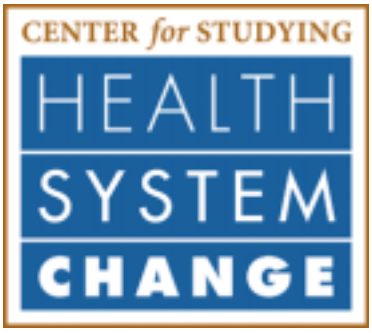
Community Tracking Study

Physician Survey Restricted Use File: User's Guide

(Round Two, Release 1)



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Suite 550
Washington, DC 20024

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Community Tracking Study (CTS) Physician Survey, Round Two
Fact Sheet

Survey Details	
Sample	12,304 physicians in the contiguous U.S. providing direct patient care for at least 20 hours per week, excluding federal employees, specialists in fields in which the primary focus is not direct patient care, and foreign medical school graduates who are only temporarily licensed to practice in the U.S. The majority of the sample is clustered in 60 communities, with a smaller supplemental sample drawn from the entire contiguous U.S. Among those 12,304 physicians, 7,092 also appeared in the data from the Round One survey, providing a panel sample (for users of the Restricted Use File only).
Time period	August 1998 – November 1999
Content	Physician specialty Practice arrangements and ownership Physician time allocation Sources of practice revenue Level and determinants of physician compensation Physician provision of charity care Perception of ability to deliver care Career satisfaction Effects of care management strategies Various aspects of phyisicians' practice of medicine Physician race and ethnicity
Differences between the Round One and Round Two surveys	There were only minor differences between the two rounds. The Round Two survey collected information on physician race and ethnicity, although that information is heavily masked for confidentiality reasons except for users of the Restricted Use File. See Chapter 2 for details on other differences.
Types of estimates	
Geographic areas represented	These data are designed to allow the user to calculate nationally representative estimates. In addition, users of the Restricted Use File can calculate estimates for the 60 selected communities.
Round Two estimates	These data can be used for calculating cross-sectional estimates for Round Two.
Change estimates (cross-sectional and panel)	The Round Two data can be combined with the Round One data to calculate the difference across rounds. In addition, users of the Restricted Use File can combine the two rounds of data and then calculate estimates of change at the physician level for the panel sample of physicians.
Pooled estimates	To benefit from increased sample size, data from Round One and Round Two can be combined to calculate a single "pooled" estimate.

Community Tracking Study (CTS) Physician Survey, Round Two
Fact Sheet - *continued*

Using the Data Files	
Obtaining the data files and documentation.	The data files and documentation are available through the Inter-University Consortium for Political and Social Research (ICPSR). The web site is www.icpsr.umich.edu, and the ICPSR study number for the Round Two Physician Survey is 3267. The Public Use File can be downloaded at no cost directly from the ICPSR web site. The Restricted Use File is available to approved users only and is available at no or nominal fee. ICPSR provides the restricted data file on CD. To obtain permission to use the Restricted Use File, users must comply with conditions listed in the CTS Physician Survey Restricted Data Use Agreement, such as limiting data access to people specified in the agreement and destroying the data upon completion of the specified research project. Copies of the agreement and a description of the application process are available from the ICPSR web site.
Software requirements	Because the CTS Physician Survey has a complex sample design, most commonly used statistical software packages will not estimate standard errors correctly. Therefore, we provide standard error look-up tables and formulas to approximate standard errors. In addition, the user's guide for the Restricted Use File explains how to use one specialized software package (SUDAAN) to directly calculate standard errors.
Differences between the Public Use File and the Restricted Use File	The Public Use File contains less detailed information than the Restricted Use File in order to preserve the confidentiality of the survey respondents. The Public Use File has fewer variables, some of which have undergone more extensive editing than those on the Restricted Use File. The Public Use File doesn't contain information on the geographical area of the physician's practice. It also doesn't contain the information necessary for using statistical software programs that account for the complex survey design, which means that users must use the standard error look-up tables or formulas to derive approximate standard errors. Lastly, only the Restricted Use File contains information that allows the user to identify physicians that are part of both the Round One and Round Two samples.
Contacting the CTS help desk	***ctshelp@hschange.org***

What's New

Version	Date	Description of Changes
Release One	July 2001	Original release
	December 2001	Changes were made only to the User's Guide. A discussion was added about how to pool data from Round One and Round Two in order to increase sample size. No changes were made to the data file.
	November 2003	Changes were made only to the User's Guide. No changes were made to the data file. 1) The previous version of the user's guide mistakenly indicated that the SUDAAN variable SITEPCP should be used for all site-specific estimates. In fact, a different SUDAAN variable (SITEPCP2 instead of SITEPCP) is required for site-specific estimates when combining Round One and Round Two data. This change has been incorporated into Table 4.2 and the discussion in Chapters 3 and 4. The example in Appendix D also reflects this change. 2) The text of Chapter 4, Table 4.2, and Appendix D of the previous version of the user's guide indicated when the SUDAAN variables CASECTOT, CNFRAME, and SECTOT should be used in analyses combining Round One and Round Two data. That information has been updated to address cases in which use of those variables results in an error message from SUDAAN.

ACKNOWLEDGMENTS

This User's Guide and the accompanying Codebook and data file were produced by the Center for Studying Health System Change (HSC) in collaboration with its contractors, Mathematica Policy Research, Inc. (MPR) and Social and Scientific Systems, Inc. (SSS). Elizabeth Schaefer and Sally Trude of HSC provided general oversight, David Edson of MPR provided ongoing supervision and coordination to this project, and Gary Moore of SSS supervised the production of the data file and the Codebook.

The development of the data file, including editing, imputation, and new variable construction, was largely performed by Ellen Singer of SSS, with assistance from Valeriy Bakaushin of SSS. Survey weights and procedures for variance estimation were developed by John Hall, Frank Potter, and Barbara Lepidus Carlson of MPR. Guidance in the data file construction was provided by HSC staff members Marie Reed and Jeffery Stoddard. David Edson, Ellen Singer, and Marie Reed had primary roles in developing the data confidentiality procedures, with the assistance of Thomas Jabine, an independent data confidentiality consultant.

Barbara Lepidus Carlson was the primary author of Chapters 1 through 3 of the User's Guide. Ellen Singer was the primary author of Chapters 4 and 5. Barbara Lepidus Carlson wrote Appendix B, which explains the derivation of the standard error tables, with assistance from John Hall. John Hall developed the standard error look up tables in Appendix C, with the assistance of Gary Moore and Ellen Singer of SSS. Ellen Singer provided sample SUDAAN setups in Appendix D, with the assistance of Gary Moore. David Edson participated in all components of the User's Guide development.

The Codebook was developed primarily by Ellen Singer, with assistance from Gary Moore, Marie Reed, Valeriy Bakaushin, and Nancy Odaka of SSS.

PREFACE

The Community Tracking Study (CTS) provides information to help policy makers and health care leaders make sound decisions. The CTS collects information on how the health system is evolving in 60 communities across the United States and the effects of those changes on people. Funded by the Robert Wood Johnson Foundation, the study is being conducted by the Center for Studying Health System Change (HSC).

The CTS relies on periodic site visits and surveys of households, physicians, and employers. One component of the CTS, the Physician Survey, provides information about source of practice revenue, problems physicians face in practicing medicine, how they are compensated and what effect various care management strategies have on their practices, as well as questions about their practice arrangements. This User's Guide gives researchers the information necessary for using the restricted use version of the data file containing information from the Round Two Physician Survey.

Data collection for the Round Two Physician Survey began in the summer of 1998 and was completed by the fall of 1999. An earlier version of the survey, Round One, was conducted in 1996 and 1997. Each survey was designed to allow separate cross-sectional estimates. Researchers can use each round of the CTS Physician Survey for separate cross-sectional analyses or use both rounds to study changes in the health care system over time.

The User's Guide presents background information about the CTS and the Round Two Physician Survey, explains how to select samples and weight variables, and discusses the correct approach to estimating variances. This discussion is followed by a description of variable construction and editing, and other information about the data file. A copy of the Round Two Physician Survey questionnaire appears in Appendix A. A discussion of the derivation of standard error look-up tables for use with the file is contained in Appendix B and Appendix C contains these tables. Example SUDAAN setups appear in Appendix D. The *Community Tracking Study Physician Survey Restricted Use File: Codebook (Round Two, Release 1)* provides more detail on the file, including frequencies and definitions of variables. Information about the Round One Physician Survey Public Use File can be found in the *Community Tracking Study Physician Survey Public Use File: User's Guide (Round One)* and the *Community Tracking Study Physician Survey Public Use File: Codebook (Round One).*

OBTAINING AND USING THE RESTRICTED USE FILE

In order to obtain and use this Restricted Use File, researchers must apply for access to the data and agree to the strict terms and conditions contained in the *Community Tracking Study Physician Survey Restricted Use Data Agreement.* Information about the application process and the data use agreement are available from the ICPSR website (www.icpsr.umich.edu).

Before applying to use the CTS Physician Survey Restricted Use File, researchers should consider whether the Public Use File would serve their analytic needs. The Public Use and Restricted Use versions differ in the amount of geographic detail provided and the confidentiality masking applied to some variables. The Restricted Use File contains site, state and county-level identifiers for each observation, while the Public Use File does not. The Restricted Use File also provides more detailed information on physician specialty/subspecialty, income, type of employer, ownership status, and race/ethnicity than is provided on the Public Use File. Moreover, information necessary for using statistical software programs that account for the survey design are not included on the Public Use File, necessitating the use of standard error look-up tables or formulas contained in the User's Guide to derive approximate standard errors. Lastly, only the Restricted Use File contains information that allows the user to identify physicians that are part of both the Round One and Round Two samples.

In addition to the Public Use and Restricted Use Files, there will also be a forthcoming Round Two Physician Survey Summary File that provides site-level means. Whereas the Public Use and Restricted Use Files provide physician-level data, such as each physician's age and gender, the Summary File combines the physician-level data into site-level measures for the 60 sites, such as the average age of physicians in a site or the percentage of physicians in a site who are males. The Summary File reflects most of the information collected in the Round Two Physician Survey. For each of the selected attributes from the Physician Survey, the Summary File includes the average or percentage and the standard errors of the estimates. The Summary File does not have restrictions on its use and therefore will allow researchers to incorporate site-level data in their analyses without having to apply for permission to use the Restricted Use File.

Information on the Public Use File is available in *Community Tracking Study Physician Survey Public Use File: User's Guide (Round Two, Release 1)* and *Community Tracking Study Physician Survey Public Use File: Codebook (Round Two, Release 1),* available from the ICPSR web site (www.icpsr.umich.edu).

OBTAINING TECHNICAL ASSISTANCE

Information on the CTS Physician Survey, and the CTS in general, may be obtained through the HSC internet home page at http://www.hschange.org. The Restricted Use File and the latest documentation are available through the Inter-university Consortium for Political and Social Research at http://www.icpsr.umich.edu.

Technical assistance on issues related to the data file may be obtained by contacting the CTS Help Desk by e-mail at ctshelp@hschange.org or fax (202-863-1763).

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CHAPTER 1

OVERVIEW OF THE COMMUNITY TRACKING STUDY AND THE PHYSICIAN SURVEY

This guide is intended to assist researchers in using the Community Tracking Study (CTS) Round Two Physician Survey Restricted Use File. The CTS is a national study of the rapidly changing health care market and the effects of these changes on people.[1] Funded by the Robert Wood Johnson Foundation, the study is being conducted by the Center for Studying Health System Change (HSC). Additional documentation and detailed information on the file layout and content are available in *Community Tracking Study Physician Survey Restricted Use File: Codebook (Round Two).* Information about other aspects of the CTS is available from HSC at www.hschange.org. Technical assistance on issues related to the data file may be obtained by contacting the CTS Help Desk by e-mail at ctshelp@hschange.org or fax (202-863-1763).

1.1. CTS OBJECTIVES

The CTS is designed to provide information to help policy makers and health care leaders make sound decisions. The CTS collects information on how the health system is evolving in 60 communities across the United States and the effects of those changes on people. Underway since 1996, the CTS is a longitudinal project that relies on periodic site visits and surveys of households, physicians and employers. While many studies have examined leading markets in California and Minnesota and analyzed local or selected data, there has been no systematic study of change in a broad cross-section of U.S. markets or analysis of the effects of those changes on service delivery, cost and quality. The Community Tracking Study is designed to provide sound empirical evidence that will inform the debate about health system change. The study addresses two broad questions that are important to public and private health decision-makers:

How is the health system changing? How are hospitals, health plans, physicians, safety net providers and other provider groups restructuring, and what key forces are driving organizational change?

How do these changes affect people? How are insurance coverage, access to care, use of services, health care costs and perceived quality of health care changing over time?

Focusing on communities is central to the design of the CTS. Understanding market changes requires studying local markets, including their culture, history and public policies relating to health care. HSC researchers randomly selected 60 communities stratified by region, community size and type (metropolitan-nonmetropolitan) to provide a representative profile of change across the United States.[2]

[1] An overview of the Community Tracking Study is contained in Kemper, et al. (1996).
[2] The CTS covers the contiguous 48 states. Alaska and Hawaii were not part of the study.

Of these communities, 12 are studied in depth, with site visits and survey samples large enough to draw conclusions about change in each community. These communities are a randomly selected subset of the sites that are metropolitan areas with more than 200,000 people and are referred to as the high-intensity sites.

1.2. ANALYTIC COMPONENTS OF THE COMMUNITY TRACKING STUDY

The CTS has qualitative and quantitative components. Case studies in the 12 high-intensity sites make up the qualitative component of the CTS, and surveys of households, physicians, and employers are the quantitative component. The first three rounds of comprehensive case studies of the health systems in the 12 communities are completed. The first round was conducted in 1996 and 1997, the second in 1998 and 1999, and the third in 2000 and 2001. The findings are available from HSC.[3] This information is complemented by survey data from these 12 communities and from 48 additional sites, listed in Table 1.1. In all 60 sites, HSC simultaneously conducted independent surveys of households and physicians, enabling researchers to study health insurance coverage, access to care, and physician practice patterns, among other issues. Another component of the CTS is the Followback Survey, in which the privately financed health insurance policies covering Household Survey respondents are "followed back" to the organization that administers the policy. The purpose of the Followback Survey is to obtain more detailed and accurate information about those private policies than Household Survey respondents could provide. A CTS survey of employers sponsored by the Robert Wood Johnson Foundation was conducted by RAND in 1996 and 1997.[4]

Data are being collected on a two-year cycle, allowing researchers to track changes in the health care system over time. The Round One Household and Physician surveys and case studies completed during 1996 and 1997 and the Followback Survey completed in 1997 and 1998 are the baseline. Data collection for the Round Two Household and Physician surveys began in 1998 and was completed in 1999. Round Two Followback Survey data collection was conducted during 1999 and 2000.

[3]Community reports from each round are available through the HSC web site at www.hschange.org.

[4]The Household and Physician surveys were conducted by HSC. The Employer Survey was conducted by RAND in collaboration with HSC. The surveys are available separately as both public and restricted use files. While these three surveys were conducted in the same communities, they were independent of one another and do not allow for the linking of persons, employers, or physicians.

TABLE 1.1

SITES SELECTED FOR THE COMMUNITY TRACKING STUDY

High-Intensity Sites	Low-Intensity Sites	
Metro areas >200,000 population	Metro areas >200,000 population	Metro areas <200,000 population
01-Boston (MA)	13-Atlanta (GA)	49-Dothan (AL)
02-Cleveland (OH)	14-Augusta (GA/SC)	50-Terre Haute (IN)
03-Greenville (SC)	15-Baltimore (MD)	51-Wilmington (NC)
04-Indianapolis (IN)	16-Bridgeport (CT)	
05-Lansing (MI)	17-Chicago (IL)	Nonmetropolitan Areas
06-Little Rock (AR)	18-Columbus (OH)	
07-Miami (FL)	19-Denver (CO)	52-West Central Alabama
08-Newark (NJ)	20-Detroit (MI)	53-Central Arkansas
09-Orange County (CA)	21-Greensboro (NC)	54-Northern Georgia
10-Phoenix (AZ)	22-Houston (TX)	55-Northeastern Illinois
11-Seattle (WA)	23-Huntington (WV/KY/OH)	56-Northeastern Indiana
12-Syracuse (NY)	24-Killeen (TX)	57-Eastern Maine
	25-Knoxville (TN)	58-Eastern North Carolina
	26-Las Vegas (NV/AZ)	59-Northern Utah
	27-Los Angeles (CA)	60-Northwestern Washington
	28-Middlesex (NJ)	
	29-Milwaukee (WI)	
	30-Minneapolis (MN/WI)	
	31-Modesto (CA)	
	32-Nassau (NY)	
	33-New York City (NY)	
	34-Philadelphia (PA/NJ)	
	35-Pittsburgh (PA)	
	36-Portland (OR/WA)	
	37-Riverside (CA)	
	38-Rochester (NY)	
	39-San Antonio (TX)	
	40-San Francisco (CA)	
	41-Santa Rosa (CA)	
	42-Shreveport (LA)	
	43-St. Louis (MO/IL)	
	44-Tampa (FL)	
	45-Tulsa (OK)	
	46-Washington (DC/MD)	
	47-West Palm Beach (FL)	
	48-Worcester (MA)	

Note: The numbers listed above are site identifiers and are provided in the data file as the variable SITEID.

1.3. THE PHYSICIAN SURVEY

The Physician Surveys, funded by the Robert Wood Johnson Foundation, were conducted under the direction of HSC. The Gallup Organization was the primary data collection contractor. Mathematica Policy Research, Inc. (MPR) managed the Gallup subcontract for HSC and was responsible for sample design, weighting, variance estimation and tracking of physicians who could not be located. Project Hope and CODA, Inc. assisted in developing the Round One survey instrument, including cognitive testing. Social and Scientific Systems, Inc. (SSS) was instrumental in converting the raw survey data into a data file suitable for analysis. MPR and SSS collaborated to prepare the documentation for the Restricted Use File.

The Physician Survey instrument collected information on physician supply and specialty distribution; practice arrangements and physician ownership; physician time allocation; sources of practice revenue; level and determinants of physician compensation; provision of charity care; physicians' perception of their ability to deliver care and of career satisfaction; effects of care management strategies; and various aspects of physicians' practice of medicine. For primary care physicians (PCPs), the instrument also contained vignettes that provided clinical presentations for which there is no prescribed method of treatment. Except for minor changes (discussed below), the same survey instrument was used in Round One and Round Two of the Physician Survey.

The survey was administered completely by telephone, using computer-assisted telephone interviewing technology. Bilingual interviewers were used in the few cases where needed. Interviews with 12,280 physicians[5] were completed between August 1998 and November 1999.

The sample frame was developed by combining lists of physicians from the American Medical Association (AMA) and the American Osteopathic Association (AOA). About 75% of the Round One respondents were randomly selected for the Round Two survey, and a high percentage of those selected agreed to participate in the second round. There were 7,092 physicians who participated in both rounds of the survey.

1.4. PHYSICIAN SURVEY PUBLIC USE FILE AND RESTRICTED USE FILE

Two versions of the CTS Physician Survey data are available to researchers: the Restricted Use File and the Public Use File. The ***Restricted Use File*** may be used only under the conditions listed in the *Community Tracking Study Physician Survey Restricted Data Use Agreement.* This agreement provides details on ownership of the data, when the data may be obtained and by whom, how the data may be used, the data security procedures that must be implemented, and the sanctions that will be imposed in the case of data misuse. Researchers must specifically apply for use of the Restricted Use File. Copies of the agreement and a description of the application process are available from the ICPSR web site at www.icpsr.umich.edu.

[5] There are 12,304 records on the file; 24 physicians were sampled twice and therefore appear on the file twice, even though they completed only one interview each. Sampling weights were constructed so that duplicate records do not bias results. Consequently, researchers should not delete the duplicate records.

The Restricted Use File is provided to researchers for use on only a specific research project (new applications would be required for subsequent analyses using the data) and for a limited time period, after which all copies of the data must be destroyed. Moreover, researchers using the Restricted Use File may be required to undertake costly or inconvenient security measures. Researchers who are interested only in producing site-level means from the physician data, whether to perform analysis using a site-level file or to merge onto one of the other CTS component surveys, may choose instead to wait for the summary (site-level mean) file. Researchers are encouraged to review documentation for both the Public Use and Restricted Use files, available from ICPSR at www.icpsr.umich.edu, as well as the requirements of the *Community Tracking Study Physician Survey Restricted Data Use Agreement*, before deciding which file will meet their needs.

The ***Public Use File*** is available from ICPSR. Researchers need not specifically apply for use of the Public Use File. It is suitable for most researchers who wish to perform analysis at the national level and do not anticipate using the site-level information in their analysis. The Public Use File does not support analysis at the site level or analysis that uses site-level information. Although it contains all of the same observations as the Restricted Use File, several variables have been deleted or modified slightly for data confidentiality reasons (see below). Note that, unlike the Restricted Use File, the Public Use File does not contain information that allows the user to identify the panel sample of physicians who are part of both the Round One and Round Two samples. Moreover, information necessary for using statistical software programs that account for the survey design is not included in the Public Use File, necessitating the use of standard error look-up tables or formulas contained in Chapter 4 to derive approximate standard errors. Separate documentation on the Public Use File is available from ICPSR at www.icpsr.umich.edu.

As stated above, the Public Use File does not contain certain data that are available on the Restricted Use File version of the Physician Survey. Other variables on the Public Use File were modified somewhat to ensure the confidentiality of survey respondents. These modifications are described in Chapter 5. Table 1.2 lists the variables available on the Public and Restricted Use versions of the data file. In this table, a different name for the same variable on the Public Use and Restricted Use files (the Public Use name ends in "X") indicates that the data for this variable underwent additional editing for confidentiality.

TABLE 1.2

VARIABLES ON THE PHYSICIAN RESTRICTED USE AND PUBLIC USE FILES

Restricted Use Name	Public Use Name	Variable Label (on Restricted Use File)
Survey Administration Variables		
PHYSIDX	PHYSIDX	PH2:Physician identification number
R1PHYIDX	n/a	PH2:Value for PHYSIDX in Round One
MSACAT	n/a	PH2:Large metro/small metro/non-metro
FIPS	n/a	PH2:State and county code when surveyed
SITEID	n/a	PH2:Updated master file SITE variable
SUBGRP	n/a	PH2:Subgroup in sample - A/B/C/D
DOCTYP	n/a	PH2:S1: Doctor type (MD, DO)
IMGSTAT	n/a	PH2:Country of medical school
IMGUSPR	IMGUSPR	PH2:Foreign medical school graduate
GENDER	GENDER	PH2:AMA/AOA: Sex, 1-Male, 2-Female
BIRTH	BIRTHX	PH2:AMA/AOA: Year of birth (Corrected)
GRAD_YR	GRADYRX	PH2:AMA/AOA: Year of graduation
AMAPRIM	n/a	AMA/AOA: Primary care physician flag
Section A – Introduction		
MULTPR	MULTPR	PH2:A4: Multiple practices
_MULTPR	_MULTPR	PH2:Imputation flag for MULTPR
NUMPR	NUMPRX	PH2:A4A: Number of practices
YRBGN	YRBGNX	PH2:A6: Year began practicing medicine
NWSPEC	n/a	PH2:A8: Primary specialty/subspecialty
GENSUB	n/a	PH2:A9: General practice vs. subspecialty
SIPNPED	n/a	PH2:A9a: Subspc, internal, or pediatric (adult specialty)
SIPPED	n/a	PH2:A9b: Subspc, internal, or pediatric (ped specialty)
SUBSPC	n/a	PH2:A10: Subspecialty
SPECX	SPECX	PH2:Combined specialty/subspecialty
PCPFLAG	PCPFLAG	PH2:Questionnaire definition of PCP
BDCERT	BDCERT	PH2:Board certification status
BDCTPS	BDCTPS	PH2:Board certified in primary subspecialty/specialty
BDELPS	BDELPS	PH2:Board eligible in primary subspecialty/specialty
CARSAT	CARSAT	PH2:A19: Overall career satisfaction

See notes at end of table.

TABLE 1.2

VARIABLES ON THE PHYSICIAN RESTRICTED USE AND PUBLIC USE FILES
(Continued)

Restricted Use Name	Public Use Name	Variable Label (on Restricted Use File)
Section B – Utilization of Time		
WKSWRK	WKSWRKX	PH2:B1: Weeks practicing medicine in 1997
WKSWRKC	n/a	PH2:Weeks worked in 1997, w/o new phys
_WKSWRKC	n/a	PH2:Imputation flag for WKSWRKC
HRSMED	HRSMEDX	PH2:Hours previous week spent medically-related activities
_HRSMED	n/a	PH2:Imputation flag for HRSMED
HRSPAT	HRSPATX	PH2:Hours previous week spent direct patient care activities
_HRSPAT	n/a	PH2:Imputation flag for HRSPAT
HRFREE	HRFREEX	PH2:B6: Hours previous month charity care
_HRFREE	n/a	PH2:Imputation flag for HRFREE
Section C – Type and Size of Practice		
OWNPR	OWNPR	PH2:C1: Ownership status (Full/Part/No Own)
_OWNPR	_OWNPR	PH2:Imputation flag for OWNPR
TOPOWN	n/a	PH2:C2: Type of practice (owners)
TOPOWNC	TOPOWNX	PH2:Practice type (owners), w/C9 recodes
TOPEMP	n/a	PH2:C3: Type of employer (non-owner)
TOPEMPC	n/a	PH2:Employer type, w/C9 recodes
TOPEMPA	TOPEMPX	PH2:Employer type (all employees)
PRCTYPE	PRCTYPE	PH2:Practice type (categorical)
GRTYPE	GRTYPEX	PH2:Type of group physician
OTHSET	n/a	PH2:C3a: Government hospital or clinic
EMPTYP	n/a	PH2:C3b: Empl type verbatims, coded
EMPTYP2	n/a	PH2:C3c:Type of employer, other
ALLPRTP	n/a	PH2:All practice type
OTHPAR	OTHPAR	PH2:C4: Owner: Other phys in practice
OTHGRP	n/a	PH2:C5A: Owner: Other phys group
HSPPAR	n/a	PH2:C5B: Owner: Hospital
INSPAR	n/a	PH2:C5C: Owner: Insurance Co, HMO
ORGPAR	n/a	PH2:C5D: Owner: Other
C5OWNER	C5OWNX	PH2:C5: Outside ownership
ORGC_1-ORGC_16	n/a	PH2:What kinds of organizations are these?
NPHYS	NPHYSX	PH2:C7: Number of physicians at practice
_NPHYS	n/a	PH2:Imputation flag for NPHYS
NASSIST	NASSISX	PH2:C8: Number of assistants in practice
_NASSIST	n/a	PH2:Imputation flag for NASSIST
ACQUIRD	ACQUIRD	PH2:C10: Practice acquired in last 2 yrs
_ACQUIRD	_ACQUIRD	PH2:Imputation flag for ACQUIRD
OWNPUR	OWNPURX	PH2:C11: Resp ownership when practice purchased

See notes at end of table.

TABLE 1.2

VARIABLES ON THE PHYSICIAN RESTRICTED USE AND PUBLIC USE FILES
(Continued)

Restricted Use Name	Public Use Name	Variable Label (on Restricted Use File)
Section D – Medical Care Management		
EFDATA	EFDATA	PH2:D1A: Effect of computer get pt data
EFTREAT	EFTREAT	PH2:D1B: Effect of computer get tx/guidelines
EFRMNDR	EFRMNDR	PH2:D1C: Effect of preventive tx reminders
EFGUIDE	EFGUIDE	PH2:D1D: Effect of formal written guidelines
EFPROFL	EFPROFL	PH2:D1E: Effect of practice profile results
EFSURV	EFSURV	PH2:D1F: Effect of patient satisfaction surveys
CMPPROV	CMPPROV	PH2:D7: Change-complexity w/o ref, PCP
CMPEXPC	CMPEXPC	PH2:D8: Appropriateness w/o ref, PCP
SPECUSE	SPECUSE	PH2:D9: Change-number of referrals to specialists
PCTGATE	PCTGATE	PH2:D10: Percent of patients for whom gatekeeper
_PCTGATE	_PCTGATE	PH2:Imputation flag for PCTGATE
CMPCHG	CMPCHG	PH2:D11: Change-complexity at ref, NPCP
CMPLVL	CMPLVL	PH2:D12: Appropriateness at ref, NPCP
CHGREF	CHGREF	PH2:D13: Change-# referrals by PCPs
Section E – Vignettes		
WHOCARE	WHOCARE	PH2:EA: Care to adults and/or kids
FORM	FORM	PH2:E_FORM: Rotation of vignette questions
VCHOL	VCHOL	PH2:E1: Percent oral agents elevated cholesterol
VCHOLF	VCHOLF	PH2:E1a: Freq oral agents elevated cholesterol
VHYPER	VHYPER	PH2:E3: Percent urology referrals w/ prostatic hyperplasia
VHYPERF	VHYPERF	PH2:E3a: Freq urology referrals prostatic hyperplasia
VCHEST	VCHEST	PH2:E4: Percent cardiology referrals w/ chest pains
VCHESTF	VCHESTF	PH2:E4a: Freq cardiology referrals w/ chest pains
VBACK	VBACK	PH2:E5: Percent MRI for low back pain
VBACKF	VBACKF	PH2:E5a: Freq MRI for low back pain
V60MAN	V60MAN	PH2:E9: Percent PSA test 60 year old male
V60MANF	V60MANF	PH2:E9a: Freq PSA test 60 year old male
VVITCH	VVITCH	PH2:E10: Percent office visit for vaginal itching
VVITCHF	VVITCHF	PH2:E10a: Freq office visit for vaginal itching
VENUR	VENUR	PH2:E11: Percent DDAVP 10 year child enuresis
VENURF	VENURF	PH2:E11a: Freq DDAVP 10 year child enuresis
VTHRT	VTHRT	PH2:E16: Percent office visit fever sore throat child
VTHRTF	VTHRTF	PH2:E16a: Freq office visit fever sore throat child
VCOUGH	VCOUGH	PH2:E17: Percent x-ray fever tachypnea child
VCOUGHF	VCOUGHF	PH2:E17a: Freq x-ray fever tachypnea child
VSUPOT	VSUPOT	PH2:E18: Percent ENT referrl suppurative otitis med child
VSUPOTF	VSUPOTF	PH2:E18a: Frq ENT referral suppurative otitis med child
V6FEVR	V6FEVR	PH2:E20: Percent sepsis workup fever 6 week child
V6FEVRF	V6FEVRF	PH2:E20a: Freq sepsis workup fever 6 week child
VECZEM	VECZEM	PH2:E21: Percent allergist eczema asthma
VECZEMF	VECZEMF	PH2:E21a: Freq allergist eczema asthma child

See notes at end of table.

TABLE 1.2

VARIABLES ON THE PHYSICIAN RESTRICTED USE AND PUBLIC USE FILES
(Continued)

Restricted Use Name	Public Use Name	Variable Label (on Restricted Use File)
Section F – Physician – Patient Interactions		
ADQTIME	ADQTIME	PH2: Adequacy of time, all physicians
CLNFREE	CLNFREE	PH2:F1C: Freedom for clinical decisions
HIGHCAR	HIGHCAR	PH2:F1D: Possibility of high quality care
NEGINCN	NEGINCN	PH2:F1E: Decision w/o neg financial incentive
USESPCS	USESPCS	PH2:F1F: Highlevel communication w/ specialists
COMPRM	COMPRM	PH2:F1G: Communication w/ primary care physician
COMMALL	COMMALL	PH2: Level of communication, all
PATREL	PATREL	PH2:F1H: Continuing patient relationships
OBREFS	OBREFS	PH2:F8A: Referrals to quality specialists
OBANCL	OBANCL	PH2:F8B: High quality ancillary services
OBHOSP	OBHOSP	PH2:F8C: Non-emergency hospital admission
OBINPAT	OBINPAT	PH2:F8D: Adequate number inpatient days
OBIMAG	OBIMAG	PH2:F8E: High quality diagnostic imaging
OBMENTL	OBMENTL	PH2:F8F: High quality inpatient mental health care
OBOUTPT	OBOUTPT	PH2:F8G: High quality outpatient mental health care
NWMCARE	NWMCARE	PH2:F9A: Accept new Medicare patients
_NWMCARE	_NWMCARE	PH2:Imputation flag for NWMCARE
NWMCAID	NWMCAID	PH2:F9B: Accept new Medicaid patients
_NWMCAID	_NWMCAID	PH2:Imputation flag for NWMCAID
NWPRIV	NWPRIV	PH2:F9C: Accept new privately insured
_NWPRIV	_NWPRIV	PH2:Imputation flag for NWPRIV
Section G – Practice Revenue		
PMCARE	PMCARE	PH2:G1A: Percent payments from Medicare
_PMCARE	_PMCARE	PH2:Imputation flag for PMCARE
PMCAID	PMCAID	PH2:G1B: Percent payments from Medicaid
_PMCAID	_PMCAID	PH2:Imputation flag for PMCAID
PCAPREV	PCAPREV	PH2: % practice rev prepaid, capitated
_PCAPREV	_PCAPREV	PH2:Imputation flag for PCAPREV
NMCCON	NMCCONX	PH2: Number of managed care contracts
_NMCCON	n/a	PH2:Imputation flag for NMCCON
PMC	PMC	PH2: % practice rev from managed care
_PMC	_PMC	PH2: Imputation flag for PMC
CAPAMTC	CAPAMTC	PH2: Capitated rev from largest MC contr
_CAPAMTC	_CAPAMTC	PH2: Imputation flag for CAPAMTC
PBIGCON	PBIGCON	PH2: Percent revenue largest managed care contract
_PBIGCON	_PBIGCON	PH2:Imputation flag for PBIGCON

See notes at end of table.

TABLE 1.2

VARIABLES ON THE PHYSICIAN RESTRICTED USE AND PUBLIC USE FILES
(Continued)

Restricted Use Name	Public Use Name	Variable Label (on Restricted Use File)
Section H - Physician Compensation Methods & Income Level		
SALPAID	SALPAID	PH2:H1: Salaried physician flag
SALTIME	SALTIME	PH2:H2: Compensate per work time period
SALADJ	SALADJ	PH2:H3: Salary adjustments
BONUS	BONUS	PH2:H4: Eligible for bonuses now flag
SPROD	SPROD	PH2:H5A: Own productivity affects compensation
SSAT	SSAT	PH2:H5B: Patient satisfaction affects compensation
SQUAL	SQUAL	PH2:H5C: Quality measures affects compensation
SPROF	SPROF	PH2:H5D: Profiling results affects compensation
RADJ	RADJ	PH2:H6: Profiles are risk adjusted
_RADJ	_RADJ	PH2:Imputation flag for RADJ_A
PCTINCN	PCTINCX	PH2:H9: Percent income from bonuses
PCTINCC	n/a	PH2:Percent income from bonuses, corrected
_PCTINCC	n/a	PH2:Imputation flag for PCTINCC
EBONUS	EBONUS	PH2:H9a: Eligible for bonuses in 1997
INCOMET	INCOMEX	PH2:H10: Net income in 1997
_INCOMET	n/a	PH2:Imputation flag for INCOMET
HISP	n/a	PH2:H11:Hispanic origin
RACE	RACEX	PH2:H12:Race

TABLE 1.2

VARIABLES ON THE PHYSICIAN RESTRICTED USE AND PUBLIC USE FILES
(Continued)

Weights and Sampling Variables		
NSTRATA	n/a	Nest variable national estimates from supplemental sample
PSTRATA	n/a	Nest variable, pseudo strata
ASRATA	n/a	Nest variable national estimates from augmented sample
PPSU	n/a	Nest variable, pseudo ppsu
APSU	n/a	Nest variable, pseudo
PSTRTOT3	n/a	Totcnt for pstrata
ASTRTOT	n/a	Totcnt for pstrata, national augmented sample
SITEPCP	n/a	Nest variable for site estimates
FRAME	n/a	Frame counts for site estimates
NFRAME	n/a	Sample frame counts for natl estimates
CNFRAME	n/a	Sample frame counts, national change estimates
FSU	n/a	Final sample unit for site estimates
NFSU	n/a	Final sample unit for national estimates
AFSU	n/a	Final sample unit for national estimates, augmented sample
SECSTRA	n/a	Secondary stratification
ASECSTRA	n/a	Secondary stratification, national augmented sample
SECTOT	n/a	Sample frame counts, national estimates
ASECTOT	n/a	Sample frame counts, national augmented sample
CASECTOT	n/a	Sample frame counts, augmented sample change
P1X – P7X	n/a	Joint inclusion probability #1 thru #7
AP1-AP7	n/a	Joint inclusion probability #1-7, national augmented sample
WTPHY1	n/a	PH2: Augmented site estimates
WTPHY3	n/a	PH2: National estimates, supplemental sample
WTPHY4	WTPHY4	PH2: National weight, combined sample
WTPHY5	n/a	PH2: National weight, augmented site sample
WTPAN1	n/a	PH: Panel weight, national estimate, combined sample
WTPAN2	n/a	PH: Panel A+B weight, national estimate, site sample

Notes: 'n/a' identifies variables that are not available on the CTS Physician Survey Public Use File. Variable label contains a brief description of the variable. In some cases, the label also provides information on the source of the variable (e.g., PH2 for the Round Two Physician Survey) and the question number (e.g., 'A6' for Section A, Question 6).

CHAPTER 2

THE STRUCTURE AND CONTENT OF THE COMMUNITY TRACKING STUDY PHYSICIAN SURVEY

The Physician Survey was administered to a sample of physicians in the 60 CTS sites and to an independent national sample of physicians. The survey's three-tiered sample design makes it possible to develop estimates at the national and community (site) levels.

- The first tier is a sample of 12 communities from which a large number of physicians in each community were surveyed. The sample in each of these "high-intensity" sites is large enough to support estimates in each site.
- The second tier is a sample of 48 communities from which a smaller sample of physicians in each community was surveyed. This sample of "low-intensity" sites allows us to validate results from the high-intensity sites and permits findings to be generalized to the nation. The first and second tiers together are known as the *site sample*.
- The third tier is a smaller, independent national sample. Known as the *supplemental sample*, this sample augments the site sample and substantially increases the precision of national estimates with a relatively modest increase in the total sample size.

This chapter describes the sample design, the process of conducting the survey, the survey content, survey administration and processing, and the sample and weighting variable to be used for analyses using the Restricted Use File. The background information on sample design (Sections 2.1 and 2.2) is provided for those who are interested; however, it is not necessary to read these sections in order to use the Restricted Use File.

2.1. CTS SAMPLE SITES

The primary goal of the CTS is to track health system change and its effects on people, accounting for characteristics of local markets. The first step in designing the CTS sample, therefore, was to determine the appropriate communities, or sites, to study. Three issues were central to the sample design: the definition of the sites, the number of sites, and the selection of the sites.

2.1.1. Definition of Sites

The sites encompass local health care markets. Although there are no set boundaries for these local markets, the intent was to define areas such that residents predominately used health care providers in their area and providers served predominately area residents. We generally defined sites as metropolitan statistical areas (MSAs) as defined by the Office of Management and

Budget or the nonmetropolitan portions of economic areas as defined by the Bureau of Economic Analysis (BEAEAs).[6]

2.1.2. Number of Sites

The next step in creating the site sample was to determine the number of high-intensity sites. In making this decision, we considered the tradeoffs between data collection costs (case studies plus survey costs) and the research benefits of a large sample of sites. The research benefits of a larger number of sites include a greater ability to empirically examine the relationship between system change and its effect on care delivery and consumers and to make the study findings more "generalizable" to the nation. Despite the cost advantages of conducting intensive case studies in fewer sites, focusing on a smaller number of communities makes it more difficult to distinguish between changes of general importance and changes or characteristics unique to a community. Solving this problem by increasing the number of case study sites would make the cost of data collection and analysis prohibitively high.

We chose 12 sites for intensive study and added 48 sites for less-intensive study. These 60 high-intensity and low-intensity sites form the *site sample*. Although there was no formal scientific basis for choosing 12 high-intensity sites, this number reflects a balance between the benefits of studying a range of different communities and the costs of doing so. The addition of 48 low-intensity sites solves the problem of limited generalizability associated with only 12 sites and provides a benchmark for interpreting how representative the high-intensity sites are.

2.1.3. Site Selection

Once the number of sites for the site sample had been determined, we selected the actual sites. Shown previously in Table 1.1, the 60 sites, or "primary sampling units," were chosen for the first stage of sampling. Sites were sampled by stratifying them geographically by region and selecting them randomly, with probability in proportion to their 1992 population. There were separate strata for small MSAs (population of less than 200,000) and for nonmetropolitan areas.

The high-intensity sites were selected randomly from MSAs with a 1992 population of 200,000 or more. Of the low-intensity sites, 36 are large metropolitan areas (also having a 1992 population of 200,000 or more), 3 are small metropolitan areas (population of less than 200,000), and 9 are nonmetropolitan sites. The *Community Tracking Study Site-County Crosswalk*, available through ICPSR at www.icpsr.umich.edu, identifies the specific counties, by FIPS code, that make up each CTS site. This sampling approach provided maximum geographic diversity, judged critical for the 12 high-intensity sites in particular, and acceptable natural variation in city size and degree of market consolidation.[7]

Together, the high-intensity and low-intensity sites account for about 90 percent of all Round Two survey respondents and can be used to make national estimates. The sample of high-

[6]For more details on the definition of CTS sites, refer to Metcalf, et al. (1996).

[7]Additional information about the number of sites and the random selection of the site sample is available in Metcalf et al. (1996).

intensity sites may also be used to make site-specific estimates for these twelve sites. However, the small sample size for each low-intensity site means that site-specific estimates for these sites will not be precise enough to support separate site analyses.

2.2. ADDITIONAL SAMPLES AND BETTER NATIONAL ESTIMATES

Although the site sample alone will yield national estimates, the estimates will not be as precise as they could have been if more communities had been sampled or had the sample been a simple random sample of the entire U.S. population. The *supplemental sample*, the third tier in the design of the CTS Physician Survey sample, was added to increase the precision of national estimates at a relatively small incremental increase in survey costs.

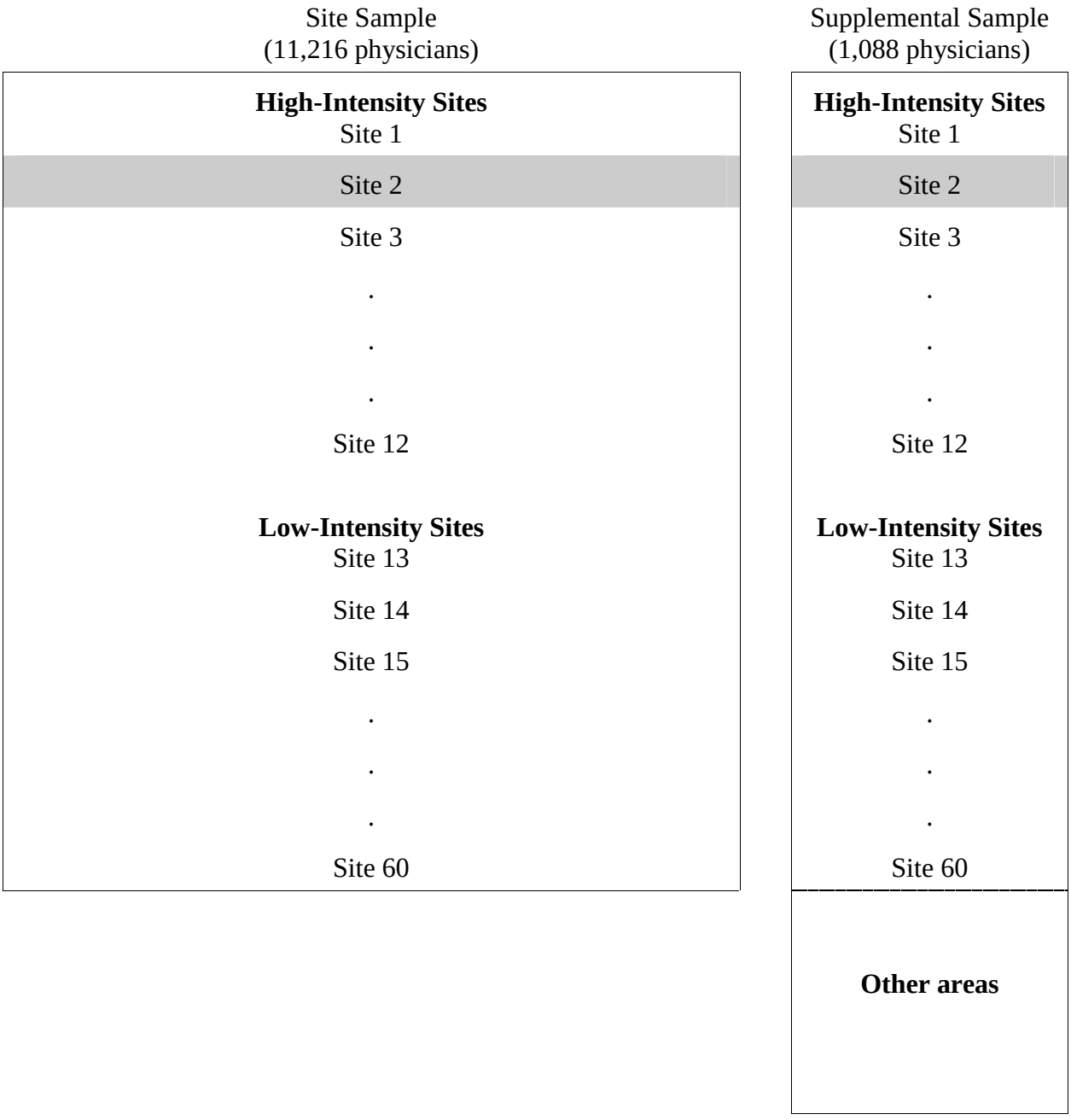
The supplemental sample is a relatively small, nationally representative sample made up of physicians randomly selected from the 48 states in the continental United States. It is stratified by region but essentially uses simple random sampling techniques within strata. When it is added to the site sample to produce national estimates, the resulting sample is called the *combined sample*.

