CHAPTER 1

Presidential Address: Continuing Education for the Neurosurgeon

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"The education of the doctor which goes on after he has his degree is, after all, the most important part of his education. . . ."

John Shaw Billings (2).

"The hardest conviction to get into the mind of a beginner is that the education upon which he is engaged is not a college course, not a medical course, but a life course, for which the work of a few years under teachers is but a preparation."

Sir William Osler (13).

At the outset, I wish to express my appreciation to you for having chosen me as your President for this past year. It has been one of the highest honors that has ever been paid me and I am deeply grateful.

The subject that I have chosen for my address is one that I have had interest in and concern over for a long time. Although I do not possess an extensive background in professional education and teaching techniques, and although I do not have complete data to document our actual needs for this type of educational project, I do believe that the establishment of a continuing education program for the practicing neurosurgeon is one of the most important, unresolved items facing our specialty today. True, socioeconomic matters are ever pressing, and potential governmental involvement in many of our professional affairs is a growing area of concern; but often we become overly preoccupied with these issues, usually at the expense of structuring and pursuing some type of continuing educational program. The importance of continuing education is obvious when one considers that one of our primary goals is the constant delivery of high quality neurosurgical care. The most important key toward this end is an effective, ongoing continuing education program in neurosurgery.

First, I wish to discuss certain background issues, including over-all objectives, relative to continuing medical education in general and continuing education in neurosurgery in particular. Then, I will speak about a proposal for organizing and implementing a national continuing education program in neurosurgery, a program that hopefully will strengthen and perpetuate the concept of a "lifetime of learning" for the practicing neurosurgeon.

RATIONALE FOR CONTINUING EDUCATION IN NEUROSURGERY

While continuing medical education programs have been in effect for several years and are part of the life-style of many physicians, most physi-

cians are now more than ever conscious of the need for ongoing, meaningful, education related to their practice. There are many reasons for this change in physicians' attitude. Perhaps the major one is the enormous growth in new scientific knowledge which has accelerated considerably in the past 10 to 15 years. Medical research produces an ever-increasing volume of new and important data and is causing a progressive shortening of the half-life of medical knowledge. The relatively rapid outdating of medical knowledge is summarized humorously but succinctly by the remarks of C. Sidney Burwell, "My students are dismayed when I say to them, 'Half of what you are taught as medical students will in 10 years have been shown to be wrong. And the trouble is, none of your teachers knows which half' " (3).

The modern physician is confronted by what often seems to be an impossible task in attempting to keep himself abreast of the latest developments. Despite conscientious efforts at reading the medical journals and attending an increasing number of scientific meetings, one is likely to fall well behind the advancing research teams. The only hope of catching up would appear to be a well planned continuing education program designed and implemented by individuals knowledgeable in medical education.

While the information explosion has given a new impetus to continuing education, there are other reasons for the increasing popularity of these programs. Howard (9) believes that physicians have been stimulated and encouraged to greater efforts in continuing education by pressures both inside and outside the profession. He discusses certain facts that serve as the basis for most physicians' growing interest and concern. I will cite only a few:

1. There has been a substantial annual growth in participation of physicians in continuing education programs in recent years. In 1972, it was estimated that there were more than 300,000 physician registrations in formal continuing education programs.

2. There is increasing emphasis on continuing medical education by state medical and medical specialty societies. A 1972–1973 survey on continuing medical education indicates that 25 state medical associations sponsored formally structured courses for physicians.

3. Action has been taken by three state legislatures to make formal participation in continuing medical education a requirement for periodic relicensure.*

4. There has been major growth in the development of self-assessment

* At the time of publication of Howard's editorial, there were only three. As of July 15, 1974, medical practice acts in four states—Kansas, Kentucky, Maryland, and New Mexico—give the State Board of Medical Examiners authority to require evidence of continuing medical education as a condition for re-registration of the license to practice medicine.

procedures by medical specialty societies. There are now 14 national medical specialty societies with self-assessment programs in operation.

Thus, these brief factual statements document the increasing interest on the part of physicians in general in continuing education. Neurosurgeons are no exception. Advances in several basic and clinical areas in our specialty are such that we need to implement an effective national program in continuing education in neurosurgery so that new knowledge can be readily disseminated to all neurosurgeons.

