

IDENTIFYING THE "BEST RESPONDENT" FOR INFORMATION ON THE NURSING  
HOME RESIDENT POPULATION - LESSONS LEARNED FROM THE 1985  
NATIONAL NURSING HOME SURVEY PRETEST

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The National Nursing Home Survey (NNHS) is a nationwide sample survey of nursing homes, their residents, and staff. The first NNHS was conducted in 1973-74 and the second was conducted in 1977. The next NNHS is being conducted from August to December of this year. From its inception, national estimates of nursing home residents have been collected by interviewing nursing home staff. The Pretest for the 1985 NNHS, however, evaluated two other methodologies for collecting information about the nursing home residents - one in which family members of the resident were interviewed by telephone and one in which the resident was interviewed directly. These two methodologies were evaluated in the Pretest for the feasibility of their inclusion in the national study. Although the instruments used in these three methodologies varied, certain items were comparable across instruments. It must be pointed out at the start that the items compared were not included in all three questionnaires due to the differing purposes of the questionnaires. Thus, comparisons were made across only two instruments at a time, as dictated by their availability. Despite these drawbacks, this situation presented the opportunity to learn something about who was the "best respondent" for these comparable items, by examining differences in response rates and responses by the three types of respondents.

#### BACKGROUND

The Pretest for the 1985 NNHS was conducted from March to August of 1984. The sample was a stratified two-stage probability design. The first stage is a selection of nursing homes and the second stage is a selection of staff and residents. The Pretest sample included 150 nursing homes evenly distributed among the four metropolitan areas of: Boston, Toledo, Atlanta, and Denver. Within each sample facility, a systematic sample of about five current residents was selected.

National estimates of current residents are based on a records-based survey involving a personal interview with the nurse most familiar with the resident, who referred to the resident's medical record when necessary. The instrument used to collect this information is called the Current Resident Questionnaire. The NNHS has used this methodology to collect resident data since the survey's inception and this methodology has been quite successful in terms of respondent cooperation and reliability. 1/, 2/, 3/.

The Pretest also evaluated two new methodologies for collecting information on nursing home residents.

The Family component was designed to collect additional information about the resident not available in the nursing home records. This additional data was collected by telephone interview with family members of the sampled resident using the Family Questionnaire. Family members to be interviewed were identified in the interview with the nursing home staff. By surveying this new source of data, it was hoped that information missing from the nursing home records, such as education and occupational status, as well as the circumstances surrounding the resident's admission to the nursing home and other information, might be learned.

The other new methodology evaluated in the Pretest was called the Mental Health component, since it was designed to estimate the prevalence of mental disorders in nursing homes. Rather than relying on the diagnoses recorded in the medical records, this component assessed the level of mental disorders in the nursing home population by conducting brief physical examinations and direct interviews with the sampled residents. The instrument used in this assessment was called the Current Resident Interview and Examination or CRIE for short. The CRIE was conducted by a specially trained survey nurse and administered only to sample residents judged by the nursing home staff to be physically able to be assessed. In other words, residents who were seriously ill or comatose at the time of the survey were not eligible to be administered the CRIE.

Although the CRIE procedure of directly interviewing and examining the resident was evaluated in the Pretest, it was felt that provisions should be made to measure the effect this procedure might have on the nursing home administrator's willingness to participate in the survey. In previous NNHSs, it was in fact stressed that no resident was ever directly contacted. To measure the effect of this procedure on the overall response rates, the Pretest sample consisted of two matched samples of 75 nursing homes. In one sample, all procedures except the CRIE were conducted; in the other sample, all procedures including the CRIE were conducted. Table 1 shows that the inclusion of the CRIE did have a measurable effect. In the half sample that the CRIE was conducted, the participation rate was 63%, about 20% less than the participation rate in homes that did not include the CRIE procedure. Because the lack of participation by a nursing home precluded any further collection of staff and patient data, the mental health component is not being included in the national study.

The response rates of questionnaires and questionnaire items was one of the major tools used to evaluate Pretest questionnaires. Table 2 shows the number of responses and the response rates for each of the questionnaires used to collect resident data. The response rate for each questionnaire is defined as the number of completed questionnaires divided by the number of eligible sample residents. Residents eligible for the Current Resident Questionnaire or CRQ were all sampled residents in participating nursing homes. Residents eligible for the Family Questionnaire or FQ were the subset of CRQ respondents with identified family members. And residents eligible to participate in the CRIE were the responding residents in the CRIE half sample judged to be physically able to participate. Table 2 shows that the response rate for the Current Resident Questionnaire, 94%, was much higher than those for the Family Questionnaire, 85%, and the Current Resident Interview and Examination, 73%. The response rate for the CRIE, as mentioned earlier, did not include persons who were not able to be physically assessed. In the Pretest about 17% of the residents in the CRIE half sample were not assessed.

The CRIE sample, therefore, is biased in favor of healthier residents. Further examination of the respondents and nonrespondents to the Family Questionnaire also found that there were differences by

sex. A greater proportion of male residents had responses to the FQ (71.6%) than females (62.7%) did. To control for such differences between samples, in the remainder of this paper, only cases responding to the questionnaires being compared will be discussed. Table 3 shows the number of cases involved in these comparisons.

It should be pointed out that some of the questions compared differed slightly. In general the response rates for these questions have been adjusted to make the questions comparable in the tables that follow. For example, age/date of birth was asked as one question on the CRQ, but as two questions on the CRIE. Respondents to the CRQ were simply asked for the resident's date of birth and were allowed to answer with the resident's age if the date of birth was unknown. In the Pretest, nearly every response to this question was a complete date of birth (99.3%). If age is included as a legitimate response, the combined response rate was 100%. Age and date of birth were separate questions on the CRIE. The response rates for age and date of birth (complete date) were 82.1% and 72.4%, respectively. When these two items were combined, however, the response rate was 82.8%. The combined response rate for age/date of birth is presented in Table 4. Similar adjustments were made as needed to response rates for education, occupation, and dates of nursing home stays. Finally, it should be pointed out that the item response rates presented do not include "Don't know" as a legitimate response, so that the response rates reflect only the respondent's knowledge or ability to answer the question.

#### FINDINGS

How well did the nursing home resident respond in comparison to the proxy respondents, i.e., the nursing home staff and the resident's family? Table 4 shows that for both age/date of birth and perceived health status, the nursing home staff responded more often than the resident. Table 4 also shows the percent distribution of age and perceived health status for the responding cases in the matched CRIE and the Current Resident Questionnaire (CRQ) sample. This table shows that the responses varied by questionnaire. A larger proportion of the residents reported their age as under 75 years (36.6%) than the nursing home staff did (27.6%). Thus, the average age reported by residents was 75.9 years, while the average age reported by the nursing home staff was 79.5 years.

In the matched sample, residents also tended to rate their health status in the extreme categories of "excellent" or "poor" more often than the nursing home staff did; 12.9% of the residents, compared to 5.3% nursing home staff rated the resident's health as "excellent". Similarly, residents were three times as likely to report that their health was "poor", (27.4%), as were the nursing home staff (9.0%).

Next the item response rates for education, whether the resident ever worked for pay, and occupation were compared. These are items for which the resident and family were respondents. Table 5 shows that the response rates were the same for both types of respondents for whether the resident ever worked for pay. The resident, however, had a slightly higher response rate for education, while family members had a slightly higher response rate for occupation. Table 5 also shows the percent distribution of education, ever worked for pay, and occupation for the responding cases in the matched CRIE and FQ sample. Again, the responses varied by questionnaire. For example, the resident was more likely to report his or her occupation as a service occupation (13.8%) than were the family

(5.4%). In contrast, family members were more likely to report the resident's job as a "white collar" job (62.2%) than was the resident (55%). The family was also more likely to report the resident's highest education as less than high school (37.2%) than the resident (13.5%). There was, however, a similarity in reporting residents who went to college by both the resident and the family.

The items compared for the two proxy respondents were Social Security Number and some items concerning the history of other nursing home stays.