In addition to making national estimates from the site sample more precise, the supplemental sample also slightly enhances site-specific estimates derived from the site sample. Because approximately half of U.S. physicians are located in the 60 site-sample communities, approximately half of the supplemental sample also falls within these communities. Therefore, when making site-specific estimates, we can augment observations from the individual site samples with observations from the supplemental sample. These are known as the *augmented site samples.*

Figure 2.1 illustrates the sample design. The shaded area shows the cases sampled in site 2 as part of the site sample and the supplemental sample cases that happened to fall within the site 2 boundaries.

FIGURE 2.1

THE CTS PHYSICIAN SAMPLE STRUCTURE



2.3. CONDUCTING THE SURVEY

After selecting the sample sites, we randomly selected physicians within each site. In the Round One Physician Survey, the AMA and the AOA constructed the sample frames and they drew the samples based on specifications provided to them. We also randomly selected physicians in this manner for the supplemental sample. In the Round Two Physician Survey, we obtained sample frames from the AMA and the AOA but selected the sample ourselves.

In the Round Two Physician Survey, the sample design involved randomly selecting both physicians who were part of the Round One Survey and physicians who were not. This was true for both the site sample and the supplemental sample. Our goals in sampling the Round One physicians in Round Two were to improve precision for estimates of overall change between the two rounds and to reduce costs. Furthermore, by sampling Round One physicians for Round Two, we were able to create a panel, allowing us to track changes for individual physicians between the two rounds. Our goal in also including physicians who were not part of the Round One sample was to account for the fact that the re-interviewed Round One physicians might not be fully representative of all physicians. In the final sample of physicians for Round Two, about 58 percent also participated in the Round One survey.

2.3.1. Eligible Physicians

As the source for our sampling frame, we obtained the April 1998 version of the AMA Masterfile (which includes nonmembers) and the AOA membership file. To meet the initial eligibility criteria for sampling, physicians on the frame had to have completed their medical training,[8] be practicing in the contiguous United States, and be providing direct patient care for at least 20 hours per week.[9] Among those deemed initially eligible, the following types of physicians were specifically designated as ineligible for this survey and were removed from the frame:

- Specialists in fields in which the primary focus is not direct patient care[10]
- Federal employees
- Graduates of foreign medical schools who are only temporarily licensed to practice in the United States

[8] Residents, interns, and fellows were considered to be still in training.

[9] This criteria resulted in the exclusion of inactive physicians and physicians who were not office- or hospital-based (teachers, administrators, researchers, etc.).

[10] Radiology (including diagnostic, nuclear, pediatric, neuro-, radiation oncology, radiological physics, vascular, and interventional); anesthesiology; pain management; pain medicine; palliative medicine; pathology (including anatomic, clinical, dermato-, forensic, neuro-, chemical, cyto-, immuno-, pediatric, radioisotophic, selective); medical toxicology; aerospace medicine and undersea medicine; allergy and immunology/diagnostic laboratory; bloodbanking/transfusion medicine; clinical and laboratory dermatological immunology; forensic psychiatry; hematology; legal medicine; medical management; public health and general preventive medicine; nuclear medicine; clinical pharmacology; sleep medicine; other specialty; unspecified specialty.

We did not attempt to survey those who specifically requested to the AMA that their names not be released to outsiders. These physicians were later classified as nonrespondents for the purpose of weighting adjustments for nonresponse.

2.3.2. Stratification of Physician Sample Frames

Once we constructed our list of eligible physicians, we classified each physician on the list as either a primary care physician (PCP) or a non-primary care physician (non-PCP). PCPs were defined as those with a primary specialty of family practice, general practice, general internal medicine, internal medicine/pediatrics, or general pediatrics. All others with survey-eligible specialties were classified as non-PCPs.

After combining the AMA and AOA lists, we developed two sampling frames: one for the site sample and one for the supplemental sample. The physician's location for sampling purposes was determined by the AMA/AOA preferred mailing address. For the site sample, we included only those physicians whose preferred mailing address fell within the boundary of one of the 60 sites. Within each site, we selected a probability sample of PCPs and a probability sample of non-PCPs, further stratified by Round One disposition, and based upon an optimal sample-allocation plan. The plan resulted in 8 strata in each site.[11] PCPs were oversampled in the site sample.

For the supplemental sample, the sample frame was first divided into the following 10 geographic strata:

1. New England (CT, ME, MA, NH, RI, VT)
2. New York
3. Middle-South Atlantic (DE, NJ, PA, WV)
4. South Atlantic (DC, GA, MD, NC, SC, VA)
5. East South Central (AL, FL, KY, MS, TN)
6. West South Central (AR, LA, MO, OK, TX)
7. East North Central (IN, MI, OH)
8. North Central (IL, IA, MN, WI)
9. Mountain-Pacific (AZ, CO, ID, KS, MT, NE, NV, NM, ND, SD, OR, UT, WY, WA)
10. California

We selected a stratified random sample of physicians, independent of the site sample, where eight strata were defined within each of the 10 geographical strata, as defined above for the site sample. A probability sample was drawn within each of these strata.

Because the site and supplemental samples were drawn independently, it was possible for some physicians to be selected into both samples; in fact, 24 physicians were selected twice in Round Two. These twice-selected physicians were only interviewed once, but they appear as two different records on the file. Each has a unique identifier and was dealt with appropriately in the

[11] The eight strata were defined by two categories for physician type (PCP and specialist) and four categories for Round One disposition (not in Round One sample frame; in Round One sample frame but not sampled for Round One; sampled for Round One but did not complete Round One interview; and completed Round One interview).

weighting process. Thus, as is mentioned in Chapter 1, researchers do not need to be concerned about deleting duplicate records.

2.3.3. Physicians Excluded from the Survey

Some physicians thought to be eligible based on the sample frame information were later classified as ineligible based on survey responses. This happened if it turned out that the physician was still in training, provided direct patient care for less than 20 hours per week, practiced in an excluded specialty, was a federal employee, or was deceased. These ineligible physicians are not included on the file.

2.4. MOVERS

The goal of the sample design was to stratify physicians based on the location of their main practice. Operationally, physicians listed on the AMA or AOA sample frame were classified geographically by the county of their "preferred mailing address." This is the most complete and up-to-date address on these files; however, in many cases, it is the physician's home address rather than his or her main practice location. In other cases, the physician's practice has moved since the last file update. But even if the actual current practice location did not match the preferred mailing address on the AMA or AOA file, the two addresses were, in most cases, within the same site (MSA) or geographical stratum.

There were a number of physicians, however, who crossed stratification boundaries (site or geographical stratum) according to their survey response regarding practice location. Some crossed from one survey site or stratum to another. Others ended up being outside the boundaries of the 60 sites. These cases are referred to as *movers*, even though the preferred mailing address of many of these physicians was simply a home address located in a different stratum or site than the main practice. As can be seen in Table 2.1, movers were a particular problem in two of the high-intensity sites that are part of larger urban areas--Orange County (20 percent) and Newark (18 percent). Low-intensity sites such as Los Angeles and New York had "in-mover" rates of over 70 percent.

For analytical purposes, the site where the physician practices is of interest, rather than the site from which the physician was originally sampled (which is important for weight construction only). The practice location site is provided on the Restricted Use File (variable SITEID). The variable SUBGRP indicates from which sample the physician was selected (site or supplemental) and whether the physician's practice location falls within the 60 CTS sites. The four values of SUBGRP are illustrated in Figure 2.2. While all physicians in the site sample were selected from within the 60 sites (based on their latest preferred mailing address), 782 of them turned out to be practicing in an area that is not found within any of the 60 sites. Chapter 3 contains a complete discussion of how weights were assigned to movers and of the circumstances under which these individuals should be included in site-specific and national estimates.

TABLE 2.1

NUMBER OF PHYSICIANS INTERVIEWED,
BY LOCATION WHEN SAMPLED AND LOCATION OF PRACTICE

Site/Geographic Area	Site Sample		Supplemental Sample, Practice Location
	Sampled Location	Practice Location	
TOTAL (See Note)	11,216	11,216	1,088
1,Boston	590	556	23
2,Cleveland	516	460	11
3,Greenville	372	345	0
4,Indianapolis	496	458	7
5,Lansing	322	276	0
6,Little Rock	342	299	3
7,Miami	435	398	8
8,Newark	567	464	11
9,Orange County	538	429	11
10,Phoenix	465	439	14
11,Seattle	498	486	7
12,Syracuse	398	361	0
13,Atlanta	147	156	11
14,Augusta	120	111	2
15,Baltimore	142	135	21
16,Bridgeport	150	131	5
17,Chicago	119	120	39
18,Columbus	136	129	6
19,Denver	139	131	12
20,Detroit	122	120	19
21,Greensboro	150	138	1
22,Houston	139	139	14
23,Huntington	114	94	0
24,Killeen	104	90	2
25,Knoxville	117	105	3
26,Las Vegas	121	121	6
27,Los Angeles	96	167	39
28,Middlesex	140	135	9
29,Milwaukee	131	126	8
30,Minneapolis	136	135	9
31,Modesto	101	91	1

TABLE 2.1

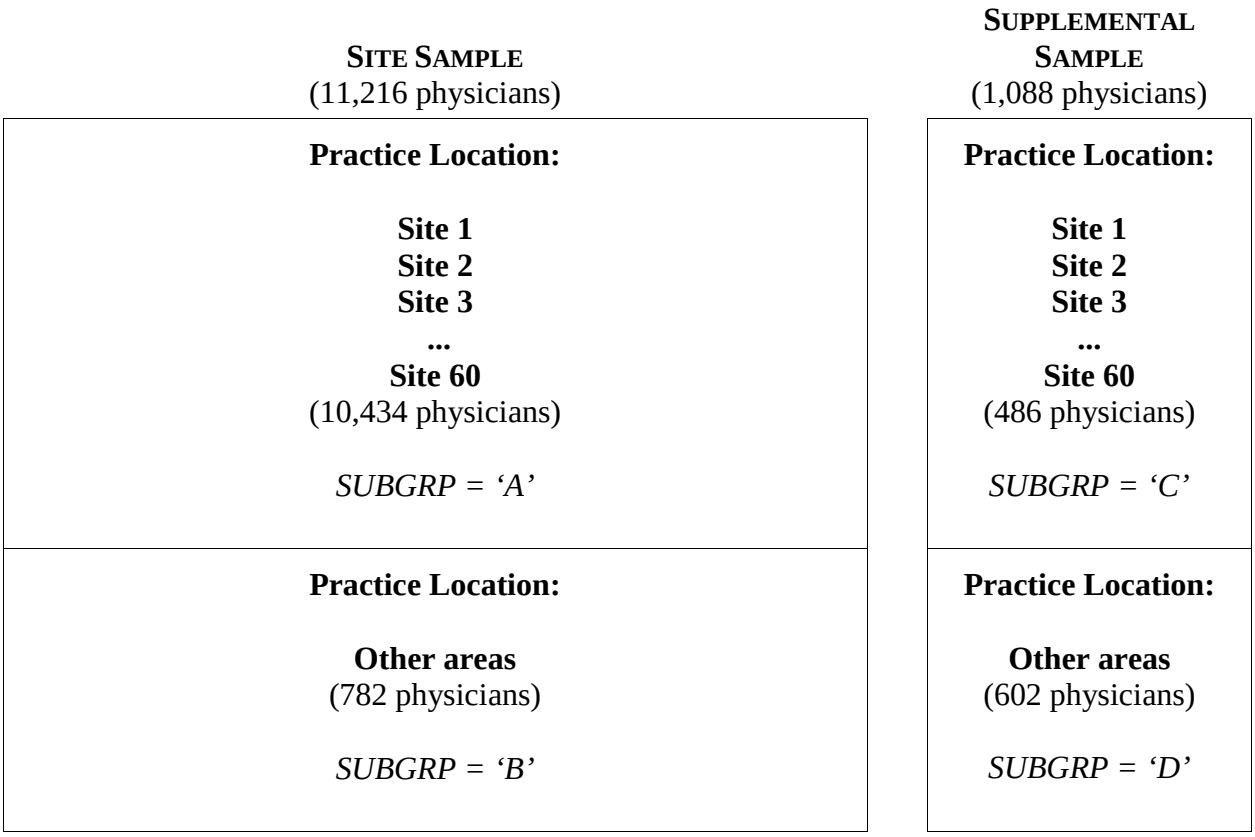
NUMBER OF PHYSICIANS INTERVIEWED,
BY LOCATION WHEN SAMPLED AND LOCATION OF PRACTICE
(Continued)

Site/Geographic Area	Site Sample		Supplemental Sample, Practice Location
	Sampled Location	Practice Location	
32,Nassau	139	104	7
33,New York City	92	163	48
34,Philadelphia	140	142	23
35,Pittsburgh	141	134	11
36,Portland	130	127	10
37,Riverside	99	108	9
38,Rochester	124	118	7
39,San Antonio	145	128	3
40,San Francisco	143	127	10
41,Santa Rosa	122	107	1
42,Shreveport	118	97	1
43,St. Louis	130	128	13
44,Tampa	133	124	6
45,Tulsa	130	114	1
46,Washingtn DC	135	147	20
47,W Palm Beach	118	109	3
48,Worchester	132	125	4
49,Dothan	66	60	0
50,Terre Haute	70	64	0
51,Wilmington	101	94	1
52,W-Cen Alabama	26	23	0
53,Cen Arkansas	107	116	3
54,N Georgia	109	101	2
55,NE Illinois	93	85	0
56,NE Indiana	76	69	1
57,E Maine	121	104	0
58,E North Car	105	93	0
59,N Utah	99	79	0
60,NW Washington	109	99	0
Areas other than CTS Sites	Not applicable	782	602

Note: The 782 site sample cases in which the practice location is outside the 60 sites are not used in estimates that are based on the site sample only. However, they are included in the national estimates using the combined sample. They are listed here to show that those interviews took place. See Chapter 3 for a discussion of when to use a particular sample.

FIGURE 2.2

THE CTS PHYSICIAN SAMPLE AND PRACTICE LOCATIONS



2.5. SURVEY CONTENT

Respondents to the survey were questioned about the following:

- Physician supply and specialty distribution
- Physician time allocation
- Practice arrangements and ownership
- "Gatekeeping"/medical care management strategies/scope of care
- Practice styles (PCPs only)
- Ability to provide care/ability to obtain needed services for patients/acceptance of new patients with various types of insurance
- Practice revenue
- Physician compensation
- Race/ethnicity

No proxy respondents were allowed for the Physician Survey. All physicians responded to the interview for themselves. Table 2.1 shows the topics covered in the survey in more detail. Detailed documentation for the computer-assisted telephone interview program, the equivalent of a survey instrument, is provided as Appendix A.

2.5.1. Differences Between Round One and Round Two Content

The survey instruments used in Round One and Round Two were similar, but not identical. The differences include:

- The Round One question on the percentage of time spent in physician's main practice was dropped from the survey for Round Two.
- Information on the physician's race and ethnicity were collected in Round Two. This information was not collected in Round One.
- The Round Two instrument included questions on whether a group practice was single- or multi-specialty, and if it was multi-specialty, whether it included both primary care physicians and specialists. That information was not collected for Round One.

Other Round Two changes were made for survey administration purposes.

2.6. SURVEY ADMINISTRATION AND PROCESSING

The survey was administered completely by telephone, using computer-assisted telephone interviewing technology. As described earlier, all physicians were selected from list frames received from the AMA and the AOA. The survey was fielded between August 1998 and November 1999. For PCPs, the average interview length was 21 minutes; for non-PCPs, the average length was 17 minutes.

The total number of completed interviews was 12,280,[12] with a response rate among eligibles of 60.9 percent. Physicians were sent advance letters from the Robert Wood Johnson Foundation and were offered a $25 honorarium for participating in the survey, with the option of forwarding the honorarium to a charity.

[12]There are 12,304 records on the file because 24 physicians were selected twice for the survey and appear twice on the file, even though they were only interviewed once. Each of these 24 physicians is represented by two records, each with the same survey data but with different weights.

TABLE 2.1

CONTENTS OF THE PHYSICIAN SURVEY

Topic	Description
Physician Supply and Specialty Distribution (Questionnaire Section A)	
Eligibility for survey	Federal employee Less than 20 hours/week Excluded specialty
Practice information	Number of practices Location of primary practice Year began medical practice
Specialty and certification	Primary specialty Board eligibility and certification
Satisfaction	Current level of satisfaction with overall career in medicine
Physician Time Allocation (Questionnaire Section B)	
In 1997, weeks worked	Number of weeks practiced medicine in 1997
Hours worked during last complete week of work	Hours worked in medicine during last complete week of work Hours spent in direct patient care during last complete week of work
Charity care in the last month	Hours spent in charity care in the last month
Practice Arrangements and Ownership (Questionnaire Section C)	
Ownership of practice	Respondent ownership Other owners Whether physician was part of a practice that was purchased during the past two years
Practice description	Type of practice Number of physicians employed Number of non-physician medical practitioners employed

TABLE 2.1

CONTENTS OF THE PHYSICIAN SURVEY
(Continued)

Gatekeeping / Medical Care Management Strategies / Scope of Care (Questionnaire Section D)	
Medical care management	Effect of various techniques on practice of medicine
PCPs	Percentage of patients for whom physician acts as gatekeeper Change in severity or complexity of patients' conditions for which care is provided without referral to specialists Appropriateness Change in number of referrals made
Non-PCPs	Changes in complexity or severity of patients' conditions at time of referral Appropriateness Change in number of referrals received
Practice Styles of Primary Care Physicians (Questionnaire Section E)	
PCPs	Clinical descriptions of patient histories for which physician is asked to state the percentage for whom s/he would recommend the course of action specified in the vignette.
Ability to Provide Care / Ability to Obtain Needed Services for Patients / Acceptance of New Patients with Various Types of Insurance (Questionnaire Section F)	
Level of agreement with statements regarding:	Having adequate time with patients Freedom to make clinical decisions Ability to provide high-quality care Level of communications with specialists/primary care physicians Ability to maintain continuing relationships with patients Ability to obtain a variety of specified services for patients Acceptance of new patients insured by Medicare, Medicaid, private insurance

TABLE 2.1

CONTENTS OF THE PHYSICIAN SURVEY
(Continued)

Topic	Description
Practice Revenue (Questionnaire Section G)	
Percentage of practice revenue from:	Medicare Medicaid Managed care Paid on a capitated or other prepaid basis Largest managed care contract Largest contract that is capitated or prepaid
Number of managed care contracts	Number of managed care contracts
Physician Compensation and Race/Ethnicity (Questionnaire Section H)	
Physician compensation	Whether physician is salaried Physician eligible to earn bonus or incentive income Factors used by practice to determine compensation
1997 income	Percentage of 1997 income earned in the form of bonuses, returned withholds, or other incentive payments Amount of income in 1997
Race/ethnicity	Hispanic origin Race

CHAPTER 3

USING THE PHYSICIAN SURVEY

The Physician Survey is made up of several sets of samples, each of which is appropriate for certain types of analyses. The decision to use one sample or another depends on three parameters that define any analysis: the population of interest, the variables included in your estimation model, and the type of estimate. The unit of analysis is always the physician. The population of interest can be a specific site population or the national population; the model variables may or may not include site characteristics; and you may be looking at cross-sectional or panel-type estimates. In this chapter, we explain how to choose the appropriate sample and weight variables according to various possible "analytic scenarios."[13] Each scenario involves a different combination of the population of interest, the type of model, and the type of estimate. As background to this discussion, the six analytic samples in the Physician Survey are summarized in Table 3.1.

3.1. CHOOSING A SAMPLE AND A WEIGHT VARIABLE

As shown in Table 3.2, the analytic sample and weight variable we recommend for an analysis depend on your population of interest, the variables included in your estimation model, and the type of estimate.

3.1.1 Cross-Sectional Estimates for Site Populations

Regardless of the model, if your population of interest is physicians within a site (that is, you want to examine the characteristics of physicians within a CTS site or to compare characteristics across sites), we recommend the augmented site sample because of its design and size. The augmented site sample was formed by taking the site-sample respondents practicing in a given site and adding respondents from the supplemental sample who also practice in that CTS site.

We were able to create the augmented site sample in this way because we knew the practice location of each respondent in the national supplement. The result was a larger sample for each CTS site, allowing more precise estimates. In general, we recommend reporting site-level physician characteristics for high-intensity sites only. Low-intensity site samples are generally too small to yield precise estimates, although precise estimates for physicians in groups of low-intensity sites can be obtained.

[13] Refer to Potter, F. et al., *Report on Survey Methods for the Community Tracking Study's 1998-1999 Round Two Physician Survey* (a forthcoming HSC technical publication that will be available at www.hschange.org) for more details on the definitions and construction of the weight variables, including probabilities of selection and adjustments for physician nonresponse. There will also be a confidential version of this report available to authorized users of the CTS Physician Survey Restricted Use File through the CTS Help Desk at ctshelp@hschange.org.

TABLE 3.1

ANALYTICAL SAMPLES IN THE PHYSICIAN SURVEY

Analytic Sample	Description	File Definition
Site sample	Physicians randomly selected for the site sample (with a primary practice location in one of the 60 high- and low-intensity sites)	All records with SUBGRP = A (N = 10,434 physicians)
Supplemental sample	A sample, separate from the site sample, that includes physicians randomly selected from the 48 states in the continental United States and the District of Columbia	All records with SUBGRP = C or SUBGRP = D (N = 1,088 physicians)
Augmented site sample	Physicians in the site sample plus physicians in the supplemental sample whose practice location lies within the CTS sites	All records with SUBGRP = A or SUBGRP = C (N = 10,920 physicians)
Combined sample	All physicians from the site and supplemental samples, including those site-sample physicians practicing outside the CTS sites	All records (SUBGRP = A, B, C, or D) (N = 12,304 physicians)
Site panel sample	Physicians in the 60 CTS sites who responded to both the Round One and Round Two surveys.	All records with SUBGRP = A or SUBGRP = B that also have a positive value for R1PHYIDX (N=6,569 physicians)
Combined panel sample	Physicians who responded to both the Round One and Round Two surveys.	All records with a positive value for R1PHYIDX (N=7,092)

TABLE 3.2

APPROPRIATE SAMPLES AND WEIGHTS FOR PHYSICIAN-LEVEL ANALYSES

Type of Model	Recommended Analytic Sample	Recommended Weight Variable
Population of Interest: Site Populations (cross-sectional estimates)		
Any model	Augmented site sample	WTPHY1
Population of Interest: National Population (cross-sectional estimates)		
Model includes site characteristics	Augmented site sample	WTPHY5
Model does not include site characteristics	Supplemental sample	WTPHY3
	Combined sample	WTPHY4
Population of Interest: National Population (panel estimates)		
Model includes site characteristics	Site panel sample	WTPAN2
Model does not include site characteristics	Combined panel sample	WTPAN1

3.1.2. Cross-Sectional Estimates for National Population

If you are conducting analyses that involve the study of physicians nationwide (including analyses of subgroups such as PCPs or non-PCPs, U.S.- or foreign-trained physicians, or physicians in large cities), we generally recommend the combined sample. This sample has the greatest number of observations and hence will produce the most precise estimates. But, if your estimation model contains explanatory variables that are site characteristics (e.g., site-level means from any CTS component survey), then you should use the augmented site sample (discussed above) to produce national estimates.[14] This is because the combined sample comprises in part the supplemental sample, and site information is not available for members of the supplemental sample falling outside the 60 CTS sites.[15] Because we include an identifier for the county where the physician practices, you can merge location information from other sources and use the combined sample.

Because of its smaller size (10 percent of the combined sample), the supplemental sample should generally not be used by itself for analysis. However, you may wish to use this sample alone to prepare national estimates in the following situations:

- ***To Perform Exploratory Analyses***. Because the supplemental sample is an independent national sample, you might want to use the supplemental sample to perform exploratory data analysis.

- ***To Take Advantage of the Supplemental Sample's Smaller Design Effects.*** The relatively straightforward design of the supplemental sample results in smaller design effects than those associated with the site sample. This reduces (but does not eliminate) the need to use more complex statistical packages like SUDAAN to develop variance estimates. A discussion of how to derive appropriate variance estimates follows in Chapter 4.

3.1.3. Panel Estimates for National Population

For panel analyses, much of the discussion above for cross-sectional estimates of the national population still applies. We generally recommend the combined panel sample because of larger sample size and therefore greater precision. However, if your estimation model contains explanatory variables that are site characteristics, then you should use the site panel sample so that you can identify the site for every physician in your analysis.

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[14] Note that the recommended sample for this scenario in Round One is the site sample, not the augmented site sample, because no Round One weight for the augmented site sample has been developed.

[15] Models that contain site dummy variables as explanatory variables can be estimated using either the site or the combined samples. If the site sample is used, one site is typically dropped from the model and used as a reference group. If the combined sample is used, cases from the supplemental sample would constitute a "61st" site. If this "61st" site is used as the excluded reference group, coefficients on site dummy variables can be interpreted as deviations from a national mean. This is a convenient, though not the most precise, way to test whether a characteristic of a given site differs from a national average. More precise site and national means can be obtained from the augmented site sample and from the combined sample, respectively.

There are some physicians in the panel sample who were in different sites in Round One and Round Two. Because the panel weights were based on the Round One population, we recommend that those physicians be considered associated with their site in Round One for panel analyses using site characteristics.

3.2. MOVERS AND THE WEIGHTING PROCESS

As described in Chapter 2, some physicians were found to practice in locations other than those they were sampled from. We refer to these physicians as "movers." Because the location of the physician's practice, rather than the sampling location, is of primary interest to researchers, the Restricted Use File indicates the practice site (variable SITEID) but not the sampling location. Because the identity of the sampling site offers no analytic value and may compromise data confidentiality, it is not included in the Restricted Use File. With the exception of those site-sample physicians whose practice location turned out to be outside the 60 CTS sites,[16] you will not be able to identify movers in the Restricted Use File.

However, both the sample and practice locations were considered when the weights were constructed. Movers were dealt with in various ways depending on the type of mover, the sample being used (site sample, augmented site sample, supplemental sample, or combined sample), and the level of analysis (site-specific or national). Table 3.3 provides information on how movers were dealt with in the construction of the weights for various types of estimates. Further details concerning weight construction are contained in MPR's technical report.[17]

[16] See discussion of the variable SUBGRP in Chapter 2.

[17] See Potter, F. et al. (forthcoming)

TABLE 3.3

TREATMENT OF PHYSICIANS WHEN PRACTICE LOCATION DIFFERS FROM SAMPLE SITE

Type of Mover	Treatment in Analysis	Basis for Weight
Site-specific estimates using the augmented sample (WTPHY1)		
Practice located in CTS site other than sampled site	Excluded from analysis of sampled site	Not applicable (weight not defined for this type of mover)
	Included in analysis of practice location site	Analysis weight based on probability of selection within the original (sampled) site as well as the probability of selection of the original site
Practice not located in a CTS site	Excluded from any site-specific analysis	Not applicable (weight not defined for this type of mover)
National supplement case with practice located in a CTS site	Included in analysis of practice location site	Analysis weight based on probability of selection within the original sampling stratum
National estimates using the augmented site sample (WTPHY5) or site sample (WTPAN2)		
Practice located in CTS site other than sampled site	For analysis purposes, considered part of the practice location site	Analysis weight based on probability of selection within the original (sampled) site
Practice not located in a CTS site	Excluded from analysis	Not applicable (weight not defined for this type of mover)
National supplement case with practice located in a CTS site	Included in analysis of practice location site	Analysis weight based on probability of selection within the original sampling stratum
National estimates using the supplemental (WTPHY3) or combined (WTPHY4, WTPAN1) sample		
Practice location differs from sample location (any such situation)	Included in all national estimates	Analysis weight based on probability of selection within the original (sampled) site or original sampling stratum

3.3. USING DATA FROM THE TWO ROUNDS

As discussed earlier (in Chapter 2), some physicians who were part of the Round One sample are also part of the Round Two sample. To protect the confidentiality of the respondents, the less detailed version of this file (the Public Use File) does not provide the information necessary to identify these physicians, or even to take advantage of the efficiencies in the overlapping sample design when producing estimates involving data from both rounds. Specifically, that file does not allow you to potentially get more efficient estimates by using the information on which observations come from the same sites and strata.

One advantage of the Round Two Restricted Use File over the Public Use File is that it contains information that allows you to identify specific linkages between the two rounds. There are three ways in which those linkages can be useful: (1) they may provide information that would be helpful if you were to edit or impute variables on your own, (2) you can track changes over time for physicians who were in both rounds, and (3) you may be able to realize some additional efficiencies in the variance of the estimates that are calculated using both rounds of data. (In general, any information on linkages between the two rounds may help control for more random noise, and so the estimates that are generated are likely to be more precise).

You should note that, unlike the household component of the CTS, we do define a longitudinal "panel" for physicians, along with two panel weights, that allows you to analyze changes associated with individual physicians between Round One and Round Two. This panel of physicians is a subset of all physicians in the survey—one that is by nature more stable than the entire population of physicians.[18] In addition to estimating changes using the panel, you can also analyze changes over time through comparison of cross-sectional estimates from the separate rounds of data.

You should also note that, for national estimates based on the combined sample or the augmented site sample, the change estimates and pooled estimates discussed below require SUDAAN parameters that are available on Release 2 of the Round One Restricted Use File. In addition, for site-specific estimates involving data from both rounds, you will need to construct a SUDAAN parameter called SITEPCP2 for both Round One and Round Two, as described in Chapter 4.

[18] The panel weights were adjusted to minimize the differences between characteristics of the panel sample and the characteristics of the full samples from each round. Nevertheless, the physicians in the panel sample are slightly older and more likely to be owners of their practices than the samples from the individual rounds.

3.3.1. Linking Data Between Round One and Round Two

What you need to do in order to benefit from the linkage of the data between the two rounds depends on the situation. For some analytic purposes, the linkage is automatically taken into account by the SUDAAN parameters. For other purposes, you need to be able to identify specifically the subsample of physicians who are represented in both rounds of data.

In the situations where you are using the recommended approach discussed below (for calculating estimates of change), the SUDAAN parameters in the Restricted Use File automatically account for some linkages between the two rounds of data, which can potentially yield more efficient estimates.

Some of the SUDAAN parameters necessary for running analyses using both rounds of data were not on the original release of the Round One Physician Survey Restricted Use File. Release 2 of the Round One file contains two SUDAAN parameters that are necessary for some change estimates and pooled estimates based on the two rounds of data (CNFRAME and CASECTOT).[19] In addition, the SUDAAN parameter SITEPCP2 for site-specific estimates using both rounds of data is not included on the latest releases of either the Round One or Round Two data files, and therefore instructions for constructing that variable are provided in Chapter 4.

There are three situations in which you will want to be able to identify specifically those physicians who are represented in both rounds of data. First, you might want to use information from one round of data to edit or impute values in the other round of data. Second, in order to compute longitudinal difference estimates using the panel data, you will need to create a physician-level file containing only those physicians who appeared in both rounds. Third, to explain even more of the variance beyond what is achieved by using the basic models discussed below, you might also want to include a variable in your models that indicates whether the physician is represented in both rounds of data. Because physician identifiers were assigned independently in the two rounds, you should look at the variable R1PHYIDX on the Round Two file in order to identify linkages between the two rounds for any of these purposes. This variable gives the Round One physician identifier for those physicians in both rounds. So if the Round Two variable R1PHYIDX has a non-missing value (say, 123456), this same physician is on the Round One file with PHYSIDX=123456.

[19] This file will also contain additional SUDAAN parameters that will allow for national estimates based on the augmented site sample for Round Two data combined with the un-augmented site sample for Round One data (ASTRATA, APSU, ASECSTRA, AFSU, ASTRTOT, AP1 – AP7, and WTPHY5).

3.3.2. Estimating Changes Between Round One and Round Two

To estimate the change in an attribute between the two rounds, you could calculate separate means for each round of data and then compare them using the sampling variances computed separately for each round;[20] however, that approach does not allow you to use the information on the linkages between the two rounds of data in order to get better estimates of the standard error of the change estimate. Therefore, we recommend combining the data from the two rounds in order to estimate change. Specifically, combine the two rounds of data into a single data set, with a separate observation for each physician in each round of data. Let Y_i represent the analytical variable of interest for each observation i, and let the variable $ROUND2_i$ indicate whether the observation comes from Round Two ($ROUND2_i$ =0 if observation i comes from Round One, $ROUND2_i$=1 if observation i comes from Round Two.) Then run the following weighted regression model.[21]

$$Y_i = a + b(ROUND2_i) + e_i$$

The resulting estimate of a represents the Round One mean, and the sum $(a+b)$ represents the Round Two mean. Therefore, the estimate of change in Y between the two rounds is b, which will generally have lower variance than the change estimate that you would get from calculating the means for the two rounds separately and then estimating the variance of the change estimate from the sum of the sampling variances for the respective rounds. When running this change model in SUDAAN, you may need to use TOTCNT parameters CNFRAME or CASECTOT instead of NFRAME or ASECTOT (see Section 4.4 for more details).

Note that this approach to calculating change allows you the option to include whatever additional independent variables you think are appropriate. For example, you could add to the right hand side of the equation other explanatory variables and interactions among those variables, as well as interactions of $ROUND2$ with those explanatory variables. You could also include a dummy variable indicating whether the observation is represented in both rounds of data (as discussed in the preceding section), in order to potentially decrease further the variance of the change estimate. With additional independent variables in the model, b should be interpreted as an estimate of the difference between the two rounds after accounting for those additional factors.

For those who do not have access to specialized statistical software designed to estimate variances for survey data estimates, there are instructions for calculating the standard error of the change estimate in Chapter 2 of the *Community Tracking Study Physician Survey Public Use File: User's Guide (Round Two, Release 1).*

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[20] This approach is explained in Chapter 2 of the *CTS Physician Survey Public Use File: User's Guide (Round Two, Release 1).*

[21] If the analytical variable Y is continuous, you would run a linear regression model. If dichotomous, you would run a logistic regression model. If the variable has three or more categories, you would run a multinomial logistic regression model.

3.3.3. Pooling Data to Increase Sample Size

The purpose of combining or "pooling" data from Round One and Round Two is to increase sample size and therefore the precision of a cross-sectional estimate, which is especially desirable for analyses of certain smaller subgroups. This approach is appropriate only if you can assume that the variable of interest either did not change substantially between the two rounds or exhibited a clear pattern of change between the two rounds (that is, a change that can be controlled for by simple main or interaction effects).

Suppose that you would like to estimate the pooled mean of a variable Y. Combine the two rounds of data into a single data set, with a separate observation for each physician in each round of data.[22] Let Y_i represent the analytical variable of interest for each observation i, and let the variable $ROUND_i$ indicate whether the observation comes from Round Two ($ROUND_i = 1$ if observation i comes from Round One, $ROUND_i = -1$ if observation i comes from Round Two.) Note that, with this approach, the variable that indicates the round of data has values of -1 and 1, as opposed to the model that we recommended for change estimates, in which the indicator variable for the round of data has values of 0 and 1. Run the following weighted regression model.[23]

$$Y_i = a + b(ROUND_i) + e_i$$

The resulting coefficient a represents the estimate of the pooled sample mean of Y, with an estimated difference between the two rounds represented by $2b$. Note that this approach is most appropriate when the weighted population size from the two rounds is approximately the same, which is likely to be true in most cases, since the sampling designs were nearly the same for both rounds.

Note that this approach to calculating the mean of Y allows you the option to include whatever control variables you think are appropriate. For example, you could add to the right hand side of the equation other explanatory variables and interactions among those variables, as well as interactions of $ROUND$ with those explanatory variables. You could also include a dummy variable indicating whether the observation is represented in both rounds of data (as discussed in Section 3.2.1), which may help decrease the variance of the estimated mean.

For those who do not have access to specialized statistical software designed to estimate variances for survey data estimates, there are instructions for calculating the standard error of the pooled estimate in Chapter 2 of the *Community Tracking Study Physician Survey Public Use File: User's Guide (Round Two, Release 1).*

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[22] At this point, after combining the two rounds of data, you could of course calculate a simple pooled mean over all observations. However, that approach does not allow the possibility of getting a more precise estimate of the mean by controlling for which observations are from Round One and which are from Round Two.

[23] If the analytical variable Y is continuous, you would run a linear regression model. If dichotomous, you would run a logistic regression model. If the variable has three or more categories, you would run a multinomial logistic regression model.

3.3.4. Making Use of the Panel

The panel sample allows you to analyze changes for individual physicians between Round One and Round Two. To do this, you need to merge the Round One and Round Two data files in order to create a data file with one record per physician by matching the physician identification number on the Round One file (PHYSIDX) with the variable on the Round Two file that indicates the Round One identification number (R1PHYIDX). The resulting data file should contain 7,092 observations, representing physicians who are in both rounds (of which you will use 6,569 if you are limiting your analysis to the site sample only). When merging the data, note that the variable names are the same across both rounds, and so you need to rename some variables in order to distinguish between the two rounds. For each pair of variables from the two rounds that is of analytic interest, you will then want to create a difference variable. See Section 4.4 for more details on how to do a panel analysis.

There are some physicians in the panel sample who were in different sites in Round One and Round Two. Because the panel weights were based on the Round One population, we recommend that those physicians be considered associated with their site in Round One for panel analyses using site characteristics.

3.3.5. Variance Estimation

All estimation including regression models should be run in SUDAAN, using the parameters appropriate to the type of estimate and model being run (see Chapter 4 and Appendix D). Because the underlying design is the same for each round, the SUDAAN parameters are generally identical and were given identical variable names in the two rounds; therefore, with a few exceptions, the same SUDAAN parameters are used in either situation. See Chapter 4 for details.

CHAPTER 4

DERIVING APPROPRIATE VARIANCE ESTIMATES

Some element of uncertainty is always associated with sample-based estimates of population characteristics because the estimates are not based on the full population. This sampling error is generally measured in terms of the standard error of the estimate, or its sampling variance,[24] which is an indicator of the precision of an estimate. Estimates of the standard errors are necessary to construct confidence intervals around estimates and to conduct hypothesis tests.

Like many other large national surveys, the sample design for the CTS Physician Survey uses stratification, clustering, and oversampling. Specialized techniques are therefore required to estimate sampling variances when using the CTS data. This chapter explains how to estimate standard errors that account for the sample design. For those who do not have access to specialized statistical software designed to estimate variances for survey data estimates, we provide standard error look-up tables (Appendix C) and formulas to approximate standard errors. These tables and formulas can be used to obtain, for some types of estimates, approximate standard errors that account for the survey design. We also describe various methods for directly calculating standard errors using specialized software, and we explain how to use one such package (SUDAAN) with the CTS data.

4.1. THE LIMITATION OF STANDARD STATISTICAL SOFTWARE

Standard statistical packages compute variances using formulas that are based on the assumption that the data are from a simple random sample taken from an infinite population. Although the simple random sample variance may approximate the sampling variance in some surveys, it is likely to substantially underestimate the sampling variance in a survey with a design like that of the CTS. For the CTS, the sampling variance estimate is a function of the sampling design and the population parameter being estimated; it is called the "design-based sampling variance."

Departures from a simple random sample design result in a "design effect" (*Deff*), which is defined as the ratio of the sampling variance (*Var*) given the actual survey design to the sampling variance of a hypothetical simple random sample (*SRS*) with the same number of observations. Thus:

$$Deff = \frac{Var\ (actual\ design\ with\ n\ cases)}{Var\ (SRS\ with\ n\ cases)}.$$

[24]The sampling variance, which is the square of the standard error, is a measure of the variation of an estimator attributable to having sampled a portion of the full population of interest using a specific probability-based sampling design. The classical population variance is a measure of the variation among the population, whereas a sampling variance is a measure of the variation of the *estimate* of a population parameter (for example, a population mean or proportion) over repeated samples. The population variance is different from the sampling variance in the sense that the population variance is a constant, independent of any sampling issues, whereas the sampling variance becomes smaller as the sample size increases. The sampling variance is zero when the full population is observed, as in a census.

A design effect equal to one means that the design did not increase or decrease the sampling variance relative to a simple random sample. A design effect of greater than one means that the design increased the sampling variance; that is, it caused the estimate to be less precise. A design effect of less than one means that the design decreased the sampling variance; that is, it made the estimate more precise. The standard error of an estimate can be expressed as the standard error from a simple random sample with the same number of observations, multiplied by the square root of the design effect.

Over a representative set of variables, the average design effect for physician-level national estimates using the combined sample is about 1.84. This means that the standard error is, on average, about 35 percent higher than it would have been had the same number of cases been selected using a simple random sample. This design effect of 1.84 also means that the precision of estimates based on the CTS (with 12,304 observations) is equal to the precision of estimates based on a simple random sample with a size of about 6,687. Note that the design effect is generally lower for subclasses of the population because there is less clustering of observations.

Because most of the variables in the CTS Physician Survey have a design effect of greater than one, we present two options for obtaining appropriate standard errors. Standard error look-up tables and formulas give approximate standard errors that account for the survey design. In addition, we explain how you can use specialized software to directly calculate standard errors.

4.2. TABLES OF STANDARD ERRORS AND DESIGN EFFECTS

Tables C.1 through C.45 in Appendix C give approximate standard errors for various types of estimates and sample sizes. The standard error will vary depending on which variable is used and on the physician subgroup upon which the estimate is based (if any). Appendix B explains how these standard errors were derived, and what variables were used in the modeling process.[25] The first 37 tables (C.1 through C.37) are for national estimates based on the combined sample: 13 tables for percentage estimates, 11 are for mean estimates of "quasi-continuous" variables (defined below), and 13 are for mean estimates of continuous variables. The last 8 tables are for site-specific estimates. Many tables are included for specific subgroups of physicians, defined as follows:

- All primary care physicians (PCPFLAG=1)
- All non-primary care physicians (PCPFLAG=0)
- Internal medicine physicians (SPECX=1)
- Family/general practice physicians (SPECX=2)
- Pediatricians (SPECX=3)
- Medical specialists, including psychiatrists (SPECX=4,6)

[25]As explained in Appendix B, certain estimates with too small a sample size, too high a relative standard error, or too small or too large a design effect were excluded from the regression models upon which these tables are based. Before using one of the tables, check to make sure that your particular estimate has a sufficient sample size (greater than 100 for national estimates, greater than 80 for site-specific estimates).

- Surgical specialists, including OB-GYNs (SPECX=5,7)
- Physicians in solo or two-person practice (PRCTYPE=1)
- Physicians in group practice (three or more) (PRCTYPE=2)
- Physicians in other practice settings (PRCTYPE=3,4,5,6)
- Physicians in practice with high revenue from managed care (above the median for PMC)
- Physicians in practice with low revenue from managed care (at or below the median for PMC)

For some types of estimates, we did not provide tables specific to some of these subgroups, either because the model used to develop the table was not significant for that subgroup or because the estimates for that subgroup were not different enough to merit their own table (see Appendix B). Specifically, for national mean estimates for quasi-continuous variables, there are no tables specifically for non-primary care physicians or surgical specialists. For estimates limited to such physicians (or to a subset of such physicians), use the table for all physicians (Table C.1).

If you are interested in a subset of physicians not listed above, use the table for all physicians. If you are interested in a subset of one of the subgroups defined above, use the table associated with the subgroup (see example in the next section).

These subgroups refer to the *denominator* of your estimate, not the numerator. For example, if you are estimating the percentage of physicians who are PCPs, you would use the table for all physicians (Table C.1), not the table specific to PCPs (Table C.2).

Users who are interested in analyzing change between Round One and Round Two and who do not have access to specialized statistical software designed to estimate variances for survey data estimates should refer to Chapter 2 of the *CTS Physician Survey Public Use File: User's Guide (Round Two, Release 1).* It contains an explanation of how to use the standard error tables to estimate the standard error of a change estimate.

4.2.1. National Percentage Estimates

Tables C.1 through C.13 give approximate standard errors for percentage estimates at the national level based on the combined sample. These tables should be used for variables that are categorical or ordinal. To use these tables, you must have produced percentage estimates using any standard statistical package and the appropriate weight variable. You can obtain standard error estimates from each table for percentages based on the population of physicians or on any subset of the population represented in the table. If in your estimate you are subsetting to one of the 12 subgroups defined above (or to any subset within that subgroup), you would use the table specific to that subgroup whenever provided.

For example, if you are making a percentage estimate based on only female physicians, you would use the table for "all physicians" because there is no table specifically for females. If you are making a percentage estimate based on female internists or internists in general, you would use the table for "all PCP physicians" because there is no table specifically for percentage

estimates of internists. For female pediatricians or pediatricians in general, you would use the table for "general pediatricians." Using the row associated with the unweighted sample size of the subset, you can obtain approximate standard errors for any weighted percentage estimates for that subset.[26]

Suppose you are interested in the national percentage of female PCP physicians who are board certified. We know that the unweighted number of female PCP physicians in the combined sample is 2,100 and that the estimated percentage (weighted) of female PCP physicians who are board certified nationally is about 87 percent. With this information in mind, you would go to the national table for PCP physicians (Table C.2) and find the row in which sample size is equal to 2,000 and the column in which the percentage is equal to 15 or 85 percent. The approximate standard error of this estimate would be 1.06 percent. Although the table is based on all PCP physicians, you can easily determine standard errors for a subset of PCP physicians (in this case, females) by using the row corresponding to the number of records for the PCP subset of interest.

4.2.2. National Mean Estimates of "Quasi-Continuous" Variables

While most of the variables on the file are categorical or ordinal, many correspond to responses expressed in terms of percentages; for example, PMCAID is the percentage of practice revenue from Medicaid. Because these responses are bounded by 0 and 100, we call the corresponding variables "quasi-continuous" and have produced standard error tables for their means separately from the means of other variables. Note that we are estimating a mean of a response that was expressed by each physician as a percentage; we are not estimating a percentage. Approximate standard errors for national estimates (based on the combined sample) of these variables are found in Tables C.14 through C.24.

Quasi-continuous variables on the file are PCTGATE, PMCARE, PMCAID, PCAPREV, PMC, PBIGCON, PCTINCN, PCTINCC, and the 12 Section E "vignette" variables representing percentages (variables beginning with the letter "V" and *not* ending with the letter "F").

These tables are used in the same manner as the tables for percentage estimates; that is, to use them, you must have produced mean estimates using any standard statistical package and the appropriate weight variable. From each table, you can obtain standard error estimates for means based on the population of physicians or on any subset of the population represented in the table. (Use appropriate subgroup-specific tables whenever provided.) Using the row associated with the unweighted sample size of the subset, you can obtain approximate standard errors for any weighted mean estimates for that subset.

Standard errors for means greater than 80 are not in the tables because the highest mean value among the variables and subgroups used for modeling was 61.4. The precision of the model-based prediction decreases for estimates far outside the observed range.

[26]If estimates are expressed in terms of proportions, rather than percentages, simply move the decimal place for the estimate and the standard error in the table two digits to the left.

4.2.3. National Mean Estimates of Continuous Variables

Tables C.25 through C.37 present national estimates (based on the combined sample) of most of the handful of continuous variables on the Restricted Use File that are not reports of percentages (see description of "quasi-continuous" variables above). Unlike the tables for percentage estimates and quasi-continuous mean estimates, these 13 tables present variable-specific estimates of standard errors and design effects for weighted mean estimates. Therefore, you do not need to have produced weighted mean estimates to use them.

Continuous variables represented in the tables include WKSWRKC, HRSMED, HRSPAT, INCOMET, HRFREE, NPHYS, NASSIST, and NMCCON. Other continuous variables on the file (other than identifiers, weights, and sampling variables) are BIRTH, GRAD_YR, NUMPR, YRBGN, and WKSWRK.

If you are working with any subset of physicians not specifically represented by one of the subgroup tables (for example, female physicians or foreign-graduate PCPs), you should first calculate the weighted mean for your subset of interest and then use one of the following formulas to estimate the logarithm of the relative standard error:[27]

$$\hat{R}_{phys-natl} = \log_{10}(RSE) = 0.106071 - 0.443649\log_{10}(n_u) - 0.076289\log_{10}(mean_w)$$
$$\hat{R}_{pcp-natl} = \log_{10}(RSE) = 0.876480 - 0.480101\log_{10}(n_w) - 0.102148\log_{10}(mean_w)$$
$$\hat{R}_{npcp-natl} = \log_{10}(RSE) = 0.051930 - 0.442061\log_{10}(n_u) - 0.081905\log_{10}(mean_w)$$

where n_u is the *unweighted* size of the subset, n_w is the *weighted* size of the subset, and $mean_w$ is the *weighted* mean estimate. The first formula should be used for physician subsets not defined within PCPs or non-PCPs. The second formula should be used for subsets of PCPs, and the third formula should be used for subsets of non-PCPs. The standard error can then be approximated as:

$$\hat{SE}_{phys-natl} = mean_w \cdot 10^{\hat{R}_{phys-natl}}$$
$$\hat{SE}_{pcp-natl} = mean_w \cdot 10^{\hat{R}_{pcp-natl}}$$
$$\hat{SE}_{npcp-natl} = mean_w \cdot 10^{\hat{R}_{npcp-natl}}$$

Suppose you are estimating the mean number of managed care contracts among female PCPs in the U.S. There are 2,100 female PCPs in the sample, the weighted number of female PCPs is 40,010, and the weighted mean number of managed care contracts among them is 11.02. Then $\hat{R}$ would be estimated as -1.439, and the standard error of this estimate would be approximately $11.02 \cdot 10^{-1.439} = .40$.

[27]The "relative standard error" is the standard error of an estimate divided by the estimate itself.

4.2.4. Site-Specific Percentage Estimates

Tables C.38 and C.43 give approximate standard errors for percentage estimates at the site level when the augmented site sample is used. Table C.38 is for estimates specific to all physicians in high-intensity sites. Tables C.39 and C.40 are specific to primary care physicians and non-primary care physicians in high-intensity sites. Another set of tables, Table C.41 through C.43 are for estimates specific to low-intensity sites. These tables are used in the same manner as the tables for national percentage estimates described above.

For example, suppose you are interested in the standard error for the percentage of physicians in solo practice for the Boston site (one of the high-intensity sites). We know that the unweighted number of physicians in this Boston site is 579 and that the estimated percentage (weighted) of physicians in solo practice in Boston is about 26 percent. So, you would go to the high-intensity site table for physicians (Table C.38) and find the row in which sample size is equal to 600 and the columns in which the percentage equals 25 or 75 percent. The approximate standard error of this estimate would be about 2.23 percent.

4.2.5. Site-Specific Mean Estimates of "Quasi-Continuous" Variables

Tables C.44 through C.45 are used in the same manner as the tables for national "quasi-continuous" variable means described above. Table C.44 is for site-specific estimates for high-intensity sites. Table C.45 is for site-specific estimates for low-intensity sites.

4.2.6. Site-Specific Mean Estimates of Continuous Variables

For site-specific mean estimates (high- or low-intensity sites) of the handful of continuous variables on the Restricted Use File that are not reports of percentages (see description of "quasi-continuous" variables above), we present only formulas, rather than tables for mean estimates for each of the 60 sites. You should first calculate the weighted mean for the site as a whole or your subset of interest and then use one of the following formulas to estimate the logarithm of the relative standard error:

$$\hat{R}_{phys-site} = \log_{10}(RSE) = -0.391525 - 0.345915 \log_{10}(n_u) - 0.034408 \log_{10}(mean_w)$$
$$\hat{R}_{pcp-site} = \log_{10}(RSE) = -0.458640 - 0.289035 \log_{10}(n_u) - 0.058262 \log_{10}(mean_w)$$
$$\hat{R}_{npcp-site} = \log_{10}(RSE) = -0.298338 - 0.413345 \log_{10}(n_u) - 0.027932 \log_{10}(mean_w)$$

where n_u is the *u*nweighted size of the site-specific subset, and $mean_w$ is the *w*eighted mean estimate for the site. The first formula should be used for all physicians or physician subsets not defined within PCPs or non-PCPs. The second formula should be used for all PCPs or subsets of PCPs, and the third formula should be used for all non-PCPs or subsets of non-PCPs. The standard error can then be approximated as:

$$\hat{SE}_{phys-site} = mean_w \cdot 10^{\hat{R}_{phys-site}}$$
$$\hat{SE}_{pcp-site} = mean_w \cdot 10^{\hat{R}_{pcp-site}}$$
$$\hat{SE}_{npcp-site} = mean_w \cdot 10^{\hat{R}_{npcp-site}}$$

Suppose you are estimating the mean number of hours spent in direct patient care activities in the Boston site. There are 579 physicians in the Boston sample, and the weighted mean number of physicians in a practice among them is 41.87. Then $\hat{R}$ would be estimated as -1.403, and the standard error of this estimate would be approximately $41.87 \cdot 10^{-1.403} = 1.66$.

4.2.7. Additional Information on Using Standard Error Tables

If you are interested in analyzing a physician subgroup that is defined by crossing the characteristics specifically represented in the subgroup tables (for example, PCPs in a practice with low revenue from managed care, or solo practice pediatricians), you should choose the table specific to one of the defining characteristics and then use the row associated with the sample size defined by the other characteristic.

Because the models for the various subgroups were roughly comparable in terms of their predictive ability, it will not matter much which of the two (or three) appropriate subgroup tables you choose. For example, for PCPs in a practice with low revenue from managed care, you can either look at the "all PCPs" table and use the row associated with the sample size of those in a practice with low revenue from managed care, or you can look at the "low revenue from managed care" table and use the row associated with the sample size of those who are PCPs.

4.3. OPTIONS FOR CALCULATING VARIANCES

The tables in Appendix C are appropriate only for obtaining approximate estimates of standard errors for percentages, proportions, and means. But because design effects vary by variable and population subgroup, these tables do not provide optimal estimates of standard errors. Furthermore, they cannot be used for other kinds of estimates, such as regression coefficients, ratios, and weighted totals. The preferred alternative is to obtain standard errors for such estimates using specialized software. This kind of software is designed especially to handle estimators specific to survey data, that is, to accommodate sampling weights and sampling design features such as stratification and clustering.

Survey estimators tend to be nonlinear. These estimators include means and proportions when the denominator is estimated from the survey, as well as ratios, and correlation and regression coefficients. In general, the variances of nonlinear statistics cannot be expressed in a closed form. Woodruff [28] suggested a procedure whereby a nonlinear estimator is linearized by a Taylor series expansion.

Most common statistical estimates and analysis tools (such as percentages, percentiles, and linear and logistic regression) can be implemented using Taylor series approximation methods. Survey data software, such as SUDAAN, uses the Taylor series linearization procedure and can handle the multistage design and joint inclusion probabilities in the CTS.

A major advantage of SUDAAN is that its estimation algorithm can incorporate a finite population correction factor that takes advantage of the high sampling rate of the site selection

[28]Woodruff, R. S. (1971). "A Simple Method for Approximating the Variance of a Complicated Estimate." *Journal of the American Statistical Association*, vol. 66, 1971:, pp. 411-414.

for CTS. SUDAAN does this by accounting for unequal selection probabilities and without replacement sampling.[29] Using survey packages that do not account for the finite population correction will produce somewhat higher variance estimates. Currently, we do not provide support for packages other than SUDAAN. Using packages other than SUDAAN with design parameters provided here for use with SUDAAN may produce variance estimates that are artificially small.

4.4. HOW TO SPECIFY THE SAMPLE DESIGN FOR SPECIALIZED SOFTWARE

The CTS data files contain a set of fully adjusted sampling weights and information on analysis parameters (that is, stratification and analysis clusters) necessary for estimating the sampling variance for a statistic. When you run one of the specialized software programs, you should specify the appropriate analysis weight (see Chapter 3) as well as the stratification and clustering variables. Table 4.1 provides guidelines for which design variables to specify in SUDAAN statements for different types of Round Two cross-sectional estimates. Table 4.2 provides guidelines for estimates using both Round One and Round Two data. (See Appendix D for sample SUDAAN code.)

The DESIGN statement, found in the first row of Table 4.1, tells SUDAAN the nature of the sampling strategy, that is, whether the sample was selected with replacement (where units can be selected more than once) or without replacement, and whether the selection probabilities were equal across all sampling units. Specifying a with-replacement design (DESIGN=WR) implies that with-replacement sampling can be assumed at the first stage of selection. This design specification is appropriate for estimates based on only the national supplement, where the first stage of selection was physicians within stratum. Specifying a without-replacement design and equal probabilities of selection (DESIGN=WOR) implies that the first stage units are assumed to have been selected without replacement and with equal probabilities within stratum. This design specification is appropriate for site-specific estimates based on the augmented sample because, generally speaking, the first stage of selection in these samples was the site, and the second stage was the physician. Specifying a without-replacement design and unequal probabilities of selection (DESIGN=UNEQWOR) implies that the first-stage units are assumed to have been selected without replacement and with unequal probabilities within strata. The UNEQWOR specification also assumes equal probabilities of selection at subsequent stages in the sampling process. This design specification is appropriate for national estimates based on the combined sample or the augmented site sample only because, generally speaking, the first stage of selection in these samples was the site, and the second stage was the physician.

The NEST statement, found in the second row of Table 4.1, tells SUDAAN which variables contain the sampling structure, that is, the stratification and clustering variables. For site-specific estimates, the stratification variable is SITEPCP. This variable specifies the site (or the geographical stratum for the supplemental sample cases), whether the physician is PCP or non-PCP, and the sample type (site or national supplement).

[29]Other software packages (STATA, PC-CARP, and the SAS SURVEYMEANS and SURVEYREG procedures, for example), use the Taylor series approximations but do not account for the CTS survey design as completely as does SUDAAN. The capabilities of software packages are often expanded with each new release. Readers should check to see if their preferred package has added new features that might better accommodate this sample design.

For estimates based on only the national supplement, the stratification variable is NSTRATA, which has 20 values: the 10 geographical strata by PCP or non-PCP.

For national estimates based on the combined sample, the first-stage sampling stratum variable (PSTRATA) has 20 values: 1 for each of 9 sites selected with certainty, 10 strata used to classify the remaining metropolitan sites, and 1 to classify the nonmetropolitan sites. For these national estimates, it is also necessary to specify a second-stage sampling stratum variable: SECSTRA. For metropolitan sites in the site sample, SECSTRA is equivalent to SITEPCP as defined in the above paragraph. For nonmetropolitan sites in the site sample, SECSTRA is set to a constant. For the national supplement cases, SECSTRA is equivalent to NSTRATA (defined above) plus 20.

For national estimates based on the augmented site sample, the first and second stage sampling stratum variables are ASTRATA and ASECSTRA. The values of these variables are identical to PSTRATA and SECSTRA for the site sample cases. For the supplemental sample cases falling within the boundaries of the 60 sites, they were assigned comparable values according to the site in which they fell.

As stated above, you must also specify the clustering variable(s) in the NEST statement. For site-specific estimates, the clustering or primary sampling unit (PSU) variable is FSU, which represents the physician. For estimates based only on the national supplement, the PSU variable NFSU represents the physician.

In the NEST statement, the first stage PSU variable is specified between the first- and second-stage stratification variables. For national estimates based on the combined sample, the first-stage PSU variable is PPSU. For metropolitan sites, PPSU represents the site.

TABLE 4.1
GUIDELINES FOR SPECIFICATION OF DESIGN VARIABLES IN SUDAAN
INVOLVING ROUND TWO DATA ONLY

SUDAAN Statements	Site-Specific Estimates (augmented site sample only)	National Estimates (augmented site sample only)	National Estimates (national supplement only)	National Estimates (combined sample)
DESIGN=	WOR	UNEQWOR	WR	UNEQWOR
NEST	SITEPCP FSU	ASTRATA APSU ASECSTRA AFSU	NSTRATA NFSU	PSTRATA PPSU SECSTRA NFSU
NESTING OPTIONS	not applicable	MISSUNIT	not applicable	MISSUNIT
TOTCNT	FRAME _ZERO_	ASTRTOT _ZERO_ ASECTOT _ZERO_	not applicable	PSTRTOT3 _ZERO_ NFRAME _ZERO_
JOINTPROB	not applicable	AP1 AP2 AP3 AP4 AP5 AP6 AP7	not applicable	P1X P2X P3X P4X P5X P6X P7X
WEIGHT	WTPHY1	WTPHY5	WTPHY3	WTPHY4
DDF=	not applicable	2,900	not applicable	2,900

Note: Chapter 6 includes a discussion of how “missing” (inapplicable) values for these variables were coded. Sample SUDAAN code is contained in Appendix D.

For nonmetropolitan sites, PPSU is set to a constant. For supplemental sample cases, PPSU is set to one. For these national estimates, it is also necessary to specify in the NEST statement a second-stage clustering variable (NFSU) after the second-stage stratification variable. For metropolitan sites, NFSU represents the physician; for nonmetropolitan sites, it represents the site. For supplemental sample cases, NFSU represents the physician.

For national estimates based on the augmented site sample, the first and second stage clustering variables are APSU and AFSU. For site sample cases, these are identical to APSU and AFSU. For supplemental sample cases that are part of the augmented sample, they are set to the site and physician respectively (for metro sites) or a constant and site (for non-metro sites).

For national estimates based on the combined sample or augmented site sample, we recommend that you utilize the MISSUNIT option within the NEST statement. This option should not be used for national estimates based on the supplemental sample or site-specific estimates based on the augmented site sample.

In order for SUDAAN to account for the without-replacement design in its variance estimates, there are one or two more statements that must be specified: the TOTCNT statement and, in some cases, the JOINTPROB statement. The TOTCNT statement provides the frame counts (or indicates stratification) at each stage of the sample design specified in the NEST statement. The JOINTPROB statement names the variables that contain single-inclusion probabilities for each site and joint-inclusion probabilities[30] for each possible pair of sites in each first-stage stratum. (This is expressed in the form of an *n x n* matrix, where *n* is the number of PSUs in each stratum.)

Because estimates based on the national supplement assume with-replacement sampling, the TOTCNT and JOINTPROB statements are not specified when making those estimates. For site-specific estimates, the TOTCNT statement is required, but the JOINTPROB statement is not because the specified design (WOR) assumes equal selection probabilities at the first stage. When site-specific estimates are made, the TOTCNT statement is specified as FRAME _ZERO_. The variable FRAME contains sample frame counts. The term _ZERO_ is a reserved SUDAAN keyword meaning, in this case, that it is a final level of sampling and therefore has no variance contribution.

For the national estimates based on the combined sample, the TOTCNT statement is specified as PSTRTOT3 _ZERO_ NFRAME _ZERO_. PSTRTOT3 specifies the variable containing population counts at the first stage of selection. For metropolitan sites selected without certainty, this is the number of sites in the sampling stratum. For all other sites, this is set equal to 1. The variable FRAME is as defined above. In the first occurrence of the variable _ZERO_, it means that the corresponding NEST variable (in this case, SECSTRA) is a stratification variable. In the second, _ZERO_ means it is a final level of sampling and therefore has no variance contribution. For national estimates based on the augmented site sample, the TOTCNT statement is specified as ASTRTOT _ZERO_ ASECTOT _ZERO_.

[30]The joint inclusion probability for a pair of sites is the probability that those two sites will occur in the same sample.

For the national estimates based on the combined sample, the JOINTPROB statement is specified as the variables P1X P2X P3X P4X P5X P6X P7X, which together represent the matrix containing single and joint inclusion probabilities as described above. For national estimates using the augmented site sample, use AP1 through AP7 instead.

In SUDAAN, the default denominator degrees of freedom can be overridden using the DDF option. We recommend that you use this option (setting DDF to 2,900) when running significance tests on national estimates based on the augmented site sample or on the combined sample. In SUDAAN, the default denominator degrees of freedom is the difference between the number of PSUs and the number of first-stage strata, which is appropriate for most surveys. Because the CTS design includes some sites with certainty, the SUDAAN default count is substantially smaller than the actual count for these national estimates. This undercount would result in significance tests that would be too conservative. See Appendix D for examples using the DDF option.

When making estimates involving data from both Round One and Round Two, you will need to pay attention to which SUDAAN parameters are appropriate for the particular type of analysis being conducted. Furthermore, for some types of analysis, you will need to make use of additional SUDAAN parameters that will be supplied on Release 2 of the Round One Restricted Use File. More information about estimates involving both rounds of data can be found in Chapter 3. Table 4.2 provides guidelines for which SUDAAN parameters to use when estimating the change in an attribute between the two rounds cross-sectionally (or when pooling the data from both rounds) and when estimating changes for individual physicians using the panel sample. All of the parameters found in this table are also found in Table 4.1 (and described above) except for the NEST parameter SITEPCP2, the TOTCNT parameters CNFRAME and CASECTOT and SECTOT, and weights WTPAN1 and WTPAN2.

When estimating change cross-sectionally, you will be working with a "stacked" file; that is, a file that is created by appending the Round Two file to the Round One file. When making site-specific estimates, the NEST statement specifies SITEPCP2 (which is described below) instead of SITEPCP. When making national estimates based on the augmented site sample, the TOTCNT statement specifies CASECTOT (or the SUDAAN term _MINUS1_) rather than ASECTOT.[31] When making national estimates based on the combined sample, the TOTCNT statement specifies CNFRAME (or the SUDAAN term _MINUS1_) instead of NFRAME.[32] Other than these three variables, the remaining SUDAAN parameters are the same as their Round Two-only counterparts in Table 4.1. CASECTOT and CNFRAME differ from ASECTOT and NFRAME only in that some records were assigned missing values. (Because

[31] The optimal SUDAAN specification when combining Round One and Round Two data for this type of estimate uses CASECTOT. However, if you get an error message when using CASECTOT, you should try substituting the SUDAAN term _MINUS1_ for the variable CASECTOT. The term _MINUS1_ indicates to SUDAAN that variance estimation uses the with-replacement sampling assumption at the second stage, and using _MINUS1_ instead of CASECTOT has only a small effect on the standard error estimates.

[32] The optimal SUDAAN specification when combining Round One and Round Two data for this type of estimate uses CNFRAME. However, if you get an error message when using CNFRAME, you should try substituting the SUDAAN term _MINUS1_ for the variable CNFRAME. The term _MINUS1_ indicates to SUDAAN that variance estimation uses the with-replacement sampling assumption at the second stage, and using _MINUS1_ instead of CNFRAME has only a small effect on the standard error estimates.

Round One had a different population count than Round Two, we needed to make this adjustment so that the finite population correction would work properly.)

SITEPCP2 is not provided on the Round One and Round Two data files, so if you want to combine both rounds to make site-specific estimates, you will need to construct it as follows:

- For Round One: SITEPCP2 = 1000000 + SITEPCP
- For Round Two: SITEPCP2 = 2000000 + SITEPCP

The reason for using SITEPCP2 instead of SITEPCP is to make sure that physicians from different rounds of the survey are not considered to be in the same stratum, which would affect variance estimation.[33] Because the values of SITEPCP in each round have five or fewer digits, the definition of SITEPCP2 indicated above preserves the strata indicated by SITEPCP within each round of the survey and ensures that the values for SITEPCP2 are unique to each round.

When estimating changes using the physician panel sample (those physicians who responded in both rounds), you will be working with a merged file; that is, a file that is created by merging the Round One file with the Round Two file by the Round One physician identifier (PHYSIDX on the Round One file and R1PHYIDX on the Round Two file). This file will have one record per physician in the panel. Note that you will need to re-name the variables on one of the files before carrying out this merge so that they do not overwrite one another. You will then create new variables indicating the difference between the Round One value and the Round Two value for your variable of interest. The relevant SUDAAN parameters for this type of analysis are found in the last two columns of Table 4.2.

The first of these two columns is for national panel estimates based on the site sample only. The second is for national panel estimates based on the combined sample. Other than the weight variable, the SUDAAN parameters are identical for these two types of estimates and match those for national estimates based on the combined sample using Round Two data only (Table 4.1). The optimal SUDAAN specification for panel analysis uses SECTOT in the TOTCNT statement. However, if you get an error message when using SECTOT, you should try substituting the SUDAAN term _MINUS1_ for the variable SECTOT. The term _MINUS1_ indicates to SUDAAN that variance estimation uses the with-replacement sampling assumption at the second stage, and using _MINUS1_ instead of SECTOT has only a small effect on the standard error estimates.

[33] For example, some values of SITEPCP in the Round One survey are also values of SITEPCP in the Round Two survey. If the Round One and Round Two data are combined, using SITEPCP instead of SITEPCP2 would mean that physicians from either round with the same value for SITEPCP would be treated as though they were in the same stratum.

TABLE 4.2
GUIDELINES FOR SUDAAN DESIGN VARIABLES
INVOLVING ROUND ONE AND ROUND TWO DATA

SUDAAN Statements	Site-Specific Estimates (augmented site sample only)	National Estimates (augmented site sample only) [a]	National Estimates (national supplement only)	National Estimates (combined sample) [a]	National Panel Estimates (site panel sample only)	National Panel Estimates (combined panel sample)
DESIGN=	WOR	UNEQWOR	WR	UNEQWOR	UNEQWOR	UNEQWOR
NEST	SITEPCP2 [b] FSU	ASTRATA APSU ASECSTRA AFSU	NSTRATA NFSU	PSTRATA PPSU SECSTRA NFSU	PSTRATA PPSU SECSTRA NFSU	PSTRATA PPSU SECSTRA NFSU
NESTING OPTIONS	not applicable	MISSUNIT	not applicable	MISSUNIT	MISSUNIT	MISSUNIT
TOTCNT	FRAME _ZERO_	ASTRTOT _ZERO_ CASECTOT [c] _ZERO_	not applicable	PSTRTOT3 _ZERO_ CNFRAME [c] _ZERO_	PSTRTOT3 _ZERO_ SECTOT [c] _ZERO_	PSTRTOT3 _ZERO_ SECTOT [c] _ZERO_
JOINTPROB	not applicable	AP1 AP2 AP3 AP4 AP5 AP6 AP7	not applicable	P1X P2X P3X P4X P5X P6X P7X	P1X P2X P3X P4X P5X P6X P7X	P1X P2X P3X P4X P5X P6X P7X
WEIGHT	WTPHY1	WTPHY5	WTPHY3	WTPHY4	WTPAN2	WTPAN1
DDF=	not applicable	2,900	not applicable	2,900	2,900	2,900

Note: Chapter 6 includes a discussion of how "missing" (inapplicable) values for these variables were coded. Sample SUDAAN code is contained in Appendix D.

[a] These types of estimates require SUDAAN parameters that are available on Release 2 of the Round One Physician Survey Restricted Use File (ASTRATA, APSU, ASECSTRA, AFSU, ASTRTOT, CASECTOT, AP1-AP7, WTPHY5, and CNFRAME). Release 1 of the Round One Physician Survey Restricted Use File does not contain these SUDAAN parameters.

[b] See Section 4.4 for information on constructing SITEPCP2 in Round One and Round Two.

[c] In some cases, you will need to use the SUDAAN term _MINUS1_ instead of the variables CASECTOT, CNFRAME, and SECTOT. See Section 4.4 for more details.

CHAPTER 5

VARIABLE CONSTRUCTION AND EDITING

The CTS Physician Survey Restricted Use File contains three types of variables: unedited variables, edited variables, and constructed variables created from edited or unedited variables.[34] This chapter provides a general description of the types of constructed and edited variables in the file, as well as additional details on selected variables.

The information in this chapter supplements the information provided in the "Description" field of the file's codebook. Users are encouraged to review this information along with the annotated questionnaire provided in Appendix A for a better understanding of the questionnaire structure, skip patterns, and other characteristics of the variables reported on the file.

5.1. EDITED VARIABLES

The CTS Physician Survey data were collected via computer-assisted telephone interviewing (CATI). The CATI editing functions included consistency checks and editing of some skip patterns and outlier values. This section describes the editing that followed the CATI data collection, including logical editing, imputation of missing values, and editing for confidentiality. Verbatim text responses were also reviewed and coded.

5.1.1. Logical Editing

Logical editing was performed to resolve inconsistencies among related variables and to resolve skip pattern inconsistencies. For example, question A6 (YRBGN), pertaining to the year the physician began practicing medicine, was asked of all physicians. There were cases where the reported year in which the physician began to practice was before his/her reported year of medical school graduation. In these cases, the value for YRBGN was changed to make it three years later than the graduation year (for primary care physicians) or five years later than the graduation year (for specialists).

Another type of logical edit occurred when a question that should have been asked according to the skip logic was not asked. For example, when a respondent said "-8:Don't Know" to physician vignette question E9 (V60MAN, For what percentage of such patients would you recommend a PSA test?), the follow-up question E9a (V60MANF, Would you recommend a PSA test rarely, sometimes, ...?) should have been asked. If for some reason question E9a was not asked in this situation (that is, if it had been coded as "-1: Inapplicable"), the response was recoded to "-9:Not Ascertained." Logical editing also included review and resolution of inconsistencies after data imputation was performed.

[34]In general, unedited variables are those that contain the original response to a single questionnaire item.

5.1.2. Imputation of Missing Values

Missing values (other than –1's) for selected variables were imputed using unweighted and weighted sequential hot-deck imputation.[35] Variables were selected for imputation according to their level of missing data and analytic importance. Table 5.1 lists the variables selected for imputation.

Most variables had few incidences of missing values (under 4 percent). The only exceptions were income (INCOMEX and INCOMET), hours of charity care (HRFREEX), and several variables from Section G: Practice Revenue that had nonresponse rates as high as 15 percent. The Section G variables are: percent managed care (PMC), number of managed care contracts (NMCCONX), percent of revenue from Medicare (PMCARE) and Medicaid (PMCAID), percent of revenue from largest managed care contract (PBIGCON), percent of revenue paid on prepaid or capitated basis (PCAPREV), and capitated revenue for the largest managed care contract (CAPAMTC). The number of managed care contracts variable had the highest nonresponse rate at 21 percent. An imputation flag is included for most variables with imputed values. A value of "1 Imputation" for the imputation flag indicates that the value of the corresponding variable was imputed.
Information from the Round One Physician Survey was used to impute the group of variables with the largest number of missing values. This was performed by selecting candidate "donors" from panel physicians who had similar values for the variables in Round One.

5.1.3. Editing for Confidentiality

With the exception of one variable (INCOMET), data in the Restricted Use File have not been manipulated or edited for confidentiality. Income was masked by top-coding at $400,000.

5.1.4. Editing Verbatim Responses

For several questionnaire items, respondents were allowed to provide "other" verbatim responses when none of the existing response categories seemed to apply. These verbatim responses are excluded from the Restricted Use File. Many of these were reviewed and coded into an appropriate existing or new categorical value. For example, certain "other" responses to question C2: TOPOWN (type of ownership), were recoded to an existing response category based on the verbatim responses to that question. Other ownership and employment arrangement variables were recoded on the basis of verbatim responses, including C3a: OTHSET, C3b: EMPTYP, C5B: HSPPAR, C5D: ORGPAR, and C6: ORGC_1 through ORGC_16.

[35] In sequential hot-deck imputation, persons with missing values, or "recipients," are linked to persons with available values, or "donors," to fill in the missing data. The donors and recipients are first classified into strata and then sorted within each strata using classification/sort variables such as gender, PCP status, and year when physician began practicing medicine. (The number of strata is limited by a minimum donor-to-recipient ratio that must be satisfied within each stratum). Donors are then assigned to recipients with similar characteristics within their stratum. In weighted hot-decking, donor and recipient weights are used to help determine the assignment of donors to recipients so that means and proportions calculated using the imputed data will equal means and proportions obtained using only donor data. In general, weighted hot-decking was performed for data with more than 5 percent missing values.

TABLE 5.1

VARIABLES SELECTED FOR IMPUTATION

Description	Variable Name
Section A:	
Multiple practice	MULTPR
Section B:	
Weeks worked	WKSWRKC
Hours worked in medical activities, patient care, and charity	HRSMED, HRSPAT, HRFREE
Section C:	
Acquired practice	ACQUIRD
Ownership status	OWNPR
Number of physicians and assistants	NPHYS, NASSIST
Section D:	
Percent of patients for whom physician is a gatekeeper	PCTGATE
Section F:	
Accepting Medicare patients	NWMCARE
Accepting Medicaid patients	NWMCAID
Accepting privately insured patients	NWPRIV
Section G:	
Percent Medicare patients	PMCARE
Percent Medicaid patients	PMCAID
Percent captitated revenue	PCAPREV
Number of managed care contracts	NMCCON
Largest contract paid on capitated basis	CAPAMTC
Percent of practice revenue from managed care	PMC
Percent of practice revenue from largest managed care contract	PBIGCON
Section H:	
Risk adjustment of profiles	RADJ
Percent income from bonuses	PCTINCC
Income	INCOMET

5.2. CONSTRUCTED VARIABLES

Constructed variables include the following:

- Weights and other sampling variables
- Other variables constructed for analytical value. These range from relatively straightforward variables that combine one or more original question items for the convenience of analysts (e.g., BDCERT, the certification or eligibility status of a physician that was constructed from four survey questions: A11, A13, A15, and A17) to more complex variables such as PMC, percent managed care revenue (and the other practice revenue variables from Section G of the survey), that is constructed from survey questions G6 through G11 and is then edited for consistency with the other practice revenue variables in the survey.

Constructed variables are indicated in the file's codebook by a value of "N/A" (Not Applicable) in the "Question" field. Information on how they were constructed appears in the "Description" field. Table 5.2 contains additional background on for some of the more complex constructions.

5.3. IDENTIFICATION, GEOGRAPHIC, AND FRAME VARIABLES

Not all variables on the Restricted Use File were obtained directly from survey respondents via the CATI questions. Additional variables include the physician identifier and other survey administration variables relating to demographic information from the sample frame.

The Round Two physician identifier variable on the Restricted Use File is called PHYSIDX. For the panel sample, the variable that indicates the identifier (PHYSIDX) for each physician in Round One is R1PHYIDX.

SITEID identifies the physician's practice location. A value of 0 indicates that the physician's practice location is outside of the 60 sites. (This group of 1,384 physicians includes 782 physicians originally selected in the 60 site sample but whose practice turned out to be located somewhere other than within the boundaries of the sites, and 602 physicians selected in the supplemental sample whose practice was located outside the 60 sites). Values 1 to 60 indicate those with a practice location within one of the 60 sample sites. This group of 10,920 physicians includes 10,434 from the original 60-site sample plus 486 from the supplemental sample whose practice location fell within the geographic boundaries of the 60 sites. (See Chapter 2 for a discussion of the CTS site sample and Figure 2.1 for a graphical view of the site and supplemental samples).

FIPS is the state and county code for the physician's practice location. MSACAT is the type of metropolitan area in which the physician practices (large metro, small metro, and nonmetro). MSACAT is based on population counts for the Metropolitan Statistical Area (MSA) in which the physician practices.

The American Medical Association (AMA) and the American Osteopathic Association (AOA) provided some demographic information when they formed the sample frame. This information includes: DOCTYP (MD or Osteopath); IMGSTAT and IMGUSPR (foreign medical school graduate), GRAD_YR (year graduated from medical school); GENDER; and BIRTH; and AMAPRIM (the frame definition of primary care physicians).

5.4. ADDITIONAL DETAILS ON SELECTED SURVEY VARIABLES

Table 5.2, organized by questionnaire section, provides "helpful hints" about variables (singly or in sets), discusses a variable's relationship with other variables, and suggests when to use a specific variable. This information supplements the variable-specific details contained in the file's codebook.

TABLE 5.2

ADDITIONAL INFORMATION ON SURVEY QUESTIONS
BY QUESTIONNAIRE SECTION

Variable	Additional Information
Section A Variables: Introduction	
YRBGN	Question A6 asks for the year that the physician began medical practice. Examination of certain responses to this question indicates that some respondents replied with the number of years in practice rather than the actual year commencing practice. For these cases, YRBGNX was set to the Interview year minus the number of years in practice (initial response to YRBGNX). For physicians who did not respond to this question or for whom his/her medical school graduation year occurred after the reported value for YRBGN, YRBGN was reset to graduation year + 3 for primary care physicians and graduation year + 5 for specialists. If graduation year was also missing, then YRBGN was set to be BIRTH + 30 for primary care physicians and BIRTH + 32 for specialists. YRBGN was converted to a 4-digit year by adding 1900 to the value for YRBGN.
PCPFLAG	PCPFLAG is a constructed flag variable that indicates whether the physician is a primary care physician (PCPFLAG=1) or a specialist (PCPFLAG=0). The variable is constructed based on responses to questions A8, A10, A9, A9a, and A9b. PCPFLAG=1 if the physician's specialty (A8 or A10) is one of the following: Family practice (019) Geriatric medicine (020,043) General practice (023) Adolescent medicine (085, 133) OR if the physician's specialty (A8 or A10) is one of the following: Internal Medicine (042) Pediatrics (088) Internal Med-Pediatrics (137) AND the physician spends most of his/her time in this specialty (i.e., A9=1) OR if the physician is an adult specialist and spends more time practicing general internal medicine than his/her subspecialty (A9a=2 or 3) OR if the physician is a pediatric specialist and spends more time practicing general pediatrics than his/her subspecialty (A9b=2 or 3) PCPFLAG is the survey definition for primary care physician. There is another flag on the file, AMAPRIM, which also indicates primary care status based on the AMA/AOA sample frame data. AMAPRIM=1 for primary care physicians and 0 for specialists and may differ from PCPFLAG.

TABLE 5.2

ADDITIONAL INFORMATION ON SURVEY QUESTIONS,
BY QUESTIONNAIRE SECTION
(Continued)

Variable	Additional Information
SPECX	SPECX is a constructed variable based on responses to questions A8 (physician's specialty) and A10 (physician's subspecialty). The two survey questions are combined into one variable and then divided into categories according to the type of specialty. The grouping of specialties is as follows. The numbered codes were created for the survey based on AMA and AOA physician specialty classifications. 1: Internal Medicine 042: Internal medicine 043: Geriatric medicine 085: Adolescent medicine-Family practice 2: Family/General Practice 019: Family practice 020: Geriatrics-general/family 023: General practice 3: Pediatrics 088: Pediatrics 133: Adolescent medicine 137: Internal med-pediatrics 4: Medical Specialties 001: Allergy 002: Allergy & Immunology 004: Immunology 007: Pain Management 008: Critical care-Anesthesiology 009: Cardiovascular Disease-Cardiology 012: Dermatology 015: Emergency Medicine 016: Sports Medicine-Emergency Medicine 017: Pediatric Emergency Medicine 021: Sports Medicine-Family/General Practice 022: Gastroenterology 024: Preventive Medicine 035: Diabetes 036: Endocrinology 037: Hematology 038: Hepatology 039: Cardiac Electrophysiology 040: Infectious Diseases 041: Clinical & Laboratory Immunology 044: Sports Medicine 045: Nephrology 046: Nutrition 047: Oncology 048: Rheumatology 049: Clinical Biochemical Genetics 050: Clinical Cytogenetics 051: Clinical Genetics 052: Clinical Molecular Genetics 053: Medical Genetics 054: Child Neurology 055: Clinical Neurophysiology 056: Neurology 068: Occupational Medicine 086: Pediatric Intensive Care 087: Neonatology 089: Pediatric Allergy 090: Pediatric Endocrinology 091: Pediatric Pulmonology 092: Pediatric Gastroenterology 093: Pediatric Hematology/Oncology 094: Clinical & Laboratory Immunology 095: Pediatric Nephrology 096: Pediatric Rheumatology 097: Sports Medicine (Pediatrics) 098: Pediatric Cardiology 100: Physical Medicine & Rehab 116: Pulmonary Diseases 120: Neuroradiology 128: Critical Care-Medicine 136: Hematology & Oncology 144: Pediatric Emergency Medicine 145: Pediatric Infectious Diseases 147: Pulmonary-Critical Care 150: Spinal Cord Injury 155: Osteo Manipulative Treat +1 156: Spec Prof in Osteo Manip Med 157: Sports Medicine-OMM 158: Osteo Manipulative Medicine 159: Proctology 210: Developmental Medicine

TABLE 5.2

ADDITIONAL INFORMATION ON SURVEY QUESTIONS,
BY QUESTIONNAIRE SECTION
(Continued)

Variable	Additional Information
SPECX (continued)	5. Surgical Specialties 011:Colon & Rectal Surgery 026:Abdominal Surgery 027:Critical Care Surgery 029:General Surgery 030:Head & Neck Surgery 031:Hand Surgery 032:Pediatric Surgery 033:Traumatic Surgery 034:Vascular Surgery 058:Critical Care-Neurosurgery 059:Neurological Surgery 060:Pediatric Neurosurgery 061:Gynecological Oncology 063:Maternal & Fetal Medicine 066: Critical Care-Obstetrics & Gynecology 067: Reproductive Endocrinology 069: Ophthalmology 070: Hand Surgery 071: Adult Reconstructive Orthopedics 072: Musculoskeletal Oncology 073: Pediatric Orthopedics 074: Orthopedic Surgery 075: Sports Medicine (Orthopedic Surgery) 076: Orthopedic Surgery of the Spine 077: Orthopedic Trauma 078: Facial Plastic Surgery 079: Otology 080: Otolaryngology 081: Pediatric Otolaryngology 101: Hand Surgery 102: Plastic Surgery 124: Cardiothoracic Surgery 125: Urology 126: Pediatric Urology 134: Foot & Ankle Orthopedics 146: Pediatric Ophthalmology 151: Surgical Oncology 152: Transplant Surgery 153: MOHS Micrographic Surgery 154: Hair Transplant 164: Dermatologic Surgery <u>6: Psychiatry</u> 010: Pediatric Psychiatry 082: Psychiatry 083: Psychoanalysis 084: Geriatric Psychiatry 127: Addictive Diseases 132: Addiction Psychiatry <u>7: Obstetrics/Gynecology</u> 062: Gynecology 064: Obstetrics & Gynecology 065: Obstetrics
Section B Variables: Utilization of Time	
HRSMED	HRSMED is a constructed variable that defines the number of hours (during the past week) spent in medically related activities. This question could be asked up to three times in three different ways by the CATI system, checking for data consistency each time. HRSMED is constructed from responses to survey questions B2, B3c, and B4. If HRSPAT (the number of hours spent in direct patient activities) was greater than HRSMED, then HRSMED was imputed.

TABLE 5.2

ADDITIONAL INFORMATION ON SURVEY QUESTIONS,
BY QUESTIONNAIRE SECTION
(Continued)

Variable	Additional Information
HRSPAT	HRSPAT is a constructed variable that defines the number of hours (during the past week) spent in direct patient care activities. This question could be asked up to three times in three different ways by the CATI system, checking for data consistency each time. HRSPAT is constructed from responses to survey questions B3, B3d, and B5. If HRSPAT was greater than HRSMED (after imputation of both variables) then HRSPAT was set equal to HRSMED.
Section C Variables: Type and Size of Practice	
TOPOWNC	TOPOWNC and TOPEMPC are constructed variables that are corrected versions of survey variable C2 (TOPOWN), type of ownership and C3 (TOPEMP), type of employment. Both variables are "corrected" or edited by incorporating the response to question C9 that asks if the practice is a group model HMO (or exclusively provides services to a group model HMO). If the physician indicated (from the response to question C9) that he/she works in a practice that is a group model HMO, then TOPOWNC and TOPEMPC were set equal to "9: Group model HM0".
TOPEMPA	TOPEMPA is a constructed variable that combines the responses of TOPEMPC and C3b (EMPTYPA). The following values for TOPEMPC and EMPTYP were coded to "1: Other" in TIPEMPA: 1: Other 11: Other insurance 14: City, county, state government 15: Integrated health 16: Freestanding clinic 17: Physician practice management 18: Community health center 19: Management services organization (MSO) 20: Physician hospital organization (PHO) 21: Locum tenens 22: Foundation 25: Independent contractor 26: Industry clinic

TABLE 5.2

ADDITIONAL INFORMATION ON SURVEY QUESTIONS,
BY QUESTIONNAIRE SECTION
(Continued)

Variable	Additional Information
PRCTYPE	PRCTYPE is a constructed variable that summarizes the type of practice in which the physician works. It combines information about ownership and employment and is constructed as follows: 1: Solo/two physician practice — TOPOWNC=solo or two-physician practice OR TOPEMPA=solo or two-physician practice 2: Group>=three physicians — TOPOWNC=three or more physicians OR TOPEMPA=three or more physicians 3: HMO — TOPOWNC=Group model HMO or staff Model HMO OR TOPEMPA=Group model HMO or staff Model HMO 4: Medical school — TOPEMPA=Medical school or university 5: Hospital based — TOPEMPA=Nongovernment hospital OR TOPEMPA=City, county, state government AND OTHSET(C3a)=hospital 6: Other — All other responses Note that all physicians who work for a state or local government hospital are classified as "Hospital Based" in PRCTYPE but as "Other" in TOPEMPA.
GRTYPE	GRTYPE is a constructed variable that combines responses to questions C2a, C2b, C2c, C3aa, C3ab, C3ac, C3ca, C3cb, and C3cc for physicians working in a group practice of 3 or more physicians. If the physician's response to C2a , C3aa or C3ca is that they are working in a single-specialty practice, then the practice is considered a single specialty practice. Otherwise, the practice is considered a multi-specialty practice. Information from the other questions listed above is used to determine the type of physician – PCP or specialist – within the single or multi-specialty practice.

TABLE 5.2

ADDITIONAL INFORMATION ON SURVEY QUESTIONS,
BY QUESTIONNAIRE SECTION
(Continued)

Variable	Additional Information
ORGC_1 through ORCG_16	These are a series of constructed variables that represent each of the 16 categories in question C6 (types of organizations that have an ownership in the practice). ORGC_3 and ORGC_4 are not present on the file because no one gave these responses. There is no variable corresponding to ORGC_5 in the questionnaire. The responses to question C6a (who owns the practice?) were combined with each of these variables to create ORGC_1 through ORGC_16. For example, if C6a=7 (physician practice management or other for profit), then ORGC_7 = 1.
Section E Variables: Vignettes	
VCHOL, VCHOLF through VECZEM, VECZEMF	The vignette questions were asked of primary care physicians. The first six questions (VCHOL, VHYPER, VCHEST, VBACK, V60MAN, VVITCH) are questions geared toward treating adults. The last six questions (VENUR, VTHRT, VCOUGH, VSUPOT, V6FEVR, VECZEM) are questions geared toward treating children. If a physician treats adults only, he/she was asked the first six questions. If a physician is a pediatrician or a general primary care physician who treats only children, then he/she was asked the last six questions. If the physician treats both adults and children, then he/she was asked six questions--three adult vignette questions and three child vignette questions--that were chosen randomly from each group of six questions. The expected response to each vignette question is a percentage (For what percentage of your patients would you recommend...?). If the physician responded "-8: Don't Know" to the vignette question, he/she was then asked a follow-up question that categorized the response into general categories (6: Always, 5: Almost always, 4: Frequently, 3: Sometimes, 2: Rarely, or 1: Never). Physicians who responded "1:Never" to a follow-up question were assigned a "0" value in the vignette variable. Similarly, physicians responding "6: Always" were coded "100" in the vignette question. All of the follow-up question variable names end in "F."

TABLE 5.2

ADDITIONAL INFORMATION ON SURVEY QUESTIONS,
BY QUESTIONNAIRE SECTION
(Continued)

Variable	Additional Information
Section G Variables: Practice Revenue	
PCAPREV	PCAPREV is a constructed variable indicating the percent of the practice's total patient care revenue paid on a capitated or other prepaid basis. PCAPREV is constructed from responses to: G3, G8c, and G8g (questions that asked about percentage of practice revenue paid on a capitated or other prepaid basis). Post imputation edits were performed on this variable as follows: Capitated revenue is a subset of managed care revenue. Therefore, if PCAPREV>PMC (percent managed care revenue) and both PCAPREV and PMC were imputed, then PCAPREV was edited to be equal to PMC. If there is only one managed care contract and all managed care revenue is capitated revenue, then the capitated revenue must be equal to all managed care revenue. Therefore, if NMCCON (number of managed care contracts)=1 **AND** PMC=PBIGCON (i.e., percent managed care revenue=percent revenue from largest man care contract) **AND** CAPAMTC (amount of capitated revenue)= "4, All" **AND** PCAPREV was imputed then PCAPREV was edited to be equal to PMC.
PMC	PMC is a constructed variable indicating the percentage of the practice's total patient care revenue obtained from managed care. PMC is constructed from responses to: G7, G8, G8b, G8f, G9a, and G9d (questions that asked about percentage of practice's revenue that comes from managed care). Capitated revenue is a subset of managed care revenue. Therefore, this variable was edited in the following way: a. If PCAPREV (percent capitated revenue)>PMC , then PMC was edited to be equal to PCAPREV. In addition, a post-imputation edit was performed: b. If PCAPREV>PMC AND PMC was imputed, but PCAPREV was not imputed, then PMC was edited to be equal to PCAPREV.

