to a longitudinal measure (Figure 1).²⁰ The Medical Expenditure Panel Survey (MEPS) and SIPP surveys, which are clearly point-in-time surveys, derive national estimates of the uninsured that roughly agree with the CPS uninsured estimates. A wide range of studies and researchers have drawn the conclusion that the CPS estimate to be more likely a point-in-time estimate than a longitudinal estimate of the uninsured.⁹ Because it provides a longitudinal measure, CPS should yield a higher percentage of persons covered by health insurance and a lower percentage of the uninsured than a point-in-time estimate would, thus leading to a lower proportion of the uninsured from the CPS survey than from the MHCIA survey.^{11,21} Curiously, however, the opposite occurs between the 2004 MHCIA and CPS surveys (Table 1).

Fig. 1. Estimates of Number of Uninsured Persons, by Survey, 2001



Source: Economic Research Initiative on the Uninsured, "How Many Are Uninsured? Different Data Offer Different Dimensions," Research Highlight, No. 6 (Aug. 2004).

Sampling

What differences exist between the samples used for the different surveys, and could these lead to variations in the findings? The MHCIA survey relies on a phone survey, while the CPS relies on a combination of in-person and phone surveying (Table 8). Phone surveys are known to be less reliable techniques than in-person interviews. Phone interviews can also lead to sampling problems because of low response rates.²² This aspect of the MHCIA survey may raise concerns. However, SHADAC goes to some effort to account for the bias resulting from phone surveying, including and reweighting the respondents to account for the possible bias that could occur when people without phones are not surveyed.¹ These sampling and weighting techniques appear to be state-of-the-art and excellent. Unfortunately, the SHADAC does not report the number of calls made in order to obtain the final number of 7,002 surveys, and the lack of information on the response rate does not allow for comparisons with the CPS and other surveys.

ISSUES AND COMPARISONS

Table 8. Sampling

	Timing	Interview Method	Imputation Method	Population		
				All	Age 0-17	Age 18-64
MHCIA	March-July 2004	Phone	“Hot Deck”	6,995	1,111	4,218
CPS	March, annual*	In Person & Phone	Complex, “Hot Deck”	3,158	972	1,839
BRFSS	N/A	Phone	None Mentioned	4,252	N/A	3,131

*Rotating sample: Housing units are interviewed, rested then interviewed again.
Sources: MHCIA: 2004 Survey. CPS: March 2004. BRFSS: 2003.

In addition to using a random-digit dialing phone survey, the MHCIA survey deliberately draws on a stratified random sample on the basis of region within Missouri. Generally, a pure random survey of Missouri would lead to larger samples in the urban centers of the state (in particular St. Louis and Kansas City) and much smaller samples in the other counties of the state. In order to allow for regional estimates within the state, the MHCIA survey drew larger samples of persons from rural counties than would be obtained by a survey drawn from a random sample of the population. The MHCIA survey reweighed

ISSUES AND COMPARISONS

the sample estimates back to the population totals to account for the stratified sampling. However, a strategy with multiple weights may bias final estimates. The reweighting procedure assumes that a person with a given set of demographic characteristics in a rural area represents a person in the urban area. Since recent estimates have shown that uninsurance rates are lower in rural areas, the oversampling of rural areas could bias the estimate of the uninsured in a downward direction for the state overall.

In order to assess whether the MHCIA survey obtained a reasonable sample, this study completed a range of analyses. It provided a thorough comparison of the MHCIA survey sample and population estimates from that sample against outside data sources.²³ Comparisons of the raw sample frequencies in the MHCIA survey to Census data would provide inaccurate information because the MHCIA survey deliberately drew a stratified random sample. Additionally, MHCIA oversampled African Americans and Hispanics. Therefore, this study compares the weighted results from the MHCIA survey and the Census figures to determine how MHCIA samples for the Missouri uninsured compare to other survey samples.