Table 6 shows that the response rate for Social Security Number was over twice as high when the nursing home staff reported as when the family reported. The response rates for the remaining items, however, were not so one-sided. There was very high response by both types of respondents as to whether the resident had previous stays in the current nursing home. The family, however, had higher response rates for reporting whether the resident had stays in other nursing homes. As to the actual dates of the stays, the nursing home staff had higher response for reporting any dates of stays at the current nursing home, while the family had higher response for reporting any dates of stays at other nursing homes. The response rates for reporting any dates of stays, however, masks some important differences in the quality of reporting by these two respondents. Table 7 shows that when the nursing home staff reported any dates of previous stays in the sample home, 90% of the time it was the complete (month and year) admission and discharge date of that stay. In contrast, the comparable proportion for family members was 57.1%. The response rates for complete dates of stays at other nursing homes were not as high for either source, however 57.8% of the nursing home staff were able to provide a complete discharge date.

Table 8 shows that according to the responses, nursing home staff were better at reporting previous stays in the current nursing home, while the family reported more information on stays at other nursing homes. The nursing home staff reported prior stays at the current nursing home more than twice as often as family members did (15.7% for CRQ respondents compared to 6.2% for family members). In contrast, the nursing home staff did not know of as many stays at other nursing homes as the family did. The nursing home staff reported that 7.1% of the residents had stayed at two or more other nursing homes, while the family reported that 27.2% of the residents had stayed at two or more other nursing homes.

The Pretest of the 1985 National Nursing Home Survey was not designed to find the "best respondent" for all the data items discussed, since no provisions were made to test the reliability of the responses. And as we have seen, the responses varied.

Given the fact that the "correct" response could not always be determined, Table 9 was developed to show the degree of agreement between sources. In items with high agreement between sources, the respondent with the higher item response rate would be the practical "best source". In items with low agreement, more research is obviously needed to find the "best source". Table 9 shows the percent agreement between sources for the items compared. The denominator for this percent was the number of responding cases to both questionnaires and the item. The items with highest percent agreement were: whether the resident had previous stays in the current and other nursing homes, whether the resident ever worked for pay, Social Security Number, and age/date of birth. The items

with the least amount of agreement between sources were: perceived health status, education, occupation, and the admission and discharge dates of nursing home stays.

### DISCUSSION

In this paper, we have found that there were differences in response rates for the same item when reported by different respondents. With a few exceptions, response rates tended to be higher for proxy respondents than for the nursing home residents. Even when response rates were similar, however, the answers varied by type of respondent. For example, although the response rates for education and occupation were fairly close, the percent agreement of responses for these two items were only 32% and 57%, respectively. Further research is necessary to answer the question of which respondent is the "best source".

The findings of this paper are merely exploratory in this regard since the Pretest did not include a way of validating the responses for the different respondents. In addition, the method of administration was not controlled for the three types of respondents. Both the CRQ and CRIE, for example, were administered in

personal interviews, while the FQ was administered by telephone interview. Thus, it is not known whether the family might have had higher response rates if the interviews were conducted face to face.

### References

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3. Maffeo, C. et al.: Evaluation of the Long-Term Care Minimum Dataset. Final report, Contract No. 233-78-2036. Westat Corporation. November 1981.

Table 1. Final participation rate of 1985 National Nursing Home Survey Pretest facilities by sample

Sample	Participation Rate
Sample excluding CRIE	82%
Sample including CRIE	63%

Table 2. Number of responding cases and response rate by questionnaire

Questionnaire	Number of responding cases	Response rate
Current Resident Interview and Examination (CRIE)	150	73%
Family Questionnaire (FQ)	343	85
Current Resident Questionnaire (CRQ)	526	94

Table 3. Number of cases in matched questionnaire samples

Matched sample	Number of cases
CRIE and CRQ	145
CRIE and FQ	97
CRQ and FQ	343

Table 4. Item response rate and percent distribution of responses for age and perceived health status in the matched CRIE and CRQ sample by questionnaire