TABLE 5.2

ADDITIONAL INFORMATION ON SURVEY QUESTIONS,
BY QUESTIONNAIRE SECTION
(Continued)

Variable	Additional Information
PBIGCON	PBIGCON is a constructed variable that is the percentage of the practice revenue obtained from the practice's largest managed care contract. PBIGCON is constructed from responses to: G9, G9b, and G9e (questions that asked about the percentage of practice revenue coming from the largest managed care contract). PBIGCON was edited for consistency as follows: 1. If NMCCONX (number of managed care contracts)=0, then PBIGCON was set equal to -1: Inapplicable. If there are no managed care contracts, then the questions asking about practice revenue from the largest contract are not applicable. a. If PMC (percent managed care revenue)=0, then PBIGCON was set equal to: -1: Inapplicable. If there is no managed care, then the questions asking about practice revenue from the largest contract are not applicable. 2. If PMC>0 AND NMCCONX=1, then PBIGCON was set equal to PMC. If there is managed care revenue coming from one contract only, then the practice revenue coming from the largest contract is equal to all of the managed care revenue for the practice. 3. If PMC>0 AND PBIGCON=0 then PBIGCON was imputed. If the physician indicated that there was managed care revenue, but there was no revenue coming from the largest contract, then we imputed the value for PBIGCON. b. If PMC>0 AND NMCCONX>0 AND PBIGCON=-1: Inapplicable, then PBIGCON was imputed. If there is managed care revenue, and at least one managed care contract, and the physician's responses to the PBIGCON questions were logically skipped, then we imputed the value for PBIGCON. 4. If PMC=0 AND NMCCONX>0 AND PBIGCON=-1: Inapplicable, then PBIGCON was set equal to 0. If there is at least one managed care contract, but no managed care revenue, and the physician's responses to the PBIGCON questions were logically skipped, then the percentage of revenue coming from the largest managed care contract is 0 (even though there are contracts, there is no revenue associated with them). In addition, a post-imputation edit was performed: 5. If PMC<PBIGCON and PBIGCON was imputed, then PBIGCON was set equal to PMC. If the percentage of practice revenue coming from the largest contract is greater than the total amount of managed care revenue from the contract (as a result of imputing PBIGCON), then the revenue from the largest contract is set equal to all of the managed care revenue.

TABLE 5.2

ADDITIONAL INFORMATION ON SURVEY QUESTIONS,
BY QUESTIONNAIRE SECTION
(Continued)

Variable	Additional Information
CAPAMTC	CAPAMTC is a constructed variable that is an edited version of question G11 (how much of practice revenue from the largest managed care contract is paid on a capitated or prepaid basis?). It was edited from the original value as follows: 1. If there is no managed care revenue or if there are no managed care contracts, then CAPAMTC=-1: Inapplicable. 2. If there is managed care revenue and the physician indicates that all of it is capitated (from question G8d or PMC=PCAPREV), then CAPAMTC=4: All. 3. If there is managed care revenue (PMC>0), but no capitated revenue (PCAPREV=0), then CAPAMTC=1: None. 4. If there is one managed care contract (NMCCONX=1) and all of the managed care revenue comes from that one contract and this revenue is all capitated revenue (PCAPREV=PBIGCON=PMC), then CAPAMTC=4: All.
Section H Variables: Physician Compensation Methods & Income Level	
PCTINCC	PCTINCC is a constructed variable that is an edited version of question H9 (percent of 1997 income coming from bonuses). It is edited as follows: Physicians who responded "0: No" to H9a (EBONUS-eligible for bonuses in 1997) are assigned a value of -1: Inapplicable.

CHAPTER 6

FILE DETAILS

This chapter provides an overview of the file content and technical specifications for programmers. It also describes the variable naming and coding conventions that were used on the file and that appear in the file's codebook.

6.1. FILE CONTENT AND TECHNICAL SPECIFICATIONS

The CTS Restricted Use File contains 12,304 person records. The unique record identifier and sort key is the variable PHYSIDX. Variables are positioned on the file in the following order:

- Survey administration variables: this group includes identifiers and other variables associated with conducting the survey
- Variables from Sections A-H of the Physician Survey questionnaire: Variables are ordered within each section by related questionnaire item number
- Weight variable

The Restricted Use File is provided as an ASCII-formatted file with the following technical specifications:

File name:	CTSR2PR1.TXT
Number of observations:	12,304
Number of variables:	208
Logical record length:	654 bytes

The file contains a two-byte carriage return/line feed at the end of each record. When you are converting to a PC-SAS file, use the LRECL option to specify the record length to avoid the default PC-SAS record length. If the RECFM=V option is used, the LRECL option must be specified as the logical record length (654). If RECFM=F is used, the LRECL value must be specified as the logical record length plus two (656). Note that if the RECFM option is omitted, then the default option of RECFM=V will be used, and LRECL must be specified as the logical record length (654). When you are converting to an SPSS file, use the "FIXED" option of the DATA LIST command, and read values according to column location specified by the column position after each variable name.

The record layout for this file is provided in the file's codebook.

6.2. VARIABLE NAMING CONVENTIONS

In general, a variable name reflects the content of the variable. Names were limited to seven characters so that additional indicators could be used in subsequent Restricted Use File releases. For the following groups of variables, a naming convention was used to provide additional information on variable content:

- ***Imputation Flags*.** These flags indicate whether a record has an imputed value for the corresponding variable. The flag variable has the same name as the variable it describes, and includes the prefix "_". When reading the data into SPSS, imputation flags contain the prefix "I" because SPSS does not recognize the "_" character. For example, _PMC (or IPMC) is the imputation flag corresponding to the variable PMC. Refer to Chapter 4 for more information on imputation and other types of editing procedures used on the file.
- ***Weight.*** The prefix "WT" is used for the weight variable name.
- ***Masked Variables***. Names of variables that were masked for confidentiality reasons end with the value "X."[36] The variable descriptions contained in the file's codebook indicate whether the variable was masked and provide brief details as to the type of masking performed.

A copy of the data collection instrument annotated with the names of those variables that directly correspond to a single question is provided in Appendix A.

6.3. VARIABLE CODING CONVENTIONS

The following coding conventions are used on the file:

-1 Inapplicable	Question was not asked because of skip pattern.
-7 Refused	Question was asked and respondent refused to answer.
-8 Don't Know	Question was asked and respondent did not know the answer.
-9 Not Ascertained	Value was not assigned for any other reason.

[36] The one masked variable that doesn't end in "X" is INCOMET. The reason is to distinguish it from INCOMEX on the public use file, which has more masking than INCOMET.

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Appendix A

The CTS Physician Survey Instrument

Round Two

THE GALLUP ORGANIZATION

CTS PHYSICIAN SURVEY

FINAL FIELD INSTRUMENT

AUGUST 1998

I.D.#: 0 (1-6)

**AREA CODE AND TELEPHONE NUMBER:

_____ _____
_____ (1/32 - 1/41)

**INTERVIEW TIME:

_____ _____
_____ (2/49 - 2/54)

SPECIALTY: **(Code from "Fone" file) (NOTE TO SURVENT: Show on "Intro" screen)

_____ _____
_____ (5/70 - 5/72)

STATE: **(Code from "Fone" file)

01	Alabama - SC	30	Montana - W
02	Alaska - W	31	Nebraska - NC
04	Arizona - W	32	Nevada - W
05	Arkansas - SC	33	New Hampshire - NE
06	California - W	34	New Jersey - NE
08	Colorado - W	35	New Mexico - W
09	Connecticut - NE	36	New York - NE
10	Delaware - SC	37	North Carolina - SC
11	Washington D.C. - SC	38	North Dakota - NC
12	Florida - SC	39	Ohio - NC
13	Georgia - SC	40	Oklahoma - SC
15	Hawaii - W	41	Oregon - W
16	Idaho - W	42	Pennsylvania - NE
17	Illinois - NC	44	Rhode Island - NE
18	Indiana - NC	45	South Carolina - SC
19	Iowa - NC	46	South Dakota - NC
20	Kansas - NC	47	Tennessee - SC
21	Kentucky - SC	48	Texas - SC
22	Louisiana - SC	49	Utah - W
23	Maine - NE	50	Vermont - NE
24	Maryland - SC	51	Virginia - SC
25	Massachusetts - NE	53	Washington - W
26	Michigan - NC	54	West Virginia - SC
27	Minnesota - NC	55	Wisconsin - NC
28	Mississippi - SC	56	Wyoming - W
29	Missouri - NC		

_____ (1/16) (1/17)

SECTION A
INTRODUCTION AND SCREENING

("FONE" MANAGEMENT NOTE: Any T&T's should send the case to a special "HOLD" category that could be reactivated by refusal converters if necessary)

S1. DOCTOR TYPE: **(Code from "Fone" file)**

DOCYP

1 DO
2 MD _____ (7/80)

S1b. REPLICATE NUMBER: **(Code from "Fone" file)**

[SET BY JOHN SELIX]

S1c. PANEL: **(Code from "Fone" file)**

1 New
2 Re-interview
3 Non-respondent _____ (21/12)

S1d. **(If code "2" in S1c:)** BDCTSP: **(Code from "Fone" file)**

1 Yes
2 No _____ (21/13)

S1e. BDCTSB: **(Code from "Fone" file)**

1 Yes
2 No _____ (21/14)

S1f. BDCTPSP: **(Code from "Fone" file)**

1 Yes
2 No _____ (23/80)

S2. DOCTOR NAME: **(Code from "Fone" file)**

_____ (/ - /)

S3. PRIMARY SPECIALTY: **(Code from "Fone" file)**

_____ (5/70 - 5/72)

S4. SITE NUMBER: **(Code from "Fone" file)**

_____ (/ - /)

S5. SITE TYPE: **(Code from "Fone" file)**

1 High intensity
2 Low intensity/National _____ (/)

HOLD 0 (6/26-6/27)

S6. ZIP CODE: **(Code from "Fone" file)**

_____ (1/21 - 1/25)

(NOTE TO SURVENT: Display "doctor's name" and "gender" at top of screen)

(If code "1" or "3" in S1c, Continue; Otherwise, Skip to "Intro #2"

INTRO #1

Hello, Dr. **(name from "Fone" file)**, my name is __ from The Gallup Organization. A short time ago, you should have received a letter from the Robert Wood Johnson Foundation indicating that Gallup is conducting a national survey of physicians for the Foundation. The survey is part of a study of changes in the health care system in communities across the nation. It concerns how such changes are affecting physicians, their practices and the health care they provide to their patients.

The interview will take about 20 minutes and we are providing an honorarium of $25 as a small token of our appreciation to each physician who completes an interview. All the information you provide will be kept strictly confidential. It will be used in statistical analysis and reported only as group totals. I can conduct the interview now or at any time that's convenient for you.

0 Gatekeeper soft refusal

1 Respondent available - **(Skip to #A1)**
3 No longer works/Lives here - **(Skip to S8)**
4 Never heard of respondent - **(Skip to S7)**

5 Gatekeeper hard refusal

6 Answering service/Can't ever reach physician at this number - **(Skip to S11)**

7 Respondent not available - **(Set time to call back)**

8 Physician soft refusal
9 Physician hard refusal _____ (5/12)

INTRO #2

Hello, Dr. **(name from "Fone" file)**, my name is _____, from The Gallup Organization. You should have received a letter from the Robert Wood Johnson Foundation indicating that Gallup would be calling you again to participate in the second round of the study of changes in the health care systems in communities across the nation. The study concerns how these changes are affecting physicians, their practices and the health care they provide to their patients.

The interview will take about twenty minutes, and we are again providing an honorarium of $25 as a small token of our appreciation to each physician who completes an interview. All the information you provide will be kept strictly confidential. It will be used in statistical analysis and reported only as group totals. I can conduct the interview now, or at any time that's convenient for you.

0 Gatekeeper soft refusal

1 Respondent available - **(Skip to #A1)**
3 No longer works/Lives here - **(Skip to S8)**
4 Never heard of respondent - **(Continue)**

5 Gatekeeper hard refusal

6 Answering service/Can't ever reach physician at this number

7 Respondent not available - **(Set time to call back)**

8 Physician soft refusal
9 Physician hard refusal

_____ (5/12)

S7. **(If code "4" in "Intro", ask:)** I would like to verify that I have reached **(phone number from "Fone" file)**.

1 Yes - **(Thank and Terminate; Skip to S11)**

2 No - **(INTERVIEWER READ:)** I am sorry to have bothered you. - **(Reset to "Intro")**

3 (DK) **(Thank and Terminate; Skip to S11)**
4 (Refused) **(Thank and Terminate; Skip to S11)**
(9/18)

S8. **(If code "3" in "Intro", ask:)** Dr. **(response in S2)** is a very important part of a medical study for the Robert Wood Johnson Foundation. Do you have the address or telephone number where I can reach (him/her)?

1 Yes - **(Skip to S10)**

2 No/Unknown **(Continue)**
3 (DK) **(Continue)**
4 (Refused) **(Continue)**

5 (Retired) - **(Thank and Terminate)**
(9/19)

S9. **(If code "2", "3" or "4" in S8, ask:)** Do you happen to know if the doctor is still in this area, or is (he/she) in another city?

1 Same area - **(Thank and Terminate; Skip to S11)**

2 Different city - **(Continue)**

3 (DK) **(Thank and Terminate; Skip to S11)**
4 (Refused) **(Thank and Terminate; Skip to S11)**
(9/20)

S10. **(If code "2" in S9, OR code "1" in S8:)** ENTER PHONE NUMBER AND ADDRESS OR AS MUCH OF IT AS POSSIBLE.

WORK PHONE NUMBER:

_____ (9/21 - 9/30)

HOME PHONE NUMBER:

_____ (9/41 - 9/50)

STREET ADDRESS:

_____ (15/12 - 15/51)

CITY:

_____ (11/31 - 11/60)

STATE:

_____ (9/31) (9/32)

ZIP CODE:

_____ (9/33 - 9/37)

(All in S10, Thank and Terminate; Call new number and reset to "Intro"; If "blank" in "WORK PHONE NUMBER" and "HOME PHONE NUMBER" in S10, Continue)

S11. **(If code "1", "3" or "4" in S7, OR code "8" in "Intro", OR code "1", "3" or "4" in S9, OR "blank" in "WORK PHONE NUMBER" and "HOME PHONE NUMBER" in S10:) (Call directory assistance for most recent city or area code. Ask for directory assistance using full name from "Fone" file.)**

(Original phone number from "Fone" file)

(Original city from "Fone" file) or **("CITY" from S10)**

(New city; New street address)

(Name from "Fone" file)

1 New number - **(Enter on next screen)**

2 No number/Match - **(Thank and Terminate; Save Case ID)** _____ (11/61)

S12 NEW PHONE NUMBER: **(FORCE 10 DIGITS)**

_____ __ __ (11/62 - 11/71)

(All in S12, call new number, and Reset to "Intro")

S13. VERBATIM SCREEN: Describe what happened on this call in as much detail as possible.

_____ __ __ (11/72) (11/73)

CLOCK:

_____ __ __ (28/12 - 28/15)

A1. Are you currently a full-time employee of a federal agency such as the U.S. Public Health Service, Veterans Administration or a military service? **(Probe:)** Do you receive your paychecks from a federal agency? **(If respondent works part-time for a Federal Agency, ask:)** Do you consider this (Federal Agency) your main practice?

1 Yes - **(Continue)**

2 No - **(Skip to #A2)**

8 (DK) **(Thank and Terminate)**
9 (Refused) **(Thank and Terminate)** _____ (5/13)

(If code "1" in #A1, INTERVIEWER READ:) In this survey, we will not be interviewing physicians who are Federal employees. So it appears that we do not need any further information from you at this time, but we thank you for your cooperation. - **(Thank and Terminate)**

A2. Are you currently a resident or fellow?

1 Yes - **(Continue)**

2 No - **(Skip to #A3)**

8 (DK) **(Thank and Terminate)**
9 (Refused) **(Thank and Terminate)** _____ (5/14)

(If code "1" in #A2, INTERVIEWER READ:) In this survey, we will not be interviewing physicians who are residents or fellows. So it appears that we do not need any further information from you at this time, but we thank you for your cooperation. - **(Thank and Terminate)**

A3. During a TYPICAL week, do you provide direct patient care for at least twenty hours a week? **(If necessary, say:)** Direct patient care includes seeing patients and performing surgery. **(If necessary, say:)** INCLUDE time spent on patient record-keeping, patient-related office work, and travel time connected with seeing patients. EXCLUDE time spent in training, teaching, or research, any hours on-call when not actually working, and travel between home and work at the beginning and end of the work day.

1 Yes - **(Skip to "Note" before #A3a)**

2 No - **(Continue)**

8 (DK) **(Thank and Terminate)**
9 (Refused) **(Thank and Terminate)** _____ (5/15)

(If code "2" in #A3, INTERVIEWER READ:) In this survey, we will not be interviewing physicians who typically provide patient care for less than 20 hours a week. So it appears that we do not need any further information from you at this time, but we thank you for your cooperation. - **(Thank and Terminate)**

(If code "1" or "3" in S1c, Continue; Otherwise, Skip to #A4)

A3a. Thinking back to April, 1996, at that time, were you a full-time employee of a federal agency?

1 Yes
2 No
8 (DK)
9 (Refused) _____ (21/15)

A3b. In April, 1996, were you a resident or fellow?

1 Yes
2 No
8 (DK)
9 (Refused) _____ (21/16)

A3c. In April, 1996, were you providing direct patient care for at least twenty hours a week?

1 Yes
2 No
8 (DK)
9 (Refused) _____ (21/17)

A4. Do you currently provide patient care in one practice, or more than one practice? **(If necessary, say:)** We consider multiple sites or offices associated with the same organization to be only one practice. **(INTERVIEWER NOTE #1: Examples are: a private MD with a downtown and suburban office is one practice; a regional organization with member doctors practicing in numerous satellite clinics or offices is one practice; and multiple sites with DIFFERENT organizations are different practices.) (INTERVIEWER NOTE #2: Do not count non-patient-care activity, such as teaching or administrative jobs, as practices.)**

MULTPR

1 One - **(Skip to #A5)**

2 More than one - **(Continue)**

8 (DK) **(Skip to #A5)**
9 (Refused) **(Skip to #A5)** _____ (5/16)

A4a. **(If code "2" in #A4, ask:)** In how many different practices do you provide patient care? (Open ended **and code actual number)**

NUMPR

DK (DK)
RF (Refused)

_____ _____ (5/17) (5/18)

A5. We'd like you to think about the practice location at which you spend the greatest amount of time in direct patient care. Is this practice located in **(county and state from "Fone" file)**? **(INTERVIEWER NOTE: Surgeons should give the location of their office, not the hospital where they perform surgery.)**

1 Yes - **(Skip to "Note" before #A5b)**

2 No **(Continue)**
8 (DK) **(Continue)**
9 (Refused) **(Continue)**
(11/74)

A5a. **(If code "2", "8" or "9" in #A5, ask:)** In what county and state is the practice located. (Open ended) **(VERIFY SPELLING)**

DK (DK)
RF (Refused)

COUNTY:

_____ (14/34 - 14/58)

STATE:

_____ (14/59) (14/60)

(If code "15 - Hawaii" or "02 - Alaska" in #A5a - "State", Continue with "Interviewer Read"; Otherwise, Skip to #A5b)

(INTERVIEWER READ:) We are not interviewing physicians in your state at this time. So it appears that we do not need any further information from you, but we thank you for your cooperation. - **(Thank and Terminate)**

A5b. What is the zip code of your practice? (Open ended **and code all five digits of zip code)**

99998 (DK)
99999 (Refused)

_____ _____ (21/18 - 21/22)

(If code "2" in S1c, Skip to #A7; Otherwise, Continue)

A6. In what year did you begin medical practice after completing your undergraduate and graduate medical training? **(INTERVIEWER NOTE: A residency or fellowship would be considered graduate medical training.)** (Open ended **and code all four digits of year)** **(NOTE TO SURVENT: Force interviewers to enter FOUR DIGITS)**

YRBGN

DK (DK)
RF (Refused)

_____ _____ (21/23 - 21/26)

(If code "999" in S3, Skip to #A8; Otherwise, Continue)

A7. We have your primary specialty listed as **(response in S3)**. Is this correct? **(If necessary, say:)** We define primary specialty as that in which the most hours are spent weekly.

1 Yes - **(Autocode response in S3 into #A8)**

2 No - **(Continue)**

8 (DK) **(Thank and Terminate)**
9 (Refused) **(Thank and Terminate)** _____ (5/25)

A8. **(If code "2" or "blank" in #A7, ask:)** What is your primary specialty? **(If necessary, say:)** We define primary specialty as that in which the most hours are spent weekly. (Open ended **and code from hard copy)** **(INTERVIEWER NOTE: Probe for codeable response)**

NWSPEC
(If code "2" in S1 [MD-AMA LIST])

001	Allergy	(A)
133	Adolescent Medicine	(ADL)
127	Addiction Medicine	(ADM)
132	Addiction Psychiatry	(ADP)
002	Allergy & Immunology	(AI)
003	Allergy & Immunology/ Diagnostic Laboratory Immunology	(ALI)
005	Aerospace Medicine	(AM)
085	Adolescent Medicine	(AMI)
006	Anesthesiology	(AN)
007	Pain Management	(APM)
026	Abdominal Surgery	(AS)
103	Anatomic Pathology	(ATP)
104	Bloodbanking/Transfusion Medicine	(BBK)
049	Clinical Biochemical Genetics	(CBG)
008	Critical Care Medicine (Anesthesiology)	(CCA)
050	Clinical Cytogenetics	(CCG)
128	Critical Care Medicine	(CCM)
086	Critical Care Pediatrics	(CCP)
027	Critical Care Surgery	(CCS)
009	Cardiovascular Diseases (Cardiology)	(CD)
051	Clinical Genetics	(CG)
054	Child Neurology	(CHN)
010	Child & Adolescent Psychiatry	(CHP)
105	Clinical Pathology	(CLP)
052	Clinical Molecular Genetics	(CMG)
055	Clinical Neurophysiology	(CN)
011	Colon & Rectal Surgery	(CRS)
124	Cardiothoracic Surgery (Thoracic Surgery)	(CTS)
012	Dermatology	(D)
164	Dermatologic Surgery	(DS)
013	Clinical & Laboratory Dermatological Immunology	(DDL)
035	Diabetes	(DIA)
106	Dermatopathology	(DMP)
014	Diagnostic Radiology	(DR)
015	Emergency Medicine	(EM)
036	Endocrinology & Metabolism	(END)
016	Sports Medicine	(ESM)

A8. (Continued:)

140	Medical Toxicology (Emergency Medicine)	(ETX)
018	Forensic Pathology	(FOP)
019	Family Practice	(FP)
020	Geriatric Medicine	(FPG)
078	Facial Plastic Surgery	(FPS)
021	Sports Medicine	(FSM)
022	Gastroenterology	(GE)
061	Gynecological Oncology	(GO)
023	General Practice	(GP)
024	General Preventive Medicine	(GPM)
029	General Surgery	(GS)
062	Gynecology	(GYN)
037	Hematology	(HEM)
038	Hepatology	(HEP)
107	Hematology Pathology	(HMP)
030	Head & Neck Surgery	(HNS)
136	Hematology/Oncology	(HO)
070	Hand Surgery	(HSO)
101	Hand Surgery	(HSP)
031	Hand Surgery	(HSS)
039	Cardiac Electrophysiology	(ICE)
040	Infectious Diseases	(ID)
004	Immunology	(IG)
041	Clinical & Laboratory Immunology	(ILI)
042	Internal Medicine	(IM)
043	Geriatric Medicine	(IMG)
044	Sports Medicine	(ISM)
129	Legal Medicine	(LM)
138	Medical Management	(MDM)
063	Maternal & Fetal Medicine	(MFM)
053	Medical Genetics	(MG)
108	Medical Microbiology	(MM)
137	Internal Medicine/Pediatrics	(MPD)
099	Public Health & General Preventive Medicine	(MPH)
056	Neurology	(N)
058	Critical Care Medicine (Neurosurgery)	(NCC)
045	Nephrology	(NEP)
057	Nuclear Medicine	(NM)
109	Neuropathology	(NP)
087	Neonatal/Perinatal Medicine (Neonatology/Perinatology)	(NPM)
117	Nuclear Radiology	(NR)
059	Neurological Surgery	(NS)
060	Pediatric Neurosurgery	(NSP)

A8. (Continued:)

046	Nutrition	(NTR)
071	Adult Reconstructive Orthopedics	(OAR)
064	Obstetrics & Gynecology	(OBG)
065	Obstetrics	(OBS)
066	OB Critical Care Medicine	(OCC)
134	Foot & Ankle Orthopedics	(OFA)
068	Occupational Medicine	(OM)
072	Musculoskeletal Oncology	(OMO)
047	Medical Oncology	(ON)
073	Pediatric Orthopedics	(OP)
069	Ophthalmology	(OPH)
074	Orthopedic Surgery	(ORS)
028	Other Specialty	(OS)
075	Sports Medicine (Orthopedic Surgery)	(OSM)
076	Orthopedic Surgery of the Spine	(OSS)
079	Otology	(OT)
080	Otolaryngology	(OTO)
077	Orthopedic Trauma	(OTR)
082	Psychiatry	(P)
130	Clinical Pharmacology	(PA)
147	Pulmonary Critical Care Medicine	(PCC)
110	Chemical Pathology	(PCH)
111	Cytopathology	(PCP)
088	Pediatrics	(PD)
089	Pediatric Allergy	(PDA)
098	Pediatric Cardiology	(PDC)
090	Pediatric Endocrinology	(PDE)
145	Pediatric Infectious Diseases	(PDI)
081	Pediatric Otolaryngology	(PDO)
091	Pediatric Pulmonology	(PDP)
118	Pediatric Radiology	(PDR)
032	Pediatric Surgery	(PDS)
139	Medical Toxicology (Pediatrics)	(PDT)
144	Pediatric Emergency Medicine	(PE)
017	Pediatric Emergency Medicine	(PEM)
135	Forensic Psychiatry	(PFP)
092	Pediatric Gastroenterology	(PG)
093	Pediatric Hematology/Oncology	(PHO)
112	Immunopathology	(PIP)
094	Clinical & Laboratory Immunology	(PLI)
143	Palliative Medicine	(PLM)
100	Physical Medicine & Rehabilitation	(PM)
142	Pain Medicine	(PMD)
095	Pediatric Nephrology	(PN)
146	Pediatric Opthalmology	(PO)
113	Pediatric Pathology	(PP)

A8. (Continued:)

096	Pediatric Rheumatology	(PPR)
102	Plastic Surgery	(PS)
097	Sports Medicine (Pediatrics)	(PSM)
114	Anatomic/Clinical Pathology	(PTH)
141	Medical Toxicology (Preventive Medicine)	(PTX)
116	Pulmonary Diseases	(PUD)
083	Psychoanalysis	(PYA)
084	Geriatric Psychiatry	(PYG)
119	Radiology	(R)
067	Reproductive Endocrinology	(REN)
048	Rheumatology	(RHU)
115	Radioisotopic Pathology	(RIP)
120	Neuroradiology	(RNR)
123	Radiation Oncology	(RO)
121	Radiological Physics	(RP)
150	Spinal Cord Injury	(SCI)
149	Sleep Medicine	(SM)
151	Surgical Oncology	(SO)
148	Selective Pathology	(SP)
033	Trauma Surgery	(TRS)
152	Transplant Surgery	(TTS)
125	Urology	(U)
025	Undersea Medicine	(UM)
126	Pediatric Urology	(UP)
131	Unspecified	(US)
122	Vascular & Interventional Radiology	(VIR)
165	Vascular Medicine	(VM)
034	Vascular Surgery	(VS)

997 Other (list) - **(USE VERY SPARINGLY; Thank and Terminate)**

998 (DK) **(Thank and Terminate)**
999 (Refused) **(Thank and Terminate)**

_____ (5/26 - 5/28)

A8. (Continued:)

(If code "1" in S1 [DO-AOA LIST])

002	Allergy and Immunology	AI	
003	Allergy-Diagnostic Lab Immunology	ALI	
004	Immunology		IG
005	Preventive Medicine-Aerospace Medicine	AM	
006	Anesthesiology	AN	
006	Anesthesiology	CAN	
006	Anesthesiology	IRA	
006	Anesthesiology	OBA	
006	Anesthesiology	PAN	
007	Pain Management		APM
007	Pain Management		PMR
008	Critical Care-Anesthesiology	CCA	
009	Cardiovascular Diseases-Cardiology		C
009	Cardiovascular Diseases-Cardiology		CVD
009	Cardiovascular Diseases-Cardiology		IC
010	Pediatric Psychiatry		CHP
010	Pediatric Psychiatry		PDP
011	Colon & Rectal Surgery	CRS	
012	Dermatology	D	
014	Diagnostic Radiology		DR
015	Emergency Medicine	EM	
015	Emergency Medicine	EMS	
015	Emergency Medicine	FEM	
015	Emergency Medicine	IEM	
016	Sports Medicine (Emergency Medicine)		ESM
017	Pediatric Emergency Medicine	PEM	
018	Forensic Pathology	FOP	
019	Family Practice		FP
019	Family Practice		UFP
020	Geriatrics-General or Family Practice	GFP	
020	Geriatrics-General or Family Practice	GGP	
021	Sports Medicine-Family or General Practice	SFP	
021	Sports Medicine-Family or General Practice	SGP	
022	Gastroenterology	GE	
023	General Practice	GP	
024	Preventive Medicine	PVM	
025	Undersea Medicine	UM	
026	Abdominal Surgery	AS	
027	Critical Care-Surgery or Trauma	CCS	
027	Critical Care-Surgery or Trauma	CCT	
028	Other Specialty		OS
029	Surgery-General		S
030	Head & Neck Surgery	HNS	

A8. (Continued:)

031	Hand Surgery	HS	
031	Hand Surgery	HSS	
032	Pediatric Surgery	PDS	
033	Traumatic Surgery	TRS	
034	Vascular Surgery-General or Peripheral	GVS	
034	Vascular Surgery-General or Peripheral	PVS	
036	Endocrinology	END	
037	Hematology		HEM
039	Cardiac Electrophysiology		ICE
040	Infectious Diseases	ID	
041	Diag Lab Immunology-Int Med	ILI	
042	Internal Medicine	IM	
042	Internal Medicine	IP	
043	Geriatrics-Internal Medicine	GER	
043	Geriatrics-Internal Medicine	GIM	
044	Sports Medicine		ISM
044	Sports Medicine		PMS
044	Sports Medicine		RMS
044	Sports Medicine		SM
045	Nephrology		NEP
046	Nutrition	NTR	
047	Oncology	ON	
048	Rheumatology	RHU	
050	Clinical Cytogenetics	CCG	
051	Clinical Genetics	CG	
053	Medical Genetics	IMG	
054	Pediatric or Child Neurology	CHN	
054	Pediatric or Child Neurology	PDN	
055	Clinical Neurophysiology		CN
056	Neurology	N	
056	Neurology	NMD	
056	Neurology		NP
056	Neurology	NPN	
057	Nuclear Medicine	NI	
057	Nuclear Medicine	NM	
057	Nuclear Medicine	NV	
058	Critical Care-Neuro Surgery	NCC	
059	Neurological Surgery		NS
061	Gynecological Oncology	GO	
062	Gynecology		GS
062	Gynecology		GYN
063	Maternal & Fetal Medicine		MFM
064	Obstetrics & Gynecology	OBG	
064	Obstetrics & Gynecology	OGS	
065	Obstetrics		OBS
066	Critical Care-Obstetrics & Gynecology	OCC	

A8. (Continued:)

067	Reproductive Endocrinology	RE	
068	Occupational Medicine	OCM	
068	Occupational Medicine	OM	
069	Ophthalmology	COR	
069	Ophthalmology	OAS	
069	Ophthalmology	OCR	
069	Ophthalmology	OGL	
069	Ophthalmology	OPH	
069	Ophthalmology	VRS	
070	Hand Surgery-Orthopedic Surg	HSO	
071	Adult Reconstructive Orthopedics	OAR	
072	Musculoskeletal Oncology		OMO
073	Pediatric Orthopedics	OP	
074	Orthopedic Surgery	AJI	
074	Orthopedic Surgery	OR	
074	Orthopedic Surgery	ORS	
075	Sports Medicine-Orthopedic Surgery		OSM
076	Orthopedic Surgery-Spine		OSS
078	Facial Plastic Surgery	OPL	
080	Otolaryngology or Rhinology	OTL	
080	Otolaryngology or Rhinology	OTR	
080	Otolaryngology or Rhinology	RHI	
081	Pediatric Otolaryngology		PDO
082	Psychiatry		P
083	Psychoanalysis	PYA	
084	Geriatric Psychiatry		PYG
085	Adolescent Medicine-Family or General Practice	AFP	
085	Adolescent Medicine-Family or General Practice	AGP	
086	Pediatric Intensive Care		PIC
087	Neonatology	NE	
088	Pediatrics		PD
089	Pediatric Allergy & Immunology		PAI
091	Pediatric Pulmology Medicine	PDX	
092	Pediatric Gastroenterology	PG	
093	Pediatric Hematology-Oncology		PHO
094	Pediatric Diag Lab Immunology		PLI
095	Pediatric Nephrology		PNP
096	Pediatric Rheumatology	PPR	
097	Sports Medicine - Pediatrics	PSM	
098	Pediatric Cardiology		PDC
099	Preventive Medicine, Epidemiology or Public Health	EPI	
099	Preventive Medicine, Epidemiology or Public Health	OE	

A8. (Continued:)

099	Preventive Medicine, Epidemiology or Public Health	PH	
099	Preventive Medicine, Epidemiology or Public Health	PHP	
100	Physical Medicine & Rehabilitation		IAR
100	Physical Medicine & Rehabilitation		PDR
100	Physical Medicine & Rehabilitation		PM
100	Physical Medicine & Rehabilitation		RM
101	Hand Surgery-Plastic Surg		HSP
102	Plastic Surgery		OOP
102	Plastic Surgery		PLR
103	Anatomic Pathology	AP	
104	Blood Banking-Transfusion Medicine		BBT
104	Blood Banking-Transfusion Medicine		LBM
105	Clinical Pathology	CLP	
106	Dermatopathology	DPT	
107	Hematology-Pathology		HEP
108	Medicine Microbiology	MMB	
109	Neuropathology	NPT	
110	Chemical Pathology	CP	
111	Cytopathology	CY	
112	Immunopathology		IPT
113	Pediatric Pathology	PP	
114	Anatomic/Clinical Pathology	APL	
114	Anatomic/Clinical Pathology	PTH	
115	Radioisotopic Pathology	RIP	
116	Pulmonary Diseases	PUD	
116	Pulmonary Diseases	PUL	
117	Nuclear Radiology	NR	
118	Pediatric Radiology	PRD	
119	Radiology	DUS	
119	Radiology	R	
119	Radiology	RI	
119	Radiology	RT	
119	Radiology	RTD	
120	Neuroradiology	NRA	
121	Radiological Physics		RP
122	Angiography & Intervent'l Radiology		ANG
122	Angiography & Intervent'l Radiology		SCL
123	Radiation Oncology	RO	
123	Radiation Oncology	TR	
124	Cardiovascular or Thoracic Cardiovascular Surgery		CVS

A8. (Continued:)

124	Cardiovascular or Thoracic Cardiovascular Surgery	TS
125	Urology	U
125	Urology	URS
126	Pediatric Urology	UP
127	Addictive Diseases	ADD
128	Critical Care-Medicine	CCM
129	Legal Medicine	LM
130	Clinical Pharmacology	PA
131	Unknown Blank	
133	Adolescent Medicine	ADL
134	Orthopedic Foot & Ankle Surg	OFA
135	Forensic Psychiatry	FPS
136	Hematology & Oncology	HEO
137	Internal Med-Pediatrics	IPD
139	Toxicology	TX
142	Psychosomatic Medicine	PYM
145	Pediatric Infectious Diseases	PID
146	Pediatric Ophthalmology	PO
147	Pulmonary-Critical Care	PUC
153	MOHS Micrographic Surgery	DMS
154	Hair Transplant	HT
155	Osteo Manipulative Treat +1	OM1
156	Spec Prof in Osteo Manip Med	OMM
157	Sports Medicine - OMM	OMS
158	Osteo Manipulative Medicine	OMT
159	Proctology	PR
160	Internship	IN
161	Retired	RET
162	Transitional Year	TY
209	Nuclear Cardiology	NC
997	Other (list) - **(USE VERY SPARINGLY; Thank and Terminate)**	
998	(DK) **(Thank and Terminate)**	
999	(Refused) **(Thank and Terminate)**	

_____ _____
(5/26 - 5/28)

(If code "003", "005-007", "013-014", "018", "025", "028", "057", "099", "103-115", "117-123", "129-131", "135", "138-143", "148-149", "160-162" or "209" in #A8,

INTERVIEWER READ:) In this survey, we are only interviewing physicians in certain specialties, and your specialty is not among those being interviewed. So, it appears that we do not need any further information from you at this time, but we thank you for your cooperation. - **(Thank and Terminate)**

(If code "042", "088" or "137" in #A8, Continue;
If code "001-002", "004", "009", "012", "015-016", "020-022", "024", "035-041", "043-048", "055-056", "085", "116", "128", "136" or "147" in #A8, Skip to #A9a;
If code "017", "049-054", "063", "086-087", "089-094", "095-098", "133" or "144-145" in #A8, Skip to #A9b;
Otherwise, Skip to #A15)

A9. **(If code "042", "088" or "137" in #A8, ask:)** Do you spend more hours weekly in general **(response in #A8)**, or a subspecialty in **(response in #A8)**? **(INTERVIEWER NOTE: If respondent says "50/50 split", code as "1")**

GENSUB

1 General - **(Skip to #A15)**

2 Subspecialty (including adolescent medicine or geriatrics) - **(Skip to #A10)**

8 (DK) **(Skip to #A15)**
9 (Refused) **(Skip to #A15)**

_____ (5/29)

A9a. **(If code "001-002", "004", "009", "012", "015-016", "020-022", "024", "035-041", "043-048", "055-056", "085", "116", "128", "136" or "147" in #A8, ask:)** Do you spend most of your time practicing in **(response in #A8)**, or in general internal medicine? **(INTERVIEWER NOTE: If respondent says "50/50 split", code as "1")**

SIPNPED

1 Subspecialty
2 General internal medicine (or general family practice)
3 General pediatrics
8 (DK)
9 (Refused)

_____ (12/80)

(All in #A9a, Skip to #A15)

A9b. **If code "017", "049-054", "063", "086-087", "089-098", "133" or "144-145" in #A8, ask:)** Do you spend most of your time practicing in **(response in #A8)**, or in general pediatrics? **(INTERVIEWER NOTE: If respondent says "50/50 split", code as "1")**

SIPPED

1 Subspecialty
2 General internal medicine (General Family Practice)
3 General pediatrics
8 (DK)
9 (Refused)

_____ (8/77)

(All in #A9b, Skip to #A15)

A10. **(If code "2" in #A9, ask:)** And what is that subspecialty? **(If "More than one", say:)** We're interested in the one in which you spend the most hours weekly. (Open ended **and code from hard copy)** **(CHECK SPELLING)**

SUBSPC

(If code "2" in S1 [MD-AMA LIST])

001	Allergy	(A)
133	Adolescent Medicine	(ADL)
127	Addiction Medicine	(ADM)
132	Addiction Psychiatry	(ADP)
002	Allergy & Immunology	(AI)
003	Allergy & Immunology/ Diagnostic Laboratory Immunology	(ALI)
005	Aerospace Medicine	(AM)
085	Adolescent Medicine	(AMI)
006	Anesthesiology	(AN)
007	Pain Management	(APM)
026	Abdominal Surgery	(AS)
103	Anatomic Pathology	(ATP)
104	Bloodbanking/Transfusion Medicine	(BBK)
049	Clinical Biochemical Genetics	(CBG)
008	Critical Care Medicine (Anesthesiology)	(CCA)
050	Clinical Cytogenetics	(CCG)
128	Critical Care Medicine	(CCM)
086	Critical Care Pediatrics	(CCP)
027	Critical Care Surgery	(CCS)
009	Cardiovascular Diseases (Cardiology)	(CD)
051	Clinical Genetics	(CG)
054	Child Neurology	(CHN)
010	Child & Adolescent Psychiatry	(CHP)
105	Clinical Pathology	(CLP)
052	Clinical Molecular Genetics	(CMG)
055	Clinical Neurophysiology	(CN)
011	Colon & Rectal Surgery	(CRS)
124	Cardiothoracic Surgery (Thoracic Surgery)	(CTS)
012	Dermatology	(D)
013	Clinical & Laboratory Dermatological Immunology	(DDL)
035	Diabetes	(DIA)
106	Dermatopathology	(DMP)
014	Diagnostic Radiology	(DR)
015	Emergency Medicine	(EM)
036	Endocrinology & Metabolism	(END)
016	Sports Medicine	(ESM)

A10. (Continued:)

140	Medical Toxicology (Emergency Medicine)	(ETX)
018	Forensic Pathology	(FOP)
019	Family Practice	(FP)
020	Geriatric Medicine	(FPG)
078	Facial Plastic Surgery	(FPS)
021	Sports Medicine	(FSM)
022	Gastroenterology	(GE)
061	Gynecological Oncology	(GO)
023	General Practice	(GP)
024	General Preventive Medicine	(GPM)
029	General Surgery	(GS)
062	Gynecology	(GYN)
037	Hematology	(HEM)
038	Hepatology	(HEP)
107	Hematology Pathology	(HMP)
030	Head & Neck Surgery	(HNS)
136	Hematology/Oncology	(HO)
070	Hand Surgery	(HSO)
101	Hand Surgery	(HSP)
031	Hand Surgery	(HSS)
039	Cardiac Electrophysiology	(ICE)
040	Infectious Diseases	(ID)
004	Immunology	(IG)
041	Clinical & Laboratory Immunology	(ILI)
042	Internal Medicine	(IM)
043	Geriatric Medicine	(IMG)
044	Sports Medicine	(ISM)
129	Legal Medicine	(LM)
138	Medical Management	(MDM)
063	Maternal & Fetal Medicine	(MFM)
053	Medical Genetics	(MG)
108	Medical Microbiology	(MM)
137	Internal Medicine/Pediatrics	(MPD)
099	Public Health & General Preventive Medicine	(MPH)
056	Neurology	(N)
058	Critical Care Medicine (Neurosurgery)	(NCC)
045	Nephrology	(NEP)
057	Nuclear Medicine	(NM)
109	Neuropathology	(NP)
087	Neonatal/Perinatal Medicine (Neonatology/Perinatology)	(NPM)
117	Nuclear Radiology	(NR)
059	Neurological Surgery	(NS)
060	Pediatric Neurosurgery	(NSP)

A10. (Continued:)

046	Nutrition	(NTR)
071	Adult Reconstructive Orthopedics	(OAR)
064	Obstetrics & Gynecology	(OBG)
065	Obstetrics	(OBS)
066	OB Critical Care Medicine	(OCC)
134	Foot & Ankle Orthopedics	(OFA)
068	Occupational Medicine	(OM)
072	Musculoskeletal Oncology	(OMO)
047	Medical Oncology	(ON)
073	Pediatric Orthopedics	(OP)
069	Opthalmology	(OPH)
074	Orthopedic Surgery	(ORS)
028	Other Specialty	(OS)
075	Sports Medicine (Orthopedic Surgery)	(OSM)
076	Orthopedic Surgery of the Spine	(OSS)
079	Otology	(OT)
080	Otolaryngology	(OTO)
077	Orthopedic Trauma	(OTR)
082	Psychiatry	(P)
130	Clinical Pharmacology	(PA)
147	Pulmonary Critical Care Medicine	(PCC)
110	Chemical Pathology	(PCH)
111	Cytopathology	(PCP)
088	Pediatrics	(PD)
089	Pediatric Allergy	(PDA)
098	Pediatric Cardiology	(PDC)
090	Pediatric Endocrinology	(PDE)
145	Pediatric Infectious Diseases	(PDI)
081	Pediatric Otolaryngology	(PDO)
091	Pediatric Pulmonology	(PDP)
118	Pediatric Radiology	(PDR)
032	Pediatric Surgery	(PDS)
139	Medical Toxicology (Pediatrics)	(PDT)
144	Pediatric Emergency Medicine	(PE)
017	Pediatric Emergency Medicine	(PEM)
135	Forensic Psychiatry	(PFP)
092	Pediatric Gastroenterology	(PG)
093	Pediatric Hematology/Oncology	(PHO)
112	Immunopathology	(PIP)
094	Clinical & Laboratory Immunology	(PLI)
143	Palliative Medicine	(PLM)
100	Physical Medicine & Rehabilitation	(PM)
142	Pain Medicine	(PMD)
095	Pediatric Nephrology	(PN)
146	Pediatric Opthalmology	(PO)

A10. (Continued:)

113	Pediatric Pathology	(PP)
096	Pediatric Rheumatology	(PPR)
102	Plastic Surgery	(PS)
097	Sports Medicine (Pediatrics)	(PSM)
114	Anatomic/Clinical Pathology	(PTH)
141	Medical Toxicology (Preventive Medicine)	(PTX)
116	Pulmonary Diseases	(PUD)
083	Psychoanalysis	(PYA)
084	Geriatric Psychiatry	(PYG)
119	Radiology	(R)
067	Reproductive Endocrinology	(REN)
048	Rheumatology	(RHU)
115	Radioisotopic Pathology	(RIP)
120	Neuroradiology	(RNR)
123	Radiation Oncology	(RO)
121	Radiological Physics	(RP)
150	Spinal Cord Injury	(SCI)
149	Sleep Medicine	(SM)
151	Surgical Oncology	(SO)
148	Selective Pathology	(SP)
033	Trauma Surgery	(TRS)
152	Transplant Surgery	(TTS)
125	Urology	(U)
025	Undersea Medicine	(UM)
126	Pediatric Urology	(UP)
131	Unspecified	(US)
122	Vascular & Interventional Radiology	(VIR)
034	Vascular Surgery	(VS)

997 Other (list) - **(USE VERY SPARINGLY; Thank and Terminate)**

998 (DK) **(Thank and Terminate)**
999 (Refused) **(Thank and Terminate)**

_____ (5/30 - 5/32)

A10. (Continued:)

(If code "1" in S1 [DO-AOA LIST])