GOALS

Before discussing the specifics of structuring and implementing continuing education programs in neurosurgery, it would be appropriate at this time to define our goals in this type of educational project. The broad general goals of continuing medical education programs include: (1) improved quality of patient care, (2) self-satisfaction in learning, and (3) preparation for some type of recertification or relicensure process. I will now discuss each of these goals in some detail.

Improved Patient Care

Hardly anyone would argue that the ultimate goal of continuing medical education is to improve the quality of patient care. However, Opfell (11) believes that one cannot realistically design a program to improve patient care unless there is an agreement on exactly what there is about patient care that needs improvement. Further, he states that there is no expert, text, or other person that has a prior knowledge of what a physician should be doing to improve the quality of care he provides for his patients. Therefore, patient care evaluation must be an integral part of a modern program of continuing medical education if it is to result in improved patient care.

The enormous gains in medical information, including strides in therapy, and new and improved techniques have created a modern situation considered by Dryer (6) to be a dilemma similar to that seen during the Flexner era—an ever-widening gap between what is known and what is learned. In order that the neurosurgeon may provide the optimum in patient care, it is important that we periodically close this gap, which can be done with a well designed and effective continuing education program.

Thus, continuing medical education in neurosurgery will ultimately lead to a continued and increased state of medical knowledge by the neurosurgeon and, thus, to a sustained high quality of patient care.

Self-satisfaction in Acquiring Knowledge

The second broad goal of a continuing education program in neurosurgery is to provide the practicing neurosurgeon with a high degree of self-satisfaction in acquiring knowledge. Although this goal may seem

idealistic, the acquisition of knowledge is an objective in itself and should be self-satisfying, for in this way the neurosurgeon will continue to be motivated to learn throughout his professional life and not just at the times that the delivery of good medical care demands.

The concept of a "lifetime of learning" is becoming more and more integral to the neurosurgeon just as it is to all practicing physicians, and our continuing education programs should be planned and structured to foster and continue this important concept.

Meaningful continuing education in neurosurgery will depend almost entirely on the individual's own initiative and determination. This is probably what Osler had in mind when he said: "This higher education so much needed today is not given in the school, is not to be bought in the market place, but it has to be wrought out in each one of us for himself; it is the silent influence of character on character . . . "(12). We can design elaborate and expensive programs and we can consume enormous amounts of time in these educational ventures; however, if there is a lack of interest, time, motivation, etc. on the part of the learner—the practicing neurosurgeon—then our efforts are wasted. There simply has to be motivation to learn. Harrell clearly understood this self-motivation factor, when he wrote, "The physician's continuing education, whether he is a scientist practicing in a medical school or a general practitioner practicing in some rural area, is largely a process within himself, one he pursues on his own. He may have some help from his professional colleagues in the county medical society or in a research group, but most of his true learning—the part that sticks with him—is what he does for himself, by himself" (8).

Preparation for Recertification and/or Relicensure

Another broad goal of a continuing education program in neurosurgery is preparation for some type of recertification or relicensure process. This is a very concrete and pragmatic objective of continuing education, for here is a means for preventing unwanted hardships for the neurosurgeon. Although I do not believe that continuing education programs in neurosurgery should be designed principally to make it possible for neurosurgeons to pass periodic recertification examinations, I do think that all of us should recognize this aspect of continuing education because some form of recertification or relicensure process is likely to appear within the next few years. It is a movement which seems to be gradually gathering force. For instance, Mangun (10) in a 1972 editorial pointed out that six state medical associations (Oregon, Arizona, Pennsylvania, New Jersey, Massachusetts, and Florida) had already made policy decisions that will in effect require continuing medical education as a condition of membership.* The Oregon

* As of July 15, 1974, five additional state medical associations (Alabama, Kansas, Minnesota, North Carolina, and Vermont) have made similar policy decisions.

Medical Association was the first one to make this decision and, according to Galambos and Stone (7), this Association has already expelled 11 members who refused to follow their guidelines; 15 others have resigned rather than comply.

Also of considerable significance to neurosurgery is the fact that all 22 specialty boards now endorse recertification and four of these specialty boards have even announced dates to activate this plan. These are the boards of family practice, internal medicine, plastic surgery, and ophthalmology. At any rate, with this momentum among the various specialties, it is reasonable to anticipate that, when a sufficient proportion of physicians have passed recertification, the Joint Commission for Accreditation of Hospitals will probably use recertification as a criterion for granting hospital staff privileges (7).

Should a requirement of this type be put into effect nationally for neurosurgery, it could revert our attitude regarding continuing education to the days of formal college and medical school training in which examinations and grades were usually the major motivating force in our educational endeavors. This is an effective means of legislating and enforcing participation of neurosurgeons in a continuing education program, but it has the undesirable effect of largely taking away our right of free choice in this matter. However, there are other sides to the issue of recertification, and when it can be shown that the process definitely upgrades medical care for the majority of people, then there is no rationale in opposing it. I would emphasize, as have many others, that it is essential that the movement toward recertification or relicensure be under the control of the medical profession.

As an alternative to recertification examinations in neurosurgery, a system could be devised similar to that which has been developed by many state medical organizations which requires proof that the physician has spent a certain number of credit hours in continuing education programs over a specified period of time, usually three years. Among the various state medical organizations, a wide variety of educational activities are available for credit. Examples of these activities are: formal meetings, programs, or courses taught or sponsored by an AMA-approved medical school; meetings, programs, or courses offered nationally or locally by a specialty society recognized formally by the AMA or a particular state medical association; research; internship or residency training; publication or presentation of a paper; teaching; and several others. However, proof of attendance at a structured course in continuing education does not necessarily indicate that useful learning on the part of the physician actually took place.

As most of you probably know, both the Congress of Neurological Surgeons and the American Association of Neurological Surgeons have been

formally approved for an accredited program in continuing medical education by the American Medical Association's Council on Medical Education.

CHARACTERISTICS DESIRABLE IN CONTINUING EDUCATION PROGRAMS

Any national plan that intends to implement continuing professional education runs the risk of becoming an inefficient bureaucratic system unless it meets highly personalized criteria. According to Dryer (6) these criteria are: personal satisfaction, freedom of choice, continuity, accessibility, and convenience. To his list I would add a sixth criterion—relevance. Most of these characteristics are evident and need no further elaboration. Much of what could be said about freedom of choice has been discussed above in reference to the impact that recertification or relicensure will have in the continuing education programs of neurosurgeons. One criterion in particular that I wish to comment upon further is continuity of the educational programs.

One may justly argue that we already have ample opportunity for continuing education. Several neurosurgical organizations meet annually and conduct excellent scientific programs that range from two to six days. But there are at least two shortcomings to medical societies providing continuing education at their annual meeting. First, the program is usually restricted to the members of the particular society and is thus denied to the majority of other neurosurgeons. The other and more important reason is that annual meetings do not provide an ongoing curriculum, *i.e.*, they lack continuity. Meetings are one form of intermittent postgraduate instruction. They help to enlarge or pin-point certain topics, they serve to solidify professional friendships, and they provide a break in the daily routine of a neurosurgeon's life; but meetings do not provide continuity of learning.

Most busy neurosurgeons have very little continuing opportunity to maintain learning. What is needed is a high quality opportunity arranged in some practical way suited to the physician's pattern of work, with a long range, organized, sequential plan of participative learning, *i.e.*, a modern curriculum. In my opinion, this concept is not fully accomplished by our national societies. Continuity is probably best achieved on a local level with well planned weekly conferences, ward rounds, clinical-correlation basic science presentations, and regional workshops on specific and needed topics. Continuity could also be effectively maintained by a well designed and available home-study course similar to that available for all ophthalmologists.

PROPOSAL FOR ORGANIZING AND IMPLEMENTING CONTINUING EDUCATION IN NEUROSURGERY

There are several steps that one needs to consider in organizing and implementing a successful program for continuing education in neurosur-

gery. I believe that the following items are important in this regard and I would like to comment on each of them:

Single Representative Committee on Continuing Education in Neurosurgery

Among the first major steps to consider is the concept of a single continuing education committee to represent all of neurosurgery, *i.e.*, a central committee on continuing education in neurosurgery. Although time and experience may change the structure of our table of organization, it is my opinion that one committee should be empowered with the authority to plan, approve, alter, implement, and accredit all continuing education programs in neurosurgery in the United States. It is essential that the committee be truly representative of neurosurgery. The academic neurosurgeon, the private practitioner, the young, the old, the established, the resident, etc., all with somewhat differing educational needs and goals, should be represented on this committee.

