R E P O R T R E S U M E S

ED 017 189 EM 006 158

DEVELOPMENT, UTILIZATION AND EVALUATION OF GRADUATE EDUCATION BY TWO-WAY RADIO ACTIVE PARTICIPATION CONFERENCES. FINAL REPORT.

ALBANY MEDICAL COLL., N.Y., DEPT.OF POSTGRAD. MED.

REPORT NUMBER BR-6-2745 PUB DATE 20 JAN 67

EDRS PRICE MF-$0.25 HC-$1.56 37P.

DESCRIPTORS- *PHYSICIANS, *EDUCATIONAL RADIO, *RELIABILITY, INDIVIDUAL CHARACTERISTICS, *INDIVIDUAL INSTRUCTION, CONFERENCES, *CLINICAL DIAGNOSIS, MEDICAL STUDENTS,

THIS PROJECT ASSESSED THE RELATIVE SKILLS OF PRACTICING PHYSICIANS IN SOLVING DIAGNOSIS AND TREATMENT PROBLEMS PRESENTED IN A CONFERENCE FORMAT BEFORE AND AFTER TWO-WAY RADIO INSTRUCTION. TEST RETEST RELIABILITY DATA FOR CORRECT DIAGNOSES YIELDED SIGNIFICANT CHANGES BEFORE AND AFTER INSTRUCTION. SIGNIFICANT DIFFERENCES IN PHYSICIAN CHARACTERISTICS ALSO APPEARED. (LH)

DEPARTMENT OF POSTGRADUATE MEDICINE
ALBANY MEDICAL COLLEGE

DEVELOPMENT, UTILIZATION AND EVALUATION OF GRADUATE EDUCATION BY TWO-WAY RADIO ACTIVE PARTICIPATION CONFERENCES

FINAL REPORT--PROJECT NO. 6-2745

January 20, 1967

The evaluation of this effort postulates that physicians can increase their knowledge and skills by participating in medical educational programs through the medium of two-way radio. Except for the evaluation by Richardson* there has been, prior to this project, no reliable evidence upon which to make an assessment of this assumption. To determine whether knowledge and skills are affected by two-way radio instruction, a new method of instruction was designed. Developed as an instructional and data collection device, this new method has been designated a "Diagnosis and Treatment Conference." (The method has also been used for "in person" conferences). The data collected allows an assessment of the relative skills of practicing physicians in solving diagnosis and treatment problems before and after two-way radio instructions.

Historically, an awareness of the need for new methods of education increased markedly after World War II. Concerned with the time demands upon practicing physicians and medical teachers, two-way radio communication for medical education was developed and expanded by the Department of Postgraduate Medicine of the Albany Medical College. (This technique has potential application in education for nurses, allied health personnel, and many others). Eight two-way radio networks are currently in operation across the nation.

The Diagnosis and Treatment Conference format was designed to accomplish several tasks simultaneously. It serves as a teaching-learning stimulus, a data recording instrument, a collection device, and to provide evidence for an assessment of knowledge and skills both before and after involvement in the radio classroom activities. In addition, it was hoped that the positive gains realized, if any, as inferred from an analysis of the data would be equally applicable to professional and nonprofessional disciplines, other than medicine.

The unique features of the data collecting system developed for this study also served to structure the analysis of several ancillary hypotheses. An attempt was made to gather information from each participant on a form designated "Physician Data Form". This form recorded his birth date, the medical college he attended, date of graduation, years in graduate medical education, type of medical practice, practice status, specialty certification, hospital and community size, and years in practice. Of these, it was suggested that the presence of significant differences between natural subgroups within the population might be a valuable avenue of inquiry.

---

* Richardson, Fred MacD. et al, "The Delaware Medical Seminars Experiment." GP, April 1962, Vol. XXV, No. 4.

In briefly summarizing the method of presenting Diagnosis and Treatment Conferences, it is well to note that each conference was carefully prepared so that it simulated the conditions which exist when a patient with a diagnostic problem is first admitted to the hospital for evaluation. Each physician analyzing the problem considers the patient's history, the results of the physical examination and the results of the routine laboratory procedures. He then uses an "Order Sheet" on which he indicates the additional procedures which he would like to have to aid him in making a diagnosis. Having "ordered" these procedures, he is given the results of certain tests but not all of the pertinent diagnostic tests are reported. Having obtained this information he may order additional diagnostic procedures on his "Order Sheet." He then receives the requested information and he may also question the instructor about other tests or procedures. He then records his diagnosis and prescribes treatment.

Having thus actively participated in analyzing the problem and demonstrating how he would have diagnosed and treated this particular patient, the student receives instruction based upon the presented problem. Since the participating physician-student has just completed his own analysis, this represents the ideal time for the instruction.

All data is collected anonymously. The physician is coded through the use of his birth date and the last two letters of his last name. Although presented in many different locations throughout the country, all data are forwarded to the data processing center in Albany.

Ninety-nine Diagnosis and Treatment Conferences have presented twenty problems for diagnosis. The data has been obtained from 7,315 Order Sheets used by the physicians who participated in the Albany network presentations and from 1819 Order Sheets used by physician participants from other networks.

Table I indicates the diagnostic problems presented. The left hand column is the conference designation number, followed by the names of the diagnostic problem. The right hand column gives the total number of physicians who have analyzed the problem through the facilities of WAMC, the Albany Medical College radio station.

Basic data (Table II) include the number and percent of participants who rendered the correct, acceptable and incorrect diagnosis and treatment, as well as those who failed to respond to this aspect of the teaching-learning situation. Table II shows the results of Diagnosis and Treatment Conferences 101 through 120.

To facilitate analysis in determining Chi square values, the correct and acceptable diagnoses were combined under an "Acceptable Diagnosis." The response range is as follows:

Re: <u>Diagnosis</u>

1. Acceptable diagnosis response range was from 18.1% in Conference 105 (Subdural Hematoma) to 83.1% in Conference 119 (Astrocytoma).

2. Incorrect diagnosis response range was from 5.2%, Conference 119 (Astrocytoma) to 76.1%, Conference 105 (Subdural Hematoma).

3. No answer "responses" were found to range from 1% in Conference 103 (Florid Cirrhosis) to 24.3% in Conference 117 (Carotid and Basilar Artery Insufficiency).

4. The average diagnosis responses, for all 20 problems, was: Acceptable, 58.2%; Incorrect, 31.8%; and No Response, 9.9%.

Combining correct and acceptable treatment under an Acceptable Treatment response, the response range is as follows:

1. Acceptable Treatment response range was from 16.7% for Conference 105 (Subdural Hematoma) to 77.6% for Conference 119 (Astrocytoma).

2. Incorrect Treatment response range was from 6.9% for Conference 118 (Astrocytoma) to 62.9% for Conference 101 (Constrictive Pericarditis).

3. No answer "responses" ranged from 3.8% for Conference 107 (Pulmonary Sarcoidosis) to 9.5% for Conference 115 (Cancer of the Cervix).

4. The average Treatment responses for all twenty problems were: Acceptable, 44.4%; Incorrect, 36.3%; and No Response, 19.2%.

Combining important and acceptable orders under an Acceptable Orders response, the response range is as follows:

Re: <u>Orders</u>

1. Acceptable Orders requested ranged from 13.5% for Conference 101 (Constrictive Pericarditis) to 75.7% for Conference 108 (Adenocarcinoma of the Prostate).

2. Unimportant Orders requested ranged from 24.2% for Conference 108 (Adenocarcinoma of the Prostate) to 86.4%, Conference 101 (Constrictive Pericarditis).

3. Contraindicated Orders requested ranged from 0% in most of the conferences to 5.1% for Conference 116 (Nonspecific Ulcerative Colitis).

The study suggested certain significant changes would be evident in the physicians' responses to the Diagnosis and Treatment Conference in situations where the traditional test-retest situation was utilized. Three diagnosis problems were presented to retest. The problems involved the diagnosis of Constrictive Pericarditis, Infectious Mononucleosis, and Astrocytoma. These retest presentations were completely disguised except for the problem itself. The retest was given approximately one year after the initial conference and its associated instruction. The results obtained from those respondents who took both the test and retest were analyzed for observed changes, if any. The "McNemar test for the significance of changes" was chosen as it is particularly applicable to those "test-retest" designs in which each respondent is used as his own control. In the analysis,

the physicians were grouped into three mutually exclusive categories of "acceptable," "incorrect," and "no response." The data was cast in the form shown in Table III. The null hypothesis of no significant differences between the results for the initial test and the retest were investigated at the .05 level of confidence. Table III revealed the following results:

Test-Retest

Constrictive Pericarditis; Conferences 101 and 106:

In the test-retest presentation, Conferences 101 and 106, 82 physicians participated in both. During the initial conference (101), 30 gave an acceptable diagnosis, 48 an incorrect diagnosis, and 4 declined to respond. In the retest, Conference 106, 45 gave an acceptable diagnosis, 27 the incorrect diagnosis, and 10 declined to respond (Table III). The Chi square value was equal to 8.6538, a significant level of change, when the degree of freedom equals 1 (df=1).

Infectious Mononucleosis; Conferences 102 and 113:

Sixty-nine physicians were paired. In the test presentation, Conference 102, 47 of 69 physicians gave an acceptable diagnosis, 20 were incorrect, and 2 gave no answers. In the retest, Conference 113, 60 returned an acceptable diagnosis, 2 were incorrect and 7 gave no answers. The significant Chi square value in this instance was 12.4999, when df=1.

Astrocytoma; Conferences 111 and 119:

Eighty-three physicians were paired. In the test situation, Conference 111, there were 59 acceptable responses, 22 were incorrect, and 2 gave no response. In the retest situation, Conference 119, there were 76 correct responses, 1 was incorrect and 6 gave no response. The Chi square value was significant -- 18.0499, when df=1.

It was originally suggested, in terms of the null hypothesis, that there would be no significant positive change in the responses of the physicians to the diagnosis, or to treatment. The data was also analyzed with the assumption that conclusions relative to the "no answers" should not be attempted and they were dropped from statistical consideration. In each of the test-retest analysis, there was a significant level of change greater than .05 in both diagnosis and treatment results.

During this study, test-retest conferences (Infectious Mononucleosis, #102 and #113) were also presented on the two-way radio network of the Ohio State University College of Medicine. Forty-six physicians participated in both conferences. The statistical analysis applied to this data revealed a significant change, comparable to the Albany results. The data were as follows: In Conference 102, the test situation, 16 diagnoses were acceptable, 18 were incorrect, and 0 gave "no answers." In the retest situation, Conference #113, 35 diagnoses were acceptable, 11 were incorrect and 0 gave "no answers." The Chi square value of 11.2499 was significant. The Chi square value of the treatment responses was significant also.

The comparative study of the relative skills of practicing physicians, interns, and residents provided data which partially supports the assumption that the practicing physician is expected to perform better than the resident and the resident in turn is expected to achieve at a higher level than the intern. As evidenced in Table IV, the full-time physician had the highest percentage rating in 9 out of 20 conferences, the residents scored highest in 7 of the 20 problems, and the interns obtained the highest percentage score in 4 of the 20 problems. The physicians were rated second best in 10 of the problems and received the lowest score in one. The residents scored second best in 2 of the problems and ended up in the third positions in 11 of the problems. The interns were in second place in 8 of the problems and in third position in 8 of the problems.

The data in Table IV is a summation of the findings of the individual conferences as reported in Table V. The data in Tables VI through X compare the physicians ability to: (1) the number of years of pre-practice training, (2) the length of time since graduation from medical school, (3) the bed capacity of his hospital, (4) the community population of his practice, and (5) his medical specialty. Definitive statistical analysis of these findings must necessarily await additional data. While no definite conclusions can be drawn from these comparisons, a close examination of the figures indicate that particular trends exist which suggest that a larger sample might produce findings of significance. Evidence of these trends can be found in Table VI which relates the groups ability to diagnose to the number of years of pre-practice training. In the case of Constrictive Pericarditis, the data supports the assumption that the number of years of pre-practice training influences ability. This is less noticeable in the analysis of Infectious Mononucleosis. It is not in evidence in the presentation of Astrocytoma. In comparing ability to diagnose against the number of years since graduation from medical school (Table VII), no apparent trends are in evidence. However, if one refers to the histogram of Table VII which compares the physicians ability to diagnose and to order, it is found that the physicians ability to diagnose generally improved on the retest situation while his ability to call for important and acceptable orders in the retest situation remained essentially the same.

In ascertaining the relationship of the ability of the physicians to diagnose to the bed capacity of the hospital in which the physician practices (Table VIII), the trend indicated that those physicians working in a hospital with a bed capacity of 100 or less showed the greatest improvement in the ability to diagnose as evidenced by the test and retest format.

The physicians ability to diagnose when compared to the community population in which he practiced (Table IX) varied with the disease entity. For example, in the analysis of the problem of Infectious Mononucleosis (Numbers 102 and 113), physicians who practiced in communities of 1,000-15,000 had a 56.3% acceptable diagnostic ability compared to 71.4% in those physicians who practiced in a community of over 50,000 population. In the analysis of the problem of Astrocytoma (Numbers 111 and 119), physicians who practiced in communities of 1,000-15,000 had a 73.3% acceptable diagnostic ability compared to 64.4% in those physicians who practiced in a community of over 50,000 population.

In Table X, which relates the physicians' diagnostic ability to specialty classification, the certified internist performed better than any other certified

specialist. It was of interest to note that with the diagnosis of Infectious Mononucleosis (Numbers 102 and 113), an acceptable diagnosis rate of 59.5% for all specialists compared with 57.7% for the certified internists. In the retest situation the certified internist arrived at the correct diagnosis more frequently than other specialists.

Careful examination of the data collected indicated the need for a more intensive investigation of the comparative performances of general practitioners and internists in the Diagnosis and Treatment Conferences. Since general practitioners and internists fall into two discrete categories, the data presented in Table XI were subjected to the Chi square test for two independent samples. The null hypothesis (H_o) might be stated that there is no significant difference between the performances of general practitioners and internists.

A comparison of the data for general practitioners and internists regarding their ability to diagnose in the tests 101 through 110 (Note: A, in Table XII) provided a Chi square equal to 29.73 which is beyond the .001 level of significance with 1 degree of freedom. B, Table XII, which compares the diagnostic acumen of GP's and Internists in tests 111 through 120 denotes a Chi square equal to 25.97 which is well beyond the .001 level of significance when df=1. C, Table XII comparing the ability of general practitioners and internists to diagnose disease entities throughout the experimental period revelas a Chi square equal to 55.46 which is significant beyond the .001 level when df=1.

A comparative analysis of general practitioners' and internists' expertise in treatment for the data in the tests (Conferences 101 through 110) revealed a Chi square equal to 41.9, (Note: D, Table XII). For the data in tests (Conferences 111 through 120) analysis revealed a Chi square equal to 13.39 (Note: E, Table XII). Analysis for the total performance (Conferences 101 through 120) revealed a Chi square equal to 56.04 (Note: F, Table XII). Each Chi square value was significant beyond the .001 level when df=1.

Table XI also reveals that 61.1% of the internists had correct and acceptable answers in the Diagnosis portion for Conferences 101 through 110 as compared to 49.8% of the general practitioners. Only 32.0% of the internists had incorrect diagnoses as compared to 43.5% of the general practitioners. In Conferences 111 through 120, 75.2% of the internists had correct or acceptable diagnoses as compared to 59.2% of the general practitioners. In Conferences 101 through 120, 55.9% of the internists had correct or acceptable treatment responses as compared to 40.1% of the general practitioners. The internists with a reported average of 31.5% of incorrect answers again reveals a more favorable finding than the general practitioners with a reported average of 41.0%.

The Chi squares as reported in Table XII support the findings that there is a significant difference between the ability of general practitioners and internists to diagnose and treat disease entities. Furthermore, the average performance of internists would tend to support the assumption that internists perform appreciably better in the diagnosis and treatment of patients.

In concluding this report we would like to emphasize the importance of governmental support for this type of research endeavor. This project gave the originators an opportunity to collect data which proved the efficacy of two-way radio as a communication technique for graduate and continuing medical education. In addition, it has indicated that there might be great merit in utilizing two-way radio in disciplines other than medicine. Unfortunately, the fact that there is at this time no support for this type of research greatly curtails the potential effect of the research accomplished. This endeavor opened the door to tremendous opportunities which may not materialize because of lack of additional support.

Those who supported this research will be interested to know of the ancillary benefits which are accruing to other governmental endeavors. The knowledge and experience acquired during the conduct of this project is being applied to the advantage of the National Library of Medicine which, through a contractual arrangement with the Albany Medical College, is supporting the development of self-instruction programs for practicing physicians. The concept and the ability to accomplish these self-instruction programs arose out of the conduct of the research project which is the subject of this report.

The ramifications are even more extensive. The self-instruction programs being developed will be utilized in the "Learning Centers" which are being developed and supported by the Division of Regional Medical Programs of N.I.H. The self-instruction programs in this way add to the contributions of the Regional Medical Programs and the Learning Centers of the Regional Medical Program add to the effective utilization of the self-instruction programs and the efforts of the National Library of Medicine.

In closing, may we respectfully suggest that if additional money were available for additional research endeavors, it would be possible to develop the utilization of two-way radio facilities for public education. The potential ramifications of the results of such endeavor could well represent a major contribution to the American people.

TABLE I

DIAGNOSIS AND TREATMENT CONFERENCE IBM CODE

		NUMBER PARTICIPATING
D & T 101	CONSTRICTIVE PERICARDITIS	529
102	INFECTIOUS MONONUCLEOSIS	502
103	FLORID CIRRHOSIS	496
104	ADDISON'S DISEASE	468
105	SUBDURAL HEMATOMA	423
106	CONSTRICTIVE PERICARDITIS	406
107	PULMONARY SARCOIDOSIS	451
108	ADENOCARCINOMA OF PROSTATE	460
109	BRONCHOGENIC CARCINOMA	410
110	CELIAC SYNDROME	207
111	ASTROCYTOMA	408
112	RHEUMATOID ARTHRITIS WITH ARTERITIS	166
113	INFECTIOUS MONONUCLEOSIS	401
114	COR PULMONALE	386
115	CANCER OF CERVIX	345
116	NON-SPECIFIC ULCERATIVE COLITIS	163
117	CAROTID AND BASILAR ARTERY INSUFFIENCY	222
118	MALIGNANT CARCINOID	342
119	ASTROCYTOMA	403
120	EXOGENOUS OBESITY	127
		7315

9/30/66

TABLE II

DIAGNOSIS AND TREATMENT CONFERENCES

"DIAGNOSIS"

Number	101	102	103	104	105	106	107	108	109	110
CORRECT	90	141	46	214	41	160	130	151	213	73
%	17.0	28.0	9.2	45.7	9.6	39.4	23.8	32.8	51.9	35.2
ACCEPTABLE	71	179	299	110	36	9	70	127	83	20
%	13.4	35.6	60.2	23.5	8.5	2.2	15.5	27.6	20.2	9.6
INCORRECT	350	169	146	129	322	172	194	152	70	85
%	66.1	33.6	29.4	27.5	76.1	42.3	43.0	33.0	17.0	41.0
NO ANSWER	18	13	5	15	24	65	57	30	44	29
%	3.4	2.5	1.0	3.2	5.6	16.0	12.6	6.5	10.7	4.0
TOTAL	529	502	496	468	423	406	451	460	410	208

"TREATMENT"

Number	101	102	103	104	105	106	107	108	109	110
CORRECT	94	91	26	193	43	145	129	62	207	59
%	17.7	18.1	5.2	41.2	10.1	35.7	28.6	14.3	50.4	28.5
ACCEPTABLE	23	156	114	78	28	2	25	126	41	5
%	4.3	31.0	22.9	16.6	6.6	0.4	5.5	27.3	10.0	2.4
INCORRECT	333	177	291	130	250	173	158	204	107	96
%	62.9	35.2	58.6	27.7	59.1	42.6	35.0	44.3	26.0	46.3
NO ANSWER	79	78	65	67	102	86	139	64	55	47
%	14.9	15.5	13.1	14.3	24.1	21.1	30.8	13.9	13.4	22.7
TOTAL	529	502	496	468	423	406	451	460	410	207

"ORDERS"

Number	101	102	103	104	105	106	107	108	109	110
IMPORTANT	537	1592	765	1169	1399	350	940	3107	1178	471
%	13.5	24.0	17.0	20.4	29.4	15.1	26.6	52.1	33.7	21.4
ACCEPTABLE	0	1894	473	1804	1689	0	688	1408	744	417
%	0.0	23.6	10.5	31.5	35.5	0.0	19.5	23.6	21.3	18.9
CONTRA-INDICATED	0	0	0	0	0	0	0	0	168	0
%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.8	0.0
UNIMPORTANT	3432	3124	3239	2753	1660	1966	1896	1443	1399	1308
%	36.4	47.2	72.3	48.0	34.9	84.3	53.8	24.2	40.0	59.5
TOTAL	3969	6610	4477	5726	4748	2316	3524	5958	3489	2196

9/30/66

TABLE II (CONTINUED)

DIAGNOSIS AND TREATMENT CONFERENCES

"DIAGNOSIS"

Number	111	112	113	114	115	116	117	118	119	120
CORRECT	203	6	296	91	107	80	2	21	21	26
%	49.7	3.6	73.8	23.5	31.0	49.0	0.9	6.1	5.2	20.4
ACCEPTABLE	40	127	3	185	160	2	139	191	314	9
%	9.8	76.5	0.7	47.9	46.3	1.2	62.6	55.8	77.9	7.0
INCORRECT	111	18	42	73	49	64	27	89	21	79
%	27.2	10.8	10.4	18.9	14.2	39.2	12.1	26.0	5.2	62.2
NO ANSWER	54	15	60	37	29	17	54	41	47	13
%	13.2	9.0	14.9	9.5	8.4	10.4	24.3	11.9	11.6	10.2
TOTAL	408	166	401	386	345	163	222	342	403	127

"TREATMENT"

Number	111	112	113	114	115	116	117	118	119	120
CORRECT	189	1	200	64	93	5	3	19	19	20
%	46.3	0.6	49.8	16.5	26.9	3.0	1.3	5.5	4.7	15.7
ACCEPTABLE	13	106	46	113	141	62	67	159	294	6
%	3.1	62.8	11.4	29.2	40.8	38.0	30.1	46.4	72.9	4.7
INCORRECT	112	25	58	144	78	71	84	101	28	68
%	27.4	15.0	14.4	37.3	22.6	43.5	37.8	29.5	6.9	53.5
NO ANSWER	94	34	97	65	33	25	68	63	62	33
%	23.0	20.4	24.1	16.8	9.5	15.3	30.6	18.4	15.3	25.9
TOTAL	408	166	401	386	345	163	222	342	403	127

"ORDERS"

Number	111	112	113	114	115	116	117	118	119	120
IMPORTANT	2176	360	829	564	1079	554	485	826	1811	71
%	49.2	15.8	25.8	14.1	47.4	33.8	21.7	20.3	45.1	5.2
ACCEPTABLE	879	393	397	1611	318	341	862	1623	593	573
%	19.3	17.3	27.9	40.5	13.9	20.8	38.7	40.0	14.7	42.7
CONTRA-INDICATED	0	0	3	0	0	84	0	113	0	0
%	0.0	0.0	0.0	0.0	0.0	5.1	0.0	2.7	0.0	0.0
UNIMPORTANT	1364	1515	1475	1801	875	659	880	1494	1611	697
%	30.3	66.7	46.0	45.2	38.5	40.2	39.5	36.8	40.1	51.9
TOTAL	4419	2268	2704	3976	2272	1638	2227	4056	4015	1341

9/30/66

TABLE III

DIAGNOSIS AND TREATMENT TEST-RETEST ANALYSIS

Constrictive Pericarditis

Diagnosis Results

D & T #	Test 101	Retest 106
Correct and Acceptable	30	45
Incorrect	48	27
No Answer	4	10
Total	82	82

CHI SQUARE = 8.6538
Level of Significance = .05 or greater

Treatment Results

D & T #	Test 101	Retest 106
Correct and Acceptable	28	40
Incorrect	44	30
No Answer	10	12
Total	82	82

CHI SQUARE = 3.9999
Level of Significance = .05 or greater

Number of Tests Ordered

D & T #	Test 101		Retest 106	
	No.	%	No.	%
Important and Acceptable	168	32.6	149	36.8
Contraindicated	0	0.0	0	0.0
Unnecessary	346	67.3	254	63.0
Total	514	100.0	403	100.0

CRITICAL RATIO = .42
Not Significant

9/30/66

TABLE III (continued)

DIAGNOSIS AND TREATMENT TEST-RETEST ANALYSIS

Infectious Mononucleosis

Diagnosis Results

D & T #	Test 102	Retest 113
Correct and Acceptable	47	60
Incorrect	20	2
No Answer	2	7
Total	69	69

CHI SQUARE = 12.4999
Level of Significance = .05 or greater

Treatment Results

D & T #	Test 102	Retest 113
Correct and Acceptable	35	51
Incorrect	24	4
No Answer	10	14
Total	69	69

CHI SQUARE = 14.4499
Level of Significance = .05 or greater

Number of Tests Ordered

D & T #	Test 102 No.	Test 102 %	Retest 113 No.	Retest 113 %
Important and Acceptable	448	53.6	287	51.2
Contraindicated	0	0.0	0	0.0
Unnecessary	386	46.2	272	48.6
Total	834	100.0	559	100.0

CRITICAL RATIO = -.31
Not Significant

9/30/66

TABLE III (continued)

DIAGNOSIS AND TREATMENT TEST-RETEST ANALYSIS

Astrocytoma

Diagnosis Results

D & T #	Test 111	Retest 119
Correct and Acceptable	59	76
Incorrect	22	1
No Answer	2	6
Total	83	83

CHI SQUARE = 18.0499
Level of Significance = .05 or greater

Treatment Results

D & T #	Test 111	Retest 119
Correct and Acceptable	53	75
Incorrect	23	1
No Answer	7	7
Total	83	83

CHI SQUARE = 18.0499
Level of Significance = .05 or greater

Number of Tests Ordered

D & T #	Test 111 No.	Test 111 %	Retest 119 No.	Retest 119 %
Important and Acceptable	717	70.1	604	65.2
Contraindicated	0	0.0	0	0.0
Unnecessary	305	29.8	321	34.7
Total	1022	100.0	925	100.0

CRITICAL RATIO = -1.08
Significant

9/30/66

TABLE IV

DIAGNOSIS AND TREATMENT CONFERENCES

Number and Percentage of Correct and Acceptable Diagnoses by:

Conference Number	Full-time Practicing Physicians		Interns		Residents	
	Total No.	%	Total No.	%	Total No.	%
101	53	35.8	12	33.0	5	0.0
102	114	60.4	42	61.8	27	55.5
103	94	74.4	49	71.4	30	60.0
104	97	81.3	53	81.1	23	78.1
105	193	20.6	99	16.1	39	15.2
106	209	48.3	78	26.8	42	42.7
107	216	49.9	87	42.4	33	54.5
108	260	62.6	74	54.0	43	53.4
109	205	73.6	88	74.9	39	64.0
110	105	48.5	41	31.6	17	64.6
111	205	63.3	87	59.6	37	70.2
112	74	79.6	38	81.5	20	75.0
113	191	74.3	103	80.5	35	65.6
114	186	73.0	90	67.7	43	72.0
115	77	90.8	56	87.4	11	99.9
116	82	51.2	41	58.4	10	70.0
117	115	63.4	34	61.7	25	72.0
118	173	62.9	87	59.7	25	68.0
119	201	86.9	67	86.4	44	77.1
120	66	34.7	27	18.5	12	8.3

TABLE V

DIAGNOSIS AND TREATMENT CONFERENCES

D & T #101

Diagnosis	Full-time Private	Intern	Resident
Correct	13	3	0
%	24.5	25.0	0.0
Acceptable	6	1	0
%	11.3	8.3	0.0
Incorrect	31	8	5
%	58.4	66.6	100.0
No Answer	3	0	0
%	5.6	0.0	0.0
Total	53	12	5

D & T #102

Diagnosis	Full-time Private	Intern	Resident
Correct	41	10	8
%	35.9	23.8	29.6
Acceptable	28	16	7
%	24.5	38.0	25.9
Incorrect	41	16	12
%	35.9	38.0	44.4
No Answer	4	0	0
%	3.5	0.0	0.0
Total	114	42	27

D & T #103

Diagnosis	Full-time Private	Intern	Resident
Correct	1	0	0
%	1.0	0.0	0.0
Acceptable	69	35	18
%	73.4	71.4	60.0
Incorrect	24	14	12
%	25.5	28.5	40.0
No Answer	0	0	0
%	0.0	0.0	0.0
Total	94	49	30

D & T #104

Diagnosis	Full-time Private	Intern	Resident
Correct	64	22	14
%	65.9	41.5	60.8
Acceptable	15	21	4
%	15.4	39.6	17.3
Incorrect	16	10	5
%	16.4	18.8	21.7
No Answer	2	0	0
%	2.0	0.0	0.0
Total	97	53	23

9/30/66

TABLE V (continued)

D & T #105

Diagnosis	Full-time Private	Intern	Resident
Correct	29	4	3
%	15.0	4.0	7.6
Acceptable	11	12	3
%	5.6	12.1	7.6
Incorrect	141	81	32
%	73.0	81.8	82.0
No Answer	12	2	1
%	6.2	2.0	2.5
Total	193	99	39

D & T #106

Diagnosis	Full-time Private	Intern	Resident
Correct	97	17	17
%	46.4	21.7	40.4
Acceptable	4	4	1
%	1.9	5.1	2.3
Incorrect	80	46	21
%	38.2	58.9	50.0
No Answer	28	11	3
%	13.3	14.1	7.1
Total	209	78	42

D & T #107

Diagnosis	Full-time Private	Intern	Resident
Correct	71	22	10
%	32.8	25.3	30.3
Acceptable	37	15	8
%	17.1	17.2	24.2
Incorrect	86	42	12
%	39.8	48.2	36.3
No Answer	22	8	3
%	10.1	9.1	9.0
Total	216	87	33

D & T #108

Diagnosis	Full-time Private	Intern	Resident
Correct	91	24	14
%	35.0	32.4	32.5
Acceptable	72	16	9
%	27.6	21.6	20.9
Incorrect	85	30	19
%	32.6	40.5	44.1
No Answer	12	4	1
%	4.6	5.4	2.3
Total	260	74	43

9/30/66

TABLE V (continued)

	D & T #109			D & T #110		
Diagnosis	Full-time Private	Intern	Resident	Full-time Private	Intern	Resident
Correct	119	38	15	39	11	10
%	58.0	43.1	38.4	37.1	26.8	58.8
Acceptable	32	28	10	12	2	1
%	15.6	31.8	25.6	11.4	4.8	5.8
Incorrect	32	18	12	39	27	5
%	15.6	20.4	30.7	37.1	65.8	29.4
No Answer	22	4	2	15	1	1
%	10.7	4.5	5.1	14.2	2.4	5.8
Total	205	88	39	105	41	17

	D & T #111			D & T #112		
Diagnosis	Full-time Private	Intern	Resident	Full-time Private	Intern	Resident
Correct	112	42	21	1	0	3
%	54.6	48.2	56.7	1.3	0.0	15.0
Acceptable	18	10	5	58	31	15
%	8.7	11.4	13.5	78.3	81.5	75.0
Incorrect	51	28	9	8	5	1
%	24.8	32.1	24.3	10.8	13.1	5.0
No Answer	24	7	2	7	2	1
%	11.7	8.0	5.4	9.4	5.2	5.0
Total	205	87	37	74	38	20

TABLE V (continued)

Diagnosis	D & T #113 Full-time Private	Intern	Resident	D & T #114 Full-time Private	Intern	Resident
Correct	141	82	22	53	15	10
%	73.8	79.6	62.8	28.4	16.6	23.2
Acceptable	1	1	1	83	46	21
%	0.5	0.9	2.8	44.6	51.1	48.8
Incorrect	20	13	6	36	19	9
%	10.4	12.6	17.1	19.3	21.1	20.9
No Answer	29	7	6	14	10	3
%	15.1	6.7	17.1	7.5	11.1	6.9
Total	191	103	35	186	90	43

Diagnosis	D & T #115 Full-time Private	Intern	Resident	D & T #116 Full-time Private	Intern	Resident
Correct	35	19	7	41	23	7
%	45.4	33.9	63.6	50.0	56.0	70.0
Acceptable	35	30	4	1	1	0
%	45.4	53.5	36.3	1.2	2.4	0.0
Incorrect	4	2	0	33	12	3
%	5.1	3.5	0.0	40.2	29.2	30.0
No Answer	3	5	0	7	5	0
%	3.8	8.9	0.0	8.5	12.1	0.0
Total	77	56	11	82	41	10

9/30/66

TABLE V (continued)

D & T #117

Diagnosis	Full-time Private	Intern	Resident
Correct	2	0	0
%	1.7	0.0	0.0
Acceptable	71	21	18
%	61.7	61.7	72.0
Incorrect	16	7	2
%	13.9	20.5	8.0
No Answer	26	6	5
%	22.6	17.6	20.0
Total	115	34	25

D & T #118

Diagnosis	Full-time Private	Intern	Resident
Correct	10	3	3
%	5.7	3.4	12.0
Acceptable	99	49	14
%	57.2	56.3	56.0
Incorrect	48	22	4
%	27.7	25.2	16.0
No Answer	16	13	4
%	9.2	14.9	16.0
Total	173	87	25

D & T #119

Diagnosis	Full-time Private	Intern	Resident
Correct	9	3	4
%	4.4	4.4	9.0
Acceptable	166	55	30
%	82.5	82.0	68.1
Incorrect	11	4	3
%	5.4	5.9	6.8
No Answer	15	5	7
%	7.4	7.4	15.9
Total	201	67	44

D & T #120

Diagnosis	Full-time Private	Intern	Resident
Correct	18	4	1
%	27.2	14.8	8.3
Acceptable	5	1	0
%	7.5	3.7	0.0
Incorrect	38	20	10
%	57.5	74.0	83.3
No Answer	5	2	1
%	7.5	7.4	8.3
Total	66	27	12

9/30/66

TABLE VI

DIAGNOSIS AND TREATMENT CONFERENCES

PRE-PRACTICE TRAINING

D&T Conference Number		DIAGNOSIS Correct & Acceptable	1 year	2 years	3 years	4 years	TREATMENT Correct & Acceptable	1 year	2 years	3 years	4 years
101	Number	6	9	8	49	Number	6	5	7	43	
	Percentage	12.5	21.4	28.6	44.5	Percentage	12.5	11.9	25.0	39.1	
106	Number	10	4	11	46	Number	8	4	11	44	
	Percentage	31.0	16.0	44.0	68.7	Percentage	27.6	16.0	44.0	65.7	
102	Number	24	22	23	65	Number	19	18	17	57	
	Percentage	58.5	68.8	71.9	63.7	Percentage	46.3	56.3	53.1	55.9	
113	Number	33	29	28	65	Number	27	25	20	56	
	Percentage	78.6	82.9	80.0	84.4	Percentage	64.3	72.9	57.3	72.7	
111	Number	26	29	19	56	Number	25	23	17	48	
	Percentage	55.3	82.9	47.5	66.7	Percentage	53.2	65.7	42.5	57.1	
119	Number	40	14	12	34	Number	36	14	11	34	
	Percentage	88.9	87.5	85.7	82.9	Percentage	80.0	87.5	78.6	82.9	

9/30/66

TABLE VI (continued)

PRE-PRACTICE TRAINING

D & T		1 Year	2 Years	3 Years	4 Years
101	No. of Physicians	48	42	28	110
	Total Orders	446	306	175	593
	Important & Acceptable Orders	51	38	33	107
	Percentage of Important & Acceptable Orders	11.4	12.4	18.9	18.0
	Average No. of Orders	9.3	7.3	6.3	5.3
102	No. of Physicians	41	32	32	102
	Total Orders	607	432	352	1358
	Important & Acceptable Orders	136	86	95	364
	Percentage of Important & Acceptable Orders	22.4	19.9	27.0	27.5
	Average No. of Orders	14.8	13.5	11.0	13.3

D & T		1 Year	2 Years	3 Years	4 Years
106	No. of Physicians	29	25	25	67
	Total Orders	259	177	142	302
	Important & Acceptable Orders	32	15	24	81
	Percentage of Important & Acceptable Orders	12.7	8.4	16.9	26.8
	Average No. of Orders	8.9	7.1	5.7	4.5
113	No. of Physicians	42	35	35	77
	Total Orders	291	291	324	626
	Important & Acceptable Orders	157	151	171	374
	Percentage of Important & Acceptable Orders	54.0	51.9	52.8	59.7
	Average No. of Orders	6.9	8.3	9.3	8.1

