Estimation and Forecasting of the Uninsured Population in Houston, Texas*

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ABSTRACT

The state of Texas has the highest percentage of uninsured individuals in the country. Houston is the fourth largest city in the U.S., and it has large numbers of blacks, Hispanics, and individuals in poverty—factors that are predictive of being uninsured. Our project has three aims: (1) estimate the current number and rate of the uninsured population in Houston, Texas, at the sub-county (e.g., ZIP Code and census tract) level; (2) project the estimated numbers and rates of the uninsured population in Houston, Texas, at the sub-county level, to the year 2020; and (3) compare estimated rates and numbers of uninsured in Houston, Texas, to estimates of the rates and numbers of uninsured individuals in other major Texas cities. Greater insight into the geographic distribution of the uninsured population in Houston and across the state of Texas may allow policy makers to more effectively allocate scarce healthcare resources or identify the locations of populations in greatest need.

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SPECIFIC AIMS

The state of Texas has the highest rate of uninsured individuals in the country. Comparing 3-year average uninsured rates for the years 2005 through 2007 across states, Texas had the highest percentage of uninsured individuals (24%) (DeNavas-Walt, Proctor, & Smith, 2008). In 2003, uncompensated care for Texas hospitals (which includes charity care plus bad debt), was estimated to be $7.7 billion (Task Force on Access to Health Care in Texas, Code Red, 2006) and that amount has likely grown over time. Individuals who are uninsured are more likely to put off preventive care and more likely to seek medical attention through the use of emergency rooms, which may ultimately result in worse health and higher health care costs (Himmelstein & Woolhandler, 1995; Salem, 1993; Weissman, Stern, Fielding, & Epstein, 1991). Those with health insurance are more likely to see doctors for routine and preventive care and to be diagnosed earlier in the course of their disease when treatments may be more effective, and less likely to delay needed care (Himmelstein & Woolhandler, 1995; Salem, 1993; Weissman et al. 1991; IOM 2002). Thus, lack of health insurance is associated with increased risks of death even after adjusting for other social and demographic factors (Rogers, Hummer, & Nam, 2000). Individuals who miss school or work due to poorly maintained health conditions may risk becoming unemployed or earning lower incomes, which might further increase the risk of poor health (Texas Health Insurance). Further, hospitals may pass the costs of uncompensated care on to taxpayers through higher property taxes (Task Force on Access to Health Care in Texas, Code Red, 2006).

Despite the high uninsured rate in Texas, little is known about the geographic distribution of the uninsured population in Houston. Houston is the largest city in Texas, and the fourth largest city in the U.S. (U.S. Census Bureau, 2008). Houston is also a remarkably diverse city: as of the 2000 Census, 25.3% of the population was black, 37.4% was Hispanic, 26.4% was born outside of the U.S., and 19.2% was living below the federal poverty line (U.S. Census Bureau, 2009). Individuals who are Black, Hispanic, or of low socioeconomic status are less likely to have health insurance, which partially accounts for the poor health among those individuals (Pickle, Su, 2002; Angel & Angel, 2006; Valdez, Morgenstern, Brown, Wyn, Cumberland, 1993). Greater knowledge about the geographic distribution of uninsured individuals in Houston, Texas, would allow local and state policy makers to identify areas where there may be many uninsured individuals but few healthcare resources; determine how to allocate scarce healthcare resources in ways that might improve the health of those in Houston and throughout Texas; and understand the distribution of one major barrier to health—uninsurance—across the state. Our project focuses on three aims:

Aim 1: Estimate the current number and rate of the uninsured population in Houston, Texas, at the sub-county (e.g., ZIP Code, census tract) level over a three year period (2006-2008; we will incorporate more recent data as they become available).

Aim 2: Project the estimated numbers and rates of the uninsured population in Houston, Texas, at the sub-county level, to the year 2020.