002	Allergy and Immunology	AI	
003	Allergy-Diagnostic Lab Immunology	ALI	
004	Immunology		IG
005	Preventive Medicine-Aerospace Medicine	AM	
006	Anesthesiology	AN	
006	Anesthesiology	CAN	
006	Anesthesiology	IRA	
006	Anesthesiology	OBA	
006	Anesthesiology	PAN	
007	Pain Management		APM
007	Pain Management		PMR
008	Critical Care-Anesthesiology	CCA	
009	Cardiovascular Diseases-Cardiology		C
009	Cardiovascular Diseases-Cardiology		CVD
009	Cardiovascular Diseases-Cardiology		IC
010	Pediatric Psychiatry		CHP
010	Pediatric Psychiatry		PDP
011	Colon & Rectal Surgery	CRS	
012	Dermatology	D	
014	Diagnostic Radiology		DR
015	Emergency Medicine	EM	
015	Emergency Medicine	EMS	
015	Emergency Medicine	FEM	
015	Emergency Medicine	IEM	
016	Sports Medicine (Emergency Medicine)		ESM
017	Pediatric Emergency Medicine	PEM	
018	Forensic Pathology	FOP	
019	Family Practice		FP
019	Family Practice		UFP
020	Geriatrics-General or Family Practice	GFP	
020	Geriatrics-General or Family Practice	GGP	
021	Sports Medicine-Family or General Practice	SFP	
021	Sports Medicine-Family or General Practice	SGP	
022	Gastroenterology	GE	
023	General Practice	GP	
024	Preventive Medicine	PVM	
025	Undersea Medicine	UM	
026	Abdominal Surgery	AS	
027	Critical Care-Surgery or Trauma	CCS	
027	Critical Care-Surgery or Trauma	CCT	
028	Other Specialty		OS
029	Surgery-General		S
030	Head & Neck Surgery	HNS	
031	Hand Surgery	HS	

A10. (Continued:)

031	Hand Surgery	HSS	
032	Pediatric Surgery	PDS	
033	Traumatic Surgery	TRS	
034	Vascular Surgery-General or Peripheral	GVS	
034	Vascular Surgery-General or Peripheral	PVS	
036	Endocrinology	END	
037	Hematology		HEM
039	Cardiac Electrophysiology		ICE
040	Infectious Diseases	ID	
041	Diag Lab Immunology-Int Med	ILI	
042	Internal Medicine	IM	
042	Internal Medicine	IP	
043	Geriatrics-Internal Medicine	GER	
043	Geriatrics-Internal Medicine	GIM	
044	Sports Medicine		ISM
044	Sports Medicine		PMS
044	Sports Medicine		RMS
044	Sports Medicine		SM
045	Nephrology		NEP
046	Nutrition	NTR	
047	Oncology	ON	
048	Rheumatology	RHU	
050	Clinical Cytogenetics	CCG	
051	Clinical Genetics	CG	
053	Medical Genetics	IMG	
054	Pediatric or Child Neurology	CHN	
054	Pediatric or Child Neurology	PDN	
055	Clinical Neurophysiology		CN
056	Neurology	N	
056	Neurology	NMD	
056	Neurology		NP
056	Neurology	NPN	
057	Nuclear Medicine	NI	
057	Nuclear Medicine	NM	
057	Nuclear Medicine	NV	
058	Critical Care-Neuro Surgery	NCC	
059	Neurological Surgery		NS
061	Gynecological Oncology	GO	
062	Gynecology		GS
062	Gynecology		GYN
063	Maternal & Fetal Medicine		MFM
064	Obstetrics & Gynecology	OBG	
064	Obstetrics & Gynecology	OGS	
065	Obstetrics		OBS
066	Critical Care-Obstetrics & Gynecology	OCC	

A10. (Continued:)

067	Reproductive Endocrinology	RE	
068	Occupational Medicine	OCM	
068	Occupational Medicine	OM	
069	Ophthalmology	COR	
069	Ophthalmology	OAS	
069	Ophthalmology	OCR	
069	Ophthalmology	OGL	
069	Ophthalmology	OPH	
069	Ophthalmology	VRS	
070	Hand Surgery-Orthopedic Surg	HSO	
071	Adult Reconstructive Orthopedics	OAR	
072	Musculoskeletal Oncology		OMO
073	Pediatric Orthopedics	OP	
074	Orthopedic Surgery	AJI	
074	Orthopedic Surgery	OR	
074	Orthopedic Surgery	ORS	
075	Sports Medicine-Orthopedic Surgery		OSM
076	Orthopedic Surgery-Spine		OSS
078	Facial Plastic Surgery	OPL	
080	Otolaryngology or Rhinology	OTL	
080	Otolaryngology or Rhinology	OTR	
080	Otolaryngology or Rhinology	RHI	
081	Pediatric Otolaryngology		PDO
082	Psychiatry		P
083	Psychoanalysis	PYA	
084	Geriatric Psychiatry		PYG
085	Adolescent Medicine-Family or General Practice	AFP	
085	Adolescent Medicine-Family or General Practice	AGP	
086	Pediatric Intensive Care		PIC
087	Neonatology	NE	
088	Pediatrics		PD
089	Pediatric Allergy & Immunology		PAI
091	Pediatric Pulmology Medicine	PDX	
092	Pediatric Gastroenterology	PG	
093	Pediatric Hematology-Oncology		PHO
094	Pediatric Diag Lab Immunology		PLI
095	Pediatric Nephrology		PNP
096	Pediatric Rheumatology	PPR	
097	Sports Medicine - Pediatrics	PSM	
098	Pediatric Cardiology		PDC
099	Preventive Medicine, Epidemiology or Public Health	EPI	
099	Preventive Medicine, Epidemiology or Public Health	OE	

A10. (Continued:)

099	Preventive Medicine, Epidemiology or Public Health	PH	
099	Preventive Medicine, Epidemiology or Public Health	PHP	
100	Physical Medicine & Rehabilitation		IAR
100	Physical Medicine & Rehabilitation		PDR
100	Physical Medicine & Rehabilitation		PM
100	Physical Medicine & Rehabilitation		RM
101	Hand Surgery-Plastic Surg		HSP
102	Plastic Surgery		OOP
102	Plastic Surgery		PLR
103	Anatomic Pathology	AP	
104	Blood Banking-Transfusion Medicine		BBT
104	Blood Banking-Transfusion Medicine		LBM
105	Clinical Pathology	CLP	
106	Dermatopathology	DPT	
107	Hematology-Pathology		HEP
108	Medicine Microbiology	MMB	
109	Neuropathology	NPT	
110	Chemical Pathology	CP	
111	Cytopathology	CY	
112	Immunopathology		IPT
113	Pediatric Pathology	PP	
114	Anatomic/Clinical Pathology	APL	
114	Anatomic/Clinical Pathology	PTH	
115	Radioisotopic Pathology	RIP	
116	Pulmonary Diseases	PUD	
116	Pulmonary Diseases	PUL	
117	Nuclear Radiology	NR	
118	Pediatric Radiology	PRD	
119	Radiology	DUS	
119	Radiology	R	
119	Radiology	RI	
119	Radiology	RT	
119	Radiology	RTD	
120	Neuroradiology	NRA	
121	Radiological Physics		RP
122	Angiography & Intervent'l Radiology		ANG
122	Angiography & Intervent'l Radiology		SCL
123	Radiation Oncology	RO	
123	Radiation Oncology	TR	
124	Cardiovascular or Thoracic Cardiovascular Surgery		CVS
124	Cardiovascular or Thoracic Cardiovascular Surgery		TS
125	Urology	U	

A10. (Continued:)

125	Urology	URS	
126	Pediatric Urology	UP	
127	Addictive Diseases	ADD	
128	Critical Care-Medicine	CCM	
129	Legal Medicine	LM	
130	Clinical Pharmacology	PA	
131	Unknown Blank		
133	Adolescent Medicine	ADL	
134	Orthopedic Foot & Ankle Surg	OFA	
135	Forensic Psychiatry	FPS	
136	Hematology & Oncology	HEO	
137	Internal Med-Pediatrics	IPD	
139	Toxicology		TX
142	Psychosomatic Medicine	PYM	
145	Pediatric Infectious Diseases		PID
146	Pediatric Ophthalmology	PO	
147	Pulmonary-Critical Care	PUC	
153	MOHS Micrographic Surgery		DMS
154	Hair Transplant		HT
155	Osteo Manipulative Treat +1	OM1	
156	Spec Prof in Osteo Manip Med	OMM	
157	Sports Medicine - OMM	OMS	
158	Osteo Manipulative Medicine	OMT	
159	Proctology		PR
160	Internship		IN
161	Retired	RET	
162	Transitional Year	TY	
209	Nuclear Cardiology	NC	

997 Other (list) - **(USE VERY SPARINGLY; Thank and Terminate)**

998 (DK) **(Thank and Terminate)**

999 (Refused) **(Thank and Terminate)**

_____ _____

_____ (5/30 - 5/32)

(If code "003", "005-007", "013-014", "018", "025", "028", "057", "099", "103-115", "117-123", "129-131", "135", "138-143", "148-149", "160-162" or "209" in #A8,

INTERVIEWER READ:) In this survey, we are only interviewing physicians in certain specialties, and your specialty is not among those being interviewed. So, it appears that we do not need any further information from you at this time, but we thank you for your cooperation. - **(Thank and Terminate)**

A11. Are you board-certified in **(response in #A10)**?

1 Yes - **(Skip to #A13)**

2 No - **(Continue)**

8 (DK) **(Skip to #A12)**
9 (Refused) **(Skip to #A12)** _____ (8/78)

A11a. **(If code "2" in #A11, ask:)** Our survey data shows that you were board certified in **(response in #A10)**, when we last interviewed you. Is that correct? **(If necessary, say:)** The previous interviews were conducted between August, 1996 and August, 1997.

1 Yes
2 No
8 (DK)
9 (Refused) _____ (21/29)

A12. **(If code "2", "8" or "9" in #A11, ask:)** Are you board-eligible in **(response in #A10)**?

1 Yes
2 No
8 (DK)
9 (Refused) _____ (21/30)

A13. Are you board-certified in **(response in #A8)**?

1 Yes - **(Skip to #A19)**

2 No - **(Continue)**

8 (DK) **(Skip to "Note" before #A14)**
9 (Refused) **(Skip to "Note" before #A14)** _____ (21/31)

**(If code "2" in S1c,
and code "2" in #A13,
and code "1" in S1d, Continue;
Otherwise, Skip to "Note" before #A14)**

A13a. Our survey data shows that you were board certified in **(response in #A8)**, when we last interviewed you. Is this correct? **(If necessary, say:)** The previous interviews were conducted between August, 1996 and August 1997.

1 Yes
2 No
8 (DK)
9 (Refused) _____ (21/32)

**(If code "1" in #A12, Skip to #A19;
Otherwise, Continue)**

A14. Are you board-eligible in **(response in #A8)**?

1 Yes
2 No
8 (DK)
9 (Refused) _____ (21/33)

(All in #A14, Skip to #A19)

A15. Are you board-certified in **(response in #A8)**?
(INTERVIEWER NOTE: If physician says "Board-Certified in Internal Medicine" or "Board-certified in Pediatrics", code as "1")

1 Yes - **(Skip to #A19)**

2 No - **(Continue)**

8 (DK) **(Skip to #A16)**
9 (Refused) **(Skip to #A16)** _____ (21/34)

(If code "2" in S1c, and code "2" in #A15, and code "1" in S1f, Continue; Otherwise, Skip to #A16)

A15a. Our survey data shows that you were board certified in **(response in #A8)**, when we last interviewed you. Is this correct? **(If necessary, say:)** The previous interviews were conducted between August, 1996 and August, 1997.

1 Yes
2 No
8 (DK)
9 (Refused) _____ (21/35)

A16. Are you board-eligible in **(response in #A8)**?
(INTERVIEWER NOTE: If physician says "Board-Certified in Internal Medicine" or "Board-certified in Pediatrics", code as "1")

1 Yes
2 No
8 (DK)
9 (Refused) _____ (21/36)

(If code "019", "023", "042", "088" or "137" in #A8, Skip to #A19; Otherwise, Continue)

A17. Are you board certified in any specialty?

1 Yes - **(Skip to #A19)**

2 No **(Continue)**
8 (DK) **(Continue)**
9 (Refused) **(Continue)**
(5/38)

(If code "1" in #A16, Skip to #A19; Otherwise, Continue)

A18. **(If code "2" or "8-9" in #A17, ask:)** Are you board eligible in any specialty?

1 Yes
2 No
8 (DK)
9 (Refused) _____ (5/39)

A19. Many of the remaining questions are about your practice and your relationships with patients. Before we begin those questions, let me ask you: Thinking very generally about your satisfaction with your overall career in medicine, would you say that you are CURRENTLY **(read 5-1)**?

CARSAT

5 Very satisfied
4 Somewhat satisfied
3 Somewhat dissatisfied
2 Very dissatisfied, OR
1 Neither satisfied nor dissatisfied

8 (DK)
9 (Refused) _____ (5/40)

CLOCK:

_____ _____
(28/16 - 28/19)

SECTION B
UTILIZATION OF TIME

B1. **(If code "2" in #A4, AND code "03-97", "DK" or "RF" in #A4a, OR code "8" or "9" in #A4, ask:)** Considering all of your practices, approximately how many weeks did you practice medicine during 1997? Exclude time missed due to vacation, illness and other absences. **(If necessary, say:)** Exclude family leave, military service, and professional conferences. If your office is closed for several weeks of the year, those weeks should NOT be counted as weeks worked. (Open ended **and code actual number)**

(If code "2" in #A4, AND code "02" in #A4a, ask:) Considering both of your practices, approximately how many weeks did you practice medicine during 1997? Exclude time missed due to vacation, illness and other absences. **(If necessary, say:)** Exclude family leave, military service, and professional conferences. If your office is closed for several weeks of the year, those weeks should NOT be counted as weeks worked. (Open ended **and code actual number)**

(If code "1" in #A4, ask:) Approximately how many weeks did you practice medicine during 1997? Exclude time missed due to vacation, illness and other absences. **(If necessary, say:)** Exclude family leave, military service, and professional conferences. If your office is closed for several weeks of the year, those weeks should NOT be counted as weeks worked. (Open ended **and code actual number)**

WKSWRK

53-
97 (BLOCK)

DK (DK)
RF (Refused)

_____ (5/41) (5/42)

B2. **(If code "2" in #A4, AND code "03-97", "DK" or "RF" in #A4a, OR code "8" or "9" in #A4, ask:)** Considering all of your practices, during your last complete week of work, approximately how many hours did you spend in all medically related activities? Please include all time spent in administrative tasks, professional activities and direct patient care. Exclude time on call when not actually working. (Open ended **and code actual number)**

(If code "2" in #A4, AND code "02" in #A4a, ask:) Considering both of your practices, during your last complete week of work, approximately how many hours did you spend in all medically related activities? Please include all time spent in administrative tasks, professional activities and direct patient care. Exclude time on call when not actually working. (Open ended **and code actual number)**

(If code "1" in #A4, ask:) During your last complete week of work, approximately how many hours did you spend in all medically related activities? Please include all time spent in administrative tasks, professional activities and direct patient care. Exclude time on call when not actually working. (Open ended **and code actual number)**

169-
997 (BLOCK)

DK (DK)
RF (Refused)

_____ _____
(5/43 - 5/45)

B3. **(If code "001-168" in #B2, ask:)** Of these **(response in #B2)** hours, how many did you spend in direct patient care activities? **(If necessary, say:)** INCLUDE time spent on patient record-keeping, patient-related office work, and travel time connected with seeing patients. EXCLUDE time spent in training, teaching, or research, any hours on-call when not actually working, and travel between home and work at the beginning and end of the work day. **(If appropriate, say:)** INCLUDE ALL PRACTICES, not just the main practice. (Open ended **and code actual number)**

(If code "DK" or "RF" in #B2, ask:) About how many hours did you spend in direct patient care activities? **(If necessary, say:)** INCLUDE time spent on patient record-keeping, patient-related office work, and travel time connected with seeing patients. EXCLUDE time spent in training, teaching, or research, any hours on-call when not actually working, and travel between home and work at the beginning and end of the work day. **(If appropriate, say:)** INCLUDE ALL PRACTICES, not just the main practice. (Open ended **and code actual number)**

169-
997 (BLOCK)

DK (DK)
RF (Refused)

_____ (5/46 - 5/48)

(If response in #B3 = response in #B2, Continue;
If response in #B3 > response in #B2, Skip to B4;
Otherwise, Skip to #B6)

B3a. So, you spent all of your time working in direct patient care activities, is that right?

1 Yes - **(Skip to #B6)**

2 No - **(Continue)**

8 (DK) **(Skip to #B6)**
9 (Refused) **(Skip to #B6)** _____ (5/75)

B3b. **(If code "2" in #B3a, ask:)** I have recorded that you spent **(response in #B2)** hours in all medically related activities and **(response in #B3)** hours in direct patient care. Which of these is incorrect?

1 All medically related activities hours - **(Continue)**

2 Direct patient care hours - **(Skip to #B3d)**

3 (Neither are correct) - **(Continue)**

4 (Both are correct)
8 (DK) **(Skip to #B6)**
9 (Refused) _____ (5/76)

B3c. **(If code "1" or "3" in #B3b, ask:)** Thinking of your last complete week of work, approximately how many hours did you spend in all medically related activities? Please include all time spent in administrative tasks, professional activities and direct patient care. Exclude time on call when not actually working. (Open ended **and code actual number)**

169-
997 (BLOCK)

DK (DK)
RF (Refused)

_____ (5/77 - 5/79)

B3d. **(If code "2" or "3" in #B3b, ask:)** Thinking of your last complete week of work, about how many hours did you spend in direct patient care activities? **(If necessary, say:)** INCLUDE time spent on patient record-keeping, patient-related office work, and travel time connected with seeing patients. EXCLUDE time spent in training, teaching, or research, any hours on-call when not actually working, and travel between home and work at the beginning and end of the work day. **(If appropriate, say:)** INCLUDE ALL PRACTICES, not just the main practice. (Open ended **and code actual number)**

169-
997 (BLOCK)

DK (DK)
RF (Refused)

_____ (6/74 - 6/76)

(All in #B3d, Skip to #B6)

B4. I may have made a recording mistake. My computer is showing that I've recorded more hours spent in direct patient care than in ALL medical activities. So, during your last complete week of work, approximately how many hours did you spend in ALL medically related activities? Please include all time spent in administrative tasks, professional activities and direct patient care, as well as any hours spent on call when actually working? (Open ended **and code actual number)**

169-
997 (BLOCK)

DK (DK)
RF (Refused)

_____ (5/49 - 5/51)

B5. And of those total [**(response in #B4)**] hours, about how many did you spend in direct patient care activities? **(If necessary, say:)** INCLUDE time spent on patient record-keeping, patient-related office work, and travel time connected with seeing patients. EXCLUDE time spent in training, teaching, or research, any hours on-call when not actually working, and travel between home and work at the beginning and end of the work day. **(If appropriate, say:)** INCLUDE ALL PRACTICES, not just the main practice. (Open ended **and code actual number)**

169-
997 (BLOCK)

DK (DK)
RF (Refused)

_____ (5/52 - 5/54)

B6. **(If code "8" or "9" in #A4, OR code "03-97", "DK" or "RF" in #A4a, ask:)** Again thinking of all your practices, during the LAST MONTH, how many hours, if any, did you spend providing CHARITY care? By this we mean, that because of the financial need of the patient you charged either no fee or a reduced fee. Please do not include time spent providing services for which you expected, but did not receive, payment. **(Probe:)** Your best estimate would be fine. (Open ended **and code actual number)**

(If code "02" in #A4a, ask:) Again thinking of both of your practices, during the LAST MONTH, how many hours, if any, did you spend providing CHARITY care? By this we mean, that because of the financial need of the patient you charged either no fee or a reduced fee. Please do not include time spent providing services for which you expected, but did not receive, payment. **(Probe:)** Your best estimate would be fine. (Open ended **and code actual number)**

(If code "1" in #A4, ask:) During the LAST MONTH, how many hours, if any, did you spend providing CHARITY care? By this we mean, that because of the financial need of the patient you charged either no fee or a reduced fee. Please do not include time spent providing services for which you expected, but did not receive, payment. **(Probe:)** Your best estimate would be fine. (Open ended **and code actual number)**

(If necessary, say:) EXCLUDE bad debt and time spent providing services under a discounted fee for service contract or seeing Medicare and

(If code "06" in "STATE", say:) MediCAL patients.

(If code "04" in "STATE", say:) AHCCCS ("Access") patients.

B6. (Continued:)

(If code "01-03", "05" or "07-56" in "STATE", say:) Medicaid patients.

(If necessary, say:) By the LAST MONTH, we mean the last four weeks.

HRFREE

DK (DK)
RF (Refused)

_____ (10/64 - 10/66)

CLOCK:

_____ (28/24 - 28/27)

SECTION C
TYPE AND SIZE OF PRACTICE

CA. PRACTICE: **(Code only)**

1 **(If code "1" in #A4:)** Practice

2 **(If code "2", "8" or "9" in #A4:)** Main Practice _____ (5/63)

(INTERVIEWER READ:) Now, I would like to ask you a series of questions about the **(response in #CA)** in which you work.

C1. Are you a full owner, a part owner, or not an owner of this practice? **(INTERVIEWER NOTE: A shareholder of the practice in which they work should be coded as "2 - Part owner")**

OWNPR

1	Full owner	**(Continue)**
2	Part owner	**(Continue)**
3	Not an owner	**(Skip to #C3)**
8	(DK)	**(Skip to #C3)**
9	(Refused)	**(Skip to #C3)**

_____ (5/64)

C2. **(If code "1" or "2" in #C1, ask:)** Which of the following best describes this practice? Is it **(read 06-16, then 01)**? **(INTERVIEWER NOTE: A free-standing clinic includes non-hospital-based ambulatory care, surgical and emergency care centers)**

TOPOWN

01 OR, something else (list) - **(Skip to #C4)**

02-
05 HOLD

06 A practice owned by one physician (solo practice) - **(Skip to "Note" before #C3)**

07 A two physician practice - **(Skip to #C4)**

08 A group practice of three or more physicians (see AMA definition on card) - **(Continue)**

09 A group model HMO **Skip to #C7)**
10 A staff model HMO **Skip to #C7)**

11-
15 HOLD

16 A free-standing clinic - **(Continue)**

98 (DK) **(Skip to #C4**
99 (Refused) **(Skip to #C4)**

_____ (5/65) (5/66)

C2a. **(If code "08" or "16" in #C2, ask:)** Is the practice a single-specialty or multi-specialty practice?

1 Single-specialty - **(Skip to "Note" before #C3)**

2 Multi-specialty - **(Continue)**

8 (DK) **(Skip to "Note" before #C3)**
9 (Refused) **(Skip to "Note" before #C3)** _____ (21/37)

(If code "019", "023", "042", "088" or "137" in #A10/#A8, OR if code "2" in #A9a, or code "3" in #A9a, or code "2" in #A9b, or code "3" in #A9b, Skip to #C2c; Otherwise, Continue)

C2b. Are any of the physicians in the practice in primary care specialties? **(Probe:)** By primary care specialties, we mean general or family practice, general pediatrics, or general internal medicine.

1 Yes
2 No
8 (DK)
9 (Refused) _____ (21/38)

(All in #C2b, Skip to "Note" before #C3)

C2c. **(If code "019", "023", "042", "088" or "137" in #A10/#A8, or if code "2" in #A9a, or code "3" in #A9a, or code "2" in #A9b, or code "3" in #A9b, ask:)** Are any of the physicians in the practice in specialties other than general or family practice, general pediatrics or general internal medicine?

1 Yes
2 No
8 (DK)
9 (Refused) _____ (21/39)

(If code "1" in #C1, AND code "06" in #C2, Skip to #C7; Otherwise, Skip to #C4)

C3. **(If code "3", "8" or "9" in #C1, ask:)** Which of the following best describes your current employer or employment arrangement? Are you employed by **(read 06-16, then 01)**? **(INTERVIEWER NOTE: Stop once response is given) (If necessary, say:)** An EMPLOYER is the entity that pays you and should not be confused with where you work. For instance, your employer could be a group practice even if you work in a hospital.

TOPEMP

01 OR, something else (do NOT list here) - **(Skip to #C3b)**

02-
05 HOLD

06 A practice owned by one physician (solo practice) - **(Skip to #C5)**

07 A two physician-owned practice - **(Skip to #C4)**

08 A group practice of three or more physicians (see) AMA definition on card) - **(Continue)**

09 A group model HMO **(Skip to #C7)**
10 A staff model HMO **(Skip to #C7)**

12 A medical school or university **(Skip to #C10)**
13 A non-government hospital or group of hospitals **(Skip to #C10)**

14 City, county or state government - **(Skip to #C3a)**

16 A free-standing clinic - **(Continue)**

98 (DK) **(Skip to #C3b)**
99 (Refused) **(Skip to #C3b)**

(5/67) (5/68)

C3aa. **(If code "08 or "16" in #C3, ask:)** Is the practice a single-specialty or multi-

specialty practice?

1 Single-specialty - **(Skip to #C4)**

2 Multi-specialty - **(Continue)**

8 (DK) **(Skip to #C4)**
9 (Refused) **(Skip to #C4)** _____ (21/40)

(If code "019", "023", "042", "088" or "137" in #A10/#A8, OR if code "2" in #A9a, or code "3" in #A9a, or code "2" in #A9b, or code "3" in #A9b, Skip to C3ac; Otherwise, Continue)

C3ab. Are any of the physicians in the practice in primary care specialties? **(Probe:)** By primary care specialties, we mean general or family practice, general pediatrics, or general internal medicine.

1 Yes
2 No
8 (DK)
9 (Refused) _____ (21/41)

(All in #C3ab, Skip to #C4)

C3ac. **(If code "019", "023", "042", "088" or "137" in #A10/#A8, or if code "2" in #A9a, or code "3" in #A9a, or code "2" in #A9b, or code "3" in #A9b, ask:)** Are any of the physicians in the practice in specialties other than general or family practice, general pediatrics or general internal medicine?

1 Yes
2 No
8 (DK)
9 (Refused) _____ (21/42)

(All in #C3ac, Skip to #C4)

C3a. **(If code "14" in #C3, ask:)** Is this a hospital, clinic or some other setting?

OTHSET

1 Hospital
2 Clinic
3 Other (do NOT list)
8 (DK)
9 (Refused) _____ (6/78)

(All in #C3a, Skip to #C10)

C3b. **(If code "01", "98" or "99" in #C3, ask:)** Are you employed by **(read 11-21, as appropriate, then 01)**?

EMPTYP

01 OR, something else (do NOT list here) - **(Continue)**

02-
10 HOLD

11 Other HMO, insurance company or health plan - **(Skip to #C10)**

15 An integrated health or delivery system - **(Skip to #C10)**

17 A physician practice management company or other for-profit investment company **(Skip to #C10)**

18 Community health center - **(Skip to #C7)**

19 Management Services Organization (MSO) **(Skip to #C10)**
20 Physician-Hospital Organization (PHO) **(Skip to #C10)**

21 Locum tenens - **(Skip to #C10)**

22 Foundation - **(Skip to #C3ca)**

25 Independent contractor **(Skip to #C10)**
26 Industry clinic **(Skip to #C10)**

98 (DK) **(Skip to #C4)**
99 (Refused) **(Skip to #C4)**

_____ (6/79) (6/80)

C3c. What type of organization do you work for? (Open ended and code, **if possible; otherwise, ENTER VERBATIM RESPONSE)**

EMPTYP2

01 Other (list) - **(Skip to #C10)**

02-
05 HOLD

06 A practice owned by one physician (solo practice) - **(Skip to #C5)**

07 A two physician-owned practice - **(Skip to #C4)**

08 A group practice of three or more physicians (see) AMA definition on card) - **(Skip to #C3ca)**

09 A group model HMO **(Skip to #C7)**
10 A staff model HMO **(Skip to #C7)**

12 A medical school or university **(Skip to #C10)**
13 A non-government hospital or group of hospitals **(Skip to #C10)**

14 City, county or state government - **(Continue)**

16 A free-standing clinic - **(Skip to #C3ca)**

17 HOLD

18 Community health center - **(Skip to #C4)**
19-
21 HOLD

22 Foundation - **(Skip to #C3ca)**

25 Independent Contractor **(Skip to #C10)**
26 Industry Clinic **(Skip to #C10)**

98 (DK) **(Skip to #C4)**
99 (Refused) **(Skip to #C4)**

(21/43) (21/44)

C3ca. **(If code "08" or "16" in #C3c, or code "22" in #C3b, ask:)** Is the practice a single-specialty or multi-specialty practice?

1 Single-specialty - **(Skip to #C4)**

2 Multi-specialty - **(Continue)**

8 (DK) **(Skip to #C4)**
9 (Refused) **(Skip to #C4)** _____ (5/57)

(If code "019", "023", "042", "088" or "137" in #A10/#A8, OR if code "2" or "3" in #A9a, OR code "2" or "3" in #A9b, Skip to #C3cc; Otherwise, Continue)

C3cb. Are any of the physicians in the practice in primary care specialties? By primary care specialties, we mean general or family practice, general pediatrics or general internal medicine.

1 Yes
2 No
8 (DK)
9 (Refused) _____ (5/58)

(All in #C3cb, Skip to #C4)

C3cc. **(If code "019", "023", "042", "088" or "137" in #A10/#A8, OR code "2" or "3" in #A9a, OR code "2" or "3" in #A9b, ask:)** Are any of the physicians in the practice in specialties other than general or family practice, general pediatrics or general internal medicine?

1 Yes
2 No
8 (DK)
9 (Refused) _____ (5/59)

C3d. **(If code "14" in C3c, ask:)** Is this a hospital, clinic, or some other setting?

1 Hospital
2 Clinic
3 Other (do NOT list)
8 (DK)
9 (Refused) _____ (21/62)

C4. Do one or more of the other physicians in the practice in which you work have an ownership interest?

OTHPAR

1 Yes
2 No
8 (DK)
9 (Refused) _____ (5/69)

(If code "22" in #C3b or #C3c, Skip to #C7; Otherwise, Continue)

C5. Do any of the following have an ownership interest in the practice in which you work? This ownership interest may include ownership of only the assets or accounts receivable. Does **(read A-D)** have an ownership interest in the practice? **(If necessary, say:)** Do not include leased equipment.

1 Yes
2 No
8 (DK)
9 (Refused)

OTHGRP

A. Another physician group _____ (6/12)

HSPPAR

B. A hospital or group of hospitals _____ (6/13)

INSPAR

C. An insurance company, health plan or HMO (6/14)

ORGPAR

D. Any other organization **(listed on next screen)** (6/15)

**(If code "1" in #C5-D, Continue;
If code "2" to ALL in #C5 A-D, Skip to #C6a;
Otherwise, Skip to #C7)**

C6. **(If code "1" in #C5-D, ask:)** What kinds of organizations are these? (Open ended and code) **(ENTER ALL RESPONSES)**

				*	
01	Other (list)	1		_____	(6/16)
02	(DK)	2			
03	(Refused)	3			
04	No others	4			
05	HOLD	5			
06	Integrated health or delivery system		6		
07	Physician practice management or other for-profit investment company	7			
08	Management Services Organization (MSO)	8			
09	Physician-Hospital Organization (PHO)	9			
10	University/Medical school		0		
11	Medical Foundation or Non-profit Foundation	1		_____	(6/17)
12	Other Non-profit or community-based organization		2		
13	Other physicians in this practice	3			
14	Another physician group	4			
15	A hospital or group of hospitals	5			
16	An insurance company, health plan or HMO	6			
		HOLD		0	(6/18-6/27)

C6a. **(If code "3" in #C1, AND code "2" in #C4, AND code "2" to ALL in #C5 A-D, ask:)** Who owns the practice in which you work? (Open ended)

01	Other (list)		
02	(DK)		
03	(Refused)		
04	HOLD		
05	HOLD		

_____ _____
(7/72) (7/73)

C7. How many physicians, including yourself, are in the practice? Please include all locations of

the practice. **(Probe:)** Your best estimate would be fine. (Open ended **and code actual number) (INTERVIEWER NOTE: If asked, this includes both full- and part-time physicians)**

NPHYS

997 997+
DK (DK)
RF (Refused)

_____ _____ (6/28 - 6/30)

C8. How many physician assistants, nurse practitioners, nurse midwives, and clinical nurse specialists are employed by the practice including all locations? Include both full- and part-time employees in your answer. **(Probe:)** Please include only those who fit these categories. Your best estimate would be fine. (Open ended **and code actual number) (INTERVIEWER NOTE: Do NOT include office staff or nursing or other personnel who do not fit these categories; examples: LPNs or RNs who are not nurse practitioners or clinical nurse specialists should not be included)**

NASSIST

997 997+
DK (DK)
RF (Refused)

_____ _____ (6/31 - 6/33)

(If code "08" in #C2 or #C3 AND code "025-997" in #C7, Continue; Otherwise, Skip to #C10)

C9. Is your practice either a group model HMO or organized exclusively to provide services to a group model HMO?

1 Yes
2 No
8 (DK)
9 (Refused) _____ (6/34)

C10. In the last two years, were you part of a practice that was purchased by another practice or organization? **(If necessary, say:)** We are only interested in purchases over the last two years that occurred while you were part of the practice.

ACQUIRD

1 Yes - **(Continue)**

2 No **(Skip to "Section D")**
8 (DK) **(Skip to "Section D")**
9 (Refused) **(Skip to "Section D")** _____ (6/35)

C11. **(If code "1" in #C10, ask:)** At the time of the purchase, were you a full owner, a part owner, or not an owner of the practice that was purchased? **(INTERVIEWER NOTE: If multiple purchases, ask about the most recent)**

OWNPUR

1 Full owner
2 Part owner
3 Not an owner
8 (DK)
9 (Refused) _____ (6/36)

CLOCK:

_____ _____
(28/32 - 28/35)

SECTION D
MEDICAL CARE MANAGEMENT

MANAGEMENT STRATEGIES

(INTERVIEWER READ:) Now, I would like to ask you a series of questions about various medical care management techniques or strategies that are sometimes used to manage the care physicians provide to their patients. For each, I'll ask you how large an effect they have on your practice of medicine. The choices are: a very large effect, large, moderate, small, very small, or no effect at all. **(If code "2", "8" or "9" in #A4, say:)** As you answer, please think only about your main practice.

D1. At present, **(read and rotate A-F)**? Would you say that (it has/they have) a **(read 5-0)**? **(If physician says "Do not use/receive", say:)** Does this mean (it has/they have) no effect?

5 Very large
4 Large
3 Moderate
2 Small
1 Very small, OR
0 No effect at all

8 (DK)
9 (Refused)

EFDATA

A. How large an effect does your use of computers to obtain or record clinical data, such as medical records and lab results, have on your practice of medicine **(INTERVIEWER NOTE: This could include the physician's own computer system or that provided by a health insurance plan or HMO, hospital or other institution.)**
(6/37)

D1. (Continued:)

EFTREAT

B. How large an effect does your use of computers to obtain information about treatment alternatives or recommended guidelines have on your practice of medicine **(INTERVIEWER NOTE: This could include the physician's own computer system or that provided by a health insurance plan or HMO, hospital or other institution.)**

EFRMNDR

C. **(If code "019-020", "023", "043", "062", "064-065", "085" or "133" in #A10/#A8, OR If code "1", "8" or "9" in #A9, or code "042", "088" or "137" in #A10, OR If code "2" or "3" in #A9a, OR If code "2" or "3" in #A9b, ask:)** How large an effect do reminders that you receive from either a medical group, insurance company or HMO alerting you about specific preventive services that may be due for your individual patients have on your practice of medicine **(INTERVIEWER NOTE: Includes reminders from either the medical practice, insurance companies, clinics or HMOs. Does NOT include general educational material about preventive services or other reminders that are not about specific services for specific patients.)** _____ (6/41)

EFGUIDE

D. How large an effect does your use of FORMAL, WRITTEN practice guidelines such as those generated by physician organizations, insurance companies or HMOs, or government agencies have on your practice of medicine **(INTERVIEWER NOTE: Exclude guidelines that are unique to the physician.)** **(If physician says that s/he uses his/her own guidelines, say:)** In this question, we are only interested in the use of formal, written guidelines such as those generated by physician organizations, insurance companies or HMOs, or other such groups.

D1. (Continued:)

EFPROFL

E. How large an effect do the results of practice profiles comparing your pattern of using medical resources to treat patients with that of other physicians have on your practice of medicine? **(INTERVIEWER NOTE: We are not interested in informal feedback, but only specific, quantified information about the physician's practice patterns.) (If necessary, say:)** A practice profile is a report that is usually computer generated which compares you to other physicians on things like referrals to specialists, hospitalizations, or other measures of cost-effectiveness. _____ (6/45)

EFSURV

F. How large an effect does feedback from patient satisfaction surveys have on your practice of medicine

(There are no D2-D6)

(If code "019-020", "023", "043", "085" or "133" in #A10/#A8, OR If code "1", "8" or "9" in #A9, OR If code "042", "088" or "137" in #A10, OR If code "2" or "3" in #A9a, OR If code "2" or "3" in #A9b, Continue; Otherwise, Skip to "Interviewer Read" before #D11)

(INTERVIEWER READ:) Now, I would like to ask you a couple of questions about the range and complexity of conditions you treat without referral to specialists.

D7. During the last two years, has the complexity or severity of patients' conditions for which you provide care without referral to specialists **(read 5-1)**? **(INTERVIEWER NOTE: If respondent says he/she has not been practicing medicine for two years, ask about time since he/she started.)**

CMPPROV

5 Increased a lot
4 Increased a little
3 Stayed about the same
2 Decreased a little, OR
1 Decreased a lot

8 (DK)
9 (Refused) _____ (6/49)

D8. In general, would you say that the complexity or severity of patients' conditions for which you are currently expected to provide care without referral is **(read 5-1)**?

CMPEXPC

5 Much greater than it should be
4 Somewhat greater than it should be
3 About right
2 Somewhat less than it should be, OR
1 Much less than it should be

8 (DK)
9 (Refused) _____ (6/50)

D9. During the last two years, has the number of patients that you refer to specialists **(read 5-1)**?

SPECUSE

5 Increased a lot
4 Increased a little
3 Stayed about the same
2 Decreased a little, OR
1 Decreased a lot

8 (DK)
9 (Refused) _____ (6/51)

D10. Some insurance plans or medical groups REQUIRE their enrollees to obtain permission from a primary care physician before seeing a specialist. For roughly what percent of your patients do you serve in this role? (Open ended **and code actual percent)**

(If necessary, say:) The term "gatekeeper" is often used to refer to this role.

(If necessary, say:) Include only those patients for whom it is required, not for patients who choose to do so voluntarily.

PCTGATE

000 None **(Skip to "Section E")**
001 1% or less **(Skip to "Section E")**

002-
100 **(Skip to "Section E")**

DK (DK) **(Continue)**
RF (Refused) **(Continue)**

_____ _____
_____ (6/52 - 6/54)

D10a **(If code "DK" or "RF" in #D10, ask:)** Would you say you serve in this role for **(read 1-2)**?

1 Less than 25 percent of your patients, OR - **(Skip to #D10c)**

2 25 percent or more of your patients - **(Continue)**

8 (DK) **(Skip to "Section E")**
9 (Refused) **(Skip to "Section E")** _____ (6/55)

D10b **(If code "2" in #D10a, ask:)** Would you say for **(read 1-2)**?

1 Less than 50 percent of your patients

OR

2 50 percent or more of your patients

8 (DK)
9 (Refused) _____ (6/56)

(All in #D10b, Skip to "Section E")

D10c **(If code "1" in #D10a, ask:)** Would you say for **(read 1-2)**?

1 Less than 10 percent of your patients

OR

2 10 percent or more of your patients

8 (DK)
9 (Refused) _____ (6/57)

(All in #D10c, "Skip to Section E")

(INTERVIEWER READ:) Now, I would like to ask you a couple of questions about the range and complexity of conditions you treat.

D11. During the last two years, has the complexity or severity of patients' conditions at the time of referral to you by primary care physicians **(read 5-1)**?

CMPCHG

5 Increased a lot
4 Increased a little
3 Stayed about the same
2 Decreased a little, OR
1 Decreased a lot

8 (DK)
9 (Refused) _____ (6/58)

D12. In general, would you say that the complexity or severity of patients' conditions at the time of referral to you by primary care physicians is **(read 5-1)**?

CMPLVL

5 Much greater than it should be
4 Somewhat greater than it should be
3 About right
2 Somewhat less than it should be, OR
1 Much less than it should be

8 (DK)
9 (Refused) _____ (6/59)

D13. During the last two years, has the number of patients referred to you by primary care physicians **(read 5-1)**?

CHGREF

5 Increased a lot
4 Increased a little
3 Stayed about the same
2 Decreased a little, OR
1 Decreased a lot

8 (DK)
9 (Refused) _____ (6/60)

CLOCK:

_____ _____
_____ (28/40 - 28/43)

(NOTE: If code "2" in S1c, Select SAME "Vignettes" as in Round #1. The question numbers will be in the "Fone" file - Skip to "Interviewer Read") (If Vignettes NOT asked last time, Continue with "Note" before #EA)

SECTION E
VIGNETTES

(If code "1", "2" or "3" in S1c, AND code "019", "023" or "137" in #A10/#A8, OR if code "2" or "3" in #A9a, OR code "2" or "3" in #A9b, Continue; Otherwise, Skip to "Note" after #EA)

EA. Does your **(response in #CA)** include providing care to **(read 1-3)**? **(INTERVIEWER NOTE: This question refers only to the physician's OWN PATIENTS)**

WHOCARE

1 Adults only **(Continue)**
2 Children only, OR **(Continue)**
3 Both adults and children **(Continue)**

8 (DK) **(Skip to "Section F")**
9 (Refused) **(Skip to "Section F")** _____ (6/61)

(NOTE: If code "42" in #A10, code as "1" in "Form"; If code "88" in #A10, code as "2" in "Form")

**(If code "042" in #A8,
AND code "1", "8" or "9" in #A9,
OR code "1" in #EA, code as "1" in "FORM";
If code "088" in #A8,
AND code "1", "8" or "9" in #A9,
OR code "2" in #EA, code as "2" in "FORM";
If code "3" in #EA, code as "3" in "FORM";
Otherwise, Skip to "Section F")**

FORM:

1 FORM 1 **(Rotate #E1, #E3, #E4, #E5, #E9 and #E10)**

2 FORM 2 **(Rotate #E11, #E16, #E17, #E18, #E20 and #E21)**

3 FORM 3 **(Randomly select and rotate) (Either #E5 or #E9 AND either #E1 or #E10 AND either E#3 or #E4 AND either #E17 or #E20 AND either #E11 or #E16 AND either #E18 or #E21)**

(INTERVIEWER READ:) I am going to read a description of a patient and I'll ask about a possible test, treatment, or recommendation. We want you to think about patients with similar problems you've seen in your own practice during the past twelve months. The key question I'll ask is for what percentage of the patients with that problem would you recommend the test, treatment, or evaluation? Reasons for not recommending the treatment may include feeling that no treatment, or that an alternative treatment, is a better option. Any percentage, from zero to 100 percent, is a valid response.

(If code "2" or "8-9" in #A4, say:) As you answer, please think only about your main practice.

(If code "2" in "FORM", Skip to #E11; Otherwise, Continue)

E1. **(If code "1" or "3" in "FORM", ask:)** What about treating an elevated cholesterol with oral agents for a 50 year old man who has no other cardiac risk factors except elevated cholesterol? After six months on a low cholesterol diet, his total cholesterol is 240 and his LDL is 150. His HDL cholesterol is 50, giving a ratio of total cholesterol to HDL cholesterol of 4.8. For what percentage of such patients would you recommend oral agents at this point? (Open ended **and code actual percent)** **(Probe:)** Your best estimate will be fine. **(If necessary, say:)** Consider all your patients with similar clinical descriptions.

VCHOL

000 None **(Skip to "Next" item)**
001 1% or less **(Skip to "Next" item)**

002-
100 **(Skip to "Next" item)**

DK (DK) - **(Continue)**

RF (Refused) - **(Skip to "Next" item)**

_____ _____ (6/63 - 6/65)

E1a. **(If code "DK" in #E1, ask:)** Would you recommend oral agents **(read 6-1)**?

VCHOLF

6 Always
5 Almost always
4 Frequently
3 Sometimes
2 Rarely, OR
1 Never

8 (DK)
9 (Refused) _____ (6/66)

(There is no #E2)

E3. **(If code "1" or "3" in "FORM", ask:)** What about a urology referral for further evaluation of symptoms of benign prostatic hyperplasia in a 60 year old man. He is moderately symptomatic, has no evidence of renal compromise or cancer. The patient is somewhat bothered by these symptoms. For what percentage of such patients would you recommend a urology referral? (Open ended **and code actual percent)** **(Probe:)** Your best estimate will be fine. **(If necessary, say:)** Consider all your patients with similar clinical descriptions.

VHYPER

000 None **(Skip to "Next" item)**
001 1% or less **(Skip to "Next" item)**

002-
100 **(Skip to "Next" item)**

DK (DK) - **(Continue)**

RF (Refused) - **(Skip to "Next" item)**

_____ (7/12 - 7/14)

E3a. **(If code "DK" in #E3, ask:)** Would you recommend a urology referral **(read 6-1)**?

VHYPERF

6 Always
5 Almost always
4 Frequently
3 Sometimes
2 Rarely, OR
1 Never

8 (DK)
9 (Refused) _____ (7/15)

E4. **(If code "1" or "3" in "FORM", ask:)** What about a cardiology referral after a stress test for a 50 year old man with a one month history of exertional chest pain. On no medications, after 6 minutes of exercise, he developed 2 millimeters of ST depression in leads II, III, and F. For what percentage of such patients would you recommend a cardiology referral at this point? (Open ended **and code actual percent)** **(Probe:)** Your best estimate will be fine. **(If necessary, say:)** Consider all your patients with similar clinical descriptions.

VCHEST

000 None **(Skip to "Next" item)**
001 1% or less **(Skip to "Next" item)**

002-
100 **(Skip to "Next" item)**

DK (DK) - **(Continue)**

RF (Refused) - **(Skip to "Next" item)**

_____ _____ _____ (7/16 - 7/18)

E4a. **(If code "DK" in #E4, ask:)** Would you recommend a cardiology referral **(read 6-1)**?