A single committee would serve the purpose of consolidating and coordinating all aspects of continuing education. I believe that this committee should be relatively free-standing, in that decisions regarding curricula, educational standards, course approval, accreditation, faculty selection, assessment programs, etc., would be decided within the committee; *i.e.*, responsibility and authority would reside within the committee. The continuing education committee should have a voice or line of communication to other organizations such as other specialties, the American Medical Association, the American College of Surgeons, etc., and this line of communication should be through the official spokesman organization for neurosurgery, the American Association of Neurological Surgeons.

Presently, several national neurosurgical societies are interested in and some have committees actively involved in continuing medical education programs. Unfortunately, there has been no effective and practical consolidation of effort on the part of these organizations toward building a unified national program of continuing education in neurosurgery. Our efforts in this direction have been fragmented and this fragmentation may well be one of the principal reasons why the discipline of neurosurgery remains one of the few specialty areas with no organized national program in continuing medical education. Practically all five of the national neurosurgical societies have in one way or another made independent attempts to develop continuing education programs, and in some instances there have been concerted endeavors to establish liaison committees in continuing education between two or more societies. However, in general, the efforts have been identified with the individual society and, consequently, there has been no real fusion of effort. Even now, there are at least three and possibly four committees actively and largely independently involved in some aspect of continuing education in neurosurgery. Fortunately, there

is a current of opinion among many of the individual members of these committees that only through amalgamation into a single committee with appropriate representation from the community of neurosurgery can we accomplish and develop worthwhile continuing education programs. The desire to maintain individual society identity should not stand as a deterrent to these programs since the educational welfare of the neurosurgeon is at stake—not the status and needs of a given neurosurgical society.

I believe that appropriate representation can be achieved by the American Association of Neurological Surgeons (AANS) and the Congress of Neurological Surgeons taking combined action and forming a joint committee on continuing education in neurosurgery. In the beginning, the size of the committee should be kept relatively small and initially, I would recommend that five members be appointed from each organization. Election of officers, term of office, etc., should be decided within the committee, not by the parent organization.

I am aware of the interest of other national neurosurgical societies in continuing education and I would not want anyone to conclude from my recommendations that I am intentionally ignoring the important input from other societies. However, virtually no one in the other national neurosurgical societies is being deprived of representation as most, if not all, of these members belong to either the AANS or Congress, or both, and thus, will be represented on the continuing education committee. Also, the joint committee that I am recommending would make it simpler administratively for the committee officers and, ultimately, for the executive director, to answer to two, rather than five or six parent organizations.

Also, the Congress and AANS represent the majority of practicing neurosurgeons, and are better able because of their large memberships to bear the initial costs of implementing the continuing education programs which will be rather expensive.

The establishment of standards for the various aspects of a continuing education program by this committee would be one of the several important tasks to be accomplished by the committee. It would be wise for our committee to study the rules for program eligibility of the Commission on Education, American Academy of Family Practice (1). Establishing standards, such as this organization has done, would do much to insure that we implement a high quality continuing education program for neurosurgeons.

Executive Director

There is a need for a single executive administrative director of the continuing education programs in neurosurgery. Such an individual has been essential to the success of national continuing education programs in disciplines such as orthopedic surgery, internal medicine, and pathology. De-

termining specific educational needs, leading, supervising, and coordinating an effective program is best done when this type of responsibility rests with one individual holding and exercising administrative authority. The executive director and continuing education committee would work closely together and final authority would be within the committee. Whereas the committee members should periodically change every three to five years, there should be continuity of administration on the part of the executive director. One may justifiably contend that the function of the executive director could be filled by any one of several talented and interested neurosurgeons currently in practice. There would be many obvious advantages in having one of "our own" in this position. However, considering the magnitude of the continuing education projects, in my opinion, the responsibilities of this position constitute a full-time commitment. For a practicing neurosurgeon to accept this responsibility would require that he relinquish his practice and devote full-time effort to the project. Budgetary support for this individual should come from the two parent societies as I will discuss below. Ultimately, as our programs become well established, much of the costs could be covered by tuition and registration fees. It is necessary that we determine in advance the specific functions to be delegated to the executive director, *i.e.*, write out a detailed job description. Guidelines outlining the responsibilities of such an individual have been published by and are available from the Council on Medical Education, AMA, and include among others the following (4):