Aim 3: Compare estimated rates and numbers of uninsured over a three-year period (2006 – 2008) in Houston, Texas, to estimates of the rates and numbers of uninsured individuals in other major Texas cities (i.e., Dallas/Fort Worth, San Antonio, Austin) for the same three-year period.
BACKGROUND AND SIGNIFICANCE

Aim 1: Small Area Estimates of the Uninsured Population in Houston, Texas

The 2002 Institute of Medicine (IOM) report states that, “Communities are both the physical and cultural settings for and—through their residents and community-based organizations—participants in action to promote the public health.” (Institute of Medicine, 2002). However, no national data allow direct insight into the prevalence of uninsurance across communities at small levels of aggregation, such as ZIP Code or census tract levels. Although Houston is the fourth largest city in the U.S., it is not in the top 100 cities in terms of population density (U.S. Census Bureau, 2008). Thus, Houston is marked by diverse and geographically dispersed communities, which likely vary in their uninsured populations.

Researchers and policy makers might use small area estimates of the uninsured population in Houston, Texas to identify locations where there might be excess demand for healthcare services or where health care providers are poorly matched to the needs of communities, and can guide the allocation of resources accordingly. For example, the Healthcare Safety Net Review project headed by Dr. Begley will use our estimates as an indicator of changes in safety net conditions in recent years. Small area estimates may also uncover areas that have relatively large uninsured populations that may not appear when examining aggregate rates for the entire city of Houston. Estimates of the uninsured population are often available at the national or state level (Association of Operating Room Nurses, inc. [AORN], 2005; Blackwell & Tonthat, 2003; Pleis, Schiller & Benson, 2003). But given that the city of Houston has a larger population than some U.S. States, a more detailed understanding of the uninsured population in Houston is warranted.

Aim 2: Projections of the Uninsured Population in Houston, Texas to the Year 2020

In addition to estimating the distribution of the uninsured population across ZIP Codes and census tracts, forecasting or projecting the uninsured population to the year 2020 is particularly important to policy makers and researchers. Projections of future trends, while allowing the composition of the population to change and holding constant the current policy environment, can provide insight into the likely distribution of future healthcare needs, healthcare coverage, and the potential costs associated with providing uncompensated care to those who are uninsured. Indeed, policy makers may want to know where additional resources will be needed in the future, especially if the geographic distribution of the uninsured population is likely to change over time. Our findings on the current and future demand for primary care in Houston can be compared with projected supply to identify ZIP Codes or census tracts marked by excess demand or supply. Such information provides policymakers with the needed data to make informed decisions in addressing the health needs of the Texas population.

Aim 3: Compare the Uninsured Population in Houston, Texas, to the Uninsured Population in other Texas Cities

Although Houston is the largest city in Texas, Texas has several other large cities: Dallas is the eighth largest city in the U.S., San Antonio is the ninth largest city in the U.S., and Austin is the 16th largest city in the U.S. (U.S. Census Bureau, 2008). These cities differ in their rates and numbers of uninsured individuals due to the composition of the population (e.g., the percent Hispanic or Black, the percent in poverty or unemployed, educational levels) and due to the major industries and employers in each city (e.g., government, military, service jobs, industry, etc). For example, in 2005, the border region of Texas had the highest rate of uninsured
individuals while the Austin-Round Rock region had nearly the lowest uninsured rates (Murdoch & Armstrong, 2006). Due to the size of the Houston, Dallas, and Fort Worth metropolitan areas, roughly half of the uninsured people in the state of Texas live in these three locations (Murdoch & Armstrong, 2006).

Our research will be particularly important because it will offer insight into variation in uninsurance both within and between major Texas cities. Comparative analyses will provide health services researchers and policy makers with improved insight into the major gaps in health insurance coverage across Texas cities, which may facilitate the efficient allocation of resources across the state, help policy makers to identify communities with comparable populations and levels of uninsurance, or shed insight into the factors that shape differences in uninsurance rates across Texas cities.

