Personal versus Telephone Surveys
For Collecting Household Health Data at the Local Level

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Abstract: Personal and telephone interview surveys were conducted simultaneously during 1981 in the same area (four counties in the area of Tampa Bay, Florida) and utilizing the same interview schedule. Following completion of the surveys, validity checks were made with the medical providers reported by a subsample of respondents to each mode. The telephone survey yielded a lower response rate but cost less than half the personal interview. There was some evidence of nonresponse bias in the telephone survey, and some relatively minor differences in responses were found between the two modes, but there was no conclusive evidence that the response differences resulted from mode effects. Telephone respondents appeared to be somewhat more accurate in their reporting of visits to medical providers, although accuracy comparisons must be interpreted with caution in view of the disparate success experienced for the two modes in securing permission forms for the release of medical record information. (Am J Public Health 1983; 73:1389–1394)

In response to evolving needs for local health survey data, several initiatives have been undertaken by the National Center for Health Statistics (NCHS) in recent years, including the systematic evaluation of alternative survey methods that could be used to meet local data needs.[1] A key component of this effort has been a thorough evaluation of the comparability of personal (in-person) and telephone interviews as mechanisms for the collection of health interview data, since the use of presumably more cost-efficient telephone interview methodology as an alternative to personal interviews is generally regarded as essential to the systematic and widespread use of health surveys in local planning and evaluation.[2,3] Although a number of studies in several social science fields have compared the two modes and concluded that the telephone mode is capable of producing generally comparable data at considerably less expense, in the health field these comparisons have been somewhat less conclusive, particularly with regard to the issue of response differences.[4–11] Moreover, the two modes have not been widely compared in local health surveys,* raising the issue of the generality of the national comparisons to the local level.[12]

As part of their evaluation effort, NCHS contracted with Research Triangle Institute (RTI) to conduct a methodological study to evaluate the feasibility of implementing local surveys at the Health Systems Agency level to collect data similar to those obtained in national surveys conducted by NCHS. Between February and August of 1981, RTI conducted the Community Health Information Policy Study (CHIPS) in the service area of the Florida Gulf Health Systems Agency (FGHSA), encompassing four counties in the Tampa Bay area (Hillsborough, Manatee, Pasco, and Pinellas).

*Two notable exceptions include studies conducted in Los Angeles in 1976 and 1980.[4,8,9]

Methods

Health Interview Survey

The CHIPS/HIS sampling design consisted of three distinct frames: an area frame, a telephone frame, and a list of persons eligible for Medicaid. The area sample consisted of 439 housing units allocated equally to the four counties and to two SES strata within each county. The telephone frame included all of the possible telephone numbers in each of the 168 area code-prefix combinations serving the FGHSA area. An equal probability sample of 1,318 four-digit suffixes was generated without replacement within strata and allocated in such a way as to yield expected contacts with the same number of eligible households in each county. The list frame was used to ensure adequate representation of the indigent population.**

The HIS was conducted during the 13-week period from February 2 through May 3, 1981. It consisted of four distinct components: an area frame personal interview survey, a list frame personal interview survey, a random digit dial (RDD) telephone survey, and a list frame telephone survey (with field follow-ups). A staff of eight RTI field interviewers conducted the first two surveys, while six telephone interviewers in RTI's in-house Telephone Survey Department worked simultaneously on the two telephone surveys. The field interviewers also assisted with the list frame telephone survey by attempting to follow up and interview in person cases that could not be located or contacted by telephone.

In an effort to minimize nonresponse, efforts were made to recontact all persons who refused to be interviewed, regardless of sampling frame. These follow-up contacts were made by a different interviewer, via the same mode (in-person visit or telephone call) as the initial contact.

The same questionnaire was used by both the field and telephone interviewers and contained 76 items covering a wide variety of health-related topics. An adult member of the household served as respondent and provided information for all family members. If a household contained unrelated persons, separate interviews were conducted with each family unit represented.

Since record checks with medical providers reported by

**A sample of 280 cases was selected from the list of Medicaid eligibles, 70 from each of the four counties, with each county subsample subsequently allocated equally at random to the field and telephone interview modes.

TABLE 1—Percentage Distribution of Final Results and Response Rates for the Four CHIPS/HIS Survey Components

Final Result Category	Area Frame (N = 439)	Random Digit Dial Telephone Frame (N = 1,322*)	Field List Frame (N = 144**)	Telephone List Frame (with Field Follow-Ups) (N = 104***)
Interviews Completed	80	27	79	59
Noninterviews	10	11	9	11
(Refused)	(8)	(10)	(5)	(6)
(Other)	(2)	(1)	(4)	(5)
Ineligible Cases	10	57	6	9
(Vacant)	(6)	(NA)	(NA)	(NA)
(Nonworking, nonresidential, and other ineligible phone numbers)	(NA)	(56)	(NA)	(NA)
(Other)	(4)	(1)	(6)	(9)
Indeterminate Cases	0	5	6	21
(Ring, no answers)	(NA)	(5)	(NA)	(NA)
(Unable to locate)	(NA)	(NA)	(6)	(21)
Total	100	100	100	100
Response Rates†				
Lower bound estimate	88	62	84	65
Upper bound estimate	88	70	90	85

*Includes 1,318 random numbers originally assigned plus 4 secondary reporting units discovered during data collection.
**Includes 140 cases originally selected plus 4 secondary reporting units discovered during data collection.
***Includes field follow-up efforts on 56 of the 65 cases that could not be located by telephone. The field staff successfully traced 36 of these and interviewed 27.
†Response rate percentages are based on the actual numbers rather than on the percentages presented above. The latter approach would produce slightly different results in some cases due to the effects of rounding. The lower bound response rate assumes that all indeterminates were eligible for interview and is derived from the fraction:

$$\frac{\text{interviews completed}}{\text{interviews completed} + \text{noninterviews} + \text{indeterminates}}$$

The upper bound response rate, on the other hand, assumes that all indeterminate cases were ineligible, and therefore excludes them from the denominator of the response rate fraction.

a sample of HIS participants were to follow the survey, an effort was made during the HIS to obtain "permission" forms from persons who reported ambulatory care visits or hospital stays.***

Follow-Up Survey of Medical Providers

The sampling frame for the follow-up survey included all persons in HIS respondent households with one or more reported ambulatory care visits and/or hospital stays for whom necessary permission forms had either been obtained or promised. The follow-up sample included all HIS respondents with one or more reported hospital stays and a sample of respondents with one or more ambulatory care vistis (and no hospital stays).

The follow-up survey was conducted during June–August, 1981. Of a total of 398 unique patient/provider combinations, 73 had to be excluded from the survey for lack of a permission form. Of the remaining 325, completed abstraction forms were received for 278, yielding an abstraction form completion rate of 86 per cent.

For the hospital stay component of the follow-up survey, field staff completed the abstraction forms rather than

***Specified reference periods were for visits within the preceding 12 months for hospital stays and ambulatory visits for chronic conditions and within the preceding two weeks for ambulatory visits for an acute condition. In the case of personal interviews, permission forms were secured primarily at the conclusion of the interview. For the telephone interviews, the respondent was asked at the end of the HIS if he/she would agree to complete (or arrange to have completed) the necessary permission forms by mail. If willing, permission forms were mailed with a cover letter and return envelope. Persons who did not return the forms promptly were followed up by telephone and encouraged to do so. Those subsequently selected into the follow-up sample who had still not returned their permission forms were followed up in person by the field interviewers.

using a mail/telephone methodology. A total of 207 unique patient/hospital combinations were identified, of which 32 had to be excluded for lack of a permission form; abstraction forms were completed for all of the remaining 175.

Results and Discussion

Response Rate Comparisons

Table 1 shows the distribution of sample cases by final result category for the four HIS survey components, along with two response rate calculations for each. The two methods of calculating response rates reflect the problem posed by cases whose eligibility status could not be determined. For most surveys with indeterminate cases, the truth no doubt lies somewhere in between these two extremes, thereby arguing for the use of both response rates in combination to calculate a "confidence" range for the actual rate.‡ In keeping with standard protocol, cases confirmed to be ineligible for interview are excluded from the base in both methods.

Overall, the response rates observed in the CHIPS/HIS would appear to be consistent with results obtained in similar surveys. The area frame response rate, for example, is close to that achieved by RTI in other recent area frame household health surveys. It is probably near the upper end of the range for more general household surveys conducted by nongovernmental agencies,[14-16] but still somewhat lower than the 95+ per cent response rate typically achieved in the

‡It is also possible to calculate a point estimate of the "true" response rate, based on assumptions about the eligibility status of the indeterminate cases. Procedures for making point estimates have been proposed recently by the Council of American Survey Research Organizations.[13]

TABLE 2—Sociodemographic Characteristics of the Random Digit Dial Telephone and Area Frame In-Person Respondents*

Characteristics	Telephone Respondents	In-Person Respondents in Telephone Households	All In-Person Respondents
Male (%)	48.6	45.7	45.3
Non-White (%)	13.9	16.0	18.8
Hispanic Origin (%)	6.2	8.5	7.4
Age (%)			
0–14	21.4	20.8	20.9
15–24	16.0	11.3	12.3
25–44	25.4	21.8	22.8
45–64	18.8	23.0	22.5
65 and over	18.4	23.1	21.5
Education (%)			
Grade school (0–8)	27.1	27.4	28.0
Some high school (9–11)	14.4	13.6	13.8
High school graduate (12)	28.2	33.3	33.3
Some college (13–15)	16.5	14.4	14.2
College graduate (16+)	13.8	11.3	10.7
Family Income			
Less than $3,000	2.9	3.3	3.9
$3,000– $4,999	5.1	7.1	9.0
$5,000– $6,999	5.3	8.1	8.9
$7,000– $9,999	10.7	17.7	20.1
$10,000–$14,999	19.5	17.1	16.5
$15,000–$24,999	27.7	29.9	27.0
$25,000 and over	28.9	16.8	14.6
Approximate Ns			
Unweighted	915	716	875
Weighted (in thousands)	1,151	1,162	1,384

*Includes all members of responding households. Percentages are based on frequencies weighted to account for different probabilities of selection.

National Health Interview Survey. The RDD telephone response rate is also in line with other household telephone surveys conducted by RTI and with response and refusal rates reported in the literature,[17,18] although somewhat higher RDD response rates have been obtained in recent telephone surveys conducted by and for NCHS.[11,19,20]

With regard to differences between the two modes, considerable variation is found in the literature with respect to *comparisons* of personal interview and telephone survey response rates obtained in identical or similar studies.[4,6,7,21] In each of the comparisons cited, the personal interview mode achieved a somewhat higher response rate than the telephone mode, although, with one exception,[7] differences between the two are somewhat less pronounced than that observed in the CHIPS comparison.

A comparison of the CHIPS field and telephone *list* frame survey response rates is confounded somewhat by substantial differences in the problems experienced by the two modes in locating sample members and by the fact that most of the unable-to-locate telephone cases were sent to the field interviewers for follow-up. In spite of these confounding factors, a valid comparison can be made with regard to the response rates achieved by the two modes if the indeterminate cases in both samples and the field follow-up cases in the telephone list sample are excluded. This comparison yields upper bound response rate estimates of 90 per cent and 75 per cent for the field and telephone list frame interviewers, respectively.‡‡ Overall then, allowing for

‡‡The field interviewers contacted 127 eligible sample members in the field list frame sample and interviewed 114, while the telephone interviewers contacted 75 sample members in the telephone list frame and interviewed 56. Note that the 85 per cent upper bound response rate shown in Table 1 for the telephone list frame survey includes the field follow-up cases, while they are excluded here for purposes of this comparison.

some idiosyncracies in the procedures employed in the CHIPS surveys and known variations in response rates by locale and/or different survey organizations, the response rate ranges observed in the CHIPS study do not appear to be unreasonable estimates of what one might expect in telephone and in-person health surveys conducted in other local areas.

Potential for Nonresponse Bias

Interest in the relative response rate potential of the two survey modes stems from an underlying concern about nonresponse bias. Since telephone survey response rates are generally lower than those from comparable personal interview surveys, utilization of the telephone mode has typically been suspected to involve a greater risk of nonresponse bias.

In an effort to assess the potential for differential effects of nonresponse bias in the CHIPS study, we compared the RDD telephone respondents and the area frame personal interview respondents on basic sociodemographic characteristics, as shown in Table 2. Since the sample of all area frame personal interview respondents includes some persons from households that do not have telephones, and would thereby not fall within the RDD telephone sampling frame, characteristics of respondents interviewed in person are presented separately for households in the personal interview survey that have a telephone and for all households interviewed face-to-face. While differences in characteristics of telephone and personal interview respondents in general may reflect undercoverage bias due to the exclusion of households without telephones in the telephone frame, differences between telephone respondents and personal interview respondents in telephone households are more clearly indicative of differences in nonresponse bias.

In general, the telephone respondents tend to be younger, better educated, and more likely White than their in-person counterparts. These differences are generally consistent with prior research[8,11,21] and could be the result of the exclusion of nontelephone households from the telephone sampling frame. With respect to the family income variable, the considerably higher incomes reported by the telephone group (especially in the highest category) is a substantial difference and seems to suggest an added effect from nonresponse bias in addition to undercoverage effects.