1. Determining the specific needs and desires of the profession in a given region for the subjects of courses and other programs, through questionnaires, precourse testing, etc.
2. Stimulating the faculty to plan programs well in advance, with specific stated objectives for each program.
3. Making certain that the facilities needed will be available at the time scheduled.
4. Supervising adequate enrollment records in courses.
5. Serving as liaison with local and national medical societies.

Appropriate administrative and clerical assistance, travel and other expenses, and suitable office facilities must be provided to the executive director.

Budget

The budget should be adequate for the program undertaken and its progressive improvement. Neurosurgeons in general (with the exception of residents in training) expect to pay for their continuing education and will willingly continue to do so. A program solely supported by tuition fees however, leaves much to be desired and takes on the aspects of a commercial

venture, an aspect which is not a notably good feature of a genuine educational effort. Solid financial support must be available and in my opinion should be provided on a 50:50 basis from the Congress of Neurological Surgeons and the American Association of Neurological Surgeons. The expenses for initiating the program and for running it for the first few years will probably be considerable. However, as the program becomes established, it will gradually begin to support itself through tuition, etc.

Curriculum

This is really the heart of the entire continuing education program. Unless we provide an appropriate curriculum that fills the educational needs of the majority of practicing neurosurgeons, our program would not succeed.

It would not be enough for us to simply take this challenge and begin actively building our continuing education program without serious reflection as to the educational needs of the neurosurgeon and the most effective manner in which he can achieve useful learning. The establishment of educational objectives for the practicing neurosurgeon must be based on identifying the problems with which the potential learner must deal rather than building programs upon problems a faculty would like to teach him to solve.

Educational emphasis should be placed on those diseases which are seen most frequently by the practicing neurosurgeon and which result in the greatest disability for the neurosurgical patient population, rather than on esoteric disorders. As examples, I would include lumbar disc disease or craniocerebral trauma as opposed to spinal cord arteriovenous malformations or intracranial occlusions requiring superficial temporal-middle cerebral artery anastomosis. However, the design of a curriculum in continuing education in neurosurgery should be well balanced so that documented needs in patient care are met and that the appropriate areas of neurosurgery are systematically covered to insure incorporation of new knowledge and skills. As there are enormous volumes of nonuseful information currently available in all fields of health, including neurosurgery, discriminating selection of the proper content should characterize the good curriculum.

Methods requiring active participation, including live clinics, seminars, workshops, and small group activities could be evolved. Also, a practical home study course in neurosurgery should be developed and made available. Home study in any form would require genuine motivation and self-discipline on the part of the neurosurgeon in order to carry through. These courses do, however, offer a structured, goal-oriented approach; and when accompanied by self-evaluation techniques, they are considered by good educators to be worth the time and trouble spent in developing them.

The Council on Medical Education of the American Medical Association stresses the importance of defining goals in continuing education in the following statements: "The effectiveness, and the opportunity to measure the effectiveness, of any specific educational program is enhanced if in the earliest stages of its planning there be formulated by those responsible a statement of specific objectives which the over-all program or the individual course should achieve with its students. Such objectives should include the following categories: (1) changes in the attitude and approach of the learner to the solution of medical problems; (2) correction of outdated knowledge; (3) the explication of new knowledge in specific areas; (4) the introduction to and/or mastery of specific skills and techniques; and (5) alteration in the habits of the learner" (4) (reprinted with permission of the American Medical Association).

Without such specific objectives as a primary guide throughout the planning and execution of each aspect of the continuing education program, it is unlikely that it would be fully effective and economical of the neurosurgeon's time. I would certainly endorse these specific goals developed by the AMA, and further, I would recommend that when we begin developing our curriculum in neurosurgery, we consider using them as guidelines.

Faculty and Teaching Staff

The selection of good teachers is important, and considerable time should be spent by the executive director and continuing education committee in making these choices. It is well known that outstanding competence in a categorical field does not necessarily qualify a faculty member for the mission at hand. It would be important to provide the faculty with the proper orientation and with appropriate guidelines regarding the courses in continuing education in neurosurgery in order to accomplish the goals of the program and to provide a good learning experience. Faculty indoctrination would be a function of the continuing education committee and the executive director. Faculty orientation is explicitly spelled out in the guidelines of the continuing education program in orthopedic surgery, and I believe it advisable that we follow their lead in this regard.

Facilities

Facilities for effective continuing education should be available and appropriate to the content of the activity and the number of participants. Educational aids of all types may be important and should be available and functional when required. Regional workshops should play a prominent role in our program; these could be conducted in a variety of geographic settings, including teaching hospitals, large clinics, medical schools, motels adjacent to airports, etc.

Methods for Assessment

Considerable time and effort should be spent by the continuing education committee in designing and implementing assessment procedures, for only in this manner can future programs be structured to fill educational needs. Consequently, it is appropriate at this time to discuss two types of potentially useful assessment procedures: (1) self-assessment techniques, and (2) professional peer review (PSRO). There are other ways to assess and evaluate continuing education, but these two potential methods are discussed because they seem practical.

SELF-ASSESSMENT

Self-assessment appraises what an individual knows but does not necessarily tell him what he needs to know. Also, when self-assessment is voluntary, it is likely that the neurosurgeon who truly needs it is less likely to participate. For these reasons, the self-assessment examination has limited validity. It may well be that the audit of care to determine true performance may represent a more reliable means of determining educational needs than the self-assessment examination.

PROFESSIONAL STANDARDS REVIEW ORGANIZATIONS (PSRO'S)

The value of PSRO's as a means for determining the educational needs of physicians has, thus far, been overshadowed by other aspects of this system of review, such as the determination of whether a hospital stay is too long, or the adjudication of disputes over payment of fees and other costs. Standards of care for a specific neurosurgical disorder can be defined. From this point, a medical record can be reviewed and compared to such standards, and from these data general needs for continuing education in neurosurgery may be identified. This matter can and should be handled locally, perhaps based on criteria established at the national level. Since the major goal of continuing education in neurosurgery is to improve quality of patient care and since some form of peer review will be instituted in the United States, one means for identifying the educational needs of the neurosurgeon would be through the feedback generated by a PSRO. The continuing education committee and faculty could then structure appropriate programs to meet these educational needs.

Some form of protocol evaluation aimed at producing tangible results in terms of improved quality of medical care must be forthcoming on our part. Otherwise, society and government will probably take the initiative and enact laws that require continuing education. Should they set forth methods of identifying needs and then require that remedial continuing education must follow, rules will undoubtedly be drafted that will set forth penalties for noncompliance. Drastic action such as these measures

should and can be prevented by appropriate action on our part. We should begin now to establish an effective ongoing national program in continuing education in neurosurgery. Further, we should determine our own educational needs and design programs to fill these needs and constantly upgrade the quality of neurosurgical care rather than allow a third party to assume these responsibilities. The AANS Subcommittee on Self-evaluation, Merit Award, and Recertification, chaired by Dr. Richard DeSaussure, have actively accepted this responsibility as their charge, and their findings and recommendations will be extremely valuable in this regard.

The various steps which I have just discussed can be summarized and interrelated in a proposed table of organization (Table 1.1). The Liaison Committee on Continuing Medical Education (LCCME) is included in this table for the reason that the Continuing Education Committee in Neurosurgery may well become the official spokesman for continuing education in neurosurgery in the United States and, in this capacity, the LCCME would be the appropriate structure to which it should relate.

SUMMARY

In summary, I would stress the following points:

1. The continuing education of the neurosurgeon is perhaps the most important problem facing our specialty today.

2. The goals of an effective program in continuing education are to deliver high quality neurosurgical care, to provide self-satisfaction in learning, and ultimately, to prepare for some type of recertification process.

3. Neurosurgery should proceed now to move forward aggressively and establish an effective, well organized continuing education program. The important features are:

a. A single, representative national committee charged with responsibility and authority for the management of all continuing education in neurosurgery should be established.

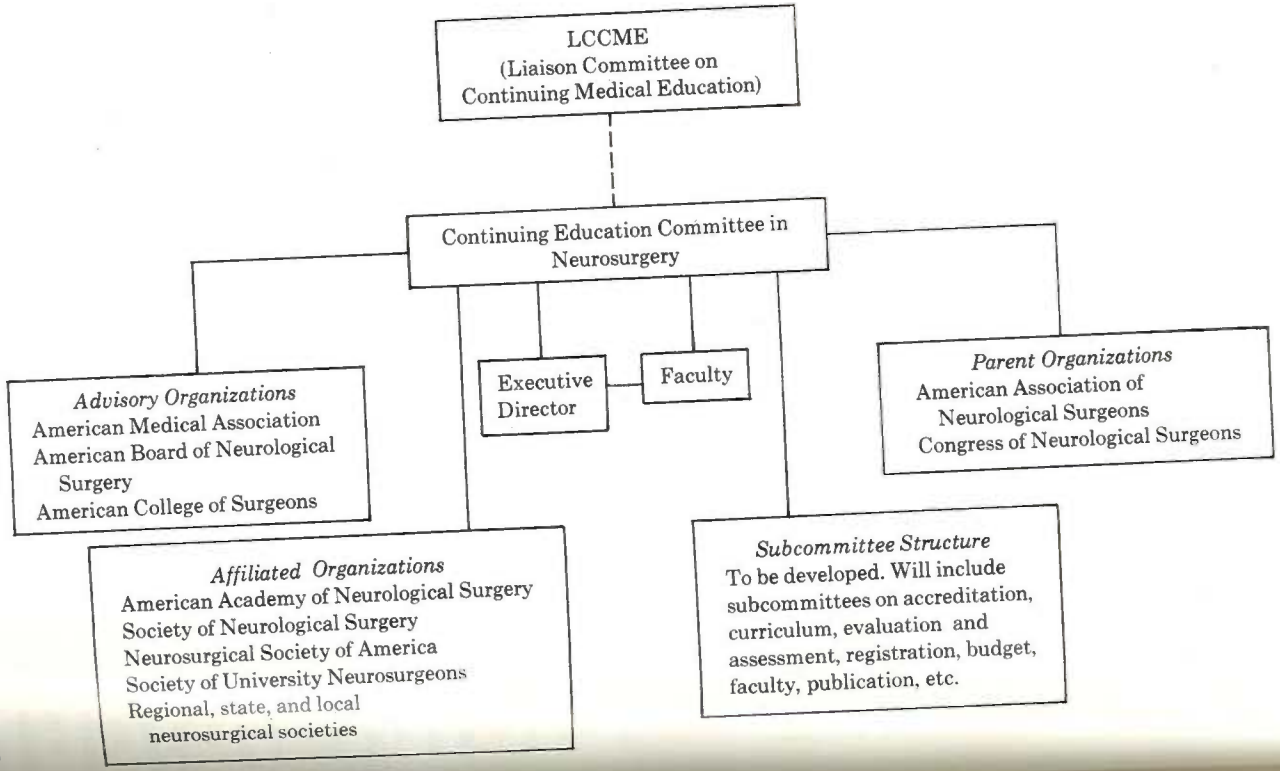
b. An executive director for our continuing education program should be appointed, to assist in its development and to coordinate and provide continuity for it on a nationwide basis.

c. The necessary facilities and budget should be provided by the parent organizations of the continuing education committee—the AANS and the Congress.

d. A faculty to develop and teach the programs should be recruited and properly indoctrinated.

e. A curriculum should be developed which places educational emphasis on those diseases which are seen most frequently by the practicing neurosurgeon and which result in greatest diability for the neurosurgical patient population.

TABLE 1.1
Proposed Organization for Continuing Education in Neurosurgery



f. A practical method for assessment and evaluation of this program should be evolved.

Effective and useful educational programs are ongoing in other specialties such as plastic surgery, opthalmology, and orthopedic surgery. These specialties have taken the necessary steps to provide their membership with ample opportunity to continue their education. It is time that the discipline of neurosurgery moved in the same direction.

In closing, I would like to quote that renowned English writer, Sir Arthur Conan Doyle whose remarks are germane to my chosen topic—"Education never ends, Watson. It is a series of lessons with the greatest for the last" (5).

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