Age and perceived health status	Questionnaire	
	CRIE	CRQ
Item response rate		
Age	82.8%	100%
Perceived health status	85.5	91.7
Percent distribution of responses		
Age		
Total	100.0%	100.0%
Under 65 years	15.8	11.0
65-74 years	20.8	16.6
75-84 years	24.2	28.3
85 years and over	39.2	44.1
Perceived health status		
Total	100.0	100.0
Excellent	12.9	5.3
Good	29.8	45.1
Fair	29.8	40.6
Poor	27.4	9.0

Table 5. Item response rate and percent distribution of responses of education, ever worked for pay, and occupation for responding cases in the matched CRIE and FQ sample, by questionnaire

Education, Ever worked for pay, and occupation	Questionnaire	
	CRIE	FQ
	Item response rate	
Education	84.5%	80.4%
Ever worked for pay	95.9	95.9
Occupation	94.1	97.4
	Percent distribution of responses	
Education		
Total	100.0%	100.0%
Never attended	3.7	--
Elementary	9.8	37.2
High school	62.2	35.9
College	24.4	26.9
Ever worked for pay		
Total	100.0	100.0
Yes	91.4	81.7
No	8.6	18.3
Occupation		
Total	100.0	100.0
White collar	55.0	62.2
Blue collar	27.5	24.3
Service	13.8	5.4
Farm	3.8	4.1
Undetermined	--	4.1

Table 6. Item response rates for selected items for responding cases in the matched CRQ and FQ sample, by questionnaire

Selected items	Questionnaire	
	CRQ	FQ
Social Security Number	97.1%	42.2%
Previous stays in current nursing home	98.0	98.5
Any reported dates of stays in current nursing home	75.5	66.7
Previous stays at other nursing homes	89.8	98.5
Number of other nursing homes	85.1	99.1
Name of other nursing homes	89.6	75.7
Any reported dates of stays at other nursing homes	67.2	71.2

Table 7. Percent distributions of responses of dates reported for stays in the current nursing home and in other nursing homes by questionnaire

Dates of stays in the current and other nursing homes	Questionnaire	
	CRQ	FQ
<b>Any reported dates of stays in current nursing home</b>		
Total	100.0%	100.0%
Admission and discharge dates complete	90.0	57.1
Only admission date complete	7.5	--
Only discharge date complete	--	--
Only admission and discharge year	--	42.9
Only admission year	2.5	--
Only discharge year	--	--
Other	--	--
<b>Any reported dates of stays in other nursing homes</b>		
Total	100.0	100.0
Admission and discharge dates complete	35.6	49.4
Only admission date complete	--	2.5
Only discharge date complete	57.8	3.8
Only admission and discharge year	--	26.6
Only admission year	2.2	5.0
Only discharge year	2.2	5.0
Other	2.2	7.6

Table 8. Percent distributions of responses for nursing home history items for responding cases in the matched CRQ and FQ sample by questionnaire

Nursing home history items	Questionnaire	
	CRQ	FQ
<b>Previous stays in current nursing home</b>		
Total	100.0%	100.0%
Yes	15.7	6.2
No	84.3	93.8
<b>Previous stays in other nursing homes</b>		
Total	100.0	100.0
Yes	21.7	32.7
No	78.3	67.3
<b>Number of other nursing homes</b>		
Total	100.0	100.0
1	93.0	72.7
2	5.3	22.7
3	--	3.6
4	1.8	0.9

Table 9. Number of comparable cases and percent agreement between matched samples for selected items

Selected items	Number of comparable cases	Percent agreement
Age/ date of birth	120	75.0%
Perceived health status	115	27.0
Education	65	32.3
Ever worked for pay	90	85.6
Occupation	65	56.9
Social Security Number	142	77.5
Previous stays in current nursing home	332	88.0
Any dates of previous stays in current nursing home	9	33.3
Previous stays in other nursing homes	304	79.9
Number of other nursing homes	44	70.5
Names of other nursing homes	38	71.1
Any dates of stays in other nursing homes	29	62.1

1] Excludes non-responding cases to either questionnaire.