VCHESTF

6 Always
5 Almost always
4 Frequently
3 Sometimes
2 Rarely, OR
1 Never

8 (DK)
9 (Refused) _____ (7/19)

E5. **(If code "1" or "3" in "FORM", ask:)** What about an MRI for a 35-year-old man who developed low back pain after shoveling snow three weeks ago. He presents to the office for an evaluation. On examination there is a new left foot drop. For what percentage of such patients would you recommend an MRI? (Open ended **and code actual percent)** **(Probe:)** Your best estimate will be fine. **(If necessary, say:)** Consider all your patients with similar clinical descriptions.

VBACK

000 None **(Skip to "Next" item)**
001 1% or less **(Skip to "Next" item)**

002-
100 **(Skip to "Next" item)**

DK (DK) - **(Continue)**

RF (Refused) - **(Skip to "Next" item)**

_____ _____
(7/20 - 7/22)

E5a. **(If code "DK" in #E5, ask:)** Would you recommend an MRI **(read 6-1)**?

VBACKF

6 Always
5 Almost always
4 Frequently
3 Sometimes
2 Rarely, OR
1 Never

8 (DK)
9 (Refused) _____ (7/23)

(There are no #E6-#E8)

E9. **(If code "1" or "3" in "FORM", ask:)** What about PSA screening in an asymptomatic 60 year old white man who has no family history of prostate cancer and a normal digital rectal exam. For what percentage of such patients would you recommend a PSA (Prostate Specific Antigen) test? (Open ended **and code actual percent) (Probe:)** Your best estimate will be fine. **(If necessary, say:)** Consider all your patients with similar clinical descriptions.

V60MAN

000 None **(Skip to "Next" item)**
001 1% or less **(Skip to "Next" item)**

002-
100 **(Skip to "Next" item)**

DK (DK) - **(Continue)**

RF (Refused) - **(Skip to "Next" item)**

_____ _____
_____ (7/36 - 7/38)

E9a. **(If code "DK" in #E9, ask:)** Would you recommend a PSA test **(read 6-1)**?

V60MANF

6 Always
5 Almost always
4 Frequently
3 Sometimes
2 Rarely, OR
1 Never

8 (DK)
9 (Refused) _____ (7/39)

E10. **(If code "1" or "3" in "FORM", ask:)** What about recommending an office visit for a 40 year old monogamous, married woman who calls to report a two day history of vaginal itching and thick white discharge. She has no abdominal pain or fever. For what percentage of such patients would you recommend an office visit to evaluate the vaginal discharge? (Open ended **and code actual percent)** **(Probe:)** Your best estimate will be fine. **(If necessary, say:)** Consider all your patients with similar clinical descriptions.

VVITCH

000 None **(Skip to "Next" item)**
001 1% or less **(Skip to "Next" item)**

002-
100 **(Skip to "Next" item)**

DK (DK) - **(Continue)**

RF (Refused) - **(Skip to "Next" item)**

_____ _____ (7/40 - 7/42)

E10a. **(If code "DK" in #E10, ask:)** Would you recommend an office visit **(read 6-1)**?

VVITCHF

6 Always
5 Almost always
4 Frequently
3 Sometimes
2 Rarely, OR
1 Never

8 (DK)
9 (Refused) _____ (7/43)

(If code "1" in "FORM", Skip to "Section F"; Otherwise, Continue)

E11. **(If code "2" or "3" in "FORM", ask:)** What about use of DDAVP for an otherwise healthy 10 year old boy who presents with long-term primary enuresis (en-your-ee-sis), repeatedly negative urinalysis and cultures, and who has failed fluid restriction and environmental interventions. For what percentage of such patients would you recommend DDAVP? (Open ended **and code actual percent)** **(Probe:)** Your best estimate will be fine. **(If necessary, say:)** Consider all your patients with similar clinical descriptions.

VENUR

000 None **(Skip to "Next" item)**
001 1% or less **(Skip to "Next" item)**

002-
100 **(Skip to "Next" item)**

DK (DK) - **(Continue)**

RF (Refused) - **(Skip to "Next" item)**

_____ (7/44 - 7/46)

E11a. **(If code "DK" in #E11, ask:)** Would you recommend DDAVP **(read 6-1)**?

VENURF

6 Always
5 Almost always
4 Frequently
3 Sometimes
2 Rarely, OR
1 Never

8 (DK)
9 (Refused) _____ (7/47)

(There are no #E12-#E15)

E16. **(If code "2" or "3" in "FORM", ask:)** What about an office visit for an otherwise healthy 10 year old boy whose parent calls to report a two day history of fever to 101 degrees, sore throat, nasal stuffiness, and no other signs or symptoms. For what percentage of such patients would you recommend an office visit in the next day or so? (Open ended **and code actual percent)** **(Probe:)** Your best estimate will be fine. **(If necessary, say:)** Consider all your patients with similar clinical descriptions.

VTHRT

000 None **(Skip to "Next" item)**
001 1% or less **(Skip to "Next" item)**

002-
100 **(Skip to "Next" item)**

DK (DK) - **(Continue)**

RF (Refused) - **(Skip to "Next" item)**

_____ _____ (7/64 - 7/66)

E16a. **(If code "DK" in #E16, ask:)** Would you recommend an office visit in the next day or so **(read 6-1)**?

VTHRTF

6 Always
5 Almost always
4 Frequently
3 Sometimes
2 Rarely, OR
1 Never

8 (DK)
9 (Refused) _____ (7/67)

E17. **(If code "2" or "3" in "FORM", ask:)** What about a chest x-ray for a previously healthy 10 year old girl with a three day history of fever to 101.5, productive cough, tachypnea (tah-kip-knee-uh) and rales at the right base. She is taking fluids, is uncomfortable, but not in acute distress. For what percentage of such patients would you recommend a chest x-ray? (Open ended **and code actual percent)** **(Probe:)** Your best estimate will be fine. **(If necessary, say:)** Consider all your patients with similar clinical descriptions.

VCOUGH

000 None **(Skip to "Next" item)**
001 1% or less **(Skip to "Next" item)**

002-
100 **(Skip to "Next" item)**

DK (DK) - **(Continue)**

RF (Refused) - **(Skip to "Next" item)**

_____ _____ _____ (7/68 - 7/70)

E17a. **(If code "DK" in #E17, ask:)** Would you recommend a chest x-ray **(read 6-1)**?

VCOUGHF

6 Always
5 Almost always
4 Frequently
3 Sometimes
2 Rarely, OR
1 Never

8 (DK)
9 (Refused) _____ (7/71)

E18. **(If code "2" or "3" in "FORM", ask:)** What about referral to an ENT specialist for PE tubes for an otherwise healthy 24 month old girl who presents with a history of six episodes of suppurative (SUPper-uh-tive) otitis media over the last year, treated with antibiotics with complete clearing. After her fifth episode she was placed on prophylactic antibiotics, but had a recurrence that again responded completely to antimicrobials. She is otherwise in good health and has normal hearing. For what percentage of such patients would you recommend referral to an ENT specialist for placement of PE tubes? (Open ended **and code actual percent)** **(Probe:)** Your best estimate will be fine. **(If necessary, say:)** Consider all your patients with similar clinical descriptions.

VSUPOT

000 None **(Skip to "Next" item)**
001 1% or less **(Skip to "Next" item)**

002-
100 **(Skip to "Next" item)**

DK (DK) - **(Continue)**

RF (Refused) - **(Skip to "Next" item)**

_____ _____
(8/12 - 8/14)

E18a. **(If code "DK" in #E18, ask:)** Would you recommend referral to an ENT specialist for placement of PE tubes **(read 6-1)**?

VSUPOTF

6 Always
5 Almost always
4 Frequently
3 Sometimes
2 Rarely, OR
1 Never

8 (DK)
9 (Refused) _____ (8/15)

(There is no #E19)

E20. **(If code "2" or "3" in "FORM", ask:)** What about a sepsis workup including at least a CBC, sterile urine, and blood cultures, for a well-appearing and otherwise normal, full-term six week old child with a fever of 101. In what percentage of such patients would you recommend a sepsis workup including at least a CBC, sterile urine, and blood cultures? (Open ended **and code actual percent)** **(Probe:)** Your best estimate will be fine. **(If necessary, say:)** Consider all your patients with similar clinical descriptions.

V6FEVR

000 None **(Skip to "Next" item)**
001 1% or less **(Skip to "Next" item)**

002-
100 **(Skip to "Next" item)**

DK (DK) - **(Continue)**

RF (Refused) - **(Skip to "Next" item)**

_____ _____
_____ (8/20 - 8/22)

E20a. **(If code "DK" in #E20, ask:)** Would you recommend a sepsis workup **(read 6-1)**?

V6FEVRF

6 Always
5 Almost always
4 Frequently
3 Sometimes
2 Rarely, OR
1 Never

8 (DK)
9 (Refused) _____ (8/23)

E21. **(If code "2" or "3" in "FORM", ask:)** What about referral to an allergist for a four year old with eczema and seasonal asthma whose asthma has been managed with intermittent oral steroids and bronchodilators. The frequency of asthma attacks is increasing despite prophylactic use of inhaled steroids. For what percentage of such patients would you recommend referral to an allergist for evaluation? (Open ended **and code actual percent)** **(Probe:)** Your best estimate will be fine. **(If necessary, say:)** Consider all your patients with similar clinical descriptions.

VECZEM

000 None **(Skip to "Next" item)**
001 1% or less **(Skip to "Next" item)**

002-
100 **(Skip to "Next" item)**

DK (DK) - **(Continue)**

RF (Refused) - **(Skip to "Next" item)**

_____ _____ (8/24 - 8/26)

E21a. **(If code "DK" in #E21, ask:)** Would you recommend referral to an allergist for evaluation **(read 6-1)**?

VECZEMF

6 Always
5 Almost always
4 Frequently
3 Sometimes
2 Rarely, OR
1 Never

8 (DK)
9 (Refused) _____ (8/27)

CLOCK:

_____ _____ (28/48 - 28/51)

SECTION F
PHYSICIAN-PATIENT INTERACTIONS

F1. Next I am going to read you several statements. For each, I'd like you to tell me if you agree strongly, agree somewhat, disagree somewhat, disagree strongly, or if you neither agree nor disagree. **(If code "2" or "8-9" in #A4, say:)** As you answer, please think only about your main practice. **(Read and rotate A-E and H, then F and G)** Do you **(read 5-1)**? **(If necessary, say:)** We'd like you to think across all patients that you see in your practice.

5 Agree strongly
4 Agree somewhat
3 Disagree somewhat
2 Disagree strongly, OR
1 Do you neither agree nor disagree

7 (Doctor does not have office) [A only]
7 (Doctor does not have continuing relationship with patients) [H only]
8 (DK)
9 (Refused)

A. I have adequate time to spend with my patients during their office visits? **(INTERVIEWER NOTE: Do not further differentiate the level of visit, that is, whether brief, intermediate, etc.)** **(If necessary, say:)** We would like you to answer in general or on AVERAGE over all types of visits. _____ (8/28)

B. **(If code "7" in #F1-A, ask:)** I have adequate time to spend with my patients during a typical patient visit **(INTERVIEWER NOTE: This does not include surgery)**

C. I have the freedom to make clinical decisions that meet my patients' needs ___
CLNFREE

D. It is possible to provide high quality care to all of my patients _____ (8/30)
HIGHCAR

F1. (Continued:)

E. I can make clinical decisions in the best interests of my patients without the possibility of reducing my income _____ (8/31)

NEGINCN

F. **(If code "019-020", "023", "043", "085" or "133" in #A10/#A8, OR if code "1", "8" or "9" in #A9, or if code "042","088" or "137" in #A10, OR if code "2" or "3" in #A9a, OR If code "2" or "3" in #A9b, ask:)** The level of communication I have with specialists about the patients I refer to them is sufficient to ensure the delivery of high quality care _____ (8/32)

USESPCS

G. **(If "Blank" in F1-F, ask:)** The level of communication I have with primary care physicians about the patients they refer to me is sufficient to ensure the delivery of high quality care _____ (

COMPRM

H. It is possible to maintain the kind of continuing relationships with patients over time that promote the delivery of high quality care ___

PATREL

(There are no F2-F7)

F8. Now, I'm going to ask you about obtaining certain services for patients in your **(response in #CA)** when you think they are medically necessary. How often are you able to obtain **(read and rotate A, B and E, then read and rotate C and D, then read and rotate F and G, as appropriate)** when you think (they are/it is) medically necessary? Would you say **(read 6-1)**? **(If physician says it depends on which patients, say:)** We'd like you to think across all the patients that you see in your **(response in #CA)** and tell us how often you are able to obtain these services when you think they are medically necessary.

6 Always
5 Almost always
4 Frequently
3 Sometimes
2 Rarely, OR
1 Never

7 (Does not apply)
8 (DK)
9 (Refused)

A. **(If code "019", "020", "023", "043", "085" or "133" in #A10/#A8, OR code "1", "8" or "9" in #A9, or if code "042", "088" or "137" in #A10, OR code "2" or "3" in #A9a, OR code "2" or "3" in #A9b, ask:)** Referrals to specialists of high quality

OBREFS

(Otherwise, ask:) Referrals to other specialists of high quality _____ (8/35)

B. High quality ancillary services, such as physical therapy, home health care, nutritional counseling, and so forth _____ (

OBANCL

C. Non-emergency hospital admissions _____ (8/37)

OBHOSP

D. Adequate number of inpatient days for your hospitalized patients _____ (8/38)

OBINPAT

E. High quality Diagnostic Imaging Services (8/39)

OBIMAG

F8. (Continued:)

F. **(If code "010", "019", "020", "023", "043", "062", "064-065", "082-085", "127", "132" or "133" in #A10/#A8, OR code "1", "8" or "9" in #A9, OR code "2" or "3" in #A9a, or code "042", "088" or "137" in #A10, OR code "2" or "3" in #A9b, ask:)** High quality INPATIENT MENTAL health care ___

OBMENTL

G. **(If code "010", "019", "020", "023", "043", "062", "064-065", "082-085", "127", "132" or "133" in #A10/#A8, OR code "1", "8" or "9" in #A9, or code "2" or "3" in #A9a, or code "042", "088" or "137" in #A10, OR code "2" or "3" in #A9b, ask:)** High quality OUTPATIENT MENTAL health services ___

OBOUTPT

F9. Now, I'd like to ask you about new patients the practice in which you work might be accepting. Is the practice accepting all, most, some, or no new patients who are insured through **(read A-C)**? **(INTERVIEWER NOTE: Refers to entire practice not just to physician's own patients. Medicaid and Medicare beneficiaries who are enrolled in managed care plans should be included in A or B, respectively.)**

4 All
3 Most
2 Some
1 No new patients/None

8 (DK)
9 (Refused)

A. Medicare, including Medicare managed care patients _____ (8/43)

NWMCARE

B. **(If code "06" in "STATE", ask:)** MediCAL, including MediCAL managed care patients **(If code "04" in "STATE", ask:)** AHCCCS ("Access")

(If code "01-03", "05" or "07-56" in "STATE", ask:) Medicaid, including Medicaid managed care patients ___

NWMCAID

C. Private or commercial insurance plans including managed care plans and HMOs with whom the practice has contracts **(If necessary, say:)** This includes both fee for service patients and patients enrolled in managed care plans with whom the practice has a contract. It excludes Medicaid or Medicare managed care _____ (8/44)

NWPRIV

CLOCK:

_____ _____ (28/56 - 28/59)

SECTION G
PRACTICE REVENUE

G1. Now, I'm going to ask you some questions about the patient care revenue received by the **(response in #CA)** in which you work. Approximately what percentage of the PRACTICE REVENUE FROM PATIENT CARE would you say comes from **(read A-B)**? (Open ended **and code actual percent)** **(Probe:)** Your best estimate will be fine. **(If necessary, say:)** We're asking about the patient care revenue of the practice in which you work, not just the revenue from the patients YOU see. **(INTERVIEWER NOTE: "Other public insurance" includes Champus, Champva and Tricare)**

000 None
001 1 percent or less
DK (DK)
RF (Refused)

A. Payments from all Medicare, including Medicare managed care

_____ _____ (8/45 - 8/47)

B. **(If code "06" in "STATE", ask:)** Payments from MediCAL or any other public insurance, including Medical managed care

(If code "04" in "STATE", ask:) Payments from AHCCCS ("Access") or any other public insurance

(If code "01-03", "05" or "07-56" in "STATE", ask:) Payments from Medicaid or any other public insurance, including Medicaid managed care

_____ _____ (8/48 - 8/50)

(There are no C and D)

(If response in #G1-A + response in #G1-B > 100, Continue; Otherwise, Skip to #G3)

G1a. I have recorded that the combined practice revenue from Medicare and Medicaid is greater than 100 percent, can you help me resolve this? Approximately what percentage of the practice's revenue from patient care comes from **(read A-B)**? **(INTERVIEWER NOTE: Revenue from patients covered by both Medicare and Medicaid should be counted in MEDICARE ONLY)** (Open ended **and code actual percent)** **(Probe:)** Your best estimate will be fine. **(If necessary, say:)** We're asking about the patient care revenue of the practice in which you work, not just the revenue from the patients YOU see.

000 None
001 1 percent or less
DK (DK)
RF (Refused)

A. Payments from all Medicare, including Medicare managed care

_____ _____ _____ (8/54 - 8/56)

B. **(If code "06" in "STATE", ask:)** Payments from MediCAL or any other public insurance, including Medical managed care

(If code "04" in "STATE", ask:) Payments from AHCCCS ("Access") or any other public insurance

(If code "01-03", "05" or "07-56" in "STATE", ask:) Payments from Medicaid or any other public insurance, including Medicaid managed care

_____ _____ _____ (8/57 - 8/59)

(There is no #G2)

G3. Now, again thinking about the patient care revenue from ALL sources received by the practice in which you work, what percentage is paid on a capitated or other prepaid basis? **(If necessary, say:)** Under capitation, a fixed amount is paid per patient per month regardless of services provided. **(Probe:)** Your best estimate would be fine. (Open ended **and code actual percent)** **(INTERVIEWER NOTE: Includes payments made on a capitated or other prepaid basis from Medicare or Medicaid)**

000 None
001 1 percent or less
002-
100
DK (DK)
RF (Refused)

_____ (9/38 - 9/40)

(There are no #G3a-#G5)

G6. Thinking again about the practice in which you work, we have a few questions about contracts with managed care plans such as HMOs, PPOs, IPAs and Point-Of-Service plans. First, roughly how many managed care contracts does the practice have? **(Probe:)** Your best estimate would be fine. **(If necessary, say:)** Managed care includes any type of group health plan using financial incentives or specific controls to encourage utilization of specific providers associated with the plan. Direct contracts with employers that use these mechanisms are also considered managed care. **(INTERVIEWER NOTE: Include Medicare managed care, Medicaid managed care, and other government managed care contracts but not traditional Medicare or Medicaid.)** (Open ended **and code actual number)**

00 None - **(Skip to #G7)**

01-19 **(Skip to #G8)**

20-97 **(Skip to #G6b)**

DK (DK) **(Continue)**
RF (Refused) **(Continue)**

_____ _____ (9/58) (9/59)

G6a. **(If code "DK" or "RF" in #G6, ask:)** Would you say less than 3 contracts, 3 to 10, or more than 10 contracts?

0 (None) - **(Skip to #G7)**

1 Less than 3 (1 or 2) **(Skip to #G8)**
2 3 to 10 **(Skip to #G8)**
3 More than 10 (11+) **(Skip to #G8)**
8 (DK) **(Skip to #G8)**
9 (Refused) **(Skip to #G8)** _____ (9/60)

G6b. **(If code "20-97" in #G6, ask:)** Just to be sure, is this the number of contracts, or patients?

1 Contracts - **(Skip to #G8)**

2 Patients - **(Continue)**

8 (DK) **(Skip to #G8)**
9 (Refused) **(Skip to #G8)** _____ (8/60)

G6c. **(If code "2" in #G6b, ask:)** In this question, we are asking about contracts. So, roughly how many managed care CONTRACTS does the practice have? (Open ended **and code actual number)**

00 None - **(Continue)**

01-
97 **(Skip to #G8)**

DK (DK) **(Skip to #G8)**
RF (Refused) **(Skip to #G8)**

_____ _____ _____
(8/61) (8/62)

G7. **(If code "00" in #G6, or code "0" in #G6a, or code "00" in #G6c, ask:)** What percentage, if any, of the patient care revenue received by the practice in which you work comes from all managed care combined? Please include ALL revenue from managed care including, but not limited to, any payments made on a capitated or prepaid basis. **(Probe:)** Your best estimate will be fine. **(If necessary, say:)** Managed care programs include, but are not limited to those with HMOs, PPOs, IPAs, and point-of-service plans. **(If necessary, say:)** Managed care includes any type of group health plan using financial incentives or specific controls to encourage utilization of specific providers associated with the plan. Direct contracts with employers that use these mechanisms are also considered managed care. (Open ended **and code actual percent)**

000 None
001 1 percent or less
DK (DK)
RF (Refused)

_____ _____ _____
(8/63 - 8/65)

(If code "00" in #G6,
and #G7 is LESS THAN response in #G3, Continue;
If code "00" in #G6a or #G6c,
And #G7 is LESS THAN response in #G3, Continue;
Otherwise, Skip to "Section H")

G7a. I may have recorded something incorrectly. I recorded that the percentage of practice revenue from all managed care is less than the percentage of practice revenue that is paid on a capitated or other prepaid basis. This seems inconsistent, so let me ask you again, what percent of patient care revenue received by the practice in which you work comes from all managed care combined? (Open ended **and code actual percent)** **(SURVENT: Show response in #G7)**

000 None
101 Less than 1%
DK (DK)
RF (Refused)

_____ _____
(10/68 - 10/70)

G7b. Let me also ask you again, thinking about the patient care revenue from ALL sources received by the practice in which you work, what percentage is paid on a capitated or other prepaid basis? (Open ended **and code actual percent)** **(SURVENT: Show response in #G3)**

000 None
101 Less than 1%
DK (DK)
RF (Refused)

_____ _____
(10/71 - 10/73)

(All in #G7b, Skip to "Section H")

G8. **(If code "02-97" in #G6c, or code "1-3" in #G6a, or code "02-97" in #G6, ask:)** What percentage of the patient care revenue received by the practice in which you work comes from these **(response in #G6c/#G6a/#G6)** managed care contracts combined? **(If code "001-100", "DK" or "RF in #G3, say:)** Please include ALL revenue from these contracts including, but not limited to, any payments made on a capitated or prepaid basis. **(Probe:)** Your best estimate will be fine. **(If necessary, say:)** Managed care contracts include, but are not limited to those with HMOs, PPOs, IPAs, and point-of-service plans. **(If necessary, say:)** Managed care includes any type of group health plan using financial incentives or specific controls to encourage utilization of specific providers associated with the plan. Direct contracts with employers that use these mechanisms are also considered managed care. (Open ended **and code actual percent)**

(If code "01" in #G6c or #G6, ask:) What percentage of the patient care revenue received by the practice in which you work comes from this managed care contract? **(If code "001-100", "DK", or "RF", say:)** Please include ALL revenue from this contract including, but not limited to, any payments made on a capitated or prepaid basis. **(Probe once lightly:)** Your best estimate will be fine. **(If necessary, say:)** Managed care contracts include, but are not limited to those with HMOs, PPOs, IPAs, and point-of-service plans. **(If necessary, say:)** Managed care includes any type of group health plan using financial incentives or specific controls to encourage utilization of specific providers associated with the plan. Direct contracts with employers that use these mechanisms are also considered managed care. (Open ended **and code actual percent)**

G8. (Continued:)

(If code "DK" or "RF" in #G6c, or code "8" or "9" in #G6a, ask:) What percentage of the patient care revenue received by the practice in which you work comes from all of the practice's managed care contracts combined? **(If code "001-100", "DK", or "RF", say:)** Please include ALL revenue from these contracts including, but not limited to, any payments made on a capitated or prepaid basis. **(Probe once lightly:)** Your best estimate will be fine. **(If necessary, say:)** Managed care contracts include, but are not limited to those with HMOs, PPOs, IPAs, and point-of-service plans. **(If necessary, say:)** Managed care includes any type of group health plan using financial incentives or specific controls to encourage utilization of specific providers associated with the plan. Direct contracts with employers that use these mechanisms are also considered managed care. (Open ended **and code actual percent)**

000	None	**(Continue)**
001	1 percent or less	**(Continue)**
002-100		**(Continue)**
DK	(DK)	**(Skip to #G9)**
RF	(Refused)	**(Skip to #G9)**

_____ _____ _____ (9/62 - 9/64)

(If response in #G8 is less than response in #G3, Continue; If response in #G3 + response in #G8="0", Skip to "Section H"; If response in G8 > "000", Skip to #G8d)

G8a. **(If response in #G8 is less than response in #G3, ask:)** I have recorded that your revenue from all managed care contracts is less than the amount you received on a capitated or prepaid basis. We would like you to include all capitated payments in estimating managed care revenue. Would you like to change your answer of **(read 1-2)**?

1 **(Response in #G8)** percent from all managed care contracts - **(Continue)**

OR

2 **(Response in #G3)** percent received on a capitated or prepaid basis - **(Skip to #G8c)**

3 (Both) - **(Continue)**

4 (Neither) **(Skip to "Note" before #G9)**
8 (DK) **(Skip to "Note" before #G9)**
9 (Refused) **(Skip to "Note" before #G9)** _____ (9/65)

**(If code "01-19" in #G6, Skip to #G8b;
If code "20-97" in #G6,
AND code "1" in #G6b, Skip to #G8b;
If code "8", "9" or "Blank" in #G6a, AND
code "DK", "RF" or "BLANK" in #G6c,
Skip to #G8d;
Otherwise, Continue)**

G8b. **(If code "1" or "3" in #G8a, ask:)**

(If code "02-97" in #G6c, or code "1-3" in #G6a or code "02-97" in #G6, ask:) So, what percentage of the practice's revenue from patient care would you say comes from all of these managed care contracts combined? (Open ended **and code actual percent)**

(If code "01" in #G6c or #G6, ask:) So, what percentage of the practice's revenue from patient care would you say comes from this managed care contract? (Open ended **and code actual percent)**

000 None - **(Skip to "Section H")**

001 1 percent or less
DK (DK)
RF (Refused)

_____ _____ _____
(9/66 - 9/68)

G8c. **(If code "2" or "3" in #G8a, ask:)** So what percentage of patient care revenue received by the practice in which you work is paid on a capitated or other prepaid basis? **(If necessary, say:)** Under capitation, a fixed amount is paid per patient per month regardless of services provided. **(Probe:)** Your best estimate would be fine. (Open ended **and code actual percent)**

000 None
001 1 percent or less
002-
100
DK (DK)
RF (Refused)

_____ _____
(8/72 - 8/74)

G8d. **(If "specific" response in #G8b/#G8 = "specific" response in #G8c/#G3, ask:)** So, all of the practice's managed care revenue is paid on a capitated, or prepaid basis, is this correct?

1 Yes - **(Skip to "Note" before #G9)**

2 No - **(Continue)**

8 (DK) **(Skip to "Note" before #G9)**
9 (Refused) **(Skip to "Note" before #G9)** _____ (8/66)

G8e. **(If code "2" in #G8d, ask:)** I have recorded that **(response in #G8)** percent of the practice revenue is from managed care and that **(response in #G3)** percent of the practice revenue is paid on a capitated or prepaid basis. Which of these is incorrect?

1 Revenue from managed care - **(Continue)**

2 Revenue paid on capitated or prepaid basis - **(Skip to #G8g)**

3 Both are correct - **(Skip to "Note" before #G9)**

4 Neither are correct - **(Continue)**

8 (DK) **(Skip to "Note" before #G9)**
9 (Refused) **(Skip to "Note" before #G9)** _____ (8/67)

G8f. **(If code "1" or "4" in #G8e, ask:)**

(If code "02-97" in #G6c, or #G6 or code "1-3" in #G6a, ask:) What percentage of the patient care revenue received by the practice in which you work comes from these [**(response in #G6c/#G6)**] managed care contracts combined? **(If code "001-100", "DK" or "RF in #G3, say:)** Please include ALL revenue from these contracts including, but not limited to, any payments made on a capitated or prepaid basis. **(Probe:)** Your best estimate will be fine. **(If necessary, say:)** Managed care contracts include, but are not limited to those with HMOs, PPOs, IPAs, and point-of-service plans. **(If necessary, say:)** Managed care includes any type of group health plan using financial incentives or specific controls to encourage utilization of specific providers associated with the plan. Direct contracts with employers that use these mechanisms are also considered managed care. (Open ended **and code actual percent)**

G8f. (Continued:)

(If code "01" in #G6c or #G6, ask:) What percentage of the patient care revenue received by the practice in which you work comes from this managed care contract? Please include ALL revenue from this contract including, but not limited to, any payments made on a capitated or prepaid basis. **(Probe:)** Your best estimate will be fine. **(If necessary, say:)** Managed care contracts include, but are not limited to those with HMOs, PPOs, IPAs, and point-of-service plans. **(If necessary, say:)** Managed care includes any type of group health plan using financial incentives or specific controls to encourage utilization of specific providers associated with the plan. Direct contracts with employers that use these mechanisms are also considered managed care. (Open ended **and code actual percent)**

(If code "DK" or "RF" in #G6c or code "8" or "9" in #G6a, ask:) What percentage of the patient care revenue received by the practice in which you work comes from all of the practice's managed care contracts combined? Please include ALL revenue from these contracts including, but not limited to, any payments made on a capitated or prepaid basis. **(Probe:)** Your best estimate will be fine. **(If necessary, say:)** Managed care contracts include, but are not limited to those with HMOs, PPOs, IPAs, and point-of-service plans. **(If necessary, say:)** Managed care includes any type of group health plan using financial incentives or specific controls to encourage utilization of specific providers associated with the plan. Direct contracts with employers that use these mechanisms are also considered managed care. (Open ended **and code actual percent)**

G8f. (Continued:)

000 None - **(Skip to "Section H")**

001 1 percent or less **(Continue)**

002-
100 **(Continue)**

DK (DK) **(Continue)**
RF (Refused) **(Continue)**

_____ (8/68 - 8/70)

G8g. **(If code "2" or "4" in #G8e, ask:)** Now thinking about the patient care revenue from ALL sources received by the practice in which you work, what percentage is paid on a capitated or other prepaid basis? **(If necessary, say:)** Under capitation, a fixed amount is paid per patient per month regardless of services provided. **(Probe:)** Your best estimate would be fine. (Open ended **and code actual percent)** **(INTERVIEWER NOTE: Includes payments made on a capitated or other prepaid basis from Medicare or Medicaid)**

000 None
001 1 percent or less
002-
100
DK (DK)
RF (Refused)

_____ (6/71 - 6/73)

(If code "01" in #G6c or #G6, Skip to "Note" before #G11; Otherwise, Continue)

G9. **(If code "000-100" in #G8, ask:)** Now, thinking of the ONE managed care contract that provides the largest amount of revenue for the practice in which you work, what percentage of the practice revenue would you say comes from this contract? **(Probe:)** Your best estimate will be fine. (Open ended **and code actual percent)**

(If code "DK" or "RF" in #G8, ask:) Would you be able to estimate, what percentage of the practice's revenue comes from the ONE contract that provides the largest amount of revenue in the practice in which you work? **(Probe:)** Your best estimate will be fine. (Open ended **and code actual percent)**

000 None
001 1 percent or less
DK (DK)
RF (Refused)

_____ _____
(9/69 - 9/71)

(If code "8" or "9" in #G6a or "DK" or "RF" in #G6c, Skip to "Note" before #G11; Otherwise, Continue)

(If response in #G9 > response in #G8b, Continue; If response in #G9 = response in #G8b AND NOT code "01" in #G6, Skip to #G9c; If "Blank" in #G8b, Continue; If response in #G9 > response in #G8, Continue; If response in #G9 = response in #G8 AND NOT code "1" in #G6, Skip to #G9c Otherwise, Skip to "Note" before #G11)

G9a. I have recorded that the percentage of revenue that comes from the largest managed care contract is greater than the total revenue from all managed care contracts. Can you help me resolve this? What percentage of the practice's revenue from patient care would you say comes from the **(response in #G6c/#G6a/#G6)** managed care contracts combined? **(Probe:)** Your best estimate will be fine. **(If necessary, say:)** Managed care plans include, but are not limited to those with HMOs, PPOs, IPAs, and point-of-service plans. Managed care includes any type of group health plan using financial incentives or specific controls to encourage utilization of specific providers associated with the plan. Direct contracts with employers that use these mechanisms are also considered managed care. (Open ended **and code actual percent)**

000 None
001 1 percent or less
DK (DK)
RF (Refused)

_____ _____
(10/12 - 10/14)

G9b. Now thinking of the ONE managed care contract that provides the largest amount of revenue for the practice in which you work, what percentage of the practice revenue would you say comes from this contract? **(Probe:)** Your best estimate will be fine. (Open ended **and code actual percent)**

000 None
001 1 percent or less
DK (DK)
RF (Refused)

_____ _____
(10/15 - 10/17)

(All in #G9b, Skip to "Note" before #G11)

G9c. I may have recorded something incorrectly. Earlier I recorded that the practice in which you work has more than one managed care contract. But, I have also recorded that the percentage of revenue that comes from the largest managed care contract is the same as the total revenue from all managed care contracts. Can you help me resolve this? How many managed care contracts does the practice in which you work have with health insurers or payers? **(If necessary, say:)** Managed care plans include, but are not limited to those with HMOs, PPOs, IPAs, and point-of-service plans. Managed care includes any type of group health plan using financial incentives or specific controls to encourage utilization of specific providers associated with the plan. Direct contracts with employers that use these mechanisms are also considered managed care. **(INTERVIEWER NOTE: Can include Medicare managed care, Medicaid managed care, and other government managed care contracts but not traditional Medicare or Medicaid.)** (Open ended **and code actual number)**

00 - **(Skip to "Section H")**

01 One - **(Skip to "Note" before #G11)**

02-97 **(Continue)**

DK (DK) **(Continue)**
RF (Refused) **(Continue)**

_____ (10/18) (10/19)

G9d. What percentage of the practice's revenue from patient care would you say comes from these **(response in #G9c)** managed care contracts combined? **(Probe:)** Your best estimate will be fine. **(If necessary, say:)** Managed care plans include, but are not limited to those with HMOs, PPOs, IPAs, and point-of-service plans. Managed care includes any type of group health plan using financial incentives or specific controls to encourage utilization of specific providers associated with the plan. Direct contracts with employers that use these mechanisms are also considered managed care. (Open ended **and code actual percent)**

000 None
001 1 percent or less
DK (DK)
RF (Refused)

_____ (10/20 - 10/22)

G9e. Now thinking of the ONE managed care contract that provides the largest amount of revenue for the practice in which you work, what percentage of the practice revenue would you say comes from this contract? **(Probe:)** Your best estimate will be fine. (Open ended **and code actual percent)**

000 None
001 1 percent or less
DK (DK)
RF (Refused)

_____ (10/23 - 10/25)

(There is no #G10)

(If code "1" in #G8d, Skip to "Section H";
If response in #G8g equals response in #G9d,
Skip to "Section H";
If response in #G8g equals response
in #G9a and #G9c is "Blank", Skip to "Section H";
If response in #G8g equals response in
#G8c, and #G9d and #G9a are "Blank",
Skip to "Section H";
If response in ##G8g equals response in
#G8 and #G9d, #G9a and #G8f are "Blank",
Skip to "Section H";
If #G8g and #G8c are "Blank",
and response in #G3 equals response in #G9d,
Skip to "Section H";
If #G8g and #G8c are "Blank",
and response in #G3 equals response in #G9a,
and #G90d is "Blank",
Skip to "Section H";
If #G8g and #G8c are "Blank",
and response in #G# equals response in #G8c,
and #G9d and #G9a are "Blank",
Skip to "Section H";
If #G8a and #G8c are "Blank",
and response in #G3 equals response
in #G8 and #G9d, #G9c and #G9f,
Skip to "Section H";
If code "000" in #G8g/#G8c/#G3,
Skip to "Section H";
Otherwise, Continue)

G11. Would you say that all, most, some, or none of the patient care revenue received from this managed care contract is paid on a capitated or prepaid basis?

4 All
3 Most
2 Some
1 None

8 (DK)
9 (Refused) _____ (10/28)

(There is no #G12)

CLOCK:

_____ _____
(28/64 - 28/67)

SECTION H

PHYSICIAN COMPENSATION METHODS AND INCOME LEVEL

(If code "1" in #C1, AND code "06" in #C2, Skip to #H9; Otherwise, Continue)

(INTERVIEWER READ:) Now, I'm going to ask you a few questions about how the practice compensates you personally.

(If code "2" or "8-9" in #A4, say:) Again, please answer only about the main practice in which you work.

H1. Are you a salaried physician?

SALPAID

1 Yes - **(Skip to #H3)**

2 No **(Continue)**
8 (DK) **(Continue)**
9 (Refused) **(Continue)**

(10/30)

H2. **(If code "2", "8" or "9" in #H1, ask:)** Are you paid in direct relation to the amount of time you work, such as by the shift or by the hour?

SALTIME

1 Yes - **(Skip to #H4)**

2 No **(Skip to #H7)**
8 (DK) **(Skip to #H7)**
9 (Refused) **(Skip to #H7)**

_____ (10/31)

H3. **(If code "1" in #H1, ask:)** Is your base salary a fixed amount that will not change until your salary is re-negotiated or is it adjusted up or down during the present contract period depending on your performance or that of the practice? **(If necessary, say:)** Adjusted up or down means for example, some practices pay their physicians an amount per month that is based on their expected revenue, but this amount is adjusted periodically to reflect actual revenue produced. **(INTERVIEWER NOTE: Base salary is the fixed amount of earnings, independent of bonuses or incentive payments.)**

SALADJ

1 Fixed amount - **(Continue)**

2 Adjusted up or down - **(Skip to #H7)**

8 (DK) **(Continue)**
9 (Refused) **(Continue)**

(10/32)

H4. **(If code "1" in #H2, OR code "1" or "8-9" in #H3, ask:)** Are you also currently eligible to earn income through any type of bonus or incentive plan? **(INTERVIEWER NOTE: Bonus can include any type of payment above the fixed, guaranteed salary.)**

BONUS

1 Yes
2 No
8 (DK)
9 (Refused)

_____ (10/33)

H5. I am going to read you a short list of factors that are sometimes taken into account by medical practices when they determine the compensation paid to physicians in the practice. For each factor, please tell me whether or not it is EXPLICITLY considered

(If code "1" in #H1, AND code "2" or "8-9" in #H4, ask:) When your salary is determined, does the **(response in #CA)** consider **(read A-D)**?

(If code "1" in #H1 AND code "1" in #H4, ask:) When either your base salary or bonus is determined, does the **(response in #CA)** consider **(read A-D)**?

(If code "1" in #H2, AND code "2", "8" or "9" in #H4, ask:) When your pay rate is determined, does the **(response in #CA)** consider **(read A-D)**?

(If code "1" in #H2, AND code "1" in #H4, ask:) When either your pay rate or bonus is determined, does the **(response in #CA)** consider **(read A-D)**?

1 Yes
2 No
8 (DK)
9 (Refused)

A. Factors that reflect your own productivity **(If necessary, say:)** Examples include the amount of revenue you generate for the practice, the number of relative value units you produce, the number of patient visits you provide, or the size of your enrollee panel
(10/34)

B. Results of satisfaction surveys COMPLETED BY YOUR OWN PATIENTS _____ (1

C. Specific measures of quality of care, such as rates of preventive care services for your patients _____ (1

H5. (Continued:)

D. Results of practice profiling comparing your pattern of using medical resources to treat patients with that of other physicians **(INTERVIEWER NOTE: A practice profile is a report that is usually computer generated, which compares you to other physicians on things like referrals to specialists, hospitalizations and other measures of cost effectiveness.)**

(If code "2", "8" or "9" in #H5-D, Skip to #H9; Otherwise, Continue)

H6. **(If code "1" in #H5-D, ask:)** Are these profiles risk-adjusted to consider the health status of your patients or the severity of their illnesses? **(INTERVIEWER NOTE: Other than by age and gender)**

1 Yes
2 No
8 (DK)
9 (Refused) _____ (10/38)

(All in #H6, Skip to #H9)

H7. **(If code "2", "8" or "9" in #H2, or code "2" in #H3, ask:)** I am now going to read you a short list of factors that are sometimes taken into account by medical practices when they determine the compensation paid to physicians in the practice. For each factor, please tell me whether or not it is EXPLICITLY considered when your compensation is determined. Does the **(response in #CA)** in which you work consider **(read A-D)**?

1 Yes
2 No
8 (DK)
9 (Refused)

A. Factors that reflect YOUR OWN productivity **(If necessary, say:)** Examples include the amount of revenue you generate for the practice, the number of relative value units you produce, the number of patient visits you provide, or the size of your enrollee panel _____ (10/39)

B. Results of satisfaction surveys COMPLETED BY YOUR OWN PATIENTS _____ (1

C. Specific measures of quality of care, such as rates of preventive care services for your patients _____ (1

D. Results of practice profiles comparing your pattern of using medical resources to treat patients with that of other physicians **(INTERVIEWER NOTE: A practice profile is a report that is usually computer generated, which compares you to other physicians on things like referrals to specialists, hospitalizations and other measures of cost effectiveness.)** _____ (1

(If code "2", "8" or "9" in #H7-D, Skip to #H9; Otherwise, Continue)

H8. **(If code "1" in #H7-D, ask:)** Are these profiles risk-adjusted to consider the health status of your patients or the severity of their illnesses? **(INTERVIEWER NOTE: Other than by age and gender)**

1 Yes
2 No
8 (DK)
9 (Refused) _____ (10/67)

H9. Of your total income from your **(response in #CA)** during calendar year 1997, approximately what percent would you estimate was earned in the form of bonuses, returned withholds, or other incentive payments based on your performance? **(INTERVIEWER NOTE: Do not include income based on productivity, only specific incentives or returned withholds/ bonuses.)** (Open ended **and code actual percent)**

PCTINCN

000 None - **(Continue)**

001 1% or less - **(Skip to #H10)**

002-100 **(Skip to #H10)**

DK (DK) **(Skip to #H10)**
RF (Refused) **(Skip to #H10)**

_____ _____ (10/43 - 10/45)

H9a. **(If code "000" in #H9, ask:)** Were you eligible to earn any bonuses or other performance-based payments in 1997? **(INTERVIEWER NOTE: This question is asking about eligibility to earn bonuses in 1997. Earlier question (#H4) asked about whether the physician is eligible to earn a bonus at the time of the interview.)**

EBONUS

1 Yes
2 No
8 (DK)
9 (Refused)

_____ (10/46)

H10. During 1997, what was your own net income from the practice of medicine to the nearest $1,000, after expenses but before taxes? Please include contributions to retirement plans made for you by the practice and any bonuses as well as fees, salaries and retainers. Exclude investment income. **(If code "2" in #A4, say:)** Also, please include earnings from ALL practices, not just your main practice. **(If necessary, say:)** We define investment income as income from investments in medically related enterprises independent of a physician's medical practice(s), such as medical labs or imaging centers. **(If "Refused", say:)** This information is important to a complete understanding of community health care patterns and will be used only in aggregate form to ensure your confidentiality of the information. (Open ended **and code actual number)** **(If response is > $1 million, verify)**

INCOMET

0000000-
9999999 **(Skip to #H11)**

DK (DK) **(Continue)**
RF (Refused) **(Continue)**

_____ _____
_____ (10/47 - 10/53)

H10a. **(If code "DK" in #H10, ask:)** Would you say that it was **(read 01-04)**?

(If code "RF" in #H10, ask:) Would you be willing to indicate if it was **(read 01-04)**?

01 Less than $100,000
02 $100,000 to less than $150,000
03 $150,000 to less than $250,000
04 $250,000 or more

98 (DK)
99 (Refused)

_____ (10/54) (10/55)

H11. Do you consider yourself to be of Hispanic origin, such as Mexican, Puerto Rican, Cuban, or other Spanish background? **(Probe for refusals with:)** I understand this question may be sensitive. We are trying to understand how physicians from different ethnic and cultural backgrounds perceive some of the changes that are affecting the delivery of medical care.

HISP

1 Yes
2 No
8 (DK)
9 (Refused) _____ (21/29)

(DEMOGRAPHICS CONTINUED)

H12. What race do you consider yourself to be? [**(If respondent hesitates, read 06-09)**] [**(Probe for refusals with:)** I understand this question may be sensitive. We are trying to understand how physicians from different ethnic and cultural backgrounds perceive some of the changes that are affecting the delivery of medical care.] (Open ended and code) **(NOTE TO INTERVIEWER: If respondent specifies a mixed race or a race not pre-coded, code as "01 - Other")**

RACE

01 Other (list)

02-
05 HOLD

06 White/Caucasian
07 African-American/Black
08 Native American (American Indian) or Alaska Native
09 Asian or Pacific Islander

98 (DK)
99 (Refused)

_____ (21/60) (21/61)

CLOCK:

_____ (28/73 - 28/76)

SECTION I
ENDING

I1. Let me verify that your name and address are **(read information from "Fone" file/S4)**? **(ENTER ALL THAT ARE INCORRECT)**

1ST NAME:

_____ (23/12 - 23/20)

LAST NAME: **(Display from "Fone" file)**

_____ (23/21 - 23/47)

ADDRESS #1: **(Display from "Fone" file)**

_____ (12/12 - 12/35)

ADDRESS #2: **(Display from "Fone" file)**

_____ (/ - /)

CITY: **(Display from "Fone" file)**

_____ (12/42 - 12/55)

STATE: **(Display from "Fone" file)**

_____ (12/67) (12/68)

ZIP CODE: **(Display from "Fone" file)**

_____ (12/69 - 12/74)

I1. (Continued:)

1 First name is incorrect
2 Last name is incorrect
3 Address is incorrect
4 City is incorrect
5 State is incorrect
6 Zip code is incorrect
7 All information correct _____ (/)

(There are no #I1a-#I2) HOLD 0 (10/74)

0 (23/12-23/41)

0 (10/63)

0 (12/12-12/73)

0 (17/18-17/47)

I3. Is the address of the practice we have been talking about during this interview **(read 1-2)**?