This conclusion is supported by a comparison of the characteristics of the telephone group and the in-person respondents living in telephone households. Theoretically, these two groups represent comparable samples from the same household frame, since the percentages in Table 2 have been weighted to account for different probabilities of selection. Nevertheless, the exclusion of the nontelephone households from the personal interview group has little impact on the characteristics of this group and most of the differences noted in the earlier comparison generally persist, providing a further indication of a differential influence of nonresponse bias in the RDD telephone and area frame in-person interview samples.

Cost Comparisons

It is difficult to evaluate comparative cost data reported in the literature for personal and telephone interviews because of the numerous variables involved, including differences in study specifications, variations in the survey components included, dissimilar methods of recovering indirect costs, and differences in start-up costs across organizations. Comparisons of dollar amounts across time are also confounded by the effects of inflation. In spite of these prob-

TABLE 3—Comparison of Estimated Direct Costs for Selected Components of the HIS Telephone and Personal Interview Surveys (Including List Frame Sample Cases)*

Survey Component	Telephone Interviews	Personal Interviews
Sampling	$2,760	$12,830
(Sampling and survey staff salaries)	(2,704)	(8,711)
(Listing salaries, mileage, and expenses)	(0)	(3,514)
(Survey staff travel)	(0)	(493)
(Miscellaneous expenses)	(56)	(112)
Interviewer recruitment	0	780
(Survey staff salaries)	(0)	(400)
(Survey staff travel)	(0)	(380)
Training	$1,148	$3,115
(Survey staff salaries)	(215)	(368)
(Telephone supervisor salaries)	(295)	(0)
(Interviewer salaries)	(638)	(1,179)
(Survey staff travel)	(0)	(894)
(Interviewer mileage and expenses)	(0)	(455)
(Miscellaneous expenses)	(0)	(219)
Data collection and quality control	$10,223	$20,328
(Survey staff salaries)	(1,434)	(3,373)
(Telephone supervisor salaries)	(796)	(0)
(Interviewer salaries)	(4,384)	(8,769)
(Interviewer mileage and expenses)	(0)	(6,249)
(Telephone charges)	(3,609)	(323)
(Postage and shipping)	(0)	(989)
(Survey staff travel)	(0)	(625)
TOTAL	$14,131	$37,053
Cost per Interview	$34.63**	$75.31**

*Excludes overhead and other indirect costs. Direct costs are estimated where exact figures are not available.
**Based on a total of 492 personal interviews and 408 telephone interviews.

lems, it is clear from the literature that telephone interviews are generally substantially less expensive to conduct than in-person interviews, with the cost of a telephone survey typically ranging from about one-fourth to one-half the cost of a comparable personal interview survey.[6,7,18,21-23]

Table 3 provides our estimates of the comparative costs for selected survey components of the CHIPS/HIS personal and telephone surveys. The personal interview costs include both the area frame survey and the field list frame survey, as well as the field costs associated with the 56 telephone list

frame cases sent to the field for follow-up. Telephone costs include both the RDD survey and the telephone list frame survey, exclusive of the field costs associated with the latter.‡‡‡ The survey components shown in Table 3—sampling, interviewer recruitment, training, and data collection and quality control—are those that were most sensitive to cost variations by mode. Other survey components (instrument development, preparation of manuals and forms, in-house processing of the survey data, analysis, and overall technical management) have been excluded from the comparison since they were essentially the same for both modes.*

The largest cost variations between the two modes are in the sampling and data collection categories, reflecting the additional work involved in selecting an area frame sample vis-a-vis an RDD sample (e.g., selection of clusters, preparation of field listing materials, listing the clusters, selecting the final household sample). The data collection differences are primarily a reflection of the additional supervision required of the field staff (telephone interviewers were all located at work stations in a single room on the RTI campus) and travel costs.

The average cost per interview for the personal mode (N = 492) was $75.31, compared to $34.63 for the telephone mode (N = 408), yielding a telephone-to-personal interview cost ratio for sampling and data collection of 46 per cent, probably a reasonable estimate of what one might expect if health surveys were to be conducted by telephone or in person in another local health planning area.

Response Differences

Comparisons of responses to selected health measures by RDD telephone and area frame personal interview respondents (the latter presented both for all respondents and only those that have a telephone) are presented in Table 4.