PRELIMINARY STUDIES

In his dissertation, Reynolds (2009) lays the foundation for the analysis for Aim 1. In brief, he extends estimates from the Texas State Data Center (TxSDC) and compares various methods to create sub-county estimates of the uninsured population for Houston. Specifically he compared estimates of the uninsured population from the strategy used by the TxSDC and the independently devised Harris method, (Reynolds, 2009), and found that they produced nearly similar estimates of the uninsured population in Houston Texas. Further, the Harris Method produced results that were nearly identical to the results published by the U.S. Census Bureau in 2005 at the county level. In contrast to the estimates from the Census, the Harris method allows insight into uninsurance rates for smaller geographic areas, and in comparison to estimates from the Texas State Data Center, the Harris method examines sex differences and more detailed race/ethnic differences in uninsurance rates. Nevertheless, the broad agreement in the findings across the three methods suggests that each method provides reliable estimates.

Prior research has occasionally generated census tract and ZIP Code level estimates of the uninsured population for Harris County and the City of Houston. The first estimates were prepared for the Harris County Public Health Taskforce in 2004. Annual updates to these estimates were provided to the St. Luke’s Episcopal Health Charities Community Health Information System through 2006. They have been reviewed and used for a variety of health service planning activities since that time, including funding and grant making by St. Luke’s Episcopal Health Charities, providing evidence for local health organizations for grant applications, and for research including the Houston Hospitals Emergency Department Use Study (Begley, Courtney, Burau, Reynolds, 2007). Our current research will update prior estimates with the most current data available, and compare a variety of different methods to ensure that our estimates are reliable.

RESEARCH DESIGN AND METHODS

Data Sources for Uninsured Estimates

We use four sources of data for our analyses. First, the 1991-2009 waves of the Current Population Survey Annual Social and Economic Supplement (CPS) to estimate the number, rate, and characteristics of the uninsured population for the Houston area (we will incorporate newer data as they become available). The Annual Social and Economic Supplement is an annual (completed each March) supplement to the CPS that, since 1991, has provided the “official” annual estimates of the number of uninsured for the nation and each of the states. The CPS surveys approximately 78,000 households in the United States, either in person or over the
telephone, and typically has a response rate of greater than 80%. The survey collects information on public or private health insurance coverage in the previous year, for everyone living in the household. The sample is designed to produce estimates that are representative of each state, and there is additional geographic information in the data that allow us to select those individuals who live in the Houston Metropolitan Area and the City of Houston. The survey is performed under a partnership of the US Census Bureau and the Bureau of Labor Statistics. The CPS asks numerous items about the source and type of insurance coverage. Appendix A provides an overview of the flow and organization of the questions that are used to assess insurance status in the CPS, and Appendix B provides the precise wording of each question used by interviewers for each item.

The strengths of the CPS include a large sample size and high response rate. Further, the CPS data have been collected in a consistent manner for a long span of time, which allows us to examine recent trends and project those trends into the future. Because the CPS data are widely used, there is a great deal of scientific literature related to this survey and the analyses of its health insurance data, which should provide us guidance as we make our estimates and projections. Several limitations of the CPS warrant mention. Because the CPS is an economic, rather than a health survey, its primary focus is not on healthcare. The survey also asks respondents to recall their insurance status for up to 16 months, depending on the time the questionnaire is completed, which may tend to inflate the insurance rates relative to estimates from surveys that use a shorter recall period.

Second, the American Community Survey (ACS) is a relatively new, nationally representative survey of approximately 3 million households per year. The ACS is conducted by the U.S. Census Bureau and will replace the Census Long Form that is distributed to approximately one out of every six households during the decennial census. The ACS uses a series of monthly samples to produce annually updated data for census tracts and block groups. Beginning in January, 2008, the ACS included a series of eight questions about types of health insurance coverage. This series of questions is similar, but not identical, to the one used in the CPS. The first uninsured estimates based on the ACS are projected to be released in August, 2009, in conjunction with the release of the annual CPS uninsured data. These first estimates will be made for the nation, all states, and all geographic areas (e.g., counties, cities) with populations of 65,000 or greater.

The principal strength of the ACS is that the sample size is large enough, after five years of data are collected, to allow for the publication of uninsured estimates for all census geography levels down to block groups and for many population subgroups. It will also be a rich data source for information about poverty, income, occupation, educational attainment, and disability status. One of the main limitations of the ACS instrument is that the questions about health insurance will not allow for an in-depth look at specific state health coverage programs, such as Medicaid and SCHIP. As designed, the ACS will also have virtually no flexibility for periodic content additions or changes. There are no plans for supplements or periodic sample increases for selected population subgroups as there are for the CPS and many other population surveys.

Third, over the next two years, the Institute of Health Policy (IHP) at the University of Texas School of Public Health will plan and conduct the Health of Houston Survey. The survey will be representative of the City of Houston and Harris County areas, with an expected sample size of 2000 households and 4,000 people, and will likely rely on a housing unit based sample to capture households that are cell phone only. The current plan is to use a multi-modal survey approach, primarily using cell or landline phones when numbers are available for the addresses
selected, and person-to-person interviews in those cases where there are no phones available for
the household. Although the survey is still in the planning stages, health insurance coverage will
be a prominent part of the survey. Examples of health insurance coverage questions from the
CPS, ACS and the California Health Interview Survey are being reviewed and will be tested. The
survey dataset is expected to be compiled and ready for analysis before the Harris County
uninsured estimates and projections are due to be completed.

Fourth, we will use the 1990, 2000, and 2010 (when they become available) U.S. Census
data to provide information on the basic demographic information (e.g., race/ethnicity, age, sex,
education, poverty status, employment status, etc.) of individuals in the 142 ZIP Codes or 649
census tracts in Houston. Although the CPS and ACS data are large and provide important
information about insurance status, they offer little information on geographic areas smaller than
the county. Thus, we combine those data with Census data to create synthetic estimates of
uninsurance rates for smaller geographic areas, as described below.

Analysis
Aim 1: Small Area Estimates of the Uninsured Population in Houston, Texas

We will use the most recent three years of CPS data, and the two most recent years of
ACS data to create synthetic estimates of the numbers and rates of the uninsured in Harris
County. We rely on synthetic estimation methods because the ACS and CPS data do not
currently contain sub-county level information on insurance status. Synthetic estimates make use
of information available at higher levels of geography (e.g., a metropolitan area or city) and
apply them, without change, to lower levels (e.g., ZIP Codes or census tracts). First, we will
select only those individuals from the CPS or ACS who live in the Houston metropolitan area,
using Federal Information Processing Standards (FIPS) geographic identifiers. Using this group
of respondents, instead of the complete national or Texas samples, increases the likelihood that
our estimates more accurately reflect the correct rate of uninsurance for this area.

Second, we use logistic regression, first with the ACS and then with the CPS, to predict
individual’s insurance status with a series of basic demographic variables that have established
relationships with insurance status. For example, we will use age (we will test linear, categorical,
and polynomial transformation of age; due to Medicare eligibility data for those aged 65 and
older are seldom reported), sex (male and female), race/ethnicity (non-Hispanic white, non-
Hispanic black, Hispanic, and Asian/other non-Hispanic), federal poverty level status, education,
marital status, and employment status. We will test other variables and measure our variables in
different ways to ensure that we parsimoniously capture major patterns in uninsurance.
Comparing estimates based on CPS and the ACS data will allow us to identify any substantive
differences in the correlates or prevalence of uninsurance across the two surveys—one important
way of assessing the reliability of our findings.

Third, we will apply the logistic regression model described in the prior paragraph to
individuals in the 2000 Census data (that does not directly ask about insurance status, but that
asks many of the same covariates as the CPS and ACS data) to calculate their predicted
probabilities of being insured. Given the same set of observed covariates in the Census data, we
can predict the probability that each individual will be insured with the models estimated from
the CPS and ACS data. Next, we will aggregate the probabilities of being uninsured for all
individuals living in each ZIP Code or census tract.

Obviously, the composition of the population in the Houston area may have changed
since the 2000 Census. Thus, we will use 1990 and 2000 Census data to provide linear forecasts
of population groups (e.g., by race/ethnicity, sex, age, poverty status, employment status, etc) to project the annual population and the composition of the population in each ZIP Code or census tract to the most current year. Then, we will apply the logistic regression estimates developed above to the estimated current population in each area. This strategy allows the composition of the small areas to change over time, and to influence our estimates of uninsurance accordingly. We will incorporate the 2010 Census data when they become available.

Following Reynolds (2009) we will take the following steps to ensure the reliability of our estimates across analytical methods. First, we will create separate estimates of uninsured rates at the ZIP Code or census tract level from the models that were estimated from the CPS and ACS data. We will have greater confidence in the reliability of our findings if the ranking of uninsurance rates among geographic units is similar when using estimates derived from the CPS and ACS data, and when the absolute differences in the numbers or percentages insured are small. Second, we will compare estimates of numbers and rates of uninsured individuals when using logistic regression models that make use of different covariates to estimate the uninsured rates. Third, we will compare estimates that rely solely on the 2000 Census data, and estimates that project Census data to the current year, to examine whether our results are sensitive to changes in the population over time (the Texas State Data Center may have these projections already). Finally, we will search for administrative or other data sources to which we can compare our estimated uninsurance rates, and we will incorporate information from the Health of Houston Survey when those becomes available.

Although some research has used data from the Behavioral Risk Factor Surveillance Survey (BRFSS) to estimate insurance rates, we will not use those data here for two reasons. First, the BRFSS data for Texas use a single question that asks about insurance status, which may understate insurance levels. Second, the survey is performed solely by landline telephone and has a relatively low response rate compared to the CPS and ASEC data that rely on both telephone and face-to-face interviews. Because the BRFSS relies only on landline telephones, households that are headed by younger adults who more often rely on cell phones and who are less likely to have health insurance, are undercounted.

**Aim 2: Projections of the Uninsured Population in Houston, Texas to the Year 2020**

Based on our small area estimates derived from Aim 1, we will forecast both the number and the rate of uninsured individuals to the year 2020. First, we will rely on the 1991 to 2009 waves of the CPS to identify trends in the rate of uninsurance over time, by estimating the logistic regression for insurance status described above for Aim 1, but including a linear term to capture trends in the odds of uninsurance across years (subsequent models will test non-monotonic relationships between insurance status and calendar year). We will also test models that allow the impact of our covariates of interest (e.g., race/ethnicity, sex, education, employment status, education, poverty status, age, etc) to impact insurance status differently across calendar periods, by including interaction terms. We will compare models with and without interactions between calendar year and the other covariates in the model with Bayesian Information Criterion and Akaike Information Criterion values, and likelihood ratio tests. Because the ACS data are not available before 2008, we cannot use them to model trends in insurance status over time, or to project those trends into the future.
Second, we will use the logistic regression model for insurance status from the 1991-2009 waves of the CPS data to estimate the predicted probability of being insured for individuals in the 2000 Census (using the same set of covariates). Then we will use the covariate for the year of survey (possibly interacted with the other covariates of interest) to project these rates into the future. We will also test separate models that specifically allow the composition of ZIP Codes and census tracts to change over time, by using the 1990 and 2000 Census data and linear extrapolation to project population subgroups (e.g., race/ethnicity, sex, age, poverty status, etc) to the year 2020. Projections of basic demographic factors such as race/ethnicity, age, and sex tend to be accurate in the near term, because fertility, mortality, and migration rates are unlikely to change rapidly (Preston, Heuveline, & Guillot, 2001).

Our analyses will emphasize comparisons of simple and complex models. All forecasts are based on imperfect knowledge, but we will feel more confident if we arrive at similar results with different methods. By necessity, all of our projections assume that the policy environment remains unchanged. For example, our estimates will be unable to account for changes in insurance status that cannot be modeled with the available data, such as if a state or national policy substantially increased the share of the population with health insurance, or if recent economic declines are not adequately captured in the most recently available data. However, separate analyses could increase the insurance rates among specific groups (e.g., children within 200% of the federal poverty line) to assess what impact some policy interventions might have on our estimated insurance rates. Finally, we will graph the trends that emerge in our data, for specific sub-populations and geographic areas, to ensure that our trends look reasonable and can be explained by likely changes in the composition of each area, rather than as a result of statistical artifacts.

Aim 3: Compare the Uninsured Population in Houston, Texas, to the Uninsured Population in other Texas Cities

Building on the strategy outlined in Aim 1, we will replicate our three-year (2006 – 2008) estimates from Houston for other major Texas cities (e.g., Dallas/Fort Worth, Austin, San Antonio), for the same period of time. With each city, we will draw the observations that come from the respective geographic area that can be best identified with the CPS or ACS data. By relying on data from specific areas to estimate insurance status, we will be able to build in city specific differences in insurance into our models (even if we cannot observe them directly). For example, the relationship between some covariates (e.g., race/ethnicity) and insurance status may vary across cities, or there may be differences across cities on certain characteristics (e.g., the mix of employers) that may impact the average level of insurance for all residents.

The subsequent steps will follow directly from Aim 1. First, we will use the ACS and CPS data from each city, but a common set of covariates for all of the cities, to build a model of insurance status for each city. Second, we will use those models to estimate the predicted probability of being uninsured for individuals in the 2000 Census data, and we will aggregate those predictions up to the ZIP Code or census tract level. Finally, as described above for Aim 1, we will endeavor to ensure that our results are not systematically biased by relying on any single estimation strategy. Although each city has a unique demographic and economic profile, a comparative framework may shed additional insight into the trends within Houston, and might be of broad interest to policy makers throughout the state.

Strengths and Limitations
The strengths of this research include the use of multiple national sources of data (including the CPS, ACS, and the Census), to estimate the distribution of the uninsured population across small areas within Houston, and to compare them to other large metropolitan areas in Texas. Further, the Health of Houston Survey (HHS) data might be available by the end of the project period, and those data may provide an important check on the reliability of our estimates. For example, the HHS is being developed along geographic lines, so that we could compare—by aggregation—our sub-county estimates.

Nevertheless, several limitations warrant mention. First, data simply do not exist that could verify that our estimates are accurate (although the availability of the Health of Houston Survey data will be especially valuable in this regard, once they become available). Thus, we will use multiple methods, where feasible, to ensure that our estimates represent the range of likely values, based on the available data. Second, the relatively small numbers of respondents in the CPS and ACS data for some sparsely populated areas may introduce non-negligible levels of sampling error into the estimates (Pui-Wa, Warcholak, Suen, Williams, Magsumbol, 2007; Fronstin, 2000, Rimsza et al., 2004). Other researchers have devised a number of estimation techniques to produce more reliable small area estimates of uninsured populations such as multivariate hierarchical approaches and Empirical Bayes procedures. But because we will focus on subsets of CPS data from large metropolitan areas, we expect that we will have sufficiently large sample sizes to ensure reliable estimates. Finally, our projections cannot account for major changes in state or federal health insurance policies that may occur in the future.

Final Products
We will have 2 major products from our work. First, we will make estimates and forecasts available to the Health Service Research Collaborative and other interested groups as they become available. Second, we will prepare manuscripts for presentation and submission to peer-reviewed journals that describe our methods and findings. Possible outlets include Population Research and Policy Review, Health Services Research, or Medical Care.
## PROJECT TIMELINE

Project Timeline for Small Area Estimation

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LITERATURE CITED


SHI1
These next questions are about health insurance coverage during the calendar year 2007. The questions apply to ALL persons of ALL ages.

