You Know I Can't Hear You When the Water's Running

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ONE cannot profitably discuss postgraduate medical training without implicating medical school education, for it is in the latter that the twig is bent. Neither should we close our eyes to the rapid transformation of medical technology and the inexorable changes in social philosophy and health legislation. All these have altered and will continue to alter profoundly the physician-patient relationship and traditional medical pedagogy. A workshop such as this cannot offer solutions to problems peculiar only to our specialty, because they are common to the entire field of medical education. I choose to consider first, then, the general dilemma and proceed to the specific. Such a separation is probably specious; the redundancy is so great that the between-group difference becomes of dubious validity.

Changing Phenomena

In the common or general field of medical education I would list certain changing phenomena. Unlike many fields of endeavor, the physician is expected to be both "a thinker and doer." Since the beginning, man has been a "doer." His application of knowledge to technical ability has increased arithmetically, and over the millennia the acquisition of information has run a parallel course. However, in recent years, the latter has risen exponentially, the so-called information explosion. Not long ago an entire generation gap existed between concept and application; it now approximates 6 months. Moreover, the half-life of medical knowledge is approximately 5.5 years; before a student completes his graduate and postgraduate education a substantial portion of his fund of information is obsolescent, if not obsolete.

Although we are probably still doing a reasonably good job in producing technicians (doers), our educational system is without the flexibility required to alter its pace and direction to cope with the challenge of burgeoning information and its application to both patient and community needs.

If the primary goal of a medical school is to produce competent physicians and orient them toward continuing education—be they generalists or specialists—then our present approach is antithetical to this concept. We are overwhelming the eager young student with a conglomeration of unessential and often irrelevant data at a point in time when he is most receptive to learn the art, logic, and science essential to the diagnosis and treatment of disease. When the physician has reached maturity (the point in time at which he recognizes his own deficiencies in the fundamental medical disciplines, and/or has the desire to study a specialty field or biomedical science in depth), he is too old; worse, he is confronted with the reality that no mechanism exists in our present academic system to enable him to fulfill his needs reasonably and efficiently. Witness the plight of a resident physician who, despite all, is still a highly motivated student who has both the desire and the professional requirement to advance himself in one of the basic sciences. The time lost is irretrievable, and the loss of potential output is both incalculable and awesome.

Problems

What are the specific criticisms of our present residency programs? These I would list as follows:

1. Repetitious "scutwork" starts in clerkships and extends through the intern and resident years. When does experience by repetition cease being educational and become purely service? This type of so-called education can shift quickly from the role of a stimulant to that of a narcotic.

2. Undergraduate and postgraduate medical education is archaic; moreover, it takes too long, and consequently deters
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the bright and ambitious.
3. There is inadequate time for selective and elective study.
4. Training is hospital-based rather than university-based. This prevents true postgraduate training since the university has no responsibility past the M.D. degree. No mechanism exists for “re-entry” into basic science or other departments, which is propaedeutic to continuing education and “updating” so mandatory today.
5. Undergraduate education and training programs are inherently rigid because they are based on the assumption that all students have substantially the same ability to learn, the same needs, motivations, and talents. But one hat will not fit all heads!
6. These factors combine to place us in a poor competitive position to attract bright young people into our neurosurgical specialty.

William Mayo, some 35 years ago, stated that, one of the chief defects in our plan of education in this country was that we gave too much attention to the development of the memory and too little to the development of the mind. Osler’s commentary remains contemporary and cogent: “We expect too much of the student and we try to teach him too much. Give him good methods and a proper point of view and all other things will be added as his experience grows.” The problems have not really changed and have often been discussed; but so far, no great effort has been made toward their solution. The problems have now reached critical mass. The ever-increasing psychosocial tempo makes it mandatory that we address ourselves to a solution and act with alacrity and imagination lest we be inundated.

Solutions

We may be like Socrates who asked all the important questions but never answered any. Vituperation and damning criticism can be useful only if they lead to creative thought and effort. Let us examine, in the broad sense, two basic ways to attain the objective of producing a modern competent physician and concomitantly provide him with the facilities and resources to maintain this high level of competency.

The usual approach has been simply to add years to the training program. Because of the short half-life of medical knowledge, this is self-defeating and makes no attempt to answer the problem of maintenance of competency or “updating.”

I espouse a diametrically opposite point of view, believing that the only hope for the future is to shorten and hasten the initial training period and set up a mechanism for continuing education. Many years are available for this if redundancy in education is eliminated and the student is admitted to medical school while he is maximally interested and venturesome. Today the basic prerequisite is an understanding of the symbolic language of mathematics and chemistry which is now taught in high school! The student can quickly be taught problem-solving (the best known methodology of diagnosis) and therapy. The salient feature in a continuum of education is not to destroy time; if time is not lost the physician can always come back to pick up new knowledge. Other advantages are inherent in this concept; the shorter term goals are reached more quickly, and the sense of accomplishment enhances motivation for continuing education. Perhaps the quiddity of what I am trying to say is captured in a quotation from Latham, “When you teach a man to read, you do not begin with the history of words.”

I would submit the following specific proposals for your consideration: experimental programs should be set up in selected schools. Ideally the university should assume the responsibility for postgraduate education. This would help close the gap between the preclinical departments (basic sciences) and the clinically oriented services by promulgating interdisciplinary departments, divisions, institutes, or units which would be dedicated to the earlier acceptance of students and the earlier introduction of clinical medicine with only the minimum of basic science knowledge essential to the treatment of disease. This is not unreasonable when one realizes that the basic sciences are no longer the glue which binds together a medical education. For example, physiology is moving away