‡‡‡Available cost data were insufficient to permit the compilation of separate costs for each of the four HIS surveys.
*Consistent with the literature, the cost comparison presented here has been confined to those components that can be expected to vary by mode. Costs for other components and all indirect costs have been omitted since they would be of little practical value to other researchers in view of likely differences in project specifications and methods of recovering indirect costs.

TABLE 4—Comparison of Percentages of Persons with Selected Health-Related Characteristics, by Interview Mode (Random Digit Dial and Area Frame Cases Only)*

Health Event or Behavior	Telephone Respondents	In-Person Respondents in Telephone Households	All In-Person Respondents
Disability Day in Past Two Weeks	13.3	14.0	13.5
Doctor Visit in Past Two Weeks	9.7	8.0	7.8
Dental Visit in Past Twelve Months	48.3	41.2	38.5**
Hospitalization in Past Twelve Months	10.1	12.4	11.9
Chronic Condition in Past Twelve Months	52.6	51.0	49.7
Functional Impairment—Self-Care	3.8	7.1**	7.7
Functional Impairment—Instrumental	3.0	4.3	4.0
Approximate N's			
Unweighted	915	716	875
Weighted (in thousands)	1,151	1,162	1,384

*Estimates are adjusted for unequal probabilities of selection only.
**Significantly different from the corresponding telephone interview percentage at the .05 level. Standard errors for these proportions were computed using SESUDAAN,[28] a program designed for calculating standard errors from complex sample survey data. Also computed by the program are estimates fo the *design effect* (DEFF), the ratio of the actual variance of a sample to the variance of a simple random sample of the same size.[29] Design effects for these proportions ranged from 1.73 to 2.66 for the telephone survey and from 1.98 to 5.53 for the in-person survey. As a result, standard errors for differences in proportions between the two survey modes are approximately 1.4 to 1.9 times larger than those for simple random samples of the same size.

TABLE 5—Percentage Distribution of Extent of Agreement on Ambulatory Care Visits, by Type of Condition and Interview Mode (Including List Frame Sample Cases)

Result	Acute Conditions		Chronic Conditions		All Conditions	
	Telephone (N = 28)	In-Person (N = 49)	Telephone (N = 123)	In-Person (N = 262)	Telephone (N = 151)	In-Person (N = 311)
Exact or Partial Agreement	71.4	46.9	52.8	45.8	56.3	46.0
Lack of Agreement	10.7	20.4	30.9	37.8	27.2	35.0
Loss to Follow-up*	17.9	32.7	16.3	16.4	16.5	19.0
Total	100.0	100.0	100.0	100.0	100.0	100.0

*Includes out of scope provider, visits to a dead, retired, or noncooperating provider, and other cases where reconciliation data were not obtained.

While only 38 per cent of all personal interview respondents were reported as having at least one dental visit during the past 12 months, 48 per cent of all telephone respondents were so reported. This finding is consistent with that reported by a previous study[11] for dental visits during a two-week period, based on national data; other comparisons provided in Table 4 provide little evidence of a general tendency for telephone respondents to report more health events than respondents interviewed in person.

Thus, while some differences are apparent in this Table, they are less consistent than those observed in similar comparisons of this type.[11] Moreover, the differences observed in dental visits and self-care limitations seem to follow from the differences noted in Table 2 between the telephone and personal interview respondents with respect to income and age, since social class discrepancies in the utilization of dental care are well documented in the literature,[24,25] as is the greater prevalence of functional disability among the elderly.[26,27] Therefore, we are inclined to conclude that the differences noted in Table 4 do not reflect any obvious trend suggesting the superiority of one interview mode over the other. Rather, they appear to result from sociodemographic differences between the telephone and personal interview respondents—differences which, as noted previously, may be enhanced by a greater influence of nonresponse bias on the telephone data.

Accuracy of Reporting

The relative accuracy of self-reported condition and utilization data obtained by the two survey modes can be assessed more directly by reference to the medical record data.**

Ambulatory Care Visits—Procedures for determining the accuracy of reported ambulatory care visits involved comparisons made on a patient-provider basis, with all visits to one provider considered at the same time, although assessments of agreement for chronic and acute conditions varied somewhat. Exact agreement was assigned for any chronic condition reported by the household respondent when that condition was also reported by the provider for at least one visit during the reference period, while partial agreement was inferred when at least one visit reported by the provider during the reference period was in the same broad category of conditions as the one reported by the respondent. For acute conditions, exact agreement was assigned for a visit when the respondent and the provider

**It should be noted that because of the small number of cases available, we have included the provider follow-up list frame cases in the accuracy analyses described below, along with the cases from the RDD and area frame samples.

reported the same date and the same reason/condition for the visit, while partial agreement was inferred if the respondent and the provider agreed on the reason/condition but not the date, or vice versa.