SHI2
At any time in 2007, (was/were) (you/ anyone in this household) covered by a health insurance plan provided through (their/your) current or former employer or union?
   1. Yes
   2. No

SHI3
Who in this household were policyholders?
   Enter persons line number (1-16)

SHI4
In addition to (name/you) who else in this household was covered by (name’s/your) plan?
   Enter persons line number (1-16)

SHI5
Did (name’s/your) plan cover anyone living outside this household?
   1. Yes
   2. No

SHI6
Did (name’s/your) former or current employer or union pay for all, part, or none of the health insurance premium?
   1. All
   2. Part
   3. None

SHI7
At any time during 2007, (was/were) (you/ anyone in this household) covered by a health insurance plan that (you/they) PURCHASED DIRECTLY FROM AN INSURANCE COMPANY, that is, not related to current or past employment?
   1. Yes
   2. No

SHI8
Who in this household were policyholders?
   Enter persons line number (1-16)
SHI9
In addition to (name/you) who else in this household was covered by (name’s/your) plan?
   Enter persons line number (1-16)

SHI10
Did (name’s/your) plan cover anyone living outside this household?
   1. Yes
   2. No

SHI11
At any time in 2007, (was/were) (you/ anyone in this household) covered by the health insurance plan of someone who does not live in this household?
   1. Yes
   2. No

SHI12
Who was that?
   Enter persons line number (1-16)

SHI13
At any time in 2007, (was/were) (you/ anyone in this household) covered by Medicare?
   1. Yes
   2. No

SHI14
Who was that?
   Enter persons line number (1-16)

SHI15
At any time in 2007, (was/were) (you/ anyone in this household) covered by Medicaid / (fill state name)?
   1. Yes
   2. No

SHI16
Who was that?
   Enter persons line number (1-16)

SHI17
How many months during 2007, (was/were) (name/you) covered by Medicaid/(fill state name)?
   Enter number of months (1-12)
SHI21
In (state), the (fill state CHIP program name) helps families get health insurance for CHILDREN. (Just to be sure,) Were any of the children in this household covered by that program?
   1. Yes
   2. No

SHI22
Who was that?
   Enter persons line number (1-16)

SHI18
At any time in, 2007 (was/were) (you/ anyone in this household) covered by TRICARE, CHAMPUS, CHAMPVA, VA, military health care, or Indian Health Service?
   1. Yes
   2. No

SHI19
Who was that?
   Enter persons line number (1-16)

SHI20
What plan (was/were) (name/you) covered by?
   1. TRICARE
   2. CHAMPVA
   3. VA
   4. Indian Health Service
   5. Other

SHI20s
   Enter other type of plan

SHIC1
Other than the plans I have already talked about, during 2007, was anyone in this household covered by a health insurance plan [such as the (state-specific name plan) or any other type of plan/of any other type]?
   1. Yes
   2. No

SHIC2
Who has insurance?
   Enter persons line number (1-16)
SHIC3
What type of health insurance (was/were) (name/you) covered by in 2007?
1. Medicare
2. Medicaid
3. TRICARE or CHAMPUS
4. CHAMPVA (CHAMPVA IS THE CIVILIAN HEALTH AND MEDICAL PROGRAM
   OF THE DEPARTMENT OF VETERAN'S AFFAIRS)
5. VA
6. Military Health Care
7. Children's Health Insurance Program (CHIP)
8. Indian Health Service
9. Other government health care
10. Employer/union provided (policyholder)
11. Employer/union provided (as dependent)
12. Privately purchased (policyholder)
13. Privately purchased (as dependent)
14. Plan of someone outside the household
15. Other

SHIC3s
Enter other type of plan

SHIC4
I have recorded that (you/read list of names) (were/was) not covered by a health plan at any time
during 2007. Is that correct?
1. Yes
2. No

SHIC4A
Who should be marked as covered?
Enter persons line number (1-16)
What type of health insurance (was/were) (name/you) covered by in 2007?

1. Medicare
2. Medicaid
3. TRICARE or CHAMPUS
4. CHAMPVA (CHAMPVA IS THE CIVILIAN HEALTH AND MEDICAL PROGRAM OF THE DEPARTMENT OF VETERAN'S AFFAIRS)
5. VA
6. Military Health Care
7. Children's Health Insurance Program (CHIP)
8. Indian Health Service
9. Other government health care
10. Employer/union provided (policyholder)
11. Employer/union provided (as dependent)
12. Privately purchased (policyholder)
13. Privately purchased (as dependent)
14. Plan of someone outside the household
15. Other

Enter other type of health insurance covered by in 2007