In general, in many comparisons not shown here, the MHCIA survey appears to include an accurate count of the Missouri population, as gauged by the Census estimates. The MHCIA and CPS estimates match up well on almost all characteristics of sample respondents. However, there are some important differences:

- ❖ The MHCIA survey includes a higher proportion of persons in the age 45-64 group (27.5% in the MHCIA survey sample as compared to 22.9% in the CPS sample), as compared to age 25-34 age group (12.0% as compared to 14.2%) (Table 9).
- ❖ The MHCIA survey also includes a slightly higher proportion of persons with “some college” education as compared to those with only a high school diploma, again in comparison to the Census data.

Since both of these groups (age 25-34 and those with some college education) are more likely to include higher proportions of insured persons, this possible bias in the MHCIA sample might lead to a lower proportion of the uninsured in the survey results.

Table 9. Sociodemographic and Economic Characteristics, Missouri Residents, CPS and MHCIA Surveys

Characteristics	CPS	MHCIA	Characteristics	CPS	MHCIA
AGE (% of population)			INCOME (% of Federal Poverty Level)		
0-5	7.7%	8.3	Under 50%	5.6%	4.3%
6-18	18.5%	18.6%	50% to 74%	2.7%	2.9%
19-24	8.0%	7.9%	75% to 99%	2.7%	4.3%
25-34	14.2%	12.0%	100% to 124%	3.8%	4.9%
35-44	14.5%	13.2%	125% to 149%	4.8%	5.5%
45-54	13.0%	15.4%	150% to 199%	8.6%	10.4%
55-64	9.9%	12.1%	200% to 299%	19.2%	20.5%
65+	14.2%	12.6%	300% and over	52.6%	47.3%
ETHNICITY (% of population)			EMPLOYMENT STATUS (% of population)		
White	81.1%	80.8%	Employed	63.6%	59.0%
African American	11.0%	11.6%	Self-Employed	6.9%	8.5%
Hispanic	3.7%	2.9%	Unpaid/Unemployed	4.1%	15.4%
Asian	1.9%	0.5%	Retired	20.4%	14.4%
American Indian	0.6%	0.5%	Student	5.1%	2.8%
Other/Multiple	1.6%	3.8%	Sources: MHCIA: 2004 Survey; CPS: March 2004.		
HEALTH STATUS (% of population)					
Excellent	34.2%	31.3%			
Very Good	32.4%	30.9%			
Good	21.7%	24.1%			
Fair	8.0%	9.9%			
Poor	3.8%	3.8%			

CONCLUSION

A range of estimates of the uninsured exist for the state of Missouri. Analysis provided by this study suggests a confidence interval of uninsured in Missouri to be between 550,000 and 620,000 in 2004 (or about 10% - 11% of the population) and 635,000 and 707,000 (or 11% - 12.6% of the population) in 2005. Several significant factors account for the differences between the surveys estimates of the uninsured for Missouri. In particular, this study has shown that the differences relate to sampling procedures, survey methodology, definitions of the uninsured, and survey timing. The differences in uninsured estimates point to the need for continued research into the uninsured as well as continued caution in the interpretation of uninsured estimates.

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- 2 These numbers do not include the 21,500 children removed from Medicaid in Oct. 31, 2005.
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- 8 L Giannarelli, "Adjusting for the Medicaid Undercount with the TRIM3 Microsimulation Model," (presentation at American Enterprise Institute) 8 April 2005, The Urban Institute.
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- 11 P Short, *Counting and Characterizing the Uninsured*, Working Paper (Ann Arbor, MI: Economic Research Initiative on the Uninsured, University of Michigan, 2001).
- 12 J Holahan and A Ghosh, *The Economic Downturn and Changes in Health Insurance Coverage, 2002-2003*, (Washington, DC: The Urban Institute, 2004).
- 13 TD McBride, "Estimating the Real Number of Chronically Uninsured," *J of Am Health Policy* 4.4 (1994): 16-23.
- 14 "Medicare Enrollment – All Beneficiaries as of July 2003," CMS, U.S. Department of Health and Human Services, www.cms.hhs.gov/statistics/enrollment/st03all.asp.

ENDNOTES

ENDNOTES

- 15** The detailed tables provided by the U.S. Census Bureau give a confidence interval (based on sampling error) for the uninsured estimates for Missouri, and these are used to guide the estimates presented here. Although this confidence interval suggests how sampling error could affect the estimates of the uninsured, the additional factor of the undercount of Medicaid is also considered here. Unfortunately, no confidence interval is reported for the MHCIA Survey, but given that the point estimate of the uninsured is 463,000, it is possible that the confidence interval for the MHCIA estimates could contain the range of estimates presented here (550,000 to 620,000), given the large sample (N = 6,995) for the MHCIA Survey.
- 16** “Detailed Tables from the March 2004 Current Population Survey,” U.S. Census Bureau, 2004, www.pubdb3.census.gov/macro/032004/health/toc.htm.
- 17** U.S. Census Bureau, “Current Population Survey Documentation,” 2004 Annual Social and Economic Supplement (2004): 258-271.
- 18** Some of these sources may be implicitly addressed in the CPS.
- 19** LA Blewitt, “Use of State and National Data for State Simulations of Coverage Expansion,” (presentation at University of Minnesota) SHADAC, November 2004.
- 20** “How Many Are Uninsured? Different Data Offer Different Dimensions,” Research Highlight No 6, Economic Research Initiative on the Uninsured, University of Michigan, (6 August 2004), www.allhealth.org/recent/audio_09-10-04/highlight-fastfacts.pdf.
- 21** S Bhandari, “People with Health Insurance: A Comparison of Estimates from Two Surveys,” Survey of Income and Program Participation Report 243 (8 June 2004): www.sipp.census.gov/sipp/workpapr/wp243.pdf.
- 22** *Guide to Health Insurance Coverage for States*, (Minneapolis, MN, SHADAC, University of Minnesota, 2004).
- 23** In particular to the U.S. Census Bureau’s estimates of the Missouri population, based on estimates from the 2000 Census, and the March 2004 CPS.

APPENDIX

Estimates from March 2005 Current Population Survey (CPS) for Missouri

Insurance Coverage in Missouri, CPS and MHCIA Survey Comparison, by Type of Insurance

Nonelderly Population (Age<65 only)
(population numbers in thousands)

	INSURED*				UNINSURED*	TOTALS
	Private		Public			
	Employer Group	Individual/ Other	Medicare	Medicaid		
MHCIA SURVEY, 2003						
Age 65 or less	3,340.2	225.3	164.0	569.4	513.7	4,812.6
	69.4%	4.7%	3.4%	11.8%	10.7%	100.0%
Children under age 18	913.7	58.7	38.7	323.3	53.7	1,388.0
	65.8%	4.2%	2.8%	23.3%	3.9%	100.0%
CPS SURVEY, MARCH 2005						
Age 65 or less	3,254.2	272.6	60.3	607.8	705.4	4,900.3
	66.4%	5.6%	1.2%	12.4%	14.4%	100.0%
Children under age 18	896.7	67.9	2.3	323.8	120.3	1,411.0
	63.6%	4.8%	0.2%	22.9%	8.5%	100.0%
DIFFERENCE (MHCIA LESS CPS)**						
Age 65 or less	86.0	(47.4)	103.7	(38.4)	(191.7)	(87.7)
	3.0%	(0.9%)	2.2%	(3.7%)	(3.7%)	0.0%
Children under age 18	16.9	(9.2)	36.3	(0.5)	(66.6)	(23.1)
	2.3%	(0.6%)	2.6%	0.3%	(4.7%)	0.0%
*Insurance coverage based on hierarchy: Employer-Sponsored Insurance, Medicaid, Medicare, Direct Purchase.						
**Negative numbers are in parenthesis.						
Sources: MHCIA, 2004 survey; CPS, March 2005.						

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Grand Central Building, Suite 400
1000 St. Louis Union Station, St. Louis, Missouri 63103
1.800.655.5560 Toll-Free
www.mffh.org