

*The need for health manpower has led to a search for solutions, of which one is continuing education. This critical analysis addresses itself to the need for evaluation of such efforts. The author discusses the assumptions underlying continuing education courses and how they might be investigated, so as to develop more realistic and effective approaches.*

## **THE EVALUATION OF CONTINUING EDUCATION EFFORTS**

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THE shortage of health manpower induced by the surging demand for health services, and by the federal and state legislation that implements these demands, has led to an urgent, even desperate, search for solutions. These solutions promise to break traditional patterns of education and practice, but it is far from clear at this moment which of them will prevail, or when, or where. Continuing education programs, however, offer a solution with high survival value and with many, and sturdy, adaptive features. Not only do they promise to accommodate the purposes of improving the competencies of available manpower, they are also considered to be peculiarly suited to dealing with the impact of the contemporary knowledge boom.

New patterning of health programs has created new kinds of positions at all levels, and has eliminated others. Some of these new positions can be filled by building on the knowledge and skills of trained health workers. If attendance at short training courses can accomplish this purpose, it would appear to be a minimally disruptive, maximally efficient procedure. The velocity of the generation of new information and of

new technologies has, for the present at least, shattered any expectation of "finishing" the process of education within the time boundaries of formal institutional training. The idea, therefore, of continuing to educate in short manageable units of content and time is appealing, particularly as a quick way of translating knowledge into action. For the participants, the continuing education course provides an opportunity to acquire needed information and skills in an agreeable setting, with congenial associates, and with only a brief interruption of work (albeit this interruption may be welcome and valuable of itself). The course director has the satisfaction of meeting evident public health needs through programs whose objectives are readily definable in terms of the content to be presented; faculty can be obtained for the limited time required; interesting new educational techniques such as programmed instruction and video tapes are at hand; funding is available; and, with suitable publicity, so are students.

Continuing education is, of course, not new, although its increased impact, importance, and vigor are. The federal funding that supports it, the many needs

it serves, and the magnitude of the health profession's involvement in it, represent a qualitative, not simply a quantitative, change in the meaning of the continuing education program. There is every reason to suppose that continuing education of one type or another will attract a growing investment in time, money and hope. The organizational arrangements for conducting the programs will show a corresponding growth in sophistication, along with an increase in the range of topics covered and purposes served.

### Need to Evaluate Effectiveness

The effects of these efforts will be felt in public health for long years ahead, and a full evaluation of them will be the task of some future historian. Concurrent evaluation is, however, as essential a part of continuing education programs as it is of all public health programs, and for the same basic reason—to justify the utilization of public resources for public benefit.

What measures of success, then, have been obtained of the continuing education program? An affirmation of the perceived value of continuing education courses is, of course, implicit in their popularity and acceptance. The validity of this sense of satisfaction and accomplishment cannot be discounted. It signifies, among other things, important by-products of the training experiences—the breaking of work tensions, intellectual stimulation, a re-examination of accepted ideas, a heightened feeling of confidence and competence—and an increase in “tone.” If these were the only results, the courses could be said to serve a valuable purpose that might be expected to lead to improved public health.

However, for those who are not satisfied with this kind of internal subjective appraisal, a search for external objective evaluation is likely to be frus-

trating. An examination of public health literature reveals little evidence of efforts to measure the actual accomplishment of continuing education courses. An inspection of policy statements and procedure manuals prepared by continuing education committees is similarly unrewarding. The absence of a single word about evaluation is particularly striking in an otherwise excellent manual that details responsibilities down to a reminder to notify management of changes in coffee-break time.

### Unverified Hypotheses

Speculation about the reasons for the remarkable absence of efforts to find out what is really being accomplished by all of this activity produces some unverified hypotheses. These are, nevertheless, stated if only so that they can be refuted. Program directors may conceivably feel: (1) that they are evaluating courses adequately through such subjective methods as the use of questionnaires; (2) that evaluation is impossible; (3) that evaluation is unnecessary or irrelevant; (4) that the results of evaluation do not justify the expense and time required.

If the first of the above suggestions is true it indicates an astonishingly naive approach to evaluation. In fact, it is not so much evaluation that is being sought through questionnaires, reactionnaires, and opinionnaires as it is formalized reassurance for course directors. One wonders what statements such as the following mean: “Evaluation reactionnaires showed this course to be highly effective in meeting its objectives”; “Faculty opinion rated the course their best presentation to date”; “The participants were deeply involved and quite honestly pleased with the seminar.” An index derived from responses to such queries has been accurately, if irreverently, referred to as a “happiness quotient.” It could indeed be proposed that a high

level of participant satisfaction is conducive to the fulfillment of what are presumably the real purposes of the programs, viz., increase and deepening of knowledge, modification of attitudes, improvement of technical skills, changes in behavior—all leading to the ultimate goal of improved public health services. This proposition has still, however, to be tested.

Secondly, is evaluation possible, or are the objectives of continuing education courses too broad in scope to yield to measurement? Perhaps, on the one hand, such measurable changes as occur are unimportant; and, on the other hand, important changes may be unmeasurable. There are, furthermore, characteristic features of continuing education courses which add to the difficulty of assessment, even though some of these features enhance the attractiveness of the total program. For example, the effect of very short courses (3 to 5 days) on relatively small numbers of candidates (25 to 30) makes statistical analysis unfeasible in some instances. The fact that presentations to be made by the faculty are often not available in advance of the courses impedes the development of relevