AN EVALUATION OF AN OPTICAL SCANNING FORM FOR A MAIL SURVEY

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A relatively untried questionnaire technique was utilized in a recent survey of professional personnel in approximately 2,500 mental health establishments. Forms were specially designed to be "read" by a high speed optical scanner with information contained thereon transferred directly onto magnetic tape, thus eliminating traditional coding and card-punching operations. Prior to the full-scale survey, an extensive pretest was conducted late in 1962 in a probability sample of mental health clinics, hospitals for the mentally ill, and institutions for the mentally retarded. The purpose of the pretest was to evaluate:

1. Respondent reaction to the form
2. Respondent ability to utilize the form.
3. Clarity of questions and definitions.

The results reported here deal with the first two aspects of the pretest -- the evaluation of the optical scanning form for the mail survey.

BACKGROUND

The system utilized in this survey is based on a dot-matrix arranged for alpha or numeric answers. The answer sheet is completed by filling in, with a standard lead pencil, one or more dots in predetermined segments of the matrix. A high speed photoelectric document reading machine scans one or both sides of the marked sheets simultaneously and converts the marks to electronic impulses. Response forms, or questionnaires, while based on the standard matrix, are specially designed for each application.

The system was originally developed for test scoring and has been used effectively in that application in all levels down through the third grade. However, there were no data available to demonstrate its effectiveness in survey applications, and it was therefore concluded that a pretest should be conducted and the results reviewed critically.

DESIGN OF QUESTIONNAIRES

Two questionnaires were developed. An attempt was made to keep the questions to a minimum rather than to utilize the full matrix capacity which is the equivalent of 13 punch cards. Administrative data, available in the business office of the establishment, was to be supplemented by personal data available only from the individual professional staff members.

The Establishment Schedule (Figure I) was designed to be completed in the administrative office of each establishment and to provide the following summary data:

1-2. Establishment name and address.
3. Total number of employees on the payroll.
   a. Full time
   b. Part time
4. Number of mental health personnel.
   a. Psychiatrists and other M.D.'s
   b. Psychologists
   c. Social Workers
   d. Professional Nurses
5. Number of personnel forms returned.

All items on this form, with exception of street and city address, were designed for coding by the respondent. Space was provided on the form for the respondent to write in the complete name and address of the establishment.

The Personnel Schedule (Figure II) was designed to be circulated by the administrative office to the appropriate professional staff. The number of completed Personnel Schedules was entered in Item 5 of the Establishment Schedule. This number equaled the sum of Item 4 on that form if each professional staff member within the scope of the survey completed a Personnel Schedule. The following items were included:

1. Name
2. Professional classification
3. Professional society affiliation
4. Most advanced level of education
5. Multiple employment (for subsequent matching operations)
6. Personal data
   a. Date of birth
   b. Sex
   c. Type of citizenship
7. Years' experience
   a. In present psychiatric or mental health specialty
   b. In non-psychiatric or non-mental health activity
8. Number of hours employed by activity type during a typical week in the establishment
   a. Total
   b. Patient care and/or clinical service
   c. Administration
   d. Teaching
   e. Research
   f. Staff consultation
9. Months of approved residency completed by psychiatrists or psychiatric residents

All items on this form were designed for coding by the respondent with the exception of the identification of other employers, which was treated as a write-in and used to assist in the identification of multiple returns from one respondent.

PRETEST SAMPLE DESIGN

Two hundred two sample units were selected for the pretest from the universe of approximately 2,500 establishments stratified by State and type of institution. Each selected establishment was treated as a cluster with 100% enumeration of the professional staff within the cluster. Each establishment received one establishment form and

a number of personnel schedules sufficient for distribution to every professional staff member within the scope of the survey. (A post card was enclosed for reorders in case the number of personnel schedules originally sent was insufficient.)

A random subsample of 15 establishments also received pretest evaluation sheets (Figure III) designed to assist in the evaluation of the respondent's reaction to the form. Each person employed in a subsample facility was asked to fill out the evaluation sheet after completing the Personnel Schedule. One hundred sixty-eight establishment schedules and 4,079 Personnel Schedules were available for analysis. A summary of the returns is as follows:

	Establishments	Professional Personnel
Total	202	--
Schedules Returned	168	4,079
Evaluation Sheet Subsample	(15)	(308)
Closures or Out-of-Scope	15	0
Mergers	1	0
Non-respondents(1)	18	-

ANALYTICAL METHOD

The analysis of the pretest was carried out in two stages:

1. Respondent reaction - a tabulation and analysis of the responses on 308 pretest evaluation sheets returned by the subsample of establishments.
2. Execution of the Schedule - a critical editing of selected items on 168 Establishment Schedules and 4,079 Personnel Schedules for discrepancies in the recording process.

In order to complete a schedule "without error," the respondent was required to conform to the following specifications:

All Items - Use only a lead pencil and blacken no more than one circle in each column.

The Alpha Grid

1. Use no more than eighteen letters for the name. Abbreviate wherever necessary and print the name in the row of boxes provided.
2. Leave a blank box between names or abbreviations.
3. Blacken the circle containing the letter printed in the box below.
4. Blacken the blank circle at the top of each unused box.

Numeric Grids

1. Enter the appropriate numeric answer in the box provided beneath the grid using the extreme right column as the unit position.
2. Blacken the circle containing the number printed in the box below the column.
3. Blacken zero circles at the top for each unused box.

Errors have been categorized into three groups: critical, non-critical, and permissible discrepancies. Critical errors are those replies which cannot be resolved on the basis of information contained on the questionnaire. Non-critical errors are those which require some editing prior to passing the document under the reader, but the necessary information is available elsewhere on the form. Permissible errors are those which do not follow the instructions in every respect but are not critical in terms of the "answer" to be read by the optical scanner.

ANALYTICAL FINDINGS

RESPONDENT REACTION

The responses to the pretest evaluation sheets are summarized for each professional dissipline in Tables 1 through 5 and are discussed in detail below. All of the observed differences between disciplines were sufficiently small to be attributed to chance, with exception of the response to Question 4 as indicated in Table 5. (The response to Questions 4 and 6 have relevance only to the content of the questionnaire for the full scale survey and will not be discussed here.)

Question 2 - "Is the questionnaire convenient to use?"

It was concluded that the form did not require an unreasonable effort on the part of the respondent. Eighty-one percent found the form convenient to use. An additional 6% were uncertain, and only 13% found it inconvenient. See Table 1.

Question 3 - "Are there any parts which are not clearly stated or which you do not understand?

This question related to more than just the form-design. Nevertheless, 79% of the respondents believed that they fully understood the form and had no suggestions for clarifying it. (We do not necessarily share their optimism.) See Table 2. Eighty percent of the comments dealt with the form content, definitions, and/or instructions for routing the forms back to us, etc., rather than the form design. Examples of some comments relevant to the mark sensing form are:

"Takes time to understand."

"Being a new idea, it seems more difficult. Probably if I had to fill the same way next month, I think it would be easier."

(1) Returns received after the cutoff date established for this preliminary analysis - a later cutoff date was set for final survey tabulations.

"An excellent schedule - well designed, easily understood and if it will be used for IBM mark-sensing - extremely efficient."

"I feel now you are eaten up by machines."

"Some confusion related to the dots and blank spaces. May have been due to not reading the instructions carefully."

"The questionnaires seemed clear."

"I only wish the instructions (if possible) were more brief and in larger print."

"This is a machine-oriented form which humans like myself resent."

Question 5 - "How long did it take you to fill out the questionnaire?"

We believe that the definitions and instructions covering the routing of the forms could have been simplified. Despite this shortcoming, 84% of the respondents in the pretest evaluation sub-sample reported that they took less than 20 minutes to complete the form. Almost half of the respondents took less than 10 minutes. See Table 3. It is unlikely that a conventional questionnaire could have been completed in less time.

EXECUTION OF THE SCHEDULE

One hundred sixty-eight Establishment Schedules and 4,079 Personnel Schedules were edited for deviations from the specifications discussed above. In addition to the alpha grids, Items 3 and 4 on the Establishment Schedule and Items 3, 6, 7 and 8 on the Personnel Schedule were critically reviewed. The items selected for editing were those where consistency checks were possible or where a non-response problem was anticipated.

The Alpha Grid

Table 6 shows the number and percentage of schedules having errors in the name grid. There were two error types classified as critical errors: a) blanks, and b) incomplete codes accompanied by incomplete write-ins. Strictly speaking, these are not critical errors on the Establishment Schedules if the respondent completes the name and address box elsewhere on the form. However, they are critical on the Personnel Schedule and we attempted to analyze the two alpha grids in the same manner.

It was originally feared that the respondents would resist the completion of the name grid since it involved coding a fairly complex matrix. Our fears were unwarranted. Only two Establishment Schedule grids (1%) were either blank or incomplete, and 3 out of 4,079 (0.1%) of the grids on Personnel Schedules were blank. In some instances the failure to complete the name grid on the Personnel Schedules may represent the respondents' refusal to divulge their names rather than any resistance to the coding technique.

A better indication of the acceptance of the alpha matrix is the very low frequency of written responses accompanied by a blank code matrix. In these few instances(one percent of the Establishment Schedules and 0.4% of the Personnel Schedules) the respondent did not object to providing the information in the conventional write-in but did fail to transfer the information to the code in the alpha matrix. This "error" can be picked up readily in the editing process since the entire alpha grid remains blank. A few more schedules showed an incomplete code but a complete write-in. See Table 6.

The error that is somewhat harder to find in an editing process is the discrepancy between the code and the write-in. Discrepancies were found in almost 2% of the Establishment Schedules and 1% of the Personnel Schedules. In all cases the write-in appeared to be correct. The errors resulted from the transposition of columns or an attempt on the respondent's part to further abbreviate in order to reduce coding time.

The most common error observed was the omission of the zero mark between names. This occurred in roughly 12% of the Establishment Schedules and 6% of the Personnel Schedules, indicating that the importance of the space code may not have been highlighted sufficiently in the instructions. Fortunately, the omission of the space code is not critical. If the specific program requires a space code, a routine spot-checking procedure can be established to identify the errors.

The Numeric Grid

The results of the edit of numeric fields are summarized in Table 7. It is interesting to note that the error rates for the two items on the Establishment Schedule are consistently low while those for the items on the Personnel Schedule are higher and more variable. Since the same coding technique was used for all the items, this difference must be due to some other factor. Two possible explanations come to mind. It could be due to different respondents, the hospital administrator vs. the professional staff member. Or it could result from inherent difficulties encountered in the items themselves. In light of the comments on the pretest evaluation sheet, the second explanation appears to be the more plausible. The Establishment Schedule figures (where the error rates are low) on total payroll (Item 3) and number of professional staff members (Item 4) were readily available and straightforward. The personal information on date of birth (Item 6), years of professional experience (Item 7) and current assignment by type of activity (Item 8) were not so easily obtained. It is not unusual to encounter persons who are reluctant to report their date of birth. There was a typographical error in the heading of Column 7B which made the item practically unintelligible unless the respondent read the detailed instruction. Many respondents asked for definitions of the activity type categories used in Item.8. We conclude that the error rates on the Personnel Schedules are

confounded with difficulties resulting from these problems and cannot be attributed solely to the specially designed form. In the absence of any other information, it is reasonable to assume that the errors on the Establishment Schedules are representative of what one might encounter under typical mail-survey conditions.

Critical errors were practically non-existent on the Establishment Schedules. Incomplete, or blank codes were provided on approximately two percent of the items. A discrepancy between the code and write-in was observed twice on the total number of employees on the payroll and once on the professional staff count. The zero space to the left of the last data field was left blank on 4% of the schedules for Item 3 and 3% of the schedules for Item 4. Fortunately this omission is not a critical one. The write-in was either by-passed completely or partially, and the complete code was entered directly on 6% of the schedules for Item 3, and 4% of the schedules for Item 4.

As mentioned above, the analysis of the error rates for the items on the Personnel Schedule is of limited value within the context of this paper. However, certain recurring errors are worth mentioning. In order to save space, we asked for only the last two digits of the year of birth (Item 6). Thus 1901 would be written "01", 1898 would be "98", etc. A few respondents attempted to enter the four digits in the two coding columns. In many of these cases the year of birth was garbled beyond the point where an intelligent judgment could be made as to the correct year of birth. The code did not agree with the write-in on 1.4% of the schedules.

Thirty-four percent of the respondents to the pretest evaluation sheet indicated that they had some difficulty allocating their hours employed by type of work (Item 8). An additional 2% stated that they had great difficulty. It is therefore not surprising to learn that the critical error rate for this item is close to 7%, or that in 2% of the schedules the component hours did not equal the total hours reported in Column A. The relatively high frequency of direct code entries, i.e., codes with incomplete or no write-ins, probably reflects the familiarity with the coding system that develops on the part of some respondents as they work with the form.

Yes-No Grid

There were relatively few errors found in Item 3 (Professional Society Affiliation). See Table 8. Less than one percent of the respondents left the item blank. The poorly worded instruction "Indicate only one response for each item below" rather than "for each column below" probably accounts for the majority of the 3-1/2% showing an incomplete response.

Number of Errors Per Individual Schedule

Up until now we have dealt with the errors identified in selected items. We might naturally ask: Are these errors concentrated in a relatively few schedules or are they distributed more generally among the respondents? In order to answer this question, an analysis was made of error types identified in the editing process. Thus, if one error was repeated in more than one item for a given schedule, it was considered as only one error. The data are shown in Table 9. There is relatively close agreement in the number of errors identified in this aspect of the scanning process with the number identified in the item-by-item analysis. This would seem to indicate that an error type was not frequently repeated on a given schedule. However, the errors were restricted to approximately 30% of the schedules. Ten percent of the Establishment Schedules had more than one error. Twenty percent had one error (the majority were permissible discrepancies as shown in Tables 6 and 7) and 70% had no errors. The corresponding percentages were very similar for the Personnel Schedules. Sixty-seven percent had no errors, 19% had one error and 14% had two or more errors.

CONCLUSIONS

1. The form, when professionally executed, presents an attractive package and demands the attention of the respondent. The final response rate to the pretest, after two follow-up letters and a night letter to the hard-core non-respondents, was 98%. In a survey such as this, where the motivation to reply is not high, this is an unusually high response rate. Eighty percent of the people found the form convenient. We would not attempt to estimate the acceptance rate had the form been more complex.

2. The length of time required to complete the form was not excessive. If the system becomes more popular, respondents will no longer need the detailed instructions. The time required for filling in the dots should be comparable with that required if the questions were asked on an orthodox questionnaire form.

3. Discrepancies between the code and the write-in were noted in 1% to 2% of the cases. Transposed digits and omissions accounted for the majority of the discrepancies. It is therefore recommended that if an error rate of 2% is considered excessive, the write-in box be utilized as an additional control and basis for verification wherever numerical data are requested.

4. The number of necessary query write-backs is not increased appreciably by this system. The critical errors appear independent of the questionnaire format.

5. The critical errors can be spotted relatively easily by a trained staff of editors. If the technique becomes more widely used, these error types would be expected to be reduced.

6. The primary gain realized from this system is, of course, the bypassing of conventional key punching and verifying. Where these facilities are not readily available, the system has obvious advantages both in terms of expense and timing. The punching is, in effect, performed by the respondent, who appears to handle both the alpha and numeric grids with ease.

TABLE 1 -- Responses to Question 2. Is the Questionnaire Convenient to Use?

Professional Classification	Total	Response: Yes	No	Not Sure
	Number			
Total	308	250	40	18
Psychiatrists	64	52	7	5
Other M.D.'s	25	24	1	0
Psychologists	42	34	8	0
Social Workers	75	55	15	5
Nurses	102	85	9	8
	Percent			
Total	100.0	81.2	13.0	5.8
Psychiatrists	100.0	81.3	10.9	7.8
Other M.D.'s	100.0	96.0	4.0	0.0
Psychologists	100.0	80.9	19.1	0.0
Social Workers	100.0	73.3	20.0	6.7
Nurses	100.0	83.4	8.8	7.8

TABLE 2 -- Responses to Question 3. Are there any parts which are not clearly stated or which you do not understand?

Professional Classification	Total	Response: Yes	No	Not Sure
	Number			
Total	308	52	243	13
Psychiatrists	64	8	51	5
Other M.D.'s	25	5	20	-
Psychologists	42	12	29	1
Social Workers	75	18	55	2
Nurses	102	9	88	5
	Percent			
Total	100.0	16.9	78.9	4.2
Psychiatrists	100.0	12.5	79.7	7.8
Other M.D.'s	100.0	20.0	80.0	--
Psychologists	100.0	28.6	69.0	2.4
Social Workers	100.0	24.0	73.3	2.7
Nurses	100.0	8.8	86.3	4.9

TABLE 3 -- Responses to Question 5. How long did it take you to fill out the questionnaire?

Professional Classification	Total	Response: <10 min.	10-20 min.	20-30 min.	one-half hour +
	Number				
Total	308	125	135	44	4
Psychiatrists	64	23	31	10	0
Other M.D.'s	25	15	8	2	0
Psychologists	42	17	18	7	0
Social Workers	75	23	32	18	2
Nurses	102	47	46	7	2
	Percent				
Total	100.0	40.6	43.8	14.3	1.3
Psychiatrists	100.0	35.9	48.5	15.6	0.0
Other M.D.'s	100.0	60.0	32.0	8.0	0.0
Psychologists	100.0	40.5	42.8	16.7	0.0
Social Workers	100.0	30.7	42.6	24.0	2.7
Nurses	100.0	46.0	45.1	6.9	2.0

TABLE 4 -- Responses to Question 4. The allocation of hours employed by type of work could be obtained with:

Professional Classification	Response: Amount of Difficulty: Total	Little or no	Some	Great
	Number			
Total	308	197	105	6
Psychiatrists	64	39	24	1
Other M.D.'s	25	23	2	0
Psychologists	42	24	18	0
Social Workers	75	38	34	3
Nurses	102	73	27	2
	Percent			
Total	100.0	64.0	34.1	1.9
Psychiatrists	100.0	60.9	37.5	1.6
Other M.D.'s	100.0	92.0*	8.0*	0.0
Psychologists	100.0	57.1	42.9	0.0
Social Workers	100.0	50.7	45.3	4.0
Nurses	100.0	71.5	26.5	2.0

* Significant from other discipline responses.

TABLE 5 -- Responses to Question 6. Would you define any additional terms?

Professional Classification	Total	Response: Yes	No	No Response	Professional Classification	Total	Yes	No	No Response
	Number					Percent			
Total	308	21	232	55	Total	100.0	6.8	75.3	17.9
Psychiatrists	64	4	50	10	Psychiatrists	100.0	6.2	78.2	15.6
Other M.D.'s	25	1	19	5	Other M.D.'s	100.0	4.0	76.0	20.0
Psychologists	42	4	30	8	Psychologists	100.0	9.5	71.5	19.0
Social Workers	75	10	52	13	Social Workers	100.0	13.3	69.4	17.3
Nurses	102	2	81	19	Nurses	100.0	2.0	79.4	18.6

TABLE 6 -- Number and Percent of Errors in the Name Grids by Error and Type of Schedule

ERROR TYPE	ESTABLISHMENT SCHEDULES (n = 168)		PERSONNEL SCHEDULES (n = 4,079)	
	Number	Percent	Number	Percent
Critical Errors	2	1.2	3	0.1
Blank	1	0.6	3	0.1
Incomplete Code + Write-in	1	0.6	-	--
Non-Critical Errors	6	3.6	91	2.2
Write-in/No Code	2	1.2	15	0.4
Write-in/ Incomplete Code	1	0.6	26	0.6
Code ≠ Write-in	3	1.8	48	1.2
Permissible Discrepancies	21	12.5	266	6.5
Zero Space Not Marked	20	11.9	265	6.5
Code/No Write-in	-	--	1	<0.1
Code/Incomplete Write-in	1	0.6	-	--

TABLE 8 -- Analysis of Execution of Professional Affiliation (Item 3) on Personnel Schedules

Error	Frequency	Relative Frequency
Total	4,079	1.000
Blank	21	.005
Incomplete	138	.034
No error	3,920	.961

TABLE 9 -- Number and Percentage Distribution of Establishment and Personnel Schedules by the Number of Errors Per Sheet 1/

NUMBER OF ERRORS	ESTABLISHMENT SCHEDULE		PERSONNEL SCHEDULE	
	Number	Percentage	Number	Percentage
Total	168	100	4,079	100
0	116	70	2,740	67
1	34	20	761	19
2	12	7	298	7
3	5	3	191	5
4	1	<1	57	1
5	0	--	32	1
6 or more	0	--	0	-

1/ An error is defined as any reponse not in complete accord with the DocuTran directions. Also, if one error was repeated in more than one item it was still considered one error (type).

TABLE 7. Number and Percent of Errors in Selected Numerical Fields by Error and Type of Schedule

ERROR TYPE	ESTABLISHMENT SCHEDULES (n = 168)				PERSONNEL SCHEDULES (n = 4,079)					
	Item 3		Item 4		Item 6		Item 7		Item 8	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Critical Errors	1	0.6	1	0.6	62	1.5	116	2.8	280	6.9
Blank	-	--	1	0.6	26	0.6	28	0.7	8	0.2
Incomplete Code + Write-in	1	0.6	-	--	36	0.9	88	2.1	272	6.7
Non-Critical Errors	5	3.0	6	3.6	150	3.7	190	4.7	254	6.2
Write-in/No Code	3	1.8	2	1.2	24	0.6	32	0.8	32	0.8
Write-in/Incomplete Code	-	--	3	1.8	68	1.7	112	2.7	166	4.1
Code ≠ Write-in	2	1.2	1	0.6	58	1.4	46	1.1	56	1.4
Permissible Discrepancies	17	10.1	12	7.1	215	5.3	311	7.6	275	6.7
Code/No Write-in	5	3.0	3	1.8	125	3.1	160	3.9	150	3.7
Code/Incomplete Write-in	5	3.0	4	2.4	90	2.2	151	3.7	125	3.1
Zero Space Not Recorded	7	4.2	5	3.0	1/	1/	1/	1/	1/	1/

1/ Not observed

FIGURE I

Survey of Professional Personnel Employed in Mental Health Establishments

ESTABLISHMENT SCHEDULE
SIDE 1

U.S. Dept. of Health, Education, and Welfare
Public Health Service
National Institute of Mental Health
Manpower Studies Program

PHS 7-134
BUREAU OF BUDGET NO. 68-6246
Approval expiration date is January 31, 1963

The purpose of this form is to identify and provide overall basic data on the establishment for which your personnel schedules are submitted. One completed Establishment Schedule must accompany the personnel schedules when they are returned for processing.

Please read all of the following directions and review the example on Side 2 before beginning to complete this schedule.

Item 1—Write in these blanks the complete name and address of your establishment:

Name.....

Street Address.....

City.....State.....

Use only **a soft, black-lead pencil (No. 2 or 2½).** Do not use ink, ball-point pen, or colored pencil.

To fill in this schedule, first print appropriate numbers or letters in the boxes provided. Then blacken the corresponding numbered or lettered circles in the columns above the boxes.

In marking a circle, fill in the entire circle but do not go outside it. Mark **one and only one** circle in each column. If you make an error, erase it thoroughly, and then fill in the correct circle.

Item 2—ESTABLISHMENT NAME. In the row of boxes under the establishment name grid below, print the name of your establishment. Use only eighteen letters and abbreviate when necessary. Leave a blank box between names or abbreviations. Notice the following examples:

CK CO INST J RSCH for Cook County Institute for Juvenile Research
STAR OF SEA HOSP for Star of the Sea Hospital
MONT CO CHD GD CLN for Montgomery County Child Guidance Clinic

Then, in the alphabetic column above each box, blacken the circle containing the letter that you printed in the box. Blacken only one circle in each column. **Blacken the blank circle at the top of each unused box,** including those between names and at the end of the name if you do not need all eighteen letters.

Item 3—TOTAL NUMBER OF EMPLOYEES ON PAYROLL—FULL TIME AND PART TIME. Under full time, include all employees who work a minimum of 35 hours per week. Under part time, include those employees working less than this number of hours per week. Include all personnel, regardless of professional or non-professional status.

PLEASE NOTE: If this establishment operates branches, personnel for both headquarters and branches should be reported on one establishment schedule.

However, please note that for purposes of this survey *out-patient mental health clinics* and their branches are to be reported separately from related hospitals. Thus, a person on both the hospital staff and the out-patient clinic staff should be reported on separate forms—one for the clinic and one for the hospital—and his Personnel Schedule should accompany the Establishment Schedule for each establishment.

First, print the number of personnel in the boxes under the appropriate heading. Then, in the numeric column above each box, blacken the circle containing the number printed in the box. Be sure to print zeros for boxes not used. For example, 9 full-time employees is printed 0009; and two part-time employees is printed 002.

(Continued on Side 2)

2 ESTABLISHMENT NAME

Print establishment name in these boxes.

3 TOTAL NUMBER OF EMPLOYEES ON PAYROLL

Full Time	Part Time
0 0 0 0	0 0 0
1 1 1 1	1 1 1
2 2 2 2	2 2 2
3 3 3 3	3 3 3
4 4 4 4	4 4 4
5 5 5 5	5 5 5
6 6 6 6	6 6 6
7 7 7 7	7 7 7
8 8 8 8	8 8 8
9 9 9 9	9 9 9

4 NUMBER OF MENTAL HEALTH PERSONNEL

A. Psychiatrists and other Physicians	B. Psychologists	C. Social Workers	D. Professional Nurses
0 0	0 0	0 0	0 0 0
1 1	1 1	1 1	1 1 1
2 2	2 2	2 2	2 2 2
3 3	3 3	3 3	3 3 3
4 4	4 4	4 4	4 4 4
5 5	5 5	5 5	5 5 5
6 6	6 6	6 6	6 6 6
7 7	7 7	7 7	7 7 7
8 8	8 8	8 8	8 8 8
9 9	9 9	9 9	9 9 9

Note: The sum of columns 4A through 4D should equal the figure in Item 5.

USE A SOFT LEAD PENCIL—MARK ONLY IN SPACES PROVIDED.
Please handle this sheet carefully. Keep it as clean as possible. Do not fold it or bend the corners.

5 NUMBER OF PERSONNEL SCHEDULES FORWARDED

0 0 0
1 1 1
2 2 2
3 3 3
4 4 4
5 5 5
6 6 6
7 7 7
8 8 8
9 9 9

SRA
DOCUTRAN™ SERVICE
165-13-2

FIGURE I (Continued)

Survey of Professional Personnel Employed in Mental Health Establishments

ESTABLISHMENT SCHEDULE SIDE 2

U.S. Dept. of Health, Education, and Welfare
Public Health Service
National Institute of Mental Health
Manpower Studies Program

Item 4—NUMBER OF MENTAL HEALTH PERSONNEL. The four mental health core disciplines shown are:

A. Psychiatrists and Other Physicians—residents in psychiatry, psychoanalysts, and all other M.D.'s.

B. Psychologists—clinical and counseling psychologists, psychometrists, and related personnel designated as psychologists by your establishment.

C. Social Workers—all persons so designated by your establishment.

D. Professional Nurses—those persons employed as nurses who have completed a prescribed course of nursing in a school approved by a state licensing agency and who hold, or are eligible for, a current license to practice nursing in the state where employed.

Include personnel as defined above whether they work full time or part time. Include all professional personnel whether reimbursed or not. Also, include personnel for headquarters and branches. **Exclude** professional personnel on leave of absence. **The sum of columns 4A through 4D should equal the figure you enter in Item 5.**

First, print the number of professional personnel in the boxes under the appropriate heading. Then, in the numeric column above each box, blacken the circle containing the number printed in the box. Be sure to print zeros for boxes not used. For example, a 9 in category 4A should be printed 09; notice that a 9 in category 4D should be printed 009. If a category does not apply to your establishment, put 00 in the boxes and blacken the top (00) circles.

Item 5—NUMBER OF PERSONNEL SCHEDULES FORWARDED. Count the personnel schedules received from members of your professional staff and enter the figure in Item 5.

Should some personnel schedules be outstanding because staff members are on vacation or otherwise temporarily unavailable, please complete schedules for those personnel to the best of your ability. Do not delay return of all survey schedules until such persons are available, and **do not** retain the schedules to be sent in later. **The number of personnel schedules (and the figure you enter in Item 5) should equal the sum of the full-time and part-time professional personnel indicated in Items 4A through 4D.** Please resolve and correct any discrepancies.

To fill in Item 5, print the number in the boxes at the bottom of the grid. Then, in the numeric column above each box, blacken the circle containing the number printed in the box. Be sure to print zeros for boxes not used. For example, in this section, 12 should be 012.

DIRECTIONS TO RETURN SCHEDULES

1. Place this completed Establishment Schedule on top of the group of personnel schedules from your establishment. Be sure that the personnel schedules are stacked with Side 1 (name grid) up and that the completed Establishment Schedule is on top of the stack with Side 1 (name grid) up.
2. Band the stack with a *loose* rubber band. Please do not use paper clips, staples, or pins.
3. Place the stack in the special envelope provided and mail to:

   Mental Health Manpower Studies Program
   Training Branch
   National Institute of Mental Health
   Building 31, Room 2A-07
   Bethesda 14, Maryland

a. If you return less than 10 schedules, please place the cardboard stiffener provided in the envelope with the schedules for protection.

b. If you have more than 100 schedules, it will be necessary to split the stack between envelopes. Place the Establishment Schedule on top of the first stack; then place a plain sheet of paper on each stack and mark each plain sheet with "Split Pack" and the name of your establishment. For example, if you have two stacks, mark the plain sheets "Split Pack 1 of 2" and Split Pack 2 of 2" with your establishment name.

4. Also, please return any *unused* forms in the same envelope at the bottom of the pack.

SAMPLE FILLED-IN ESTABLISHMENT SCHEDULE

MAKE NO MARKS ON THIS SIDE

2 ESTABLISHMENT NAME

C K C O I N S T J R S C H

3 TOTAL NUMBER OF EMPLOYEES ON PAYROLL

Full Time	Part Time
0 2 9 5	0 2 5

4 NUMBER OF MENTAL HEALTH PERSONNEL

A. Psychiatrists and other Physicians	B. Psychologists	C. Social Workers	D. Professional Nurses
0 9	2 6	1 2	0 0 4

Note: The sum of columns 4A through 4D should equal the figure in Item 5.

USE A SOFT LEAD PENCIL—MARK ONLY IN SPACES PROVIDED.

Please handle this sheet carefully. Keep it as clean as possible. Do not fold it or bend the corners.

5 NUMBER OF PERSONNEL SCHEDULES FORWARDED

0 5 1

MAKE NO MARKS BELOW

165-13-2

FIGURE II

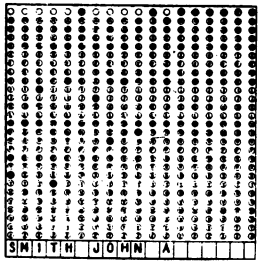
Survey of Professional Personnel Employed in Mental Health Establishments

PERSONNEL SCHEDULE
SIDE 1

U.S. Dept. of Health, Education, and Welfare
Public Health Service
National Institute of Mental Health
Manpower Studies Program

PHS 1-135
BUREAU OF BUDGET NO. 68-6246
Approval expiration date is January 31, 1963

SAMPLE NAME GRID



This schedule is specially designed to be "read" by a high-speed, electronic optical scanner in order to facilitate earlier, and more meaningful use of the information gathered. Since the schedule will be processed by machine, it is of the utmost importance that it be filled in completely and accurately.

Please handle this sheet carefully; do not fold it or bend the corners. Make no marks on it except in the spaces provided and keep it as clean as possible.

Read all of the directions and samples before you begin to fill in this schedule.

Use only a soft, black-lead pencil (No. 2 or 2½). Please do not use ink, ball-point pen, or colored pencil because they cannot be read by the machine.

To properly complete the schedule, blacken each appropriate circle with a heavy black mark, filling in the entire circle, but not going outside it. Mark one and only one circle in each column. If you make an error, erase it thoroughly, and then fill in the correct circle.

DIRECTIONS FOR COMPLETING SIDE 1

ITEM 1—NAME. Study the sample name found to the left and then fill in Item 1 with your name. Notice that a box is provided below each column of circles. Starting with the first box on the left, print the letters of your **last name**, skip a space, print your **first name**, skip a space, and then print your **middle initial**. If space is insufficient for first name and middle initial, abbreviate first name or print the initials of first and middle name. Then, in the alphabetic column above each box, blacken the circle containing the letter that you printed in the box. In the column above each unused box that separates your last and first name and middle initial, blacken the **top** (blank) circle. Blacken only one circle in each column, but be sure that there is one circle blackened in **every** column of the name grid. (If you have completed this grid as directed and find that there are still unused columns following the last letter, your middle initial, blacken the top row of circles in the remaining columns.)

PLEASE NOTE: This name grid is for identification purposes in processing. No data on individuals will be tabulated.

Immediately to the right of the name grid boxes, you will note that space has been left for you to indicate the name of the establishment for which this schedule is being completed. Please print its name; then, on the line below, print the names of the city and state where your establishment is located.

ITEM 2—PRINCIPAL PROFESSIONAL CLASSIFICATION. Six professional classifications are shown:

Resident in Psychiatry—currently in residence in this establishment.
Psychiatrist—includes psychoanalysts.
Other Physician—all M.D.'s not included in the two categories above.
Psychologist—includes clinical and counseling psychologists, psychometrists, and related personnel designated as psychologists by this establishment.
Social Worker—includes all persons so designated by this establishment.
Professional Nurse—those persons employed as nurses who have completed a prescribed course of nursing in a school approved by a state licensing agency and who hold, or are eligible for, a current license to practice nursing in the state where employed.

BE SURE TO COMPLETE BOTH SIDES OF THIS FORM.

165-13-1

1 **YOUR NAME**

Print your name in these boxes; start with last name first.

(Last Name, First Name, Middle Initial)

INDICATE ONLY ONE RESPONSE FOR EACH ITEM BELOW

2 PRINCIPAL PROFESSIONAL CLASSIFICATION	3 PROFESSIONAL AFFILIATION A. American Psychiatric Association	B. American Board of Psychiatry and Neurology Certified	C. American Psychological Association	D. American Board of Examiners in Prof. Psychology	E. American Nursing Association	F. National Association of Social Workers	4 MOST ADVANCED LEVEL OF EDUCATION	5 Employed by More Than One Mental Health Establishment?
○ Resident in Psychiatry	○ YES	○ YES	○ YES	○ YES	○ YES	○ YES	○ No Degree	○ YES
○ Psychiatrist	○ NO	○ NO	○ NO	○ NO	○ NO	○ NO	○ Assoc/Arts	○ NO
○ Other Physician							○ 3-Yr Diploma	
○ Psychologist							○ Bachelors	
○ Social Worker							○ Grad Study No Degree	
○ Professional Nurse							○ Masters	
							○ PhD, EdD, ScD, etc.	
							○ M.D.	
							○ M.D. Plus PhD, EdD, ScD, etc.	

If yes, fill in blank(s) with name and city.

USE A SOFT LEAD PENCIL ONLY — Please handle this sheet carefully. Keep it as clean as possible. Do not fold it or bend the corners.

NAME OF THIS ESTABLISHMENT

CITY STATE

NAME CITY

1
2
3

OTHER ESTABLISHMENTS IN WHICH CURRENTLY EMPLOYED

FIGURE II (Continued)

Survey of Professional Personnel Employed in Mental Health Establishments

PERSONNEL SCHEDULE
SIDE 2

U.S. Dept. of Health, Education, and Welfare
Public Health Service
National Institute of Mental Health
Manpower Studies Program

It is possible that more than one classification might apply to you. Nevertheless, blacken the **one** circle that identifies your principal classification **in this establishment.** Do not blacken more than one circle. If you are not in one of the classifications given, please return this schedule to your administrative office.

ITEM 3—PROFESSIONAL AFFILIATION. Read carefully each of the affiliations given (A through F); then blacken the one circle in each that denotes your present affiliation status. Be sure to respond to **every** category. (Do not print "Yes" or "No;" just fill in the appropriate circle.)

ITEM 4—MOST ADVANCED LEVEL OF EDUCATION. Carefully review all levels of educational training shown before making any marks. Then blacken the circle beside the level that best identifies your most advanced degree(s) or extent of training. Blacken only one circle in this section.

ITEM 5—EMPLOYED BY MORE THAN ONE MENTAL HEALTH ESTABLISHMENT? Indicate by blackening the appropriate circle ("Yes" or "No") whether you are currently providing services for more than one mental health establishment (hospital, clinic, institution for mentally retarded, etc.). If so, print the name(s) and city(ies) in the spaces provided. If you subsequently receive another schedule from another establishment, please complete a schedule at each establishment.

DIRECTIONS FOR COMPLETING SIDE 2

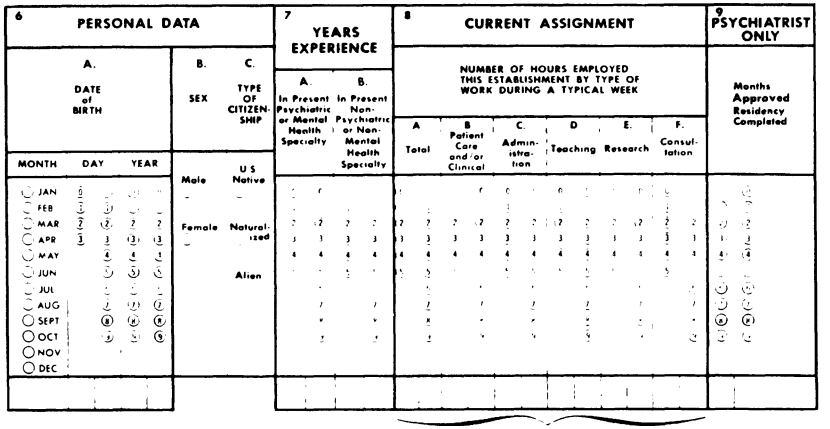
ITEM 6—PERSONAL DATA. (A) *Date of Birth.* First, print the month, day, and last two digits of your birth year in the boxes provided. Then blacken the circle that denotes the **month** of your birth. Next, blacken the circles to indicate the **day** and the **last two digits of the year** of your birth.

CAUTION: In the event that both columns of day or year are not needed to record the necessary information, as in the case of March 3, the 3 should be entered in the **right-hand** column and the 0 circle blackened in the left-hand column. It will then appear as 03. Study the sample numeric grid found below. Notice that the 3 has been filled in as 03. (B) and (C) *Sex and Citizenship.* Blacken the appropriate circle for each item. It is not necessary to print the answers below the circles.

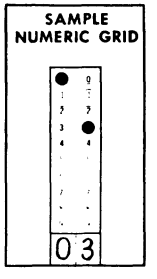
ITEM 7—YEARS EXPERIENCE. This item is divided into two parts to identify the number of completed **years** that you have practiced in your present psychiatric or mental health specialty, as related to the number of years for which you have related professional employment not as a psychiatrist or mental health specialist. For example, if you are a psychiatrist, indicate in columns 7A the number of years that you have practiced psychiatry; in columns 7B, indicate the number of years that you practiced in other medical areas. If you are a psychologist, social worker, or a nurse, indicate in columns 7A the number of years you have been employed in a mental health setting; in columns 7B indicate the number of years that you were employed in a non-mental health setting. Remember, for any years less than 10, blacken the number circle in the **right-hand** column, then blacken the 0 circle in the left. For example, the number 2 is filled in as 02. If you have completed less than one full year in a given category, put 00 in the boxes and **blacken the top (00) circles.**

ITEM 8—CURRENT ASSIGNMENT—(AVERAGE) NUMBER OF HOURS EMPLOYED IN THIS ESTABLISHMENT BY TYPE OF WORK DURING A TYPICAL WEEK. The purpose of this item is to determine by types of work, the average number of hours per week that you work in this establishment. If your assignment varies from week to week, make your best estimate of a typical week by dividing the total number of hours worked per month by 4½. Accordingly, for each of the categories 8A through 8F, put the number of hours in the boxes below the grid; then, in each column blacken the circle above containing the number appearing in each box. **Remember,** for any numbers less than 10, blacken the number circle in the **right-hand** column, then blacken the 0 circle in the left. For example, 02, 04, 09, and so forth. In those categories that do not apply, put 00 in the boxes and blacken the **top** (00) circles. **Be sure that the sum of columns 8B through 8F equals the figure in column 8A.**

ITEM 9—MONTHS APPROVED RESIDENCY COMPLETED—FOR PSYCHIATRISTS ONLY. If you are a psychiatrist or psychiatric resident, indicate the months of residency completed in an institution approved by the Council on Medical Education and Hospitals of the AMA at the time of residency. Enter that number in the boxes below the grid; then blacken the circles above that contain the number appearing in each box. Where less than 10 months are involved, be sure to blacken the numbered circle in the **right-hand** column and the 0 circle in the left. For example, two months should be filled in as 02.



Note: The sum of columns B through F should equal the figure in column A.



USE A SOFT LEAD PENCIL—MARK ONLY IN SPACES PROVIDED.

Please handle this sheet carefully. Keep it as clean as possible. Do not fold it or bend the corners.

SRA
DOCUTRAN™ SERVICE
165-13-1

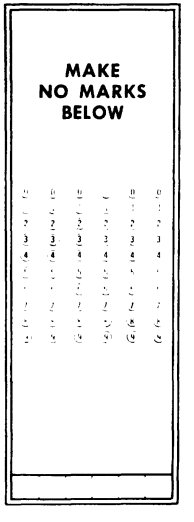


FIGURE III

PHS-T139
10-62

FORM APPROVED
BUDGET BUREAU NO. 68-6246

U. S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
PUBLIC HEALTH SERVICE
NATIONAL INSTITUTES OF HEALTH

EVALUATION OF THE PRETEST ON
SURVEY OF PROFESSIONAL PERSONNEL EMPLOYED
IN MENTAL HEALTH ESTABLISHMENTS

1. INDICATE YOUR PROFESSIONAL CLASSIFICATION BELOW

Check	Classification
	Psychiatrist, Resident Psychiatrist
	Other M. D.
	Psychologist
	Social Worker
	Professional Nurse

2. IS THE QUESTIONNAIRE CONVENIENT TO FILL OUT?

☐ Yes ☐ No ☐ Not sure

3. ARE THERE ANY PARTS WHICH ARE NOT STATED CLEARLY, AND WHICH YOU DO NOT UNDERSTAND?

☐ Yes ☐ No ☐ Not sure

IF YOU HAVE CHECKED YES OR NOT SURE, LIST ITEM NUMBERS AND EXPLAIN:

4. THE ALLOCATION OF HOURS EMPLOYED BY TYPE OF WORK COULD BE OBTAINED WITH

Check	Obtained
	Little or no difficulty
	Some difficulty
	Great difficulty

IF YOU HAD GREAT DIFFICULTY ALLOCATING YOUR TIME, WHICH WORK CLASSIFICATIONS GAVE YOU TROUBLE?

5. HOW LONG DID IT TAKE YOU TO FILL OUT THE QUESTIONNAIRE?

Check	Length of Time
	Less than 10 minutes
	10 - 20 minutes
	20 - 30 minutes
	More than 1/2 hour

6. WOULD YOU DEFINE ANY ADDITIONAL TERMS?

☐ Yes ☐ No If yes, which terms?

7. ADD ANY OTHER COMMENTS YOU FEEL NECESSARY: