Evaluation of a Symposium on Epilepsy As a Method of Training

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A MAJOR PROBLEM in health communications is to update the level of skills and knowledge of health practitioners—physicians, nurses, and auxiliary medical personnel. The symposium, in which experts are brought together with persons who feel a need to increase their information and capabilities, has been a major means of attempting to accomplish this task. The questions that have not been answered satisfactorily are the usefulness of this training method and how to improve it.

As a first step in gauging the effectiveness of the symposium as a training method, we conducted a followup evaluation of a 3-day symposium on the care of the epileptic presented by Jefferson Medical College and Pennsylvania State University in Harrisburg on May 27–29, 1965. The symposium was sponsored jointly by the Neurological and Sensory Disease Service Program, Public Health Service, Pennsylvania Department of Health, the Epilepsy Foundation, the Epilepsy Association of America, and the Pennsylvania Medical Society.

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The followup study was conducted by the Epilepsy Foundation to aid in planning similar future symposia. This evaluation encompasses the backgrounds of participants, the symposium's values and benefits to their practices, criticisms of content and presentation, and recommendations for improving future symposia.

Nineteen presentations by medical professors and specialists were planned to provide a comprehensive coverage of epilepsy. Topics ranged through definition of the problem of epilepsy, classification of seizures, diagnosis and treatment, and information on sources of community aid to the patient and his family. The evaluation, however, covered only 18 of the 19 presentations since the session on trauma and epilepsy was inadvertently omitted from the followup questionnaire.

A printed questionnaire was mailed a week after the close of the symposium to the 145 people who had preregistered. The questionnaire requested quantitative ratings of statements regarding presentation of the symposium and the separate lectures, as well as posing open-ended questions concerning points of value and recommendations for improvements. Two sets of followup letters were sent to those not responding, with a final total response of 98. Of these, 86 actually participated in the symposium, approximately two-thirds of the estimated attendance. No record of actual registrants was kept. However, approximately 130 sets of materials were passed out at the registration desk.

Background of Participants

The 86 respondents were grouped into the following 8 categories by occupation:

Occupation	*Number*
Physician:	
General practitioner	23
Psychiatrist	13
Internist	6
Pediatrician	7
Neurosurgeon	7
Neurologist	8
Nurse	8
Miscellaneous (intern, EEG technician, and others)	14
Total	86

All respondents had at least M.D. or O.D. degrees with the exception of eight nurses and two electroencephalogram technicians, and therefore they were a highly professional medical audience.

The type of practice engaged in by the physician participants in each group is shown in table 1. The majority of the general practitioners and internists were engaged in private practice only, whereas the psychiatrists, pediatricians, and neurologists were primarily in institutional practices.

Seventy-two respondents were from Pennsylvania, with the greatest concentrations from Harrisburg and Philadelphia. Their ages ranged from 26 to 70 years, with the median falling within the age group 41–45 years. The period of years since they received their medical degrees is shown in table 2. The general practitioners and neurologists tended to have proportionately more members who had earned their M.D.'s 25 or more years earlier.

Evaluation by Occupation

For each occupational group, content of the symposium was evaluated in the following five ways: (*a*) quantitative group ratings of each talk, (*b*) qualitative individual evaluations, (*c*) benefits attributed by individual practitioners to attendance at the symposium, (*d*) criticisms of content, and (*e*) recommendations for improving the content of similar future symposia.

The quantitative group ratings consisted of medians computed from a rating scale which was part of the questionnaire. A 5-point scale of 1 (little value) to 5 (highly valuable) was used. Median ratings and the number of respondents attending each talk are presented in table 3. In interpreting these scores three points should be kept in mind:

1. Group scores tend to be biased upward due to a "social desirability" tendency of the rater to avoid low ratings.
2. The number of persons contributing to a given median, as well as the numerical value, should be considered in determining its significance. Some groups were very small, especially on the last day of the symposium, and little can be inferred from their ratings.
3. The speakers varied greatly in mode and effectiveness of presentation—both of which influenced the ratings received.

General practitioners. One talk—that concerned with medical treatment—was rated highly valuable (median of 5) by the general practitioners. Their rating of the talks on temporal lobe seizures and surgical treatment was 4.5, indicating that these sessions were also of considerable value for the entire group. Nine other talks were given a median rating of 4 (table 3). Six talks were rated average (median of 3), and none were rated lower. Thus, from the quantitative data, the general practitioners appeared to have found most of the symposium valuable.

Individual general practitioners indicated that the symposium contained concepts of value and interest that were not apparent from the group ratings. Most noteworthy of these concepts for planning future symposia were the following: (*a*) classification of temporal lobe seizures, (*b*) dosage and methods of administering currently available drugs, (*c*) outside (paramedical) agencies, (*d*) utilization of the electroencephalogram, (*e*) incidence of epilepsy, (*f*)

Table 1. Physician respondents by type of practice

Occupation	Private only	Institution only	Both	Unspecified
General practitioner	13	2	5	3
Psychiatrist	3	7	3	0
Internist	4	1	0	1
Pediatrician	2	3	1	1
Neurosurgeon	2	2	2	1
Neurologist	1	6	1	0

nontumor etiology of seizures in adults, (*g*) significance of hyperpyretic seizures, and (*h*) review of the general area of epilepsy.

The general practitioners appeared to have benefited in a wider variety of ways than any other group. They reported expecting to make these improvements in practice as a result of attending the symposium: (*a*) better office diagnostic workup and neurological examinations, (*b*) greater confidence in treating seizure patients, with less need for referral, (*c*) more precise diagnosis of types of epilepsy, (*d*) improved referrals to paramedical government agencies, and (*e*) improved drug therapy.

The general practitioners expressed the following criticisms of the content of the program.

Table 2. Interval of years since receiving medical degree, by occupation

Occupation	Less than—					25 or more	Unspecified
	5	10	15	20	25		
General practitioner	3	3	2	2	2	8	3
Psychiatrist	3	3	7	0	0	0	0
Internist	0	1	1	2	0	1	1
Pediatrician	2	0	0	3	0	1	1
Neurosurgeon	1	1	0	4	0	1	0
Neurologist	1	2	1	0	1	3	0
Total	10	10	11	11	3	14	5

Table 3. Number attending and median ratings [1] of each session, by occupational group

Session topic [2]	General practitioners	Psychiatrists	Internists	Pediatricians	Neurosurgeons	Neurologists	Nurses
Thursday, May 27							
Epilepsy, a survey of the problem	15 *3*	9 *3*	3 *4*	4 *3*	4 *2*	5 *4*	7 *4*
Pathophysiology of seizures	16 *4*	11 *4*	3 *4*	5 *4*	6 *4*	7 *5*	7 *4*
Significance of the electroencephalogram in epilepsy	17 *4*	11 *4*	3 *4*	6 *4.5*	7 *4*	7 *4*	6 *4*
Recognition of idiopathic epilepsy	18 *3*	11 *3*	4 *3*	6 *3*	5 *3*	7 *3*	8 *4*
Classification of seizures	18 *4*	11 *4*	4 *3*	5 *3*	7 *3*	7 *4*	7 *4*
Significance of seizures in adults	18 *4*	11 *4*	3 *4*	2 *3.5*	5 *3*	7 *4*	7 *4*
Seizures, syncope, and vertigo	18 *4*	11 *4*	4 *3.5*	2 *3*	7 *3*	7 *4*	8 *5*
Friday, May 28							
Unusual patterns in temporal lobe seizures	18 *4.5*	12 *4*	5 *4*	3 *4*	4 *4*	6 *4.5*	8 *4.5*
Medical treatment of the epileptic	17 *5*	12 *4*	5 *3*	5 *4*	4 *3*	6 *4.5*	8 *4.5*
Social adjustment of the epileptic	15 *3*	12 *2.5*	5 *4*	4 *3.5*	4 *2.5*	6 *3*	8 *3.5*
Indications for surgical treatment of the epileptic	14 *4.5*	12 *4*	4 *3.5*	4 *4.5*	5 *4*	6 *4.5*	7 *3*
Significance and management of convulsive disorders in children	14 *4*	9 *3*	3 *3*	6 *4*	4 *3.5*	5 *4*	6 *4.5*
Emergency treatment of the patient with seizures	15 *4*	11 *3*	3 *4*	6 *4*	6 *3.5*	6 *4*	6 *3.5*
Outlook for the epileptic	13 *4*	10 *3*	2 *4*	2 *2.5*	2 *2.5*	4 *4*	5 *4*
Saturday, May 29							
Public Health Service assistance	8 *3*	7 *2*	1 *4*	0	2 *2*	2 *3.5*	7 *3*
Trends in rehabilitation	7 *3*	7 *3*	2 *4*	0	2 *2*	2 *4*	7 *4*
Voluntary health agencies	7 *3*	7 *2*	2 *4*	0	1 *1*	2 *4*	7 *4*
Medicolegal assistance	7 *4*	7 *4*	2 *4*	0	1 *1*	2 *4*	7 *4*

[1] Ratings, based on a scale of *1* (little value) to *5* (highly valuable) are italicized.
[2] The session on trauma and epilepsy was omitted from the questionnaire through a typographical error.

"Detailed discussion of EEG findings in epilepsy could have been given within 1 hour."

"The differential diagnosis of petit mal, grand mal, and epileptic equivalents could be improved."

"More emphasis should be placed on the history of seizure patterns and the clinical diagnosis."

"Maybe I expected too much but I did feel that I could have gotten as much information from a condensed textbook of medicine or pediatrics—I felt there would surely be some new concepts or research concerning cause and effect."

"Presentation far below audience level—might have been more apt for nurses or attendants."

The content of the symposium could be made more relevant to their needs, according to the general practitioners, by using clinical motion pictures to show types of seizures. "More emphasis should be placed on the history of seizure patterns and the clinical diagnosis," was another comment. The general practitioners also wanted more presentations of case histories, how they were handled and how they should have been handled, and "some emphasis on epilepsy as it is applicable to mental retardation."

Psychiatrists. The psychiatrists gave no session a median rating of 5, but gave nine ratings of 4, and they rated six with a 3 (table 3). The talk on social adjustment was rated 2.5 by this group, and the talks on Public Health Service assistance and voluntary health agencies were both given a 2.

Individual psychiatrists regarded the following concepts to be of value and interest: (*a*) drugs to use, order in which they are to be tried, and good combinations of drugs, (*b*) total daily dosage of diphenolhydantoin sodium at one time, (*c*) diagnosis of psychomotor seizures or behavioral disturbances, (*d*) EEG information, (*e*) indications, as they are seen today, of the need for surgery, and (*f*) what actually happens during a seizure.

The psychiatrists reported the following improvements in their practices which resulted from attending the symposium: (*a*) improved advice and suggestions for parents of epileptic children, (*b*) better able to stabilize the epileptic in a hospital setting, (*c*) easier to weed out false positives from those on medication, (*d*) ability to provide general assistance and support of individuals tagged as epileptics, (*e*) improved referral capability, (*f*) more careful search for organic factors in functional psychiatric disorders, (*g*) improved understanding of epileptics in individual and group psychotherapy.

Criticisms of the symposium voiced by the psychiatrists boiled down to "not enough behavioral science representatives or discussion in that sector."

The psychiatrists had these suggestions for making the program more relevant to their needs.

"More emphasis on the behavorial manifestations of epilepsy."

"Approaches and techniques of individual and family therapy as related specifically to the epileptic."

"Eliminate all the talks on the social aspects and add a talk about psychiatric management and problems."

Internists. This group rated 12 of the 18 talks with a median of 4. Individual internists cited the following topics as of value to them: (*a*) recent physiological concepts of seizure mechanisms, (*b*) unrecognized precipitating factors in seizures, (*c*) extent of tolerance to surgery, and (*d*) danger of side effects from certain drugs used in controlling seizures.

The internists felt that, as a result of attending the symposium, they are better able to diagnose types of epilepsy and prescribe appropriate treatment, especially in the choice of surgical or medical treatment. They reported that they would be able to improve their neurological examinations and the taking of histories.

The internists expressed no criticisms of the content of the program, but offered these suggestions for improvement: (*a*) use more specific case histories with discussion of their modern management, (*b*) more information on psychologic features of temporal lobe epilepsy, (*c*) more discussion regarding psychological and psychiatric phenomena associated with epilepsy, (*d*) more neurophysiologic data, (*e*) more clinical descriptions of seizure phenomena, and (*f*) more discussion of the electroencephalogram.

Pediatricians. The pediatricians expressed greatest interest in the talks on the significance

of the electroencephalogram and surgical treatment (median ratings of 4.5). Five talks received ratings of 4 (table 3). Only one talk, outlook for the patient, was rated below average, 2.5.

Individual pediatricians regarded the following concepts to be of value: (*a*) differentiation of temporal lobe epilepsy from hysteria, (*b*) EEG interpretation, (*c*) effects of pyramiding drugs, and (*d*) emergency treatment of children.

The pediatricians reported that the symposium would help them improve the following techniques: diagnosis and treatment, counseling the epileptic patient and his family, teaching medical students, interns, and residents, and social planning for the patient (schools and other facilities).

The pediatricians' only criticism was "Subject as a whole is still badly in need of standardization of definition of seizures. . . . Nomenclature still confused among 'experts'—thus transmission to the rest of us continues to be confusing."

The pediatricians felt the program could be made more relevant to their needs by "more description of classifications, with movies, case studies, or actual patients as aid in diagnosis," and "more stress given to the problem of seizures and the mentally retarded with or without cerebral palsy."

Neurosurgeons. The neurosurgeons found four talks above average (ratings of 4); pathophysiology of seizures, significance of the EEG, temporal lobe seizures, and surgical treatment. Topics they found of little value (2 ratings) were a survey of the problem, social adjustment, and talks on the social aspects in general.

Mentioned by individual neurosurgeons as valuable and worthy of note were (*a*) the general approach to the preoperative evaluation and the operative technique, (*b*) EEG verification of the clinical syndrome of epilepsy, (*c*) avoidance of amobarbital, (*d*) presence of vertiginous seizures, and (*e*) electrical development of seizures and methods of seizure propagation.

The neurosurgeons noted the following improvements in their practices as a result of attending the symposium: (*a*) improved diagnostic procedures as they relate to neurosurgery, (*b*) improved medical treatment, (*c*) improved EEG interpretation, and (*d*) discouraging the use of the electroencephalogram by general practitioners and encouraging history taking.

In offering criticisms, the neurosurgeons asked for more information on two topics. They said, "Add to the discussions on those patients whose seizures do not respond to usual treatment procedures" and asked, "What do you do with the 'one-seizure adult' patient?"

Neurologists. Pathophysiology of seizures was rated highly valuable (5) by the neurologists, while the talks on temporal lobe seizures, medical treatment, and surgical treatment were rated almost as useful (4.5). Eleven other talks received median ratings of 4, and only three were rated at 3. Thus, this group found the majority of the talks valuable.

Topics of value indicated by neurologists included the following: (*a*) review of drug management, (*b*) discussions of electroencephalograms, (*c*) large-area excisions, (*d*) limiting the diagnosis of idiopathic epilepsy, and (*e*) infrequency of tumors as etiology of adult seizures.

The neurologists thought that information gained at the symposium would help them in the following ways: (*a*) more meaningful EEG interpretation of epilepsy in infancy and childhood, (*b*) more adequate evaluation of certain pediatric conditions as related to neurological involvement, (*c*) greater knowledge of etiological possibilities, and (*d*) more skill in discussing the problem of epilepsy with patients.

One neurologist felt the talks were geared to the general practitioner and lacked sophistication for the specialist.

The neurologists suggested the following improvements in content: (*a*) more discussion, both technical and clinical, on the EEG, (*b*) movies on types of convulsions, their management, and so forth, (*c*) EEG interpretation as it relates to epilepsy in infancy and childhood, and (*d*) more discussion of sensory epilepsy, "abdominal" epilepsy, and narcolepsy.

Nurses. This group was apparently enthusiastic and highly interested in the symposium as a whole—as judged by consistently high attendance at the talks and high median ratings. These data may be influenced, however, by the fact that half of the nurses were encouraged to attend by their supervisors. Rated 5 by the

nurses was the talk on seizures, syncope, and vertigo; rated 4.5 were temporal lobe seizures, medical treatment, and convulsive disorders in children. Ten talks were rated 4, and 2 received median ratings of 3.5 (table 3).

Individual nurses regarded the following topics as being of value and interest: (*a*) incidence of epilepsy, (*b*) statistics on accidents caused by epileptics, (*c*) how an epileptic is affected by the law and how some laws are outdated, (*d*) review of clinical manifestations, (*e*) rehabilitation facilities available, and (*f*) physiological understanding of seizures.

The nurses listed several improvements in nursing care which they felt they gained from attending the symposium. Among these were (*a*) improved instruction on the topic, (*b*) education of patient's family and friends, (*c*) helping families to understand and to accept the patient's condition, (*d*) helping families seek assistance of community agencies, (*e*) aiding the epileptic patient in seeking employment, (*f*) education of public about epilepsy, (*g*) greater assistance in casefinding, (*h*) handling of epileptics on an outpatient basis, (*i*) closer observation of seizure patterns and accurate reporting to physicians, and (*j*) closer attention to effects of medication in patients with epilepsy.

The nurses did not feel they were in a position to criticize the content of the program. However, in their recommendations they asked for more information on these subjects in order to make the content of future symposia more relevant to nurses' needs: (*a*) more detailed case presentations, (*b*) detailed explanation of nursing care expected by the physician when the epileptic patient is hospitalized, (*c*) demonstration of an EEG procedure, (*d*) more emphasis on continued rehabilitation of the patient in the home, (*e*) methods of assisting family members to understand and help the patient, and (*f*) the role of the nurse in regard to epilepsy in the home, school, and industry.

Evaluative Comparison of the Sessions

The sum of median ratings of all groups in table 3 indicates that the talk on temporal lobe seizures was of greatest value to the largest number of participants in different groups. Almost equal in value, however, were the pathophysiology of seizures, significance of the electroencephalogram, and medical treatment of the epileptic. Ranked in decreasing order of value were surgical treatment; seizures, syncope, and vertigo; convulsive disorders in children; emergency treatment; classification of seizures; outlook for the patient; a survey of the problem; idiopathic epilepsy; social adjustment; medicolegal assistance; trends in rehabilitation; voluntary health agencies; and Public Health Service assistance.

The evaluative questionnaire contained questions about methods of presentation that were rated by all 86 participants. Following are the questions and mean ratings.

Statement	*Mean ratings* [1]
1. *Your interest and involvement.* Did the discussion continue in the breaks after the meetings? Did it stimulate your interest?	3.85
2. *Your chance to influence the proceedings.* Did you feel free to ask questions, express ideas, agree or disagree?	3.32
3. *Your feeling about the method of presentation.* Were the methods of presentation effective? How well were the presentations adapted to experience and competence of the audience?	4.25
4. *Your estimate of program productivity.* To what extent did the program add to your knowledge or influence your attitudes? Did you get something you feel will be useful?	3.96
5. *Your feeling about the clarity of communication.* Were ideas expressed in words the audience could understand? Were the speakers successful in communicating their knowledge and ideas? Were the illustrations and statistical graphs and tables understandable?	4.15
6. *Your attitude about the time and timing of the symposium.* Was the symposium too short, long? Was the time of day, night appropriate?	3.72

[1] Based on scale of 1 (very low) to 5 (very high).

Items 2, 3, 5, and 6 reflect participant attitudes toward how and when the program was presented. The highest mean ratings were given to item 3 (method of presentation) a 4.25, and item 5 (clarity of communication) 4.15, indicating highly favorable feelings regarding the didactic aspects of the symposium.

Item 4 (program productivity) was rated only 3.96. This general estimate is not consistent with the high individual and group ratings frequently given to specific talks. One possible explanation may lie in the differential value of talks to various occupational groups, with a consequent overall rating of high average for the entire symposium. Item 6 (time and timing of the symposium) received a mean rating of 3.72, also a high average.

It became apparent that a holiday weekend is not an opportune time to hold a symposium. From the criticisms, it also appears preferable to limit it to 2 days. Attendance on Saturday, the third day, was drastically reduced (table 4). One psychiatrist felt that half-days do not appear warranted. A pediatrician felt the symposium was "too long—could have been condensed into a.m., p.m., and evening of one day."

Several participants felt there was too much duplication and overlapping between talks. Also, as one neurosurgeon stated, "In several instances the speakers strayed from the listed topics, and many unimportant and irrelevant subjects were touched upon at the expense of the assigned topics." The titles of some talks did not clearly delineate the subject matter. One speaker was not well acquainted with the paper he read. All these criticisms reflect inadequacies of the speakers which reduced somewhat the effectiveness of the symposium.

Participants could submit written questions to the speakers, but spontaneous discussion was not encouraged. An internist stated that "some of the panel speakers did not seem too enthusiastic about really clarifying a question, and gave short answers." The same person felt that "the people of the group were rather aloof from each other . . . and tended to scatter after the meetings."

Table 4. Range of attendance at sessions on the 3 days of the symposium, by occupation

Occupation	Thursday	Friday	Saturday	Percent at Saturday sessions
General practitioner	15–19	13–18	7–8	42
Psychiatrist	9–11	9–12	7	58
Internist	3–4	2–5	1–2	40
Pediatrician	2–6	2–6	0	0
Neurosurgeon	4–7	2–5	1–2	29
Neurologist	4–6	4–6	2	33
Nurse	6–7	5–7	6	86
Miscellaneous	9–11	4–6	2–4	33

Summary

Awareness of epilepsy as a major national health problem has been increasing recently. The medical and auxiliary medical communities and their allied disciplines have been seeking additional knowledge on the subject. To bring them available information, a series of symposia has been sponsored by various professional groups and interested government agencies. An evaluation of this training method was conducted as a guide to the development of future symposia on epilepsy and related medical problems.

The discrepancy between the objectives of the participants and the content of the symposium is reflected in their ratings of the presentations. Physicians' primary aim in attending was to improve their differential diagnoses of seizures and to better prescribe treatment. With few exceptions they agreed it served this function well by providing an excellent review of the field and an updating of pharmacological and neurosurgical therapies. The physicians discovered certain contraindications in prescribing medications for epileptics that are not listed in the Physicians Desk Reference Index; for example, that antihistamines potentiate seizures. Wide interest in recent drug research was also demonstrated. Although the speakers stressed that the electroencephalogram plays a role second to careful history taking, strong interest was expressed in the proper interpretation and utilization of the EEG in diagnosing seizures.

These results underline a basic problem in the design of a symposium—specification of its objectives and delineation of its audience. How wide a net should be cast and how large should the opening be? Many medical specialists reported becoming more cognizant of new developments in areas other than their own. Some specialists, however, were disappointed that epilepsy as related to their respective specialties was not covered more intensively. Thus a po-

tential weakness in the symposium as a training tool is the overly general approach to subject matter in combination with a similar approach to prospective guests. The inevitable uncertainty as to who will attend and the need to fill seats provokes invitations to groups and persons for whom the program could be of little value.

Evidently the greatest single cause of breakdown in interest and effectiveness is the lack of communication between speakers and panelists and the audience. A speaker may be unaware of his audience's motives for attendance and present a highly specialized talk which can, at best, be understood only by his professional peers. He may have been invited to speak without being told the precise objectives of his audience and without being discreetly reminded that his purpose is to impart to others an understanding of what he is doing and how it is being accomplished. In this symposium, speakers were not asked to submit in advance either their papers or an outline, nor were provisions made for an adequate discussion period, either with the entire audience or in panels with a selected group.

The audience—neurologists, psychiatrists, pediatricians, internists, general practitioners, nurses, social workers, technicians, and an assortment of miscellaneous personnel from voluntary health and government agencies—was assembled for 2 or 3 days of meetings without consideration of what they wanted from such a meeting. Most attended to learn; frequently they had to make difficult changes in their personal and professional schedules. Many left early, however, or after attending the opening sessions, drifted away until a particular speaker or topic was presented. Thus, most speakers found themselves addressing only a fraction of the registrants.

The nurse participants, for example, showed a high degree of interest in all of the topics. However, the subject matter was geared to physicians and much of it was only indirectly relevant to the nurses' interests. It would appear extremely useful to sponsor a symposium exclusively for nurses and nursing instructors. For this group the social and psychological aspects of epilepsy should be strongly emphasized, since nurses play an important role in educating the public about epilepsy.

Recommendations

A number of procedures for improving speaker-audience communications can be used. For example, each speaker could be asked to submit the full text or an abstract of his proposed remarks so that other panel members and the audience could have mimeographed copies in advance of the presentation. This step will allow them to follow the talk more closely, question what they fail to grasp immediately, and absorb the essence of the speech without the necessity of prodigious note taking which often interferes with comprehension.

Even more important is increasing the responsiveness of the speakers to the needs of the audience and their objectives in attending. One technique is to arrange for panel discussions on various phases of a general topic, choose panel moderators, and allow time for reports from each moderator and discussion by the entire audience.

Evaluations of the symposium readily indicated whether the communications were on target, or indeed whether any of the messages backfired. A possible boomerang effect was noted in the comments of two general practitioners. They said they now felt more confident in treating patients with epilepsy themselves and were less likely to refer them to specialists.

Evaluation can be accomplished by mailing a questionnaire to participants after they return home or by preparing questionnaires in advance and having participants fill them out before departure. An invaluable adjunct to evaluation would be to have available an interviewer to discuss with anyone who wished any part of the meeting while thoughts and feelings are still fresh. Much insight could be gained through these on-the-spot discussions. An evaluation of the entire meeting will establish whether the symposium has met its purpose, whether additional meetings on the same subject are called for, and if new areas should be considered for a future symposium.

Knowledge gained at a symposium often needs to be reinforced. One technique which disseminates the information more widely is to make a full recording of proceedings which can be subsequently edited for reproduction in full or in summarized form. Participants and

other interested persons or organizations can then obtain the reports.

The major value of a symposium is its personal impact, the opportunity for live two-way communication. The respondents expressed satisfaction with the opportunity to exchange information with fellow physicians and to meet experts in the field. One internist stated, "Much of the value and enjoyment of a program such as this is just getting to see and hear leaders in the field from other sources." Moreover, not all respondents agreed with the points of view expressed by the speakers, a difference which served to stimulate much thought and discussion.

It appears legitimate to conclude that the symposium, despite its limitations and the heterogeneity of the audience, was successful. Evaluation of it revealed several avenues to improvement of similar future programs.

Accident Prevention Research Grants and Fellowships

The Division of Accident Prevention, Public Health Service, offers financial aid for research and research training in accident prevention.

Among the disciplines apparently best oriented to contribute to accident prevention are public health (with all of its disciplines), the biomedical sciences and bioengineering, the behavioral and social sciences, mathematics and statistics, forensic medicine, law, pharmacy, toxicology, and communications.

Research training grants support establishment or expansion of training programs at degree-granting institutions. They cover staff salaries, equipment, supplies, and travel. Allowances for indirect costs, trainee stipends, and tuition are included. These grants can be used to finance training programs that include research seminars to provide the student with an understanding of the problems, concepts, techniques, variables, or prior research in some classes of accidents.

Research grants are awarded in the name of individual scientists to universities and other nonprofit research organizations. They are intended to defray the cost of the actual research effort.

Deadlines for receipt of applications for both kinds of grants are February 1 for review in June, June 1 for review in November, and October 1 for review in March.

Research fellowships are available to applicants planning to attend universities which offer predoctoral and postdoctoral research training of interest to the individual. Fellowships are not awarded for training leading to an M.D., D.D.S., or D.V.M. degree.

Fellowship awards are announced after the meeting of the Community Health Research Training Committee in January, April, and October. Recipients may activate the awards any time during the 12 months following the date of the award.

Application materials and information concerning the Public Health Service grant and award programs in accident prevention research are available from the Research Grants Branch, Division of Accident Prevention, Bureau of State Services, Public Health Service, 800 North Quincy Street, Arlington, Va. 22203.