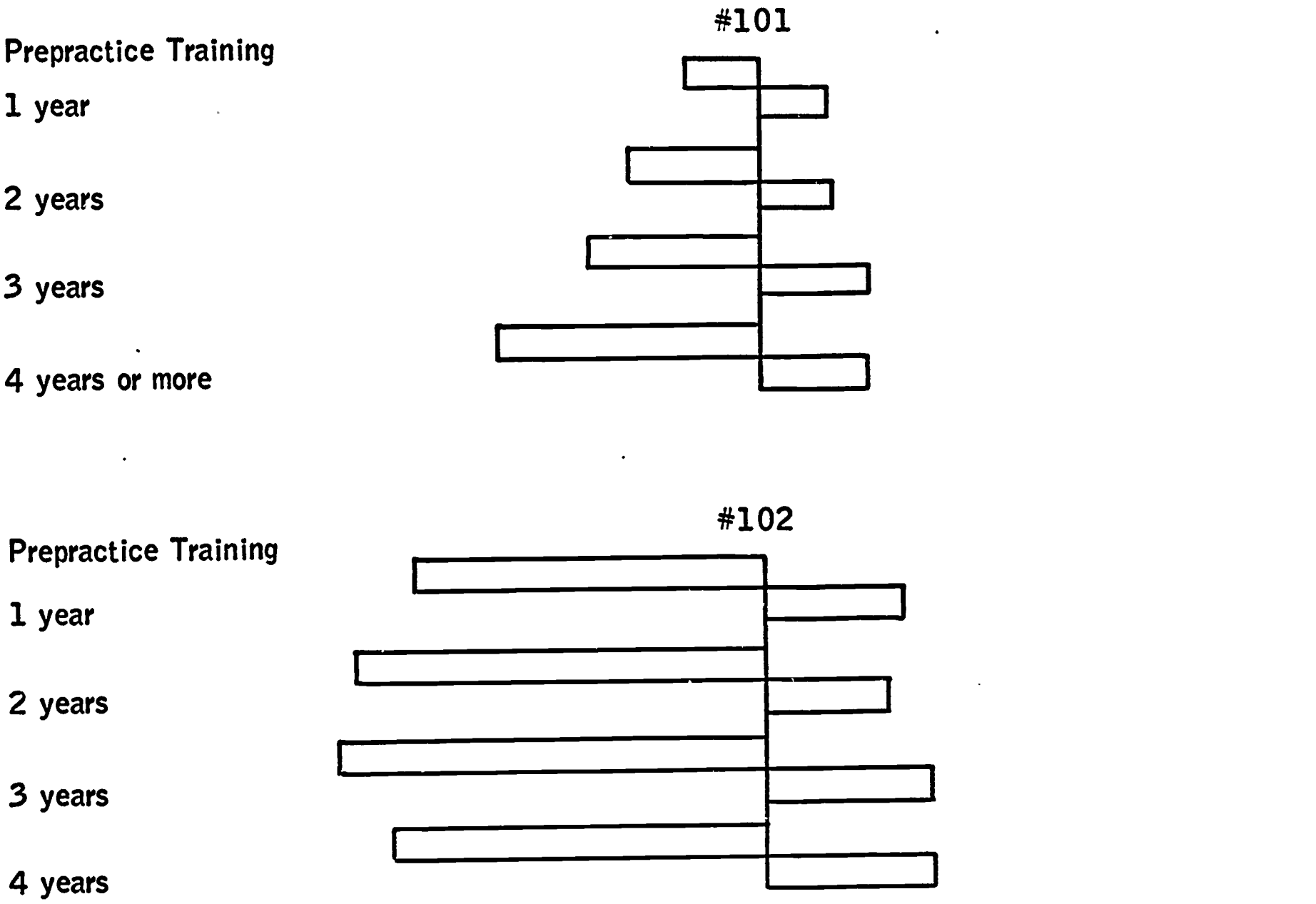
9/30/66

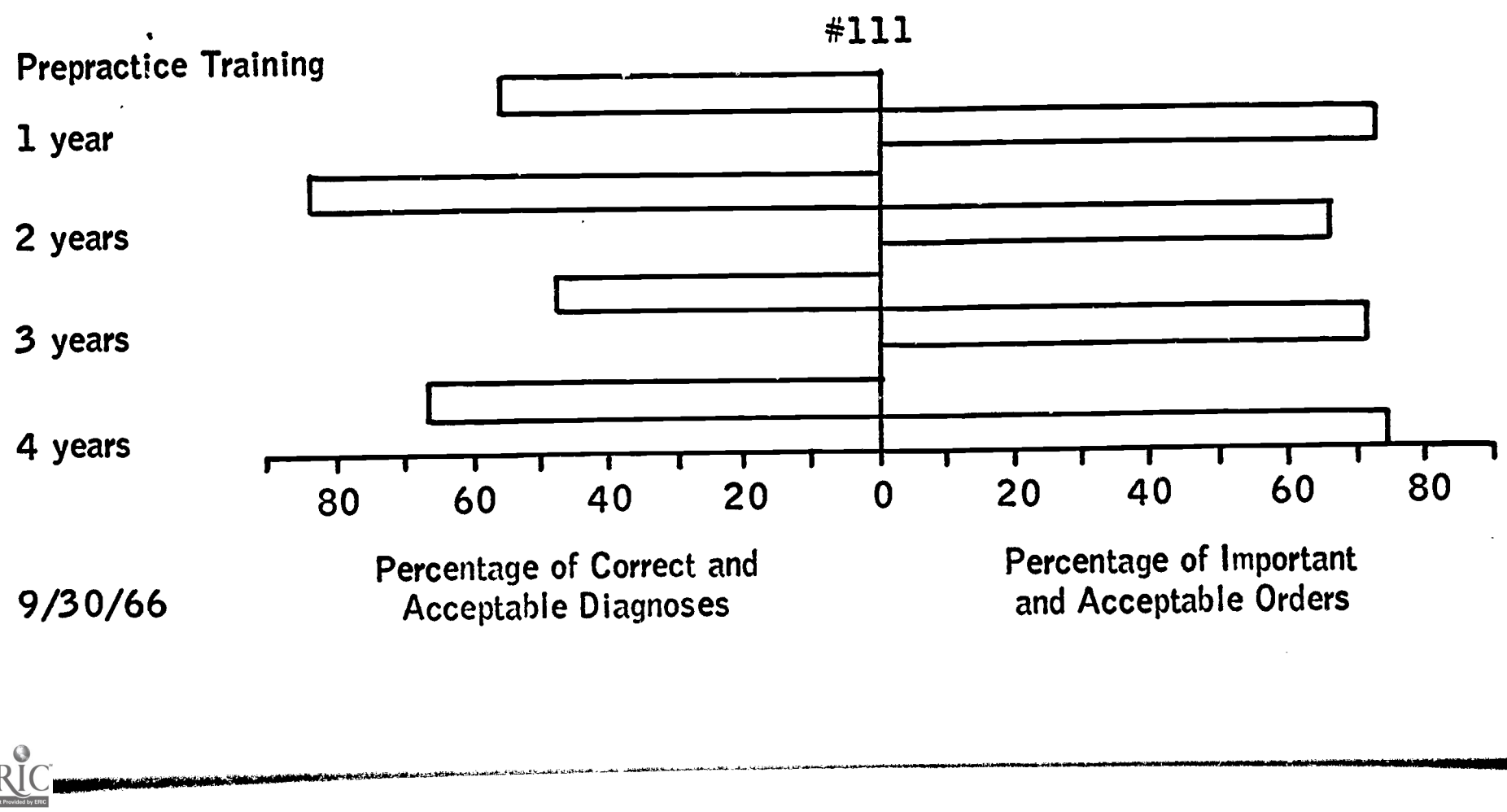
TABLE VI (continued)

PRE-PRACTICE TRAINING

D & T		1 Year	2 Years	3 Years	4 Years	D & T		1 Year	2 Years	3 Years	4 Years
111	No. of Physicians	47	35	40	84	119	No. of Physicians	45	16	14	41
	Total Orders	443	451	505	930		Total Orders	487	190	158	399
	Important & Acceptable Orders	319	293	354	685		Important & Acceptable Orders	315	109	98	258
	Percentage of Important & Acceptable Orders	72.0	65.0	70.1	73.6		Percentage of Important & Acceptable Orders	64.7	57.4	62.0	64.7
	Average No. of Orders	9.4	12.9	12.6	10.8		Average No. of Orders	10.8	11.9	11.3	9.7

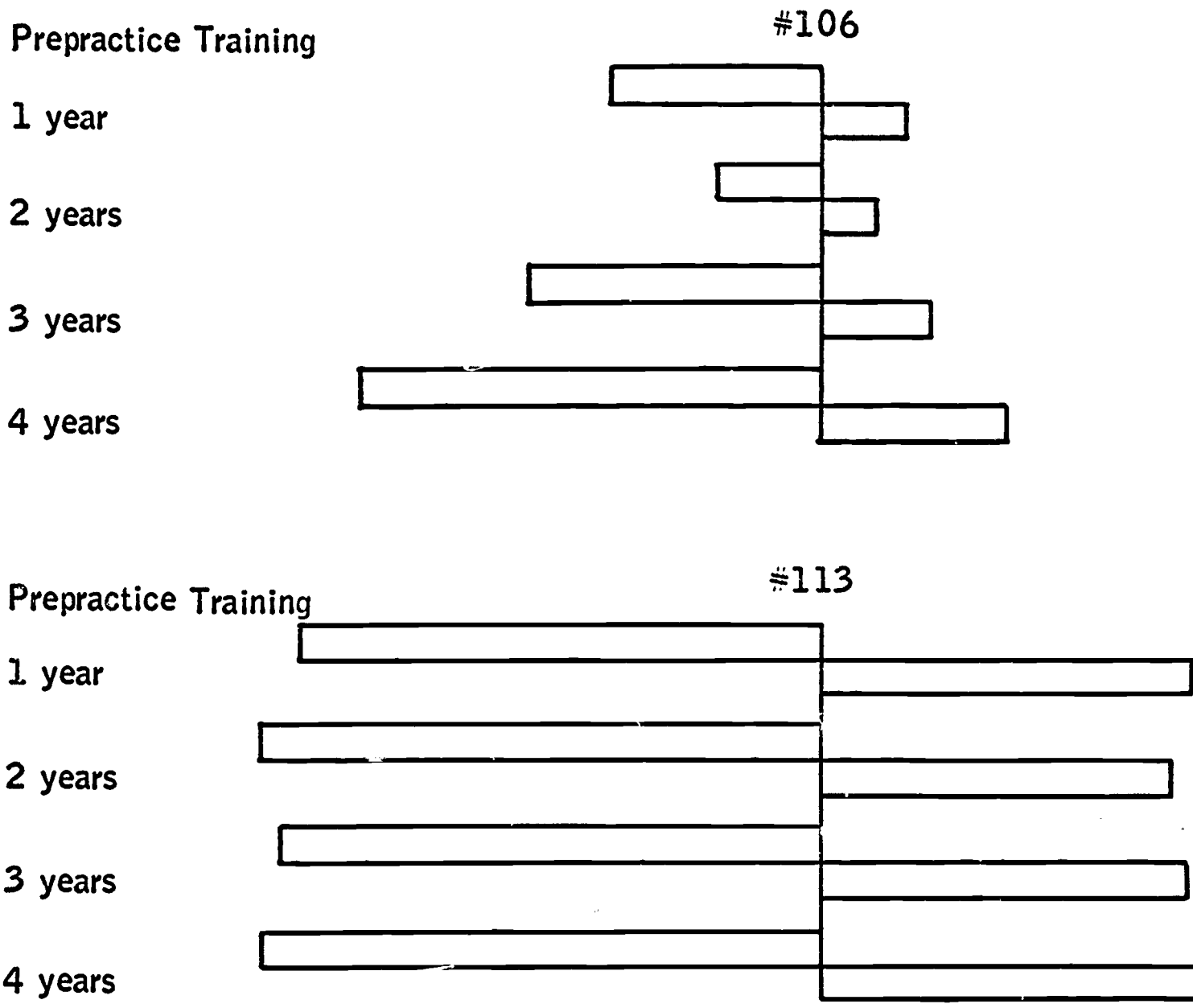
Histogram From Table VI
Diagnosis and Treatment Conferences





9/30/66

Histogram From Table VI
Diagnosis and Treatment Conferences



9/30/66

Table VII

DIAGNOSIS AND TREATMENT CONFERENCES

YEAR OF GRADUATION

	Physicians with Correct and Acceptable Diagnosis		Physicians with Correct and Acceptable Treatment		Number of Physicians	Total Orders Requested	Important & Acceptable Orders Requested		Average No. of Orders Requested
	No.	%	No.	%			No.	%	
#101									
1920-29	5	19.2	1	3.8	26	206	24	11.7	7.9
1930-39	24	29.6	17	29.0	81	476	76	16.0	5.9
1940-44	19	36.5	15	28.8	52	262	49	18.7	5.0
1945-49	13	46.4	12	42.9	28	191	29	15.2	6.8
1950-54	12	46.2	13	50.0	26	173	30	17.3	6.7
1955-66	15	42.9	10	28.6	35	347	43	12.4	9.9
#106									
1920-29	2	33.3	2	33.3	6	42	5	11.6	7.0
1930-39	19	43.2	18	40.9	44	239	38	15.9	5.4
1940-44	13	65.0	13	65.0	20	95	24	25.3	4.8
1945-49	12	63.2	9	47.4	19	53	17	32.1	2.8
1950-54	12	80.0	12	80.0	15	82	22	26.8	5.5
1955-66	13	36.1	12	33.3	36	354	42	11.9	9.8
#102									
1920-29	9	64.3	8	57.1	14	147	69	46.9	10.5
1930-39	42	70.0	29	48.3	60	846	402	47.5	14.1
1940-44	19	54.3	15	42.9	35	440	244	55.5	12.6
1945-49	20	80.0	18	72.0	25	352	199	56.5	14.1
1950-54	16	59.3	18	66.7	27	392	206	52.6	14.5
1955-66	41	74.5	31	56.4	55	758	414	54.6	13.8

9/30/66

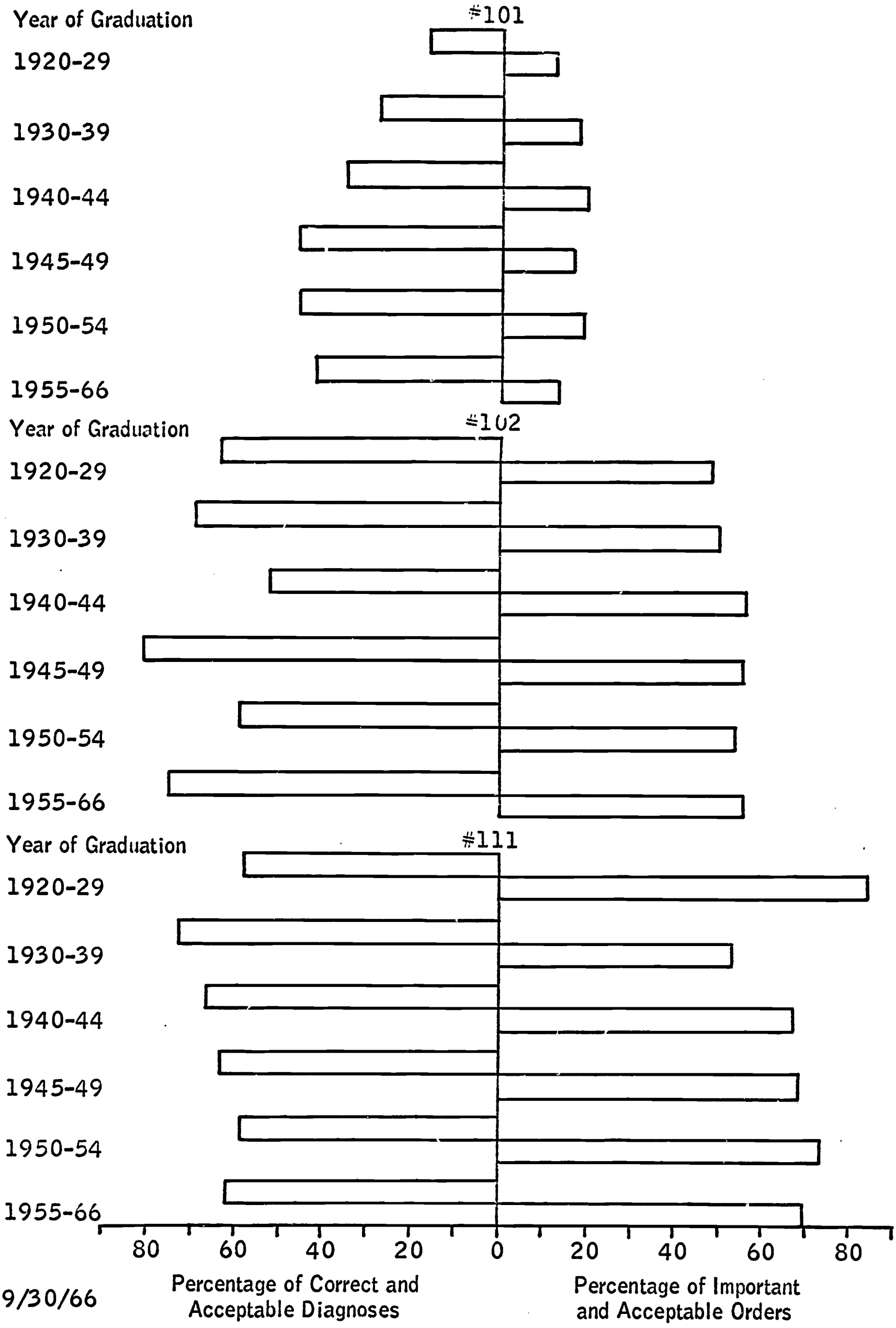
Table VII (continued)

YEAR OF GRADUATION

	Physicians with Correct and Acceptable Diagnosis		Physicians with Correct and Acceptable Treatment		Number of Physicians	Total Orders Requested	Important & Acceptable Orders Requested		Average No. of Orders Requested
	No.	%	No.	%			No.	%	
#113									
1920-29	10	62.5	4	25.0	16	122	65	53.3	7.6
1930-39	40	83.3	35	72.9	48	395	218	55.2	8.2
1940-44	21	80.8	18	69.2	26	248	146	58.9	9.5
1945-49	16	88.9	13	72.2	18	114	71	62.3	6.3
1950-54	19	90.5	16	76.2	21	190	103	54.2	9.0
1955-66	44	86.3	38	74.5	51	417	215	51.6	8.2
#111									
1920-29	8	57.1	6	42.9	14	106	89	84.0	7.6
1930-39	39	72.2	35	64.8	54	634	338	53.3	11.7
1940-44	20	66.7	19	63.3	30	385	258	67.0	12.8
1945-49	9	64.3	9	64.3	14	196	131	66.8	14.0
1950-54	16	57.1	12	42.9	28	310	230	74.1	11.1
1955-66	37	60.7	32	52.3	61	669	463	69.2	11.0
#119									
1920-29	6	75.0	6	75.0	8	62	37	59.7	7.8
1930-39	28	90.3	27	87.1	31	325	162	49.8	10.5
1940-44	10	71.4	10	71.4	14	137	85	62.0	9.8
1945-49	5	71.4	5	71.4	7	58	42	72.4	8.3
1950-54	9	100.0	9	100.0	9	106	68	63.0	11.8
1955-66	32	86.5	30	81.1	37	433	260	60.0	11.7

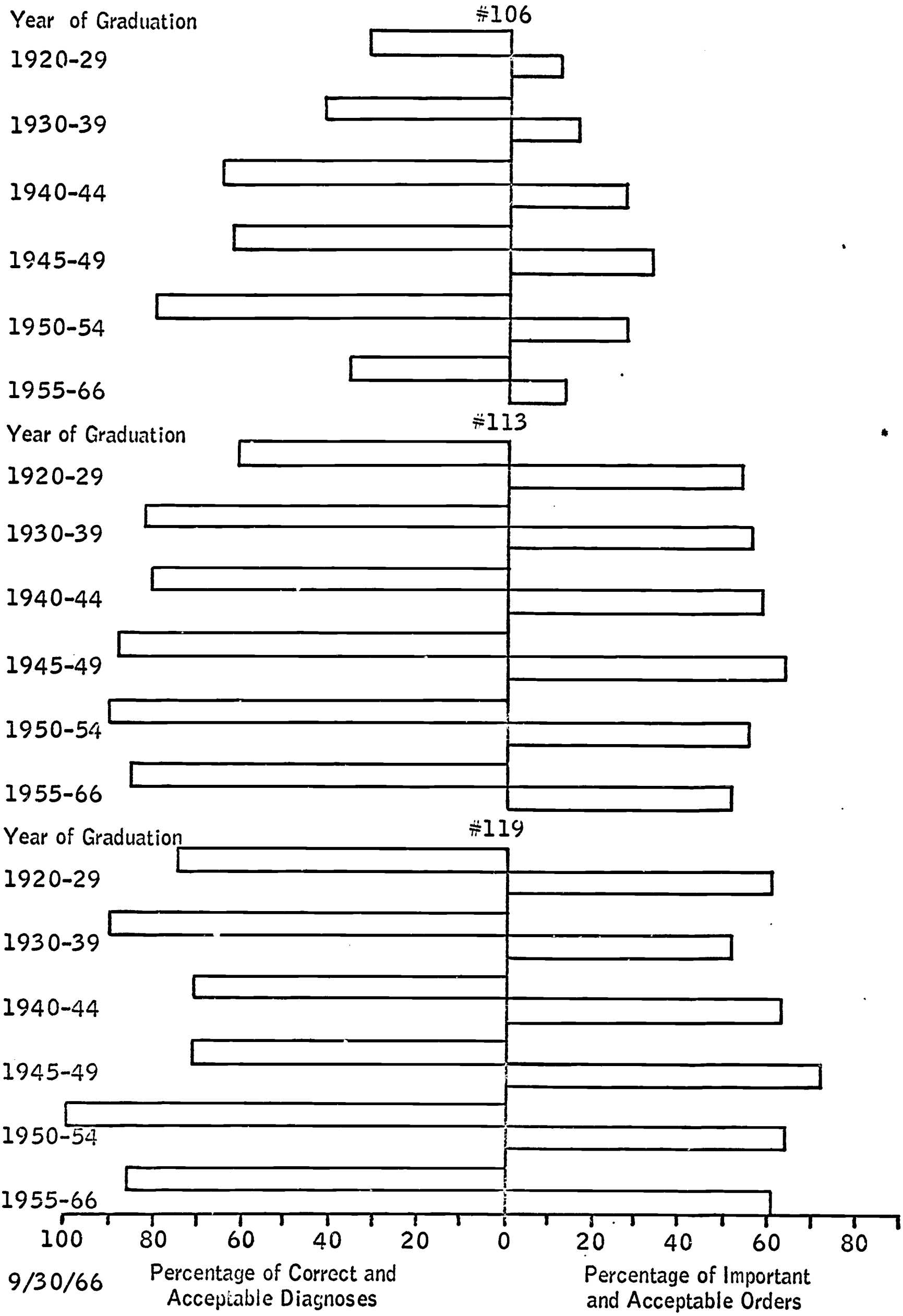
9/30/66

Histogram From Table VII Test Situation
Diagnosis and Treatment Conferences



9/30/66

Histogram From Table VII Retest Situation
Diagnosis and Treatment Conferences



9/30/66

TABLE VIII

DIAGNOSIS AND TREATMENT CONFERENCES

BED CAPACITY

	Physicians with Correct and Acceptable Diagnosis		Physicians with Correct and Acceptable Treatment		Number of Physicians	Total Orders Requested	Important & Acceptable Orders Requested		Average No. of Orders Requested
	No.	%	No.	%			No.	%	
D&T #101 Test									
-0-100	7	30.4	7	30.4	23	116	11	9.5	16.6
251-500	7	25.9	7	25.9	27	203	22	10.8	29
D&T #106 Retest									
0-100	13	68.4	11	57.9	19	90	14	15.6	4.7
251-500	25	48.1	24	46.2	52	332	56	16.7	64.0
D&T #102 Test									
0-100	8	61.5	7	53.8	13	149	39	26.2	11.5
101-250	25	64.1	19	48.7	39	475	134	28.2	12.2
251-500	28	75.7	20	54.1	37	414	126	30.4	11.2
D&T #113 Retest									
0-100	20	90.9	16	72.7	22	167	95	56.9	7.6
101-250	53	77.9	43	63.2	68	526	307	58.4	7.7
251-500	47	85.5	41	74.5	55	474	265	55.9	8.6

9/30/66

TABLE VIII (continued)

BED CAPACITY

	Physicians with Correct and Acceptable Diagnosis No.	%	Physicians with Correct and Acceptable Treatment No.	%	Number of Physicians	Total Orders Requested	Important & Acceptable Orders Requested No.	%	Average No. of Orders Requested
D&T #111 Test									
0-100	10	50.0	11	55.0	20	248	164	66.1	12.4
251-500	43	65.2	35	53.0	66	802	545	68.0	8.3
D&T #119 Retest									
0-100	22	95.7	22	95.7	23	223	140	62.8	9.7
251-500	29	85.3	27	79.4	34	404	244	60.6	11.9

TABLE IX

DIAGNOSIS AND TREATMENT CONFERENCES

COMMUNITY POPULATION

	Physicians with Correct and Acceptable Diagnosis		Physicians with Correct and Acceptable Treatment		Number of Physicians	Total Orders Requested	Important & Acceptable Orders Requested		Average No. of Orders Requested
	No.	%	No.	%			No.	%	
D&T #101 Test									
1000-15,000	17	44.7	15	39.5	38	161	28	17.4	4.2
over 50,000	31	37.3	22	26.5	83	711	95	13.4	8.6
D&T #106 Retest									
1000-15,000	9	47.4	7	36.8	19	92	13	14.1	4.8
over 50,000	26	44.8	26	44.8	58	401	70	17.5	6.9
D&T #102 Test									
1000-15,000	18	56.3	15	46.9	32	292	163	55.8	9.1
over 50,000	70	71.4	59	60.2	98	1509	794	52.6	15.4
D&T #113 Retest									
1000-15,000	25	83.3	22	73.3	30	271	146	53.9	9.0
over 50,000	69	82.1	57	67.9	84	661	350	53.0	7.9

9/30/66

TABLE IX (continued)

DIAGNOSIS AND TREATMENT CONFERENCES

COMMUNITY POPULATION

	Physicians with Correct and Acceptable Diagnosis No.	%	Physicians with Correct and Acceptable Treatment No.	%	Number of Physicians	Total Orders Requested	Important & Acceptable Orders Requested No.	%	Average No. or Orders Requested
D&T #111 Test									
1000-15,000	22	73.3	19	63.3	30	305	244	80.0	10.2
over 50,000	58	64.4	54	60.0	90	1028	739	72.9	11.6
D&T #119 Retest									
1000-15,000	18	94.7	18	94.7	19	192	126	65.6	10.1
over 50,000	43	86.0	40	80.0	50	568	352	62.0	11.4

9/30/66

TABLE X

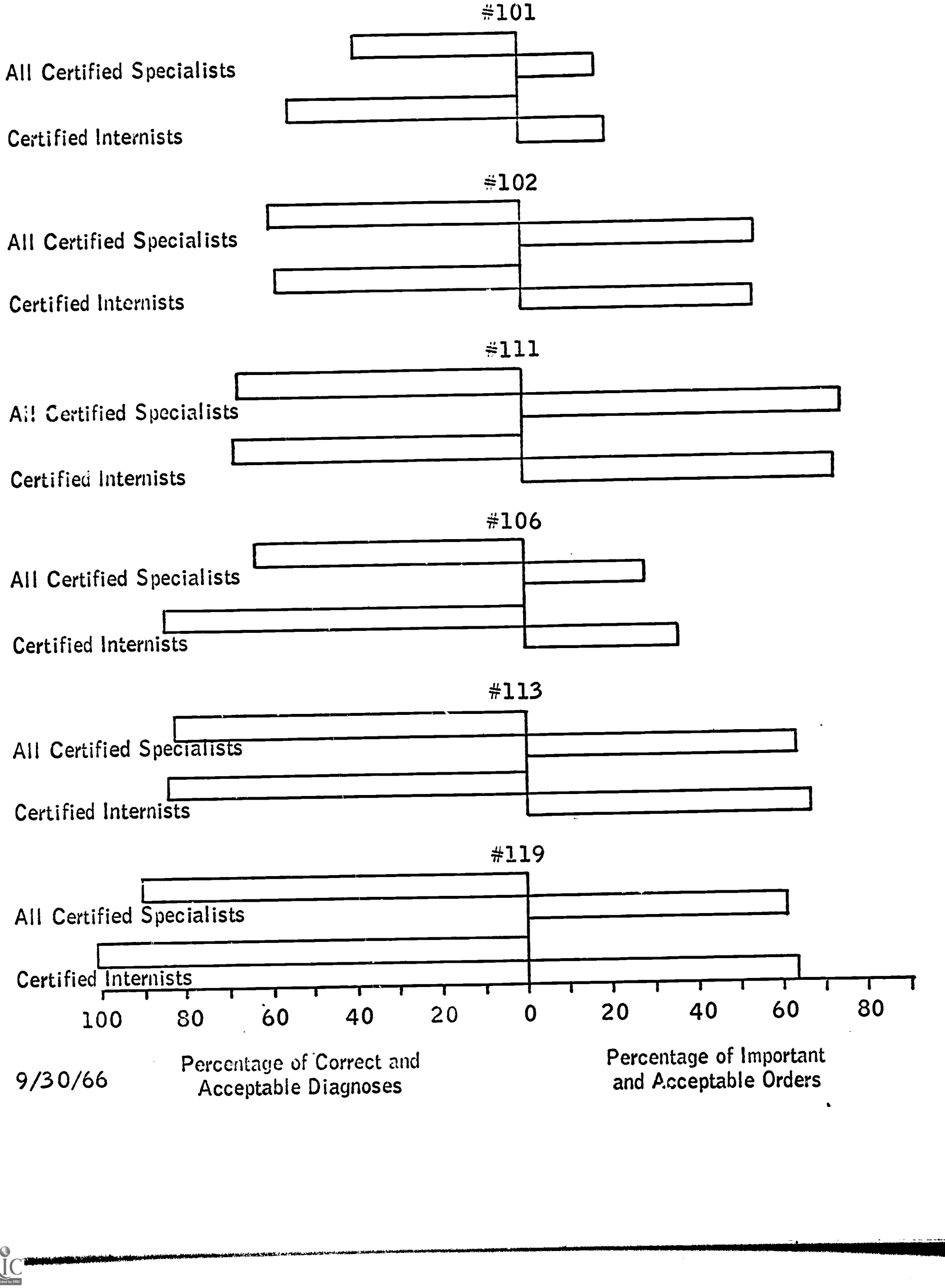
DIAGNOSIS AND TREATMENT CONFERENCES

CERTIFIED SPECIALISTS

D&T #	Diagnosis Correct and Acceptable No.	%	Treatment Correct and Acceptable No.	%	Number of Physicians	Total Orders Requested	Important and Acceptable Orders Requested No.	%	Average No. of Orders Requested
101	37	38.1	30	30.9	97	511	93	18.2	5.3
106	34	64.2	33	62.3	53	230	64	27.8	4.3
102	47	59.5	37	46.8	79	1081	596	55.0	13.6
113	56	82.4	47	69.1	68	490	306	62.4	7.2
111	50	67.6	44	59.5	74	896	664	74.1	12.1
119	27	90.0	26	86.7	30	348	213	61.2	11.6
					INTERNISTS				
101	18	54.5	15	45.5	33	186	38	20.4	5.6
106	17	85.0	17	85.0	20	91	33	36.3	4.6
102	15	57.7	10	38.5	26	396	216	54.5	15.2
113	16	84.2	15	78.9	19	154	102	66.2	8.1
111	23	67.6	21	61.8	34	469	343	73.1	13.8
119	8	100.0	8	100.0	8	111	71	64.0	13.9

9/30/66

Histogram From Table X
Diagnosis and Treatment Conferences



9/30/66

TABLE XI

DIAGNOSIS AND TREATMENT CONFERENCES

COMPARISON OF G.P.'S AND INTERNISTS

	G.P.'s Diagnosis				Internists Diagnosis				
Conf.	No. Correct and Acceptable	% Correct and Acceptable	No. Incorrect	% Incorrect	Conf.	No. Correct and Acceptable	% Correct and Acceptable	No. Incorrect	% Incorrect
101	22	17.9	97	79.5	101	69	52.1	61	46.2
102	83	70.3	30	25.4	102	75	69.4	31	28.7
103	66	74.7	28	24.3	103	80	69.5	34	29.5
104	60	65.1	31	33.6	104	86	81.8	16	15.2
105	21	21.3	74	75.5	105	17	22.6	54	72.0
106	35	35.0	50	50.0	106	60	61.1	29	29.5
107	43	42.5	47	46.5	107	49	54.9	29	32.5
108	72	57.6	47	37.6	108	71	67.5	30	28.5
109	74	69.7	20	18.8	109	72	84.4	7	8.3
110	20	44.3	21	46.6	110	21	47.6	15	34.0
Sub Total	516	Average 49.8	445	Average 43.5	Sub Total	599	Average 61.1	306	Average 32.0
111	59	61.3	24	25.0	111	60	63.8	28	29.7
112	33	76.7	5	11.6	112	27	84.3	5	15.6
113	67	77.8	8	9.3	113	75	83.3	8	8.8
114	59	70.2	19	22.6	114	75	87.1	5	5.8
115	53	73.6	16	22.2	115	44	67.6	15	23.0
116	15	38.3	19	48.7	116	25	64.1	12	30.7
117	28	50.9	8	14.5	117	41	83.6	2	4.0
118	35	41.1	38	44.7	118	73	79.3	9	9.7
119	82	82.0	8	8.0	119	82	91.0	2	2.2
120	7	19.9	26	74.2	120	11	47.7	11	47.8
Sub Total	436	Average 59.2	171	Average 24.6	Sub Total	513	Average 75.2	97	Average 14.6
Grand Total	952	Average 54.5	616	Average 34.1	Total	1112	Average 68.2	403	Average 23.3

9/30/66

TABLE XI (continued)

COMPARISON OF G.P.'S AND INTERNISTS

	G.P.'s Treatment				Internists Treatment				
Conf.	No. Correct and Acceptable	% Correct and Acceptable	No. Incorrect	% Incorrect	Conf.	No. Correct and Acceptable	% Correct and Acceptable	No. Incorrect	% Incorrect
101	17	13.8	90	73.7	101	56	42.3	63	47.7
102	62	52.4	41	25.4	102	61	56.4	33	28.7
103	39	33.8	68	59.1	103	40	34.7	61	53.0
104	44	47.8	34	36.9	104	82	78.0	12	11.4
105	21	21.3	59	60.2	105	16	21.2	49	65.3
106	29	29.0	50	50.0	106	55	56.1	29	29.5
107	29	28.6	46	45.5	107	43	48.2	21	23.5
108	55	44.0	52	41.6	108	51	58.5	43	40.9
109	63	59.3	27	25.4	109	58	69.0	18	21.4
110	7	15.5	31	68.8	110	19	43.1	16	36.3
Sub Total	366	Average 34.6	498	Average 48.7	Total	481	Average 50.8	345	Average 35.7
111	50	52.0	27	28.1	111	53	56.3	27	28.7
112	25	58.1	6	13.9	112	24	75.0	7	21.8
113	54	62.7	11	12.7	113	64	71.1	14	15.5
114	39	46.3	32	38.0	114	50	58.0	29	33.7
115	45	62.4	23	31.9	115	37	56.9	20	30.7
116	12	30.7	21	53.8	116	20	51.1	16	41.0
117	10	18.1	22	40.0	117	26	53.0	15	30.6
118	30	35.2	37	43.5	118	61	66.2	17	18.4
119	76	76.0	10	10.0	119	79	87.7	3	3.3
120	6	17.0	21	60.0	120	8	34.6	11	47.8
Sub Total	347	Average 45.6	210	Average 33.2	Sub Total	422	Average 61.0	159	Average 27.2
Grand Total	713	Average 40.1	708	Average 41.0	Grand Total	903	Average 55.9	504	Average 31.5

9/30/66

TABLE XII

DIAGNOSIS AND TREATMENT CONFERENCES

DIAGNOSIS

Tests 101-110

(A)	G.P.'s	Internists
Correct and Acceptable	516	599
Incorrect	445	306

$X^2 = 29.73$, .001 level, 1 d.f.*

Tests 111-120

(B)	G.P.'s	Internists
Correct and Acceptable	436	513
Incorrect	171	97

$X^2 = 25.97$, .001 level, 1 d.f.

Overall 101-120

(C)	G.P.'s	Internists
Correct and Acceptable	952	1112
Incorrect	616	403

$X^2 = 55.46$, .001 level, 1 d.f.

TREATMENT

Tests 101-110

(D)	G.P.'s	Internists
Correct and Acceptable	366	481
Incorrect	498	345

$X^2 = 41.91$, .001 level, 1 d.f.

Tests 111-120

(E)	G.P.'s	Internists
Correct and Acceptable	347	422
Incorrect	210	159

$X^2 = 13.39$, .001 level, 1 d.f.

Overall 10 -120

(F)	G.P.'s	Internists
Correct and Acceptable	713	903
Incorrect	708	504

$X^2 = 56.04$, .001 level, 1 d.f.

* one degree of freedom

9/30/66