1 **(Address from "Fone" file)** - **(Skip to "Note" before #I5)**

2 **(Address in #I1)** - **(Skip to "Note" before #I5)**

3 No/Neither - **(Continue)**

8 (DK) **(Skip to "Note" before #I5)**
9 (Refused) **(Skip to "Note" before #I5)** _____ (8/76)

I4. Will you please give me the address of the practice we have been talking about during this interview? (Open ended)

STREET ADDRESS #1:

_____ (13/12 - 13/41)

STREET ADDRESS #2:

_____ (17/48 - 17/77)

CITY:

_____ (13/42 - 13/66)

STATE:

_____ (13/67) (13/68)

ZIP:

_____ (13/69 - 13/73)

(If code "08-10" in #C2, #C3, #C3b or #C3c, Continue; If code "1" or "2" in #C3a or #C3b, Continue; Otherwise, Skip to "Section J")

I5. What is the name of the practice we have been talking about during this interview? Include the names of government clinics as eligible responses to this question. **(If necessary, say:)** This information will help us to better understand the nature of physician organizations in your region. (Open ended)

00001	Other (list)
00002	HOLD
00003	HOLD
00004	No/Yes mind giving
00005	HOLD
99998	(DK)
99999	(Refused)

_____ (14/12 - 14/16)

(There are no #I6-#I9)

CLOCK:

_____ (28/69 - 28/72)

SECTION J
SWEEP-UP

(There are no #J1-#J3)

J4. This concludes the survey unless you have any brief comment you would like to add. (Open ended)

0001 Other (list)
0002-
0003 HOLD

0004 No/Nothing

9998 (DK)
9999 (Refused)

_____ _____ (10/75 - 10/78)

J5. INTERVIEWER CODE ONLY: **(INTERVIEWER NOTE: Do NOT offer to send study report to respondent. Encourage use of Center's Website, www.hschange.com, and encourage them to put their name on the Center's mailing list by using the Website)** Did respondent ask any of the following?

1 Yes
2 No

A. Center's Website address so they can access it themselves _____ (

B. To be placed in the Center's mailing list
(/)

C. Round 1 data bulletins _____ (/)

J6. INTERVIEWER COMMENTS:

_____ _____ (17/78) (17/79)

(INTERVIEWER READ:) Again, this is _____, with The Gallup Organization of Lincoln, Nebraska. I'd like to thank you for your time. Our mission is to "help people be heard", and your opinions are important to Gallup in accomplishing this.

(VALIDATE PHONE NUMBER AND THANK RESPONDENT)

INTERVIEWER I.D.# _____ (2/41-2/44)

CLOCK:

_____ _____
(28/44 - 28/47)

DESCRIPTIVE NAMES ONLY: NEED ACTUAL "FONE" FILE NAMES AND NUMBER OF COLUMNS!

1. MEDICAL EDUCATION: **(Code from "Fone" file)**

_____ _____
(/ - /)

2. PHYSICIAN NAME: **(Code from "Fone" file)**

_____ _____
(/ - /)

3. GENDER: **(Code from "Fone" file)** _____ (/)

4. PREFERRED PROFESSIONAL MAILING ADDRESS: **(Code from "Fone" file)**

_____ _____
(/ - /)

5. GEOGRAPHIC CODES (STATE, COUNTY, ZIP, MSA, CENSUS REGION OR DIVISION): **(Code from "Fone" file)**

_____ _____
_____ (/ - /)

6. BIRTH DATE: **(Code from "Fone" file)**

_____ _____
_____ (/ - /)

7. BIRTH PLACE: **(Code from "Fone" file)**

_____ _____
_____ (/ - /)

8. CITIZENSHIP AND VISA: **(Code from "Fone" file)**

_____ _____
_____ (/ - /)

9. LICENSURE DATE: **(Code from "Fone" file)**

_____ _____
_____ (/ - /)

10. NATIONAL BOARD COMPLETION DATE: **(Code from "Fone" file)**

_____ _____
_____ (/ - /)

11. MAJOR PROFESSIONAL ACTIVITY: **(Code from "Fone" file)**

_____ _____
_____ (/ - /)

12. PRIMARY SPECIALTY: **(Code from "Fone" file)**

_____ _____
_____ (/ - /)

13. SECONDARY SPECIALTY: **(Code from "Fone" file)**

_____ _____
_____ (/ - /)

14. PRESENT EMPLOYMENT: **(Code from "Fone" file)**

_____ _____
_____ (/ - /)

15. AMERICAN SPECIALTY BOARD CERTIFICATION: **(Code from "Fone" file)**

_____ _____
_____ (/ - /)

16. CURRENT AND FORMER MEDICAL TRAINING - (INSTITUTION, SPECIALTY, TRAINING DATES): **(Code from "Fone" file)**

_____ _____
_____ (/ - /)

17. CURRENT AND FORMER GOVERNMENT SERVICE: **(Code from "Fone" file)**

_____ _____
_____ (/ - /)

18. ECFMG CERTIFICATE: **(Code from "Fone" file)**

_____ _____
_____ (/ - /)

19. TYPE OF PRACTICE: **(Code from "Fone" file)**

_____ _____
_____ (/ - /)

20. TELEPHONE NUMBER: **(Code from "Fone" file)**

_____ _____
_____ (/ - /)

21. FAX NUMBER: **(Code from "Fone" file)**

_____ _____
_____ (/ - /)

Appendix B

Derivation of Standard Error Look-up Tables

APPENDIX B

DERIVATION OF STANDARD ERROR LOOK-UP TABLES

The standard errors in the tables in Appendix C were derived as follows.[1]

B.1. PERCENTAGES

To calculate standard errors for percentages (Tables C.1 through C.13), a representative set of categorical variables from the CTS Physician Survey was selected. These representative variables can be grouped into the following categories:

- Practice type and ownership: PRCTYPE, MULTPR, C5OWNER, OWNPR, NWMCAID
- Board certification: BDCERT
- Compensation: ELIGBON, SALWAGE[2]
- Opinion questions: CARSAT, CLNFREE, CMPEXPC, EFGUIDE, EFPROFL, EFSURV, HIGHCAR, NEGINCN, OBHOSP, OBOUTPT, SQUAL

These variable names (other than the compensation variables) can be cross-referenced in the CTS Physician Survey Restricted Use File Codebook.

For each categorical variable with more than two possible values, we created a series of dichotomous variables--one for each possible response. Each dichotomous variable indicates whether the respondent chose that category (value set to one) or one of the other categories (value set to zero).

Weighted percentages and associated standard errors and design effects were produced for these variables using SUDAAN software (release 7.5, SAS-callable for Windows 95 and NT, Taylor Series default option for variance estimation) for 3 estimate types and 13 population subgroups:

- Estimate Types
    - National estimates, site sample and supplemental sample combined
    - High-intensity site-specific estimates, augmented sample
    - Low-intensity site-specific estimates, augmented sample

[1]The methods used were based on those described in "Sample Design, Sampling Weights, Imputation, and Variance Estimation in the 1995 National Survey of Family Growth," *Vital and Health Statistics*, Series 2, No. 124, February 1998, National Center for Health Statistics.

[2]These two variables were not included on the file in their original forms due to confidentiality considerations. The variables BONUS, SALPAID, SALTIME, and SALADJ, included on both the Restricted and Public Use Files, provide compensation information.

- Physician Subgroups
    - All physicians
    - All primary care physicians (PCPFLAG=1)
    - All non-primary care physicians (PCPFLAG=0)
    - Internal medicine physicians (SPECX=1)
    - Family/general practice physicians (SPECX=2)
    - General pediatricians (SPECX=3)
    - Medical specialists, including psychiatrists (SPECX=4,6)
    - Surgical specialists, including OB-GYNs (SPECX=5,7)
    - Physicians in solo or two-person practice (PRCTYPE=1)
    - Physicians in group practice of three or more (PRCTYPE=2)
    - Physicians in other practice settings (PRCTYPE=3,4,5,6)
    - Physicians in practice with high revenue from managed care (above the median for PMC)
    - Physicians in practice with low revenue from managed care (at or below median for PMC)

The output from the SUDAAN runs was saved in several data files, which were used to derive regression models in SAS. The goal here was to derive a generalized function to predict design effects, given the size of the estimate and the unweighted sample size.

Before these models were run, estimates with an unweighted sample size of less than 100 (national) or 80 (site), a relative standard error of greater than 0.3,[3] or a particularly small or large design effect[4] were flagged as outliers and excluded from the regression runs. For the remaining estimates, a $\log_{10}$ transformation was used for the point estimate (p), for its complement ($q=1-p$), for the design effect ($DEFF$), and for the unweighted sample size (n_u).

A series of linear regression models (SAS's PROC REG) was fit, using the categorical variables specified above. If the model was not significant (at $a = .10$) with all three independent variables, or if the model was significant but any of the three coefficients was not significant (at

[3]The relative standard error is calculated as the standard error of an estimate divided by the estimate. It is used as a measure of the instability of an estimate.

[4]If greater than 16 or less than 0.8 (national) or 0.5 (site).

$a = .10$), independent variables were dropped until the best model was fit.[5] The models were specified as:

$$\hat{D} = \log_{10}(DEFF) = b_0 + b_1 \log_{10}(p) + b_3 \log_{10}(q).$$

These models were run for categorical variables (excluding outliers) for the 39 combinations of estimate types and population subgroups described above.

For national estimates, the models for family/general practice physicians, general pediatricians, medical specialists, and physicians with practice managed care revenue below the median were not significant so the mean design effect was used for the tables.

The predicted design effect $\hat{DEFF} = 10^{\hat{D}}$ is the anti-log of the predicted $\log_{10}$ design effect $\hat{D}$ based on the associated regression model. This design effect $\hat{DEFF}$ was then used in the following standard error formula to produce the tables:

$$S.E.(p) = \sqrt{\frac{p \cdot q \cdot \hat{DEFF}}{n_u - 1}}.$$

None of the models for high- or low-intensity site-specific estimates were significant. Instead, for site-specific estimates, the median design effects were used to produce standard error tables. We calculated the standard error for each combination of p and sample size as follows:

$$S.E.(p) = \sqrt{\frac{p \cdot q \cdot MED(DEFF)}{n_u - 1}}$$

where $MED(DEFF)$ is the median design effect across the representative variables and across sites for either the high- or the low-intensity site-specific estimates. Note that these tables were not generated for any physician subgroups.

B.2. MEANS OF QUASI-CONTINUOUS VARIABLES

As described in Chapter 4, we are defining as "quasi-continuous" those variables associated with responses that are expressed in terms of percentages and whose values are therefore bounded by 0 and 100. To calculate standard errors for these means (Tables C.14 through C.24, C.44, and C.45), the following representative set of quasi-continuous variables from the CTS physician survey was selected:

- Percent values from vignettes: VCOUGH, VHYPER
- Percent of patients for whom physician is a gatekeeper: PCTGATE

[5]These models predict design effects with less error than that which occurs when one simply uses a mean or median design effect; however, their predictive power is relatively low. To estimate design effects with greater confidence, you will need to use specialized software to calculate them directly.

- Percent income, payments, revenue from various sources: PMC, PBIGCON, PCAPREV, PMCARE, PMCAID, PCTINCN

These variable names can be cross-referenced in the CTS Physician Survey Codebook.

Weighted means and associated standard errors and design effects were produced for these variables using SUDAAN software for the same combinations of estimate types and population subgroups described above for percentage estimates.

The goal for the quasi-continuous variable means was to derive a generalized function to predict standard errors, given the unweighted sample size and the weighted mean.

Before these models were run, estimates with an unweighted sample size of less than 100 (national) or 80 (site), a relative standard error of greater than 0.3, or a particularly small or large design effect[6] were flagged as outliers and excluded from the regression runs. For the remaining estimates, a $\log_{10}$ transformation was used for the standard error (*SE*), for the unweighted sample size (n_u) and for the weighted mean ($mean_w$).

A series of linear regression models was fit, using the quasi-continuous variables specified above. The models were specified as:

$$\hat{S} = \log_{10}(SE) = b_0 + b_1 \log_{10}(n_u) + b_2 \log_{10}(mean_w).$$

For national estimates, the models for non-primary care physicians and surgical specialists were not significant. For the remaining subgroups, standard errors were derived as the anti-log of the predicted $\log_{10}$ standard error, $\hat{S}$, based on the associated regression model:

$$\hat{SE} = 10^{\hat{S}}$$

For site-specific estimates (for high- and low-intensity sites), the standard errors used in the tables were derived in the same manner. For site-specific estimates, the only subgroup models that were significant were for PCPs and non-PCPs.

B.3. MEANS OF OTHER CONTINUOUS VARIABLES

To calculate standard errors for means of continuous variables *other* than those described as "quasi-continuous" above and subgroups other than those presented in Tables C.25 through C.37, see the formulas in Chapter 4, section 4.2.3. To derive these formulas, the following representative set of continuous variables from the CTS physician survey was selected:

- Time allocation: HRFREE, HRSPAT, HRSMED
- Practice characteristics: NPHYS, NASSIST, NMCCON

[6] If greater than 16 or less than 0.8 (national) or 0.5 (site).

- Income: INCOMEC[7]
- Weeks worked: WKSWRKC

These variable names can be cross-referenced in the CTS Physician Survey Codebook.

Weighted means and associated standard errors and design effects were produced for these variables using SUDAAN software for the same 13 population subgroups described above for national percentage estimates.

The goal for the continuous variable means was to derive a generalized function to predict relative standard errors, given the unweighted sample size and weighted mean.

Before these models were run, estimates with an unweighted sample size of less than 100 (national) or 80 (site), a relative standard error of greater than 0.3, or a particularly small or large design effect[8] were flagged as outliers and excluded from the regression runs. For the remaining estimates, a $\log_{10}$ transformation was used for the relative standard error (*RSE*), for the unweighted sample size (n_u), the weighted sample size (n_w),and for the weighted mean ($mean_w$).

A series of linear regression models was fit, using the continuous variables specified above. The models were specified as:

$$\hat{R} = \log_{10}(RSE) = b_0 + b_1 \log_{10}(n_u) + b_2 \log_{10}(mean_w)$$

or

$$\hat{R} = \log_{10}(RSE) = b_0 + b_1 \log_{10}(n_w) + b_2 \log_{10}(mean_w)$$

These models were run for continuous variables (excluding outliers) for the 13 population subgroups described above. For national estimates based on the combined sample, and for site-specific estimates, the only subgroup models that were significant were for PCPs and non-PCPs.

As described in Chapter 4, predicted relative standard errors for mean estimates can then be used to estimate standard errors using the following formula:

$$\hat{SE} = mean_w \cdot 10^{\hat{R}}.$$

B.4. SMALL CELL SIZE WARNING

If the number of observations used in your estimate is less than 500 (for national estimates) or less than 100 (for site-specific estimates), your estimate is likely to be unstable, and you should not use the relevant table in Appendix C to obtain an estimate of the standard error.

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[7]This was later masked (by combining into categories) and included as INCOMET.

[8]If greater than 16 or less than 0.8 (national) or 0.5 (site).

Appendix C

Standard Error Tables

APPENDIX C

STANDARD ERROR TABLES FOR THE CTS ROUND TWO PHYSICIAN SURVEY RESTRICTED USE FILE

NATIONAL ESTIMATES FROM THE COMBINED SAMPLE

PERCENTAGE ESTIMATES — Table No.

MEAN ESTIMATES FOR QUASI-CONTINUOUS VARIABLES
(Interview questions for which individual response is expressed in terms of a percentage)

APPENDIX C

STANDARD ERROR TABLES FOR THE CTS ROUND TWO PHYSICIAN SURVEY RESTRICTED USE FILE

NATIONAL ESTIMATES FROM THE COMBINED SAMPLE
(Continued)

MEAN ESTIMATES FOR OTHER CONTINUOUS VARIABLES

SITE-SPECIFIC ESTIMATES FROM THE AUGMENTED SITE SAMPLE

PERCENTAGE ESTIMATES

MEAN ESTIMATES FOR QUASI-CONTINUOUS VARIABLES

TABLE C.1

STANDARD ERRORS FOR PERCENTAGES: NATIONAL ESTIMATES FROM COMBINED SAMPLE, ALL PHYSICIANS (OR ANY SUBSET)*

Sample Size	For Percentages Near								
	5% or 95%	10% or 90%	15% or 85%	20% or 80%	25% or 75%	30% or 70%	35% or 65%	40% or 60%	50%
12,400	0.33%	0.46%	0.55%	0.61%	0.66%	0.70%	0.73%	0.75%	0.77%
12,000	0.34%	0.46%	0.55%	0.62%	0.67%	0.71%	0.74%	0.76%	0.77%
11,500	0.34%	0.47%	0.56%	0.63%	0.68%	0.72%	0.75%	0.77%	0.79%
11,000	0.35%	0.48%	0.57%	0.64%	0.69%	0.73%	0.76%	0.78%	0.80%
10,500	0.35%	0.49%	0.58%	0.65%	0.70%	0.74%	0.77%	0.80%	0.81%
10,000	0.36%	0.50%	0.59%	0.66%	0.71%	0.76%	0.79%	0.81%	0.83%
9,500	0.37%	0.50%	0.60%	0.67%	0.73%	0.77%	0.80%	0.82%	0.84%
9,000	0.37%	0.51%	0.61%	0.68%	0.74%	0.78%	0.82%	0.84%	0.86%
8,500	0.38%	0.52%	0.62%	0.70%	0.76%	0.80%	0.83%	0.86%	0.87%
8,000	0.39%	0.54%	0.64%	0.71%	0.77%	0.82%	0.85%	0.87%	0.89%
7,500	0.40%	0.55%	0.65%	0.73%	0.79%	0.84%	0.87%	0.89%	0.91%
7,000	0.41%	0.56%	0.67%	0.75%	0.81%	0.86%	0.89%	0.92%	0.93%
6,500	0.42%	0.58%	0.68%	0.77%	0.83%	0.88%	0.91%	0.94%	0.96%
6,000	0.43%	0.59%	0.70%	0.79%	0.85%	0.90%	0.94%	0.97%	0.99%
5,500	0.44%	0.61%	0.73%	0.81%	0.88%	0.93%	0.97%	1.00%	1.02%
5,000	0.46%	0.63%	0.75%	0.84%	0.91%	0.96%	1.00%	1.03%	1.05%

*See note at end of table.

TABLE C.1

STANDARD ERRORS FOR PERCENTAGES: NATIONAL ESTIMATES FROM COMBINED SAMPLE, ALL PHYSICIANS (OR ANY SUBSET)*
(Continued)

Sample Size	For Percentages Near								
	5% or 95%	10% or 90%	15% or 85%	20% or 80%	25% or 75%	30% or 70%	35% or 65%	40% or 60%	50%
4,500	0.47%	0.65%	0.78%	0.87%	0.94%	1.00%	1.04%	1.07%	1.09%
4,000	0.49%	0.68%	0.81%	0.91%	0.98%	1.04%	1.08%	1.11%	1.14%
3,500	0.52%	0.71%	0.85%	0.95%	1.03%	1.09%	1.13%	1.17%	1.19%
3,000	0.55%	0.75%	0.90%	1.00%	1.09%	1.15%	1.20%	1.23%	1.25%
2,500	0.58%	0.80%	0.95%	1.07%	1.16%	1.23%	1.28%	1.31%	1.34%
2,000	0.63%	0.87%	1.03%	1.16%	1.25%	1.32%	1.38%	1.42%	1.45%
1,500	0.70%	0.96%	1.14%	1.28%	1.38%	1.46%	1.52%	1.56%	1.60%
1,000	0.80%	1.10%	1.31%	1.47%	1.59%	1.69%	1.75%	1.80%	1.84%
500	1.02%	1.41%	1.67%	1.87%	2.03%	2.15%	2.23%	2.29%	2.34%

*Separate tables are provided for all primary care physicians (C.2), all non-primary care physicians (C.3), internal medicine physicians (C.4), family/general practice physicians (C.5), general pediatricians (C.6), medical specialists (C.7), surgical specialists (C.8), physicians in solo or two-person practice (C.9), physicians in HMO, medical school, hospital, or other practice setting (C.10), physicians in practice with a higher percentage of revenue from managed care (C.11), and physicians in practice with a lower percentage of revenue from managed care (C.12). We recommend that you use one of these tables if your estimate is limited to one of these subgroups (or any subset within it).

TABLE C.2

STANDARD ERRORS FOR PERCENTAGES: NATIONAL ESTIMATES FROM COMBINED SAMPLE, ALL PRIMARY CARE PHYSICIANS (OR ANY SUBSET)*

Sample Size	For Percentages Near								
	5% or 95%	10% or 90%	15% or 85%	20% or 80%	25% or 75%	30% or 70%	35% or 65%	40% or 60%	50%
7,300	0.40%	0.55%	0.65%	0.73%	0.79%	0.84%	0.87%	0.90%	0.92%
7,000	0.41%	0.56%	0.66%	0.74%	0.81%	0.85%	0.89%	0.91%	0.93%
6,500	0.42%	0.57%	0.68%	0.77%	0.83%	0.88%	0.91%	0.94%	0.96%
6,000	0.43%	0.59%	0.70%	0.79%	0.85%	0.90%	0.94%	0.97%	0.99%
5,500	0.44%	0.61%	0.73%	0.81%	0.88%	0.93%	0.97%	1.00%	1.02%
	0.46%	0.63%	0.75%	0.84%	0.91%	0.97%	1.01%	1.03%	1.05%
5,000									
4,500	0.48%	0.66%	0.78%	0.88%	0.95%	1.01%	1.05%	1.07%	1.10%
4,000	0.50%	0.69%	0.82%	0.92%	0.99%	1.05%	1.09%	1.12%	1.15%
3,500	0.52%	0.72%	0.86%	0.96%	1.04%	1.10%	1.15%	1.18%	1.20%
3,000	0.56%	0.77%	0.91%	1.02%	1.10%	1.17%	1.22%	1.25%	1.28%
	0.59%	0.82%	0.97%	1.09%	1.18%	1.25%	1.30%	1.34%	1.36%
2,500									
2,000	0.65%	0.89%	1.06%	1.19%	1.28%	1.36%	1.41%	1.45%	1.48%
1,500	0.72%	0.99%	1.18%	1.32%	1.43%	1.51%	1.57%	1.62%	1.65%
1,000	0.84%	1.15%	1.37%	1.54%	1.66%	1.76%	1.83%	1.88%	1.92%
500	1.08%	1.49%	1.77%	1.99%	2.15%	2.28%	2.37%	2.43%	2.48%

*Separate tables are provided for internal medicine physicians (C.4), family/general practice physicians (C.5), and general pediatricians (C.6). We recommend that you use one of these tables if your estimate is limited to one of these subgroups (or any subset within it).

TABLE C.3

STANDARD ERRORS FOR PERCENTAGES: NATIONAL ESTIMATES FROM COMBINED SAMPLE, ALL NON-PRIMARY CARE PHYSICIANS (OR ANY SUBSET)*

Sample Size	For Percentages Near								
	5% or 95%	10% or 90%	15% or 85%	20% or 80%	25% or 75%	30% or 70%	35% or 65%	40% or 60%	50%
5,100	0.37%	0.54%	0.65%	0.74%	0.81%	0.87%	0.91%	0.94%	0.97%
5,000	0.38%	0.54%	0.66%	0.75%	0.82%	0.88%	0.92%	0.95%	0.98%
4,500	0.39%	0.56%	0.69%	0.78%	0.86%	0.91%	0.96%	0.99%	1.03%
4,000	0.41%	0.59%	0.72%	0.82%	0.90%	0.96%	1.01%	1.04%	1.08%
3,500	0.44%	0.63%	0.76%	0.87%	0.95%	1.01%	1.06%	1.10%	1.14%
3,000	0.47%	0.67%	0.81%	0.92%	1.01%	1.08%	1.13%	1.17%	1.21%
2,500	0.50%	0.72%	0.87%	0.99%	1.09%	1.16%	1.22%	1.26%	1.31%
2,000	0.55%	0.79%	0.96%	1.09%	1.19%	1.28%	1.34%	1.39%	1.43%
1,500	0.62%	0.89%	1.08%	1.23%	1.34%	1.44%	1.51%	1.56%	1.61%
1,000	0.73%	1.05%	1.27%	1.45%	1.59%	1.70%	1.78%	1.84%	1.90%
500	0.97%	1.39%	1.69%	1.93%	2.11%	2.26%	2.37%	2.45%	2.53%

*Separate tables are provided for medical specialists (C.7) and surgical specialists (C.8). We recommend that you use one of these tables if your estimate is limited to one of these subgroups (or any subset within it).

TABLE C.4

STANDARD ERRORS FOR PERCENTAGES: NATIONAL ESTIMATES FROM COMBINED SAMPLE, INTERNAL MEDICINE PHYSICIANS (OR ANY SUBSET)

Sample Size	For Percentages Near								
	5% or 95%	10% or 90%	15% or 85%	20% or 80%	25% or 75%	30% or 70%	35% or 65%	40% or 60%	50%
2,425	0.64%	0.88%	1.05%	1.17%	1.27%	1.35%	1.40%	1.44%	1.47%
2,000	0.70%	0.96%	1.14%	1.28%	1.38%	1.46%	1.52%	1.56%	1.60%
1,500	0.79%	1.09%	1.29%	1.45%	1.57%	1.66%	1.73%	1.77%	1.81%
1,000	0.94%	1.29%	1.54%	1.73%	1.87%	1.98%	2.06%	2.11%	2.16%
500	1.27%	1.75%	2.08%	2.33%	2.52%	2.67%	2.78%	2.85%	2.91%

TABLE C.5

STANDARD ERRORS FOR PERCENTAGES: NATIONAL ESTIMATES FROM COMBINED SAMPLE, FAMILY/GENERAL PRACTICE PHYSICIANS (OR ANY SUBSET)

Sample Size	For Percentages Near								
	5% or 95%	10% or 90%	15% or 85%	20% or 80%	25% or 75%	30% or 70%	35% or 65%	40% or 60%	50%
3,050	0.39%	0.54%	0.65%	0.72%	0.78%	0.83%	0.86%	0.89%	0.91%
2,500	0.44%	0.60%	0.71%	0.80%	0.87%	0.92%	0.95%	0.98%	1.00%
2,000	0.49%	0.67%	0.80%	0.89%	0.97%	1.02%	1.07%	1.10%	1.12%
1,500	0.56%	0.77%	0.92%	1.03%	1.12%	1.18%	1.23%	1.27%	1.29%
1,000	0.69%	0.95%	1.13%	1.27%	1.37%	1.45%	1.51%	1.55%	1.58%
500	0.98%	1.34%	1.60%	1.79%	1.94%	2.05%	2.14%	2.19%	2.24%

TABLE C.6

STANDARD ERRORS FOR PERCENTAGES: NATIONAL ESTIMATES FROM COMBINED SAMPLE, GENERAL PEDIATRICIANS (OR ANY SUBSET)

Sample Size	For Percentages Near								
	5% or 95%	10% or 90%	15% or 85%	20% or 80%	25% or 75%	30% or 70%	35% or 65%	40% or 60%	50%
1,750	0.74%	1.03%	1.22%	1.37%	1.48%	1.57%	1.63%	1.67%	1.71%
1,500	0.80%	1.11%	1.32%	1.48%	1.60%	1.69%	1.76%	1.81%	1.85%
1,000	0.99%	1.36%	1.61%	1.81%	1.96%	2.07%	2.16%	2.22%	2.26%
500	1.39%	1.92%	2.28%	2.56%	2.77%	2.93%	3.05%	3.13%	3.20%

TABLE C.7

STANDARD ERRORS FOR PERCENTAGES: NATIONAL ESTIMATES FROM COMBINED SAMPLE, MEDICAL SPECIALISTS (OR ANY SUBSET)

Sample Size	For Percentages Near								
	5% or 95%	10% or 90%	15% or 85%	20% or 80%	25% or 75%	30% or 70%	35% or 65%	40% or 60%	50%
3,050	0.48%	0.66%	0.78%	0.88%	0.95%	1.00%	1.05%	1.07%	1.10%
2,500	0.53%	0.73%	0.86%	0.97%	1.05%	1.11%	1.15%	1.19%	1.21%
2,000	0.59%	0.81%	0.97%	1.08%	1.17%	1.24%	1.29%	1.33%	1.35%
1,500	0.68%	0.94%	1.12%	1.25%	1.35%	1.43%	1.49%	1.53%	1.56%
1,000	0.83%	1.15%	1.37%	1.53%	1.66%	1.75%	1.83%	1.88%	1.91%
500	1.18%	1.62%	1.93%	2.17%	2.35%	2.48%	2.58%	2.65%	2.71%

TABLE C.8

STANDARD ERRORS FOR PERCENTAGES: NATIONAL ESTIMATES FROM COMBINED SAMPLE, SURGICAL SPECIALISTS (OR ANY SUBSET)

Sample Size	For Percentages Near								
	5% or 95%	10% or 90%	15% or 85%	20% or 80%	25% or 75%	30% or 70%	35% or 65%	40% or 60%	50%
2,050	0.56%	0.80%	0.97%	1.09%	1.20%	1.27%	1.34%	1.38%	1.42%
1,500	0.65%	0.92%	1.11%	1.26%	1.38%	1.47%	1.54%	1.59%	1.63%
1,000	0.78%	1.10%	1.33%	1.51%	1.65%	1.76%	1.84%	1.90%	1.96%
500	1.06%	1.50%	1.82%	2.06%	2.25%	2.40%	2.51%	2.60%	2.67%

TABLE C.9

STANDARD ERRORS FOR PERCENTAGES: NATIONAL ESTIMATES FROM COMBINED SAMPLE, PHYSICIANS IN SOLO OR TWO-PERSON PRACTICE (OR ANY SUBSET)

Sample Size	For Percentages Near								
	5% or 95%	10% or 90%	15% or 85%	20% or 80%	25% or 75%	30% or 70%	35% or 65%	40% or 60%	50%
4,400	0.41%	0.59%	0.72%	0.82%	0.90%	0.96%	1.01%	1.04%	1.08%
4,000	0.43%	0.62%	0.75%	0.86%	0.94%	1.01%	1.06%	1.09%	1.13%
3,500	0.46%	0.66%	0.80%	0.92%	1.00%	1.08%	1.13%	1.17%	1.21%
3,000	0.50%	0.71%	0.87%	0.99%	1.09%	1.16%	1.22%	1.26%	1.31%
2,500	0.54%	0.78%	0.95%	1.08%	1.19%	1.27%	1.34%	1.38%	1.43%
2,000	0.61%	0.87%	1.06%	1.21%	1.33%	1.42%	1.49%	1.55%	1.60%
1,500	0.70%	1.01%	1.23%	1.40%	1.54%	1.64%	1.73%	1.79%	1.85%
1,000	0.86%	1.23%	1.50%	1.71%	1.88%	2.01%	2.11%	2.19%	2.27%
500	1.21%	1.74%	2.13%	2.42%	2.66%	2.85%	2.99%	3.10%	3.21%

TABLE C.10

STANDARD ERRORS FOR PERCENTAGES: NATIONAL ESTIMATES FROM COMBINED SAMPLE, PHYSICIANS IN GROUP PRACTICE* (OR ANY SUBSET)

Sample Size	For Percentages Near								
	5% or 95%	10% or 90%	15% or 85%	20% or 80%	25% or 75%	30% or 70%	35% or 65%	40% or 60%	50%
3200	0.46%	0.67%	0.82%	0.93%	1.02%	1.09%	1.15%	1.18%	1.21%
3000	0.47%	0.69%	0.84%	0.96%	1.05%	1.13%	1.18%	1.22%	1.25%
2500	0.51%	0.74%	0.91%	1.04%	1.14%	1.22%	1.28%	1.32%	1.35%
2000	0.57%	0.82%	1.01%	1.15%	1.26%	1.35%	1.42%	1.46%	1.50%
1500	0.65%	0.94%	1.15%	1.31%	1.44%	1.54%	1.61%	1.66%	1.71%
1000	0.78%	1.13%	1.38%	1.58%	1.73%	1.85%	1.94%	2.00%	2.05%
500	1.06%	1.54%	1.89%	2.16%	2.37%	2.53%	2.65%	2.74%	2.80%

* Three or more physicians in the practice.

TABLE C.11

STANDARD ERRORS FOR PERCENTAGES: NATIONAL ESTIMATES FROM COMBINED SAMPLE, PHYSICIANS IN HMO, MEDICAL SCHOOL, HOSPITAL, OR OTHER PRACTICE SETTING (OR ANY SUBSET)*

Sample Size	For Percentages Near								
	5% or 95%	10% or 90%	15% or 85%	20% or 80%	25% or 75%	30% or 70%	35% or 65%	40% or 60%	50%
4,750	0.49%	0.68%	0.81%	0.91%	0.98%	1.04%	1.08%	1.11%	1.13%
4,500	0.50%	0.69%	0.83%	0.92%	1.00%	1.06%	1.10%	1.13%	1.16%
4,000	0.53%	0.73%	0.86%	0.97%	1.05%	1.11%	1.16%	1.19%	1.21%
3,500	0.56%	0.77%	0.91%	1.02%	1.11%	1.17%	1.22%	1.25%	1.28%
3,000	0.59%	0.81%	0.97%	1.08%	1.17%	1.24%	1.29%	1.33%	1.36%
2,500	0.63%	0.87%	1.04%	1.17%	1.26%	1.34%	1.39%	1.43%	1.46%
2,000	0.69%	0.95%	1.14%	1.27%	1.38%	1.46%	1.52%	1.56%	1.59%
1,500	0.78%	1.07%	1.27%	1.42%	1.54%	1.63%	1.70%	1.75%	1.78%
1,000	0.91%	1.25%	1.49%	1.67%	1.81%	1.91%	1.99%	2.05%	2.09%
500	1.20%	1.65%	1.96%	2.20%	2.38%	2.52%	2.62%	2.69%	2.75%

* “Other Practice Setting” does not apply to private group practices of three or more.

TABLE C.12

STANDARD ERRORS FOR PERCENTAGES: NATIONAL ESTIMATES FROM COMBINED SAMPLE, PHYSICIANS IN PRACTICE WITH HIGH REVENUE FROM MANAGED CARE* (OR ANY SUBSET)

Sample Size	For Percentages Near								
	5% or 95%	10% or 90%	15% or 85%	20% or 80%	25% or 75%	30% or 70%	35% or 65%	40% or 60%	50%
7,475	0.40%	0.55%	0.66%	0.74%	0.80%	0.84%	0.88%	0.90%	0.92%
7,000	0.41%	0.57%	0.68%	0.76%	0.82%	0.87%	0.90%	0.93%	0.95%
6,500	0.42%	0.58%	0.70%	0.78%	0.84%	0.89%	0.93%	0.95%	0.97%
6,000	0.44%	0.60%	0.72%	0.80%	0.87%	0.92%	0.96%	0.99%	1.01%
5,500	0.45%	0.62%	0.74%	0.83%	0.90%	0.95%	0.99%	1.02%	1.04%
5,000	0.47%	0.65%	0.77%	0.87%	0.94%	0.99%	1.03%	1.06%	1.08%
4,500	0.49%	0.68%	0.81%	0.90%	0.98%	1.03%	1.08%	1.11%	1.13%
4,000	0.52%	0.71%	0.85%	0.95%	1.02%	1.08%	1.13%	1.16%	1.18%
3,500	0.54%	0.75%	0.89%	1.00%	1.08%	1.14%	1.19%	1.22%	1.25%
3,000	0.58%	0.80%	0.95%	1.06%	1.15%	1.22%	1.27%	1.30%	1.33%
2,500	0.62%	0.86%	1.02%	1.14%	1.24%	1.31%	1.36%	1.40%	1.43%
2,000	0.68%	0.94%	1.12%	1.25%	1.35%	1.43%	1.49%	1.53%	1.56%

* Revenue from managed care above the median of 35 percent.

TABLE C.13

STANDARD ERRORS FOR PERCENTAGES: NATIONAL ESTIMATES FROM COMBINED SAMPLE, PHYSICIANS IN PRACTICE WITH LOW REVENUE FROM MANAGED CARE* (OR ANY SUBSET)

Sample Size	For Percentages Near								
	5% or 95%	10% or 90%	15% or 85%	20% or 80%	25% or 75%	30% or 70%	35% or 65%	40% or 60%	50%
4,850	0.45%	0.62%	0.74%	0.82%	0.89%	0.94%	0.98%	1.01%	1.03%
4,500	0.47%	0.64%	0.76%	0.86%	0.93%	0.98%	1.02%	1.05%	1.07%
4,000	0.49%	0.68%	0.81%	0.91%	0.98%	1.04%	1.08%	1.11%	1.14%
3,500	0.53%	0.73%	0.87%	0.97%	1.05%	1.11%	1.16%	1.19%	1.21%
3,000	0.57%	0.79%	0.94%	1.05%	1.14%	1.20%	1.25%	1.28%	1.31%
2,500	0.63%	0.86%	1.03%	1.15%	1.24%	1.32%	1.37%	1.41%	1.44%
2,000	0.70%	0.96%	1.15%	1.28%	1.39%	1.47%	1.53%	1.57%	1.61%
1,500	0.81%	1.11%	1.32%	1.48%	1.61%	1.70%	1.77%	1.82%	1.85%
1,000	0.99%	1.36%	1.62%	1.82%	1.97%	2.08%	2.17%	2.23%	2.27%
500	1.40%	1.93%	2.30%	2.57%	2.78%	2.95%	3.07%	3.15%	3.21%

* Revenue from managed care at or below the median of 35 percent.

TABLE C.14

STANDARD ERRORS FOR MEANS OF QUASI-CONTINUOUS VARIABLES:
NATIONAL ESTIMATES FROM COMBINED SAMPLE,
ALL PHYSICIANS (OR ANY SUBSET)*

	For Means Near								
Sample Size	5	10	20	30	40	50	60	70	80
12,400	0.224	0.296	0.390	0.459	0.515	0.563	0.606	0.644	0.680
12,000	0.227	0.299	0.395	0.464	0.521	0.569	0.613	0.652	0.687
11,500	0.230	0.303	0.400	0.471	0.528	0.578	0.622	0.661	0.697
11,000	0.233	0.308	0.407	0.478	0.537	0.587	0.631	0.671	0.708
10,500	0.237	0.313	0.413	0.486	0.545	0.596	0.641	0.682	0.719
10,000	0.241	0.318	0.420	0.494	0.554	0.606	0.652	0.693	0.732
9,500	0.245	0.324	0.427	0.503	0.564	0.617	0.664	0.706	0.744
9,000	0.250	0.330	0.435	0.512	0.575	0.628	0.676	0.719	0.758
8,500	0.255	0.336	0.444	0.522	0.586	0.641	0.689	0.733	0.773
8,000	0.260	0.344	0.453	0.533	0.598	0.654	0.704	0.748	0.790
7,500	0.266	0.351	0.463	0.545	0.612	0.669	0.719	0.765	0.807
7,000	0.272	0.360	0.475	0.558	0.626	0.685	0.737	0.783	0.826
6,500	0.279	0.369	0.487	0.572	0.642	0.702	0.756	0.804	0.848
6,000	0.287	0.379	0.500	0.588	0.660	0.722	0.776	0.826	0.871
5,500	0.296	0.390	0.515	0.606	0.680	0.744	0.800	0.851	0.898
5,000	0.306	0.403	0.532	0.626	0.703	0.768	0.826	0.879	0.927

*See note at end of table.

TABLE C.14

STANDARD ERRORS FOR MEANS OF QUASI-CONTINUOUS VARIABLES:
NATIONAL ESTIMATES FROM COMBINED SAMPLE,
ALL PHYSICIANS (OR ANY SUBSET)*
(Continued)

	For Means Near								
Sample Size	5	10	20	30	40	50	60	70	80
4,500	0.317	0.418	0.552	0.649	0.728	0.796	0.857	0.911	0.961
4,000	0.330	0.435	0.575	0.676	0.758	0.829	0.892	0.949	1.001
3,500	0.345	0.456	0.602	0.708	0.794	0.868	0.934	0.993	1.048
3,000	0.364	0.480	0.634	0.746	0.837	0.915	0.984	1.047	1.104
2,500	0.388	0.511	0.675	0.794	0.891	0.974	1.048	1.114	1.175
2,000	0.418	0.552	0.728	0.857	0.961	1.051	1.131	1.203	1.269
1,500	0.462	0.609	0.804	0.945	1.061	1.160	1.248	1.327	1.400
1,000	0.530	0.700	0.923	1.086	1.219	1.333	1.433	1.525	1.608
500	0.672	0.887	1.171	1.377	1.545	1.689	1.817	1.933	2.039

*Separate tables are provided for all primary care physicians (C.14), internal medicine physicians (C.15), family/general practice physicians (C.16), general pediatricians (C.17), medical specialists (C.18), physicians in solo or two-person practice (C.19), physicians in group practice of three or more (C.20), physicians in HMO, medical school, hospital, or other practice setting (C.21), physicians in practice with a higher percentage of revenue from managed care (C.22), and physicians in practice with a lower percentage of revenue from managed care (C.23). We recommend that you use one of these tables if your estimate is limited to one of these subgroups (or any subset within it).

TABLE C.15

STANDARD ERRORS FOR MEANS OF QUASI-CONTINUOUS VARIABLES:
NATIONAL ESTIMATES FROM COMBINED SAMPLE,
ALL PRIMARY CARE PHYSICIANS (OR ANY SUBSET)*

	For Means Near								
Sample Size	5	10	20	30	40	50	60	70	80
7,300	0.232	0.335	0.483	0.599	0.697	0.784	0.864	0.937	1.006
7,000	0.235	0.339	0.490	0.607	0.707	0.796	0.876	0.951	1.021
6,500	0.241	0.348	0.503	0.623	0.726	0.816	0.899	0.976	1.047
6,000	0.248	0.358	0.517	0.641	0.746	0.839	0.924	1.003	1.076
5,500	0.256	0.369	0.533	0.660	0.769	0.865	0.953	1.034	1.109
5,000	0.264	0.381	0.550	0.682	0.794	0.894	0.985	1.068	1.146
4,500	0.274	0.396	0.571	0.707	0.824	0.927	1.021	1.108	1.189
4,000	0.285	0.412	0.595	0.737	0.858	0.966	1.064	1.154	1.238
3,500	0.299	0.431	0.623	0.772	0.899	1.011	1.114	1.208	1.297
3,000	0.315	0.455	0.657	0.814	0.948	1.067	1.175	1.275	1.368
2,500	0.336	0.485	0.699	0.867	1.010	1.136	1.251	1.358	1.457
2,000	0.363	0.524	0.756	0.936	1.091	1.227	1.352	1.466	1.574
1,500	0.401	0.578	0.835	1.034	1.205	1.356	1.493	1.620	1.738
1,000	0.461	0.665	0.960	1.190	1.386	1.560	1.718	1.864	2.000
500	0.586	0.846	1.220	1.512	1.761	1.982	2.183	2.368	2.542

*Separate tables are provided for internal medicine physicians (C.15), family/general practice physicians (C.16), and general pediatricians (C.17). We recommend that you use one of these other tables if your estimate is limited to one of these subgroups (or any subset within it).

TABLE C.16

STANDARD ERRORS FOR MEANS OF QUASI-CONTINUOUS VARIABLES:
NATIONAL ESTIMATES FROM COMBINED SAMPLE,
INTERNAL MEDICINE PHYSICIANS (OR ANY SUBSET)

	For Means Near								
Sample Size	5	10	20	30	40	50	60	70	80
2,425	0.369	0.519	0.731	0.893	1.030	1.150	1.258	1.358	1.450
2,000	0.396	0.557	0.784	0.958	1.105	1.233	1.350	1.456	1.556
1,500	0.439	0.619	0.871	1.064	1.227	1.370	1.499	1.617	1.728
1,000	0.509	0.717	1.010	1.234	1.422	1.588	1.737	1.875	2.002
500	0.655	0.923	1.300	1.588	1.830	2.044	2.236	2.413	2.578

TABLE C.17

STANDARD ERRORS FOR MEANS OF QUASI-CONTINUOUS VARIABLES:
NATIONAL ESTIMATES FROM COMBINED SAMPLE,
FAMILY/GENERAL PRACTICE PHYSICIANS (OR ANY SUBSET)

	For Means Near								
Sample Size	5	10	20	30	40	50	60	70	80
3,050	0.276	0.402	0.586	0.730	0.853	0.963	1.064	1.157	1.244
2,500	0.308	0.448	0.653	0.814	0.952	1.075	1.187	1.290	1.388
2,000	0.348	0.507	0.739	0.921	1.076	1.215	1.342	1.459	1.569
1,500	0.407	0.594	0.865	1.079	1.261	1.424	1.572	1.709	1.838
1,000	0.509	0.742	1.082	1.348	1.577	1.780	1.965	2.137	2.298
500	0.746	1.087	1.584	1.975	2.309	2.606	2.878	3.129	3.365

TABLE C.18

STANDARD ERRORS FOR MEANS OF QUASI-CONTINUOUS VARIABLES:
NATIONAL ESTIMATES FROM COMBINED SAMPLE,
GENERAL PEDIATRICIANS (OR ANY SUBSET)

	For Means Near								
Sample Size	5	10	20	30	40	50	60	70	80
1,750	0.460	0.577	0.725	0.828	0.910	0.979	1.040	1.094	1.143
1,500	0.489	0.614	0.771	0.881	0.968	1.042	1.106	1.164	1.216
1,000	0.576	0.723	0.908	1.037	1.140	1.226	1.302	1.369	1.431
500	0.761	0.955	1.199	1.370	1.505	1.620	1.719	1.809	1.890

TABLE C.19

STANDARD ERRORS FOR MEANS OF QUASI-CONTINUOUS VARIABLES:
NATIONAL ESTIMATES FROM COMBINED SAMPLE,
MEDICAL SPECIALISTS (OR ANY SUBSET)

	For Means Near								
Sample Size	5	10	20	30	40	50	60	70	80
3,050	0.315	0.391	0.485	0.550	0.602	0.645	0.683	0.716	0.746
2,500	0.349	0.433	0.538	0.610	0.667	0.715	0.757	0.794	0.827
2,000	0.392	0.486	0.604	0.685	0.749	0.803	0.849	0.891	0.929
1,500	0.455	0.565	0.701	0.795	0.869	0.932	0.986	1.034	1.078
1,000	0.562	0.697	0.864	0.981	1.072	1.149	1.216	1.276	1.330
500	0.804	0.998	1.238	1.404	1.536	1.646	1.742	1.828	1.905

TABLE C.20

STANDARD ERRORS FOR MEANS OF QUASI-CONTINUOUS VARIABLES:
NATIONAL ESTIMATES FROM COMBINED SAMPLE,
PHYSICIANS IN SOLO OR TWO-PERSON PRACTICE (OR ANY SUBSET)

	For Means Near								
Sample Size	5	10	20	30	40	50	60	70	80
4,400	0.245	0.339	0.468	0.566	0.647	0.718	0.781	0.840	0.894
4,000	0.255	0.353	0.487	0.589	0.673	0.747	0.813	0.874	0.930
3,500	0.270	0.373	0.515	0.622	0.712	0.790	0.860	0.924	0.983
3,000	0.288	0.398	0.550	0.664	0.759	0.843	0.917	0.986	1.049
2,500	0.311	0.429	0.593	0.717	0.819	0.909	0.990	1.064	1.132
2,000	0.341	0.471	0.651	0.787	0.900	0.998	1.087	1.168	1.243
1,500	0.385	0.532	0.734	0.887	1.015	1.126	1.226	1.317	1.402
1,000	0.456	0.630	0.870	1.051	1.202	1.334	1.453	1.561	1.661
500	0.609	0.842	1.163	1.405	1.607	1.783	1.941	2.086	2.220

TABLE C.21

STANDARD ERRORS FOR MEANS OF QUASI-CONTINUOUS VARIABLES:
NATIONAL ESTIMATES FROM COMBINED SAMPLE,
PHYSICIANS IN GROUP PRACTICE* (OR ANY SUBSET)

	For Means Near								
Sample Size	5	10	20	30	40	50	60	70	80
3,200	0.368	0.458	0.571	0.649	0.710	0.762	0.808	0.848	0.885
3,000	0.375	0.467	0.581	0.661	0.724	0.777	0.823	0.864	0.901
2,500	0.395	0.491	0.612	0.696	0.762	0.818	0.866	0.910	0.949
2,000	0.420	0.523	0.652	0.741	0.812	0.871	0.923	0.969	1.011
1,500	0.456	0.568	0.707	0.804	0.881	0.945	1.001	1.051	1.097
1,000	0.511	0.637	0.793	0.902	0.988	1.060	1.123	1.179	1.230
500	0.622	0.775	0.965	1.097	1.202	1.290	1.367	1.435	1.497

* Three or more physicians in the practice.

TABLE C.22

STANDARD ERRORS FOR MEANS OF QUASI-CONTINUOUS VARIABLES:
NATIONAL ESTIMATES FROM COMBINED SAMPLE, PHYSICIANS IN
HMO, MEDICAL SCHOOL, HOSPITAL, OR OTHER
PRACTICE SETTING (OR ANY SUBSET)

	For Means Near								
Sample Size	5	10	20	30	40	50	60	70	80
4,750	0.300	0.425	0.603	0.739	0.855	0.956	1.048	1.133	1.212
4,500	0.303	0.430	0.610	0.748	0.865	0.968	1.061	1.147	1.227
4,000	0.312	0.442	0.626	0.768	0.888	0.994	1.090	1.178	1.259
3,500	0.321	0.455	0.645	0.792	0.915	1.024	1.123	1.213	1.298
3,000	0.332	0.471	0.668	0.820	0.947	1.060	1.162	1.256	1.343
2,500	0.346	0.491	0.696	0.854	0.987	1.105	1.211	1.309	1.400
2,000	0.364	0.516	0.732	0.898	1.038	1.161	1.273	1.376	1.472
1,500	0.388	0.551	0.781	0.958	1.107	1.239	1.358	1.468	1.570
1,000	0.425	0.603	0.855	1.049	1.213	1.357	1.487	1.608	1.719
500	0.497	0.705	0.999	1.226	1.417	1.585	1.738	1.878	2.009

TABLE C.23

STANDARD ERRORS FOR MEANS OF QUASI-CONTINUOUS VARIABLES:
NATIONAL ESTIMATES FROM COMBINED SAMPLE, PHYSICIANS
IN PRACTICE WITH HIGH REVENUE FROM MANAGED CARE (OR ANY SUBSET)*

	For Means Near								
Sample Size	5	10	20	30	40	50	60	70	80
7,475	0.231	0.318	0.437	0.526	0.600	0.665	0.723	0.776	0.825
7,000	0.237	0.325	0.447	0.538	0.614	0.680	0.740	0.794	0.844
6,500	0.243	0.334	0.458	0.552	0.630	0.698	0.759	0.814	0.866
6,000	0.250	0.343	0.471	0.568	0.648	0.717	0.780	0.837	0.890
5,500	0.257	0.353	0.486	0.585	0.667	0.739	0.804	0.863	0.917
5,000	0.266	0.365	0.502	0.604	0.690	0.764	0.831	0.891	0.948
4,500	0.276	0.379	0.520	0.627	0.715	0.792	0.861	0.924	0.983
4,000	0.287	0.394	0.542	0.653	0.745	0.825	0.897	0.963	1.023
3,500	0.300	0.413	0.567	0.683	0.780	0.864	0.939	1.008	1.072
3,000	0.317	0.435	0.598	0.721	0.822	0.911	0.990	1.063	1.130
2,500	0.337	0.464	0.637	0.767	0.876	0.970	1.055	1.132	1.203
2,000	0.364	0.501	0.688	0.829	0.946	1.047	1.139	1.222	1.299
1,500	0.402	0.553	0.760	0.915	1.044	1.157	1.257	1.350	1.435
1,000	0.463	0.636	0.874	1.052	1.201	1.330	1.446	1.552	1.650
500	0.587	0.807	1.109	1.336	1.524	1.689	1.836	1.970	2.095

* Revenue from managed care above the median of 35 percent.

TABLE C.24

STANDARD ERRORS FOR MEANS OF QUASI-CONTINUOUS VARIABLES:
NATIONAL ESTIMATES FROM COMBINED SAMPLE, PHYSICIANS
IN PRACTICE WITH LOW REVENUE FROM
MANAGED CARE * (OR ANY SUBSET)

	For Means Near								
Sample Size	5	10	20	30	40	50	60	70	80
4,850	0.204	0.267	0.350	0.411	0.459	0.501	0.538	0.572	0.602
4,500	0.214	0.280	0.367	0.430	0.481	0.525	0.563	0.598	0.630
4,000	0.230	0.301	0.394	0.462	0.517	0.564	0.606	0.643	0.678
3,500	0.249	0.326	0.428	0.501	0.561	0.612	0.657	0.698	0.735
3,000	0.274	0.359	0.470	0.551	0.616	0.673	0.722	0.767	0.808
2,500	0.306	0.401	0.526	0.616	0.689	0.752	0.807	0.857	0.903
2,000	0.351	0.460	0.603	0.706	0.790	0.862	0.925	0.983	1.035
1,500	0.418	0.548	0.719	0.842	0.942	1.028	1.104	1.172	1.235
1,000	0.536	0.703	0.921	1.079	1.207	1.317	1.414	1.502	1.583
500	0.819	1.074	1.408	1.649	1.845	2.013	2.162	2.296	2.419

* Revenue from managed care above the median of 35 percent.

TABLE C.25

STANDARD ERRORS FOR MEANS OF CONTINUOUS VARIABLES: NATIONAL ESTIMATES FROM COMBINED SAMPLE, ALL PHYSICIANS*

Variable	Description of Variable	Unweighted Sample Size	Weighted Sample Size	Standard Error of Mean	Design Effect
WKSWRKC	WKSWRKC, Wks worked in 1997,w/o new phys	12239	361411	0.059	2.03
HRSMED	HRSMED, Hrs prev wk medically-relatd act	12304	363374	0.215	2.205
HRSPAT	HRSPAT, Hrs prev wk direct patient care	12304	363374	0.194	1.956
HRFREE	HRFREE, Hrs previous month charity care	12304	363374	0.311	3.163
NPHYS	NPHYS, # of physicians at practice	8733	264286	4.569	7.957
NASSIST	NASSIST, # of assistants in practice	8748	264640	1.561	3.092
NMCCON	NMCCON, # of managed care contracts	12304	363374	0.259	4.183
INCOMEC	INCOMEC, Net income w/o new physicians	12239	361411	2333.350	3.048

*Separate tables are provided for all primary care physicians (C.25), all non-primary care physicians (C.26), internal medicine physicians (C.27), family/general practice physicians (C.28), general pediatricians (C.29), medical specialists (C.30), surgical specialists (C.31), physicians in solo or two-person practice (C.32), physicians in group practice of three or more (C.33), physicians in HMO, medical school, hospital, or other practice settings (C.34), physicians in practice with a higher percentage of revenue from managed care (C.35) , and physicians in practice with a lower percentage of revenue from managed care (C.36). We recommend that you use one of these other tables if your estimate is limited to one of these subgroups.

TABLE C.26

STANDARD ERRORS FOR MEANS OF CONTINUOUS VARIABLES: NATIONAL ESTIMATES FROM COMBINED SAMPLE, ALL PRIMARY CARE PHYSICIANS*

Variable	Description of Variable	Unweighted Sample Size	Weighted Sample Size	Standard Error of Mean	Design Effect
WKSWRKC	WKSWRKC, Wks worked in 1997,w/o new phys	7230	139119	0.081	1.76
HRSMED	HRSMED, Hrs prev wk medically-relatd act	7264	139865	0.218	1.46
HRSPAT	HRSPAT, Hrs prev wk direct patient care	7264	139865	0.285	2.79
HRFREE	HRFREE, Hrs previous month charity care	7264	139865	0.349	3.077
NPHYS	NPHYS, # of physicians at practice	5077	98095	4.478	5.437
NASSIST	NASSIST, # of assistants in practice	5087	98287	1.022	1.394
NMCCON	NMCCON, # of managed care contracts	7264	139865	0.230	2.669
INCOMEC	INCOMEC, Net income w/o new physicians	7230	139119	1648.590	4.131

*Separate tables are provided for internal medicine physicians (C.27), family/general practice physicians (C.28), and general pediatricians (C.29). We recommend that you use one of these other tables if your estimate is limited to one of these subgroups.

TABLE C.27

STANDARD ERRORS FOR MEANS OF CONTINUOUS VARIABLES: NATIONAL ESTIMATES FROM COMBINED SAMPLE, ALL NON-PRIMARY CARE PHYSICIANS*

Variable	Description of Variable	Unweighted Sample Size	Weighted Sample Size	Standard Error of Mean	Design Effect
WKSWRKC	WKSWRKC, Wks worked in 1997,w/o new phys	5009	222292	0.069	1.38
HRSMED	HRSMED, Hrs prev wk medically-relatd act	5040	223509	0.293	1.62
HRSPAT	HRSPAT, Hrs prev wk direct patient care	5040	223509	0.241	1.17
HRFREE	HRFREE, Hrs previous month charity care	5040	223509	0.378	1.68
NPHYS	NPHYS, # of physicians at practice	3656	166191	5.119	3.78
NASSIST	NASSIST, # of assistants in practice	3661	166353	2.154	1.95
NMCCON	NMCCON, # of managed care contracts	5040	223509	0.336	2.47
INCOMEC	INCOMEC, Net income w/o new physicians	5009	222292	2932.641	1.43

*Separate tables are provided for medical specialists (C.30) and surgical specialists (C.31). We recommend that you use one of these other tables if your estimate is limited to one of these subgroups.

TABLE C.28

STANDARD ERRORS FOR MEANS OF CONTINUOUS VARIABLES: NATIONAL ESTIMATES FROM COMBINED SAMPLE, INTERNAL MEDICIAN PHYSICIANS

Variable	Description of Variable	Unweighted Sample Size	Weighted Sample Size	Standard Error of Mean	Design Effect
WKSWRKC	WKSWRKC, Wks worked in 1997,w/o new phys	2406	45913	0.123	1.35
HRSMED	HRSMED, Hrs prev wk medically-relatd act	2426	46261	0.383	1.45
HRSPAT	HRSPAT, Hrs prev wk direct patient care	2426	46261	0.373	1.53
HRFREE	HRFREE, Hrs previous month charity care	2426	46261	0.695	2.50
NPHYS	NPHYS, # of physicians at practice	1702	32443	5.118	1.98
NASSIST	NASSIST, # of assistants in practice	1705	32472	1.558	0.89
NMCCON	NMCCON, # of managed care contracts	2426	46261	0.321	2.29
INCOMEC	INCOMEC, Net income w/o new physicians	2406	45913	1733.573	1.52

TABLE C.29

STANDARD ERRORS FOR MEANS OF CONTINUOUS VARIABLES: NATIONAL ESTIMATES FROM COMBINED SAMPLE, FAMILY/GENERAL PRACTICE PHYSICIANS

Variable	Description of Variable	Unweighted Sample Size	Weighted Sample Size	Standard Error of Mean	Design Effect
WKSWRKC	WKSWRKC, Wks worked in 1997,w/o new phys	3059	60774	0.124	1.90
HRSMED	HRSMED, Hrs prev wk medically-relatd act	3064	60954	0.414	2.29
HRSPAT	HRSPAT, Hrs prev wk direct patient care	3064	60954	0.531	4.02
HRFREE	HRFREE, Hrs previous month charity care	3064	60954	0.298	1.44
NPHYS	NPHYS, # of physicians at practice	2132	42798	5.543	4.47
NASSIST	NASSIST, # of assistants in practice	2134	42873	0.973	0.81
NMCCON	NMCCON, # of managed care contracts	3064	60954	0.322	2.30
INCOMEC	INCOMEC, Net income w/o new physicians	3059	60774	2806.298	4.56

TABLE C.30

STANDARD ERRORS FOR MEANS OF CONTINUOUS VARIABLES: NATIONAL ESTIMATES FROM COMBINED SAMPLE, GENERAL PEDIATRICIANS

Variable	Description of Variable	Unweighted Sample Size	Weighted Sample Size	Standard Error of Mean	Design Effect
WKSWRKC	WKSWRKC, Wks worked in 1997,w/o new phys	1719	30786	0.144	1.35
HRSMED	HRSMED, Hrs prev wk medically-relatd act	1727	30959	0.424	1.41
HRSPAT	HRSPAT, Hrs prev wk direct patient care	1727	30959	0.383	1.36
HRFREE	HRFREE, Hrs previous month charity care	1727	30959	0.365	1.05
NPHYS	NPHYS, # of physicians at practice	1209	21605	5.577	1.71
NASSIST	NASSIST, # of assistants in practice	1214	21694	2.584	1.51
NMCCON	NMCCON, # of managed care contracts	1727	30959	0.463	1.84
INCOMEC	INCOMEC, Net income w/o new physicians	1719	30786	2102.514	2.06

TABLE C.31

STANDARD ERRORS FOR MEANS OF CONTINUOUS VARIABLES: NATIONAL ESTIMATES FROM COMBINED SAMPLE, MEDICAL SPECIALISTS

Variable	Description of Variable	Unweighted Sample Size	Weighted Sample Size	Standard Error of Mean	Design Effect
WKSWRKC	WKSWRKC, Wks worked in 1997,w/o new phys	3027	125688	0.090	1.14
HRSMED	HRSMED, Hrs prev wk medically-relatd act	3043	126232	0.374	1.58
HRSPAT	HRSPAT, Hrs prev wk direct patient care	3043	126232	0.376	1.66
HRFREE	HRFREE, Hrs previous month charity care	3043	126232	0.478	1.68
NPHYS	NPHYS, # of physicians at practice	1966	83687	5.835	2.41
NASSIST	NASSIST, # of assistants in practice	1971	83849	2.633	1.67
NMCCON	NMCCON, # of managed care contracts	3043	126232	0.297	1.38
INCOMEC	INCOMEC, Net income w/o new physicians	3027	125688	2209.248	1.28

TABLE C.32

STANDARD ERRORS FOR MEANS OF CONTINUOUS VARIABLES: NATIONAL ESTIMATES FROM COMBINED SAMPLE, SURGICAL SPECIALISTS

Variable	Description of Variable	Unweighted Sample Size	Weighted Sample Size	Standard Error of Mean	Design Effect
WKSWRKC	WKSWRKC, Wks worked in 1997,w/o new phys	2028	98250	0.108	1.71
HRSMED	HRSMED, Hrs prev wk medically-relatd act	2044	98969	0.397	1.26
HRSPAT	HRSPAT, Hrs prev wk direct patient care	2044	98969	0.352	1.08
HRFREE	HRFREE, Hrs previous month charity care	2044	98969	0.495	1.13
NPHYS	NPHYS, # of physicians at practice	1724	83752	5.677	2.46
NASSIST	NASSIST, # of assistants in practice	1724	83752	2.480	1.16
NMCCON	NMCCON, # of managed care contracts	2044	98969	0.512	2.02
INCOMEC	INCOMEC, Net income w/o new physicians	2028	98250	5147.730	1.06

TABLE C.33

STANDARD ERRORS FOR MEANS OF CONTINUOUS VARIABLES: NATIONAL ESTIMATES FROM COMBINED SAMPLE, PHYSICIANS IN SOLO OR TW0-PERSON PRATICE

Variable	Description of Variable	Unweighted Sample Size	Weighted Sample Size	Standard Error of Mean	Design Effect
WKSWRKC	WKSWRKC, Wks worked in 1997,w/o new phys	4381	135473	0.075	1.45
HRSMED	HRSMED, Hrs prev wk medically-relatd act	4397	135922	0.325	1.58
HRSPAT	HRSPAT, Hrs prev wk direct patient care	4397	135922	0.282	1.37
HRFREE	HRFREE, Hrs previous month charity care	4397	135922	0.498	2.93
NPHYS	NPHYS, # of physicians at practice	4387	135608	0.651	2.84
NASSIST	NASSIST, # of assistants in practice	4391	135759	0.327	2.84
NMCCON	NMCCON, # of managed care contracts	4397	135922	0.281	2.21
INCOMEC	INCOMEC, Net income w/o new physicians	4381	135473	3433.226	1.44

TABLE C.34

STANDARD ERRORS FOR MEANS OF CONTINUOUS VARIABLES: NATIONAL ESTIMATES FROM COMBINED SAMPLE, PHYSICIANS IN GROUP PRACTICE (THREE OR MORE)

Variable	Description of Variable	Unweighted Sample Size	Weighted Sample Size	Standard Error of Mean	Design Effect
WKSWRKC	WKSWRKC, Wks worked in 1997,w/o new phys	3145	98146	0.076	1.41
HRSMED	HRSMED, Hrs prev wk medically-relatd act	3166	98734	0.340	1.66
HRSPAT	HRSPAT, Hrs prev wk direct patient care	3166	98734	0.315	1.51
HRFREE	HRFREE, Hrs previous month charity care	3166	98734	0.326	1.31
NPHYS	NPHYS, # of physicians at practice	3148	98203	3.512	4.18
NASSIST	NASSIST, # of assistants in practice	3148	98203	0.743	1.11
NMCCON	NMCCON, # of managed care contracts	3166	98734	0.410	2.53
INCOMEC	INCOMEC, Net income w/o new physicians	3145	98146	3990.469	2.59

TABLE C.35

STANDARD ERRORS FOR MEANS OF CONTINUOUS VARIABLES: NATIONAL ESTIMATES FROM COMBINED SAMPLE, PHYSICIANS IN HMO, MEDICAL SCHOOL, HOSPITAL, OR OTHER PRACTICE SETTING

Variable	Description of Variable	Unweighted Sample Size	Weighted Sample Size	Standard Error of Mean	Design Effect
WKSWRKC	WKSWRKC, Wks worked in 1997,w/o new phys	4713	127793	0.116	2.07
HRSMED	HRSMED, Hrs prev wk medically-relatd act	4741	128718	0.321	2.06
HRSPAT	HRSPAT, Hrs prev wk direct patient care	4741	128718	0.341	2.58
HRFREE	HRFREE, Hrs previous month charity care	4741	128718	0.459	2.11
NPHYS	NPHYS, # of physicians at practice	1198	30475	21.183	4.61
NASSIST	NASSIST, # of assistants in practice	1209	30679	10.736	2.88
NMCCON	NMCCON, # of managed care contracts	4741	128718	0.370	2.85
INCOMEC	INCOMEC, Net income w/o new physicians	4713	127793	2021.039	2.76

TABLE C.36

STANDARD ERRORS FOR MEANS OF CONTINUOUS VARIABLES: NATIONAL ESTIMATES FROM COMBINED SAMPLE, PHYSICIANS IN PRACTICE WITH HIGH REVENUE FROM MANAGED CAREE (ABOVE MEDIAN OF 35%)

Variable	Description of Variable	Unweighted Sample Size	Weighted Sample Size	Standard Error of Mean	Design Effect
WKSWRKC	WKSWRKC, Wks worked in 1997,w/o new phys	7438	198599	0.068	1.74
HRSMED	HRSMED, Hrs prev wk medically-relatd act	7473	199523	0.246	1.83
HRSPAT	HRSPAT, Hrs prev wk direct patient care	7473	199523	0.217	1.58
HRFREE	HRFREE, Hrs previous month charity care	7473	199523	0.275	1.89
NPHYS	NPHYS, # of physicians at practice	5293	143942	7.275	7.95
NASSIST	NASSIST, # of assistants in practice	5305	144240	2.511	3.04
NMCCON	NMCCON, # of managed care contracts	7473	199523	0.346	3.62
INCOMEC	INCOMEC, Net income w/o new physicians	7438	198599	2217.471	2.98

TABLE C.37

STANDARD ERRORS FOR MEANS OF CONTINUOUS VARIABLES: NATIONAL ESTIMATES FROM COMBINED SAMPLE, PHYSICIANS IN PRACTICE WITH LOW REVENUE FROM MANAGED CAREE (AT OR BELOW MEDIAN OF 35%)

Variable	Description of Variable	Unweighted Sample Size	Weighted Sample Size	Standard Error of Mean	Design Effect
WKSWRKC	WKSWRKC, Wks worked in 1997,w/o new phys	4801	162813	0.086	1.56
HRSMED	HRSMED, Hrs prev wk medically-relatd act	4831	163851	0.333	1.98
HRSPAT	HRSPAT, Hrs prev wk direct patient care	4831	163851	0.306	1.77
HRFREE	HRFREE, Hrs previous month charity care	4831	163851	0.495	2.54
NPHYS	NPHYS, # of physicians at practice	3440	120344	1.763	1.51
NASSIST	NASSIST, # of assistants in practice	3443	120400	0.957	1.68
NMCCON	NMCCON, # of managed care contracts	4831	163851	0.268	2.92
INCOMEC	INCOMEC, Net income w/o new physicians	4801	162813	3383.687	1.65

TABLE C.38

STANDARD ERRORS FOR PERCENTAGES: HIGH-INTENSITY SITE-SPECIFIC ESTIMATES, ALL PHYSICIANS (OR ANY SUBSET)*

Sample Size	For Percentages Near								
	5% or 95%	10% or 90%	15% or 85%	20% or 80%	25% or 75%	30% or 70%	35% or 65%	40% or 60%	50%
650	0.91%	1.36%	1.69%	1.95%	2.15%	2.31%	2.43%	2.51%	2.57%
600	0.94%	1.40%	1.75%	2.02%	2.23%	2.39%	2.51%	2.59%	2.66%
550	0.97%	1.46%	1.81%	2.09%	2.31%	2.48%	2.61%	2.69%	2.76%
500	1.01%	1.52%	1.89%	2.18%	2.41%	2.58%	2.71%	2.80%	2.87%
450	1.06%	1.59%	1.98%	2.28%	2.52%	2.70%	2.84%	2.93%	3.00%
400	1.12%	1.67%	2.08%	2.40%	2.65%	2.84%	2.98%	3.08%	3.16%
350	1.18%	1.77%	2.20%	2.54%	2.80%	3.01%	3.16%	3.26%	3.34%
300	1.26%	1.89%	2.35%	2.71%	2.99%	3.21%	3.37%	3.49%	3.57%
250	1.36%	2.04%	2.54%	2.93%	3.23%	3.47%	3.65%	3.77%	3.86%
200	1.50%	2.24%	2.79%	3.22%	3.56%	3.82%	4.01%	4.15%	4.24%
150	1.70%	2.54%	3.16%	3.64%	4.02%	4.32%	4.54%	4.69%	4.80%
100	2.02%	3.02%	3.76%	4.33%	4.79%	5.14%	5.40%	5.58%	5.71%

TABLE C.39

STANDARD ERRORS FOR PERCENTAGES: HIGH-INTENSITY SITE-SPECIFIC ESTIMATES, ALL PRIMARY CARE PHYSICIANS (OR ANY SUBSET)*

Sample Size	For Percentages Near								
	5% or 95%	10% or 90%	15% or 85%	20% or 80%	25% or 75%	30% or 70%	35% or 65%	40% or 60%	50%
370	1.07%	1.59%	1.98%	2.28%	2.51%	2.69%	2.83%	2.92%	2.99%
350	1.10%	1.63%	2.02%	2.33%	2.57%	2.75%	2.89%	2.99%	3.06%
300	1.17%	1.74%	2.16%	2.48%	2.74%	2.94%	3.08%	3.19%	3.26%
250	1.26%	1.87%	2.32%	2.68%	2.95%	3.17%	3.33%	3.44%	3.52%
200	1.38%	2.05%	2.55%	2.94%	3.24%	3.47%	3.65%	3.77%	3.86%
150	1.56%	2.31%	2.87%	3.31%	3.65%	3.91%	4.11%	4.25%	4.35%
100	1.84%	2.74%	3.40%	3.92%	4.32%	4.63%	4.87%	5.03%	5.15%
50	2.46%	3.67%	4.55%	5.24%	5.78%	6.20%	6.51%	6.73%	6.89%

TABLE C.40

STANDARD ERRORS FOR PERCENTAGES: HIGH-INTENSITY SITE-SPECIFIC ESTIMATES, ALL NON-PRIMARY CARE PHYSICIANS (OR ANY SUBSET)*

Sample Size	For Percentages Near								
	5% or 95%	10% or 90%	15% or 85%	20% or 80%	25% or 75%	30% or 70%	35% or 65%	40% or 60%	50%
200	1.53%	2.25%	2.78%	3.18%	3.50%	3.74%	3.92%	4.04%	4.12%
175	1.63%	2.39%	2.95%	3.38%	3.71%	3.97%	4.16%	4.28%	4.37%
150	1.74%	2.56%	3.16%	3.62%	3.98%	4.25%	4.45%	4.59%	4.68%
125	1.89%	2.78%	3.43%	3.93%	4.31%	4.61%	4.83%	4.98%	5.08%
100	2.09%	3.07%	3.79%	4.34%	4.77%	5.10%	5.34%	5.50%	5.61%

TABLE C.41

STANDARD ERRORS FOR PERCENTAGES: LOW-INTENSITY SITE-SPECIFIC ESTIMATES, ALL PHYSICIANS (OR ANY SUBSET)*

Sample Size	For Percentages Near								
	5% or 95%	10% or 90%	15% or 85%	20% or 80%	25% or 75%	30% or 70%	35% or 65%	40% or 60%	50%
225	1.54%	2.35%	2.97%	3.45%	3.84%	4.14%	4.37%	4.53%	4.66%
200	1.61%	2.46%	3.10%	3.61%	4.01%	4.33%	4.57%	4.73%	4.87%
175	1.69%	2.59%	3.26%	3.79%	4.22%	4.55%	4.80%	4.97%	5.11%
150	1.79%	2.74%	3.45%	4.02%	4.47%	4.82%	5.08%	5.27%	5.42%
125	1.92%	2.93%	3.70%	4.30%	4.78%	5.16%	5.44%	5.64%	5.80%
100	2.08%	3.19%	4.02%	4.67%	5.20%	5.60%	5.91%	6.13%	6.30%
75	2.32%	3.55%	4.48%	5.21%	5.79%	6.24%	6.59%	6.83%	7.02%

TABLE C.42

STANDARD ERRORS FOR PERCENTAGES: LOW-INTENSITY SITE-SPECIFIC ESTIMATES, ALL PRIMARY CARE PHYSICIANS (OR ANY SUBSET)*

Sample Size	For Percentages Near								
	5% or 95%	10% or 90%	15% or 85%	20% or 80%	25% or 75%	30% or 70%	35% or 65%	40% or 60%	50%
125	1.90%	2.83%	3.51%	4.04%	4.45%	4.78%	5.02%	5.19%	5.32%
100	2.07%	3.07%	3.81%	4.39%	4.84%	5.19%	5.46%	5.64%	5.78%
75	2.30%	3.43%	4.25%	4.89%	5.40%	5.79%	6.08%	6.29%	6.44%

TABLE C.43

STANDARD ERRORS FOR PERCENTAGES: LOW-INTENSITY SITE-SPECIFIC ESTIMATES, ALL NON-PRIMARY CARE PHYSICIANS (OR ANY SUBSET)*

Sample Size	For Percentages Near								
	5% or 95%	10% or 90%	15% or 85%	20% or 80%	25% or 75%	30% or 70%	35% or 65%	40% or 60%	50%
100	2.21%	3.35%	4.21%	4.88%	5.42%	5.83%	6.14%	6.36%	6.53%
75	2.45%	3.73%	4.68%	5.43%	6.03%	6.49%	6.84%	7.08%	7.26%
50	2.86%	4.34%	5.45%	6.32%	7.01%	7.55%	7.96%	8.24%	8.45%
25	3.72%	5.65%	7.10%	8.23%	9.13%	9.83%	10.36%	10.72%	11.00%

TABLE C.44

STANDARD ERRORS FOR MEANS OF QUASI-CONTINUOUS VARIABLES:
HIGH INTENSITY SITE-SPECIFIC ESTIMATES

	For Means Near								
Sample Size	5	10	20	30	40	50	60	70	80
				All Physicians (or any subset)*					
580	0.527	0.711	0.959	1.143	1.294	1.424	1.541	1.647	1.745
550	0.540	0.729	0.983	1.171	1.326	1.460	1.579	1.688	1.788
500	0.565	0.762	1.027	1.224	1.385	1.525	1.650	1.764	1.868
450	0.593	0.800	1.078	1.284	1.454	1.601	1.732	1.851	1.961
400	0.626	0.844	1.139	1.356	1.536	1.691	1.829	1.955	2.071
350	0.666	0.898	1.211	1.442	1.633	1.798	1.945	2.079	2.203
300	0.715	0.964	1.300	1.549	1.754	1.931	2.089	2.233	2.365
250	0.778	1.049	1.414	1.685	1.908	2.100	2.272	2.429	2.573
200	0.862	1.162	1.568	1.868	2.114	2.328	2.519	2.692	2.852
150	0.984	1.328	1.790	2.133	2.415	2.659	2.876	3.074	3.257
100	1.187	1.601	2.159	2.572	2.912	3.206	3.468	3.707	3.927
50	1.634	2.204	2.973	3.541	4.009	4.415	4.776	5.104	5.407
				All Primary Care Physicians (or any subset)					
370	0.601	0.833	1.155	1.399	1.603	1.781	1.941	2.087	2.223
350	0.615	0.853	1.183	1.433	1.641	1.824	1.987	2.137	2.276
300	0.657	0.911	1.264	1.531	1.753	1.948	2.123	2.283	2.432
250	0.710	0.985	1.367	1.655	1.895	2.106	2.295	2.468	2.629
200	0.782	1.084	1.504	1.821	2.085	2.317	2.525	2.716	2.893
150	0.884	1.226	1.701	2.059	2.359	2.621	2.856	3.072	3.272
100	1.051	1.458	2.023	2.450	2.806	3.117	3.398	3.654	3.892
				All Non-Primary Care Physicians (or any subset)					
210	0.841	1.106	1.454	1.707	1.912	2.088	2.244	2.385	2.514
150	0.967	1.272	1.672	1.963	2.199	2.401	2.581	2.743	2.891
100	1.144	1.505	1.979	2.322	2.602	2.842	3.054	3.245	3.421

*Separate values are provided for primary care physicians and non-primary care physicians. We recommend that you use one of these separate values if your estimate is limited to one of these subgroups (or any subset within it).

TABLE C.45

STANDARD ERRORS FOR MEANS OF QUASI-CONTINUOUS VARIABLES:
LOW INTENSITY SITE-SPECIFIC ESTIMATES

	For Means Near								
Sample Size	5	10	20	30	40	50	60	70	80
				All Physicians (or any subset)*					
225	0.809	1.126	1.569	1.905	2.186	2.432	2.654	2.857	3.045
200	0.847	1.180	1.644	1.996	2.290	2.548	2.781	2.993	3.191
150	0.949	1.322	1.842	2.237	2.566	2.856	3.116	3.354	3.575
100	1.114	1.552	2.163	2.626	3.013	3.352	3.658	3.938	4.198
				All Primary Care Physicians (or any subset)					
115	0.901	1.310	1.904	2.370	2.768	3.122	3.445	3.743	4.023
100	0.958	1.393	2.025	2.520	2.943	3.320	3.663	3.980	4.278
				All Non-Primary Care Physicians (or any subset)					
100	1.303	1.822	2.548	3.101	3.564	3.970	4.337	4.672	4.984

*Separate values are provided for primary care physicians and non-primary care physicians. We recommend that you use on of these separate values if your estimate is limited to one of these subgroups (or any subset within it).

Appendix D

Sample SUDAAN Procedure Statements

APPENDIX D

SAMPLE SUDAAN PROCEDURE STATEMENTS

There are a number of releases of the SUDAAN software running on several different platforms. Although the same procedure statements are used for all versions, enhancements or subtle differences can exist from one release to the next, particularly in terms of reading and writing external data files. The statements displayed in the examples in this appendix are tailored for SUDAAN Release 7.5, SAS-Callable for Windows 95 and NT. The user should take this into consideration when using these examples or parts of these examples verbatim.

The example procedures represent relatively simple, straightforward applications. The options (various parameters, test statistics, etc.) in the sample programs may not be suitable for all your needs. Likewise, particular types of analyses may require options that are not displayed in the sample program statements. Our intention is not to suggest analytical approaches but to provide the key parameters that capture the relevant characteristics of the sample design. These parameters are found in the SUDAAN *design, weight, nest, totcnt,* and *jointprob* statements.

The CTS Physician Survey is made up of several samples, each of which can be used for certain types of analyses. Each sample and analysis type combination requires different sample design statements and/or weights. The user is encouraged to review Tables 3.1 and 3.2, which indicate the appropriate samples and weights for specific types of analyses. Tables 4.1 and 4.2 explain how to choose the design variables appropriate for each sample.

Separate examples are provided for the following seven samples and estimate types:

- ***Round 2 Site-specific estimates based on the augmented site sample***. The example assumes that the input file, ASITES, consists of all records with WTPHY1>0 and is sorted by the variables appearing in the NEST statement (SITEPCP, FSU). The sample would include 10,920 physician records.

- ***Round 2 National estimates based on the augmented site sample***. The example assumes that the input file, NSITES, consists of all records with WTPHY5>0 and is sorted by the variables appearing in the NEST statement (ASTRATA, APSU, ASECSTRA, AFSU). The sample would include 10,920 physician records.

- ***Round 2 National estimates based on the supplemental sample***. The example assumes that the input file, SUPP, consists of all records with WTPHY3>0 and is sorted by the variables appearing in the NEST statement (NSTRATA, NFSU). The sample would include 1,088 physician records.

- ***Round 2 National estimates based on the combined sample***. The example assumes that the input file, SITESUPP, consists of all records on the file and is sorted by the variables appearing in the NEST statement (PSTRATA, PPSU, SECSTRA, NFSU). The sample would include 12,304 physician records.

- ***Round 1 and 2 Site-specific change estimates based on the augmented site sample***. The example assumes that the input file, STACKED1, consists of all records from Round 1 and Round 2 with WTPHY1>0 and is sorted by the variables appearing in the NEST statement (SITEPCP2, FSU). The sample would include 22,376 physician records.

- ***Round 1 and 2 National change estimates based on the combined sample***. The example assumes that the input file, STACKED2, consists of all records from Round 1 and Round 2 and is sorted by the variables appearing in the NEST statement (PSTRATA,PPSU,SECSTRA,NFSU). The sample would include 24,832 physician records.

- ***Round 1 and 2 National panel estimates based on the combined panel sample***. The example assumes that the input file, PANEL, consists of all panel (reinterview) records from Round 2 (WTPAN1>0) merged with corresponding records from Round 1 and is sorted by the variables appearing in the NEST statement (PSTRATA, PPSU, SECSTRA, NFSU). The sample would include 7,092 physician records.

Preprocessing or recoding may be required for some variables because of missing or nonpositive data. Missing data in the file were assigned an applicable negative value (e.g., "-9 Not Ascertained"; see Section 6.3--Variable Coding Conventions).[1] Classification (SUBGROUP) variables with zero or negative values will be treated by SUDAAN as missing and dropped from the procedure. This does not hold true for continuous analysis variables (VAR) where zero or negative values are valid. Records with missing, zero, or negative weights will automatically be excluded from the estimates produced in SUDAAN procedures.

Formats (the RFORMAT statement) need to be consistent with SUDAAN rules. Therefore, the preexisting formats provided with the Restricted Use File may need to be modified for use in SUDAAN. An example of this appears in item 1 below: Site-Specific Estimates Based on the Augmented Sample. It is a SUDAAN convention to include a total count for each subgroup variable, with a value of "0" representing the total. Therefore, if the subgroup variable can take on the value of "0" in the data, then the value should be changed to a positive integer.

In using SUDAAN, the full population must be processed even when analyses are for subgroups or subpopulations. This is required to ensure the correct computation of the sampling variance. The SUDAAN statement SUBPOPN should be used to identify the specific analytic subpopulation of interest. If the file is reduced to a specific subpopulation, the sampling variance estimates SUDAAN computes may be wrong. As discussed in Chapter 4, to ensure stable estimates you should limit your estimates to those subgroups with at least 100 responses (for national estimates), or at least 80 responses (for site-specific estimates). Similarly, as described in Appendix B, any estimates with a relative standard error greater than 0.3, a design effect greater than 16 or less than 0.8 (for national estimates), or 0.5 (for site-specific estimates) are considered to be unstable.

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[1]Chapter 6 also explains how missing values of weight and sampling variables were coded.

Some of the SUDAAN examples use the DDF option that overrides the default denominator degrees of freedom. We recommend that you use this option when running significance tests on national estimates based on the augmented site sample or the combined sample (or the site sample for panel estimates). In SUDAAN, the default DDF is the difference between the number of PSUs and the number of first-stage strata, which is appropriate for most surveys. Because the CTS design includes some sites with certainty, the SUDAAN default count is substantially smaller than is the actual count for these national estimates. This undercount would result in significance tests that would be too conservative (that is, that do not reject null hypothesis often enough). We included the DDF value in four of the generic examples to provide researchers with an approximation of the true degrees of freedom that will be valid for most significance tests. The DDF for the full sample is also appropriate for analyses of subpopulations, because the full design is being utilized in the sampling variance computation.

D.1. Round Two Site-specific estimates based on the augmented site sample

This example estimates the percentage of physicians in each of six practice-type categories (PRCTYPE) within each of the 12 high-intensity sites (SITEID=1-12). Standard errors of the percentages, unweighted and weighted population counts, and sample design effects are also included in the output. Note that the SUBPOPN statement is used to identify the high-intensity site subpopulation within the overall augmented sample.

```
proc crosstab data=asites design=wor;
    subpopn (siteid>=1) & (siteid<=12) / name="High Intensity Sites";
    nest sitepcp fsu;
    totcnt frame _zero_;
    weight wtphy1;
    subgroup siteid prctype;
    levels 12 6;
    tables siteid*prctype;
    rformat siteid siteid.;
    rformat prctype prctype.;
    print nsum wsum rowper serow deffrow /style=nchs
      wsumfmt=f10.0 rowperfmt=f8.2 serowfmt=f8.2 deffrowfmt=f8.4;
    rtitle "Site-specific Estimates from the Augmented Site Sample";
```

D.2. Round Two National estimates based on the augmented site sample

This example estimates the mean number of hours per month that physicians provide charity care (HRFREE) by the primary care/nonprimary care provider flag variable (PCPFLAG). Standard errors of the means, population counts, and sample design effects are also included in the output. Note that PCPFLAG, a "0/1" dichotomous variable, has been recoded to "1/2" to conform to SUDAAN conventions for SUBGROUP variables.

```
proc descript data=nsites design=uneqwor ddf=2900;
   nest astrata apsu asecstra afsu / missunit;
   totcnt astrtot _zero_ asectot _zero_;
   weight wtphy5;
   jointprob ap1 ap2 ap3 ap4 ap5 ap6 ap7;
   subgroup pcpflag;
   recode pcpflag=(0 1);
   levels 2;
   var hrfree;
   rformat pcpflag pcpflag.;
   print nsum wsum mean semean deffmean /style=nchs
     wsumfmt=f10.0 meanfmt=f8.4 semeanfmt=f8.4 deffmeanfmt=f8.4;
   rtitle "National Estimates from the Augmented Site Sample";
```

D.3. Round Two National estimates based on the supplemental sample

This example estimates the mean percentage of patient care revenue a physician receives from managed care (PMC) by gender (GENDER). Standard errors, population counts, and design effects are also included in the output.

```
proc descript data=supp design=wr;
    nest nstrata nfsu;
    weight wtphy3;
    subgroup gender;
    levels 2;
    var pmc;
    rformat gender gender.;
    print nsum wsum mean semean deffmean /style=nchs
      wsumfmt=f10.0 meanfmt=f8.4 semeanfmt=f8.4 deffmeanfmt=f8.4;
    rtitle "National Estimates from the Supplemental Sample";
```

D.4. Round Two National estimates based on the combined sample

This example estimates the percentage of physicians who respond that is possible to provide high quality care (HIGHCAR) to their patients by MSA/PMSA size (MSACAT). Standard errors, population counts, and design effects are also included in the output. The SUBPOPN statement is used to exclude cases for which HIGHCAR is not defined.

```
proc crosstab data=sitesupp design=uneqwor ddf=2900;
    subpopn highcar > 0 / name="Physicians with Valid HIGHCAR";
    nest pstrata ppsu secstra nfsu / missunit;
    totcnt pstrtot3 _zero_ nframe _zero_;
    weight wtphy4;
    jointprob p1x p2x p3x p4x p5x p6x p7x;
    subgroup msacat highcar;
    levels 3 5;
    tables msacat*highcar;
    rformat msacat msacat.;
    rformat highcar highcar.;
    print nsum wsum rowper serow deffrow / style=nchs
      wsumfmt=f10.0 rowperfmt=f8.2 serowfmt=f8.2 deffrowfmt=f8.4;
    rtitle "National Estimates from the Combined Sample";
```

D.5. Round One and Round Two Site-specific change estimates based on the augmented site sample

This example estimates the change in percent capitated revenue (PCAPREV) within each of the 12 high-intensity sites (SITEID=1 to 12). ROUND2 is a dummy flag which is equal to 1 if the data comes from Round 2, and 0 if it comes from Round 1. Coefficients, their standard errors, T-statistics, and P-values are included in the output. The estimate of change in PCAPREV between the two rounds is the coefficient for ROUND2. Note that the SUBPOPN statement is used to identify the high-intensity site subpopulation within the overall augmented sample.

```
proc regress data=stacked1 design=wor;
   subpopn (siteid>=1) & (siteid<=12) / name="High Intensity Sites";
   nest sitepcp2 fsu;
   totcnt frame _zero_;
   weight wtphy1;
   model pcaprev=round2;
   print beta sebeta t_beta p_beta deft /
   betafmt=f8.4 sebetafmt=f8.4 deftfmt=f8.4;
   rtitle "Change Estimates from the Augmented Site Sample (12 High Intensity Sites)";
```

D.6. Round One and Round Two National change estimates based on the combined sample

This example estimates the change in charity care hours (HRFREE) for the combined sample. ROUND2 is a dummy flag which is equal to 1 if the data comes from Round 2, and 0 if it comes from Round 1. Coefficients, their standard errors, T-statistics, and P-values are included in the output. The estimate of change in HRFREE between the two rounds is the coefficient for ROUND2.

```
proc regress data=stacked2 design=uneqwor ddf=2900 ;
   nest pstrata ppsu secstra nfsu / missunit;
   totcnt pstrtot3 _zero_ cnframe _zero_;
   jointprob p1x p2x p3x p4x p5x p6x p7x;
   weight wtphy4;
   model hrfree=round2;
   print beta sebeta t_beta p_beta deft /
   betafmt=f8.4 sebetafmt=f8.4 deftfmt=f8.4;
   rtitle "Change Estimates from the Combined Sample";
```

NOTE: For some other analyses based on the combined sample from Round One and Round Two, you might need to use the SUDAAN term _MINUS1_ instead of the variable CNFRAME. See Section 4.4 of the User's Guide for more detail.

D.7. Round One and Round Two National panel estimates based on the combined panel sample

This example estimates the change in charity care hours (HRFREE) for the panel sample. The SUBPOPN statement (FLAG=1) is used to identify those physicians who did not change PCP status between Round 1 and Round 2. Before merging the Round One and Round Two files, we renamed PCPFLAG and HRFREE in the Round One file to PCPFLAG1 and HRFREE1 and PCPFLAG and HRFREE in the Round Two file to PCPFLAG2 and HRFREE2. After merging the files, we created the variable FLAG with a value of 1 if PCPFLAG1=PCPFLAG2 and created the change variable CHHRFREE=HRFREE2-HRFREE1. Note that PCPFLAG1, a "0/1" dichotomous variable, has been recoded to "1/2" to conform to SUDAAN conventions for SUBGROUP variables. Standard errors, population counts, and design effects are also included in the output.

```
proc descript data=panel design=uneqwor ddf=2900;
    subpopn flag=1 / name= "No Change in PCP Status";
    nest pstrata ppsu secstra nfsu / missunit;
    totcnt pstrtot3 _zero_ sectot _zero_;
    weight wtpan1;
    jointprob p1x p2x p3x p4x p5x p6x p7x;
    subgroup pcpflag1;
    recode pcpflag1 = (0 1);
    levels 2;
    var chhrfree ;
    rformat pcpflag1 pcpflag.;
    print nsum wsum mean semean /
      nsumfmt=f8.0 wsumfmt=f10.0 meanfmt=f6.4 semeanfmt=f8.4;
    rtitle "Panel Estimates from the Combined Sample";
```

NOTE: For some other analyses based on the combined panel sample for Round One and Round Two, you might need to use the SUDAAN term _MINUS1_ instead of the variable SECTOT. See Section 4.4 of the User's Guide for more detail.