The results of these comparisons are provided in Table 5, separately for acute and chronic conditions and then for all conditions combined. In each case, the proportion of patient-provider combinations for which either exact or partial agreement was observed is higher among respondents interviewed by telephone than those interviewed in person, suggesting a greater accuracy of reporting of ambulatory care visits by telephone respondents. However, as noted previously, provider follow-up was not possible for cases where a permission form was not obtained from the respondent, and our success in obtaining permission forms was greater for respondents interviewed in their homes than for those interviewed by telephone, primarily due to the logistics of obtaining forms from the latter by mail.

Given the difference in our success in obtaining permission forms (along with the inclusion of list frame cases, as noted above), it is possible that the differences in agreement observed in Table 5 are more a function of differences by mode in the types of follow-up sample members for whom permission forms were available rather than of mode per se. However, when these same comparisons are examined *within* various sociodemographic subgroups, the observed trend of higher levels of agreement among telephone respondents generally persists. Thus, in spite of substantial differences between the telephone and personal interview follow-up samples, observed differences in accuracy of reporting are apparently not accounted for by differences between these samples in their sociodemographic characteristics.

Hospitalizations—Information on hospital visits reported by household respondents was compared with data abstracted from hsopital records and agreement codes assigned as specified in Table 6. In addition to specifying agreement or lack of agreement on the fact of hospitalization at the time reported by the respondent, varying levels of agreement or lack thereof on the specific condition(s) reported were coded.

Overall, consistent with the analyses presented for ambulatory care visits, a slightly higher proportion of agreement on *either* the fact of *or* reason for stay is evident for hospitalizations reported by telephone than those reported in personal interviews. Moreover, *exact* agreement on both the fact and condition of stay is more frequent for telephone-reported hospitalizations. However, when the two other categories reflecting at least partial agreement on condition are also considered, there is little difference between respondents to the two modes in their tendencies to provide

TABLE 6—Percentage Distribution of Reported Hospital Stays by Extent of Agreement and Interview Mode

	Mode of Interview	
Result of Comparison	Telephone (N = 77)	In-Person (N = 152)
Agreement on stay and condition	53.2	49.3
(Exact agreement on primary condition)*	(35.0)	(25.6)
(Agreement on hospital-related secondary condition)**	(5.2)	(8.6)
(General agreement (same general condition or body system))	(13.0)	(15.1)
Agreement on stay but not on condition	32.5	24.3
(Patient reported vague symptoms or condition consistent with hospital's report)	(2.6)	(3.3)
(Patient did not specify a condition)	(22.1)	(7.2)
(Lack of agreement on condition)***	(7.8)	(13.8)
Lack of agreement on stay	14.3	26.4
(Patient reported visit not in hospital records)	(11.7)	(21.8)
(Visit in hospital records not reported by patient)	(2.6)	(4.6)
TOTAL	100.0	100.0

*Same three-digit IDC-9 code or one very similar in meaning.
**Condition reported by patient listed by hospital as secondary condition.
***Widely divergent conditions reported by patient and hospital.

hospitalization information consistent with hospital records on both of these dimensions. Finally, note that lack of agreement on condition is almost twice as high for hospitalizations reported in person than by telephone, while telephone respondents were much more likely not to report a condition at all.

Thus, at least with regard to these conditions, it would appear that respondents interviewed in person make a somewhat greater effort to report more fully than do telephone respondents. However, considering the fact that personal interview respondents manifest a higher proportion of clear disagreements between their reports of such conditions and what is indicated in hospital records, this greater effort apparently often results in more reporting errors. Thus, although telephone respondents are substantially less likely to report the condition(s) for which they have been hospitalized, a higher proportion of the conditions they do report are more accurate than those reported by respondents interviewed face-to-face.

As is the case of ambulatory care visits, we were able to acquire permission forms from a higher proportion of persons who reported hospitalizations in personal interviews than by telephone. However, when the comparisons presented in Table 6 are examined *within* each of these sociodemographic subgroups, the observed differences in accuracy of reporting generally persist, suggesting that these results are not entirely a reflection of differences by mode in our success in acquiring permission forms (or the inclusion of list frame sample cases in these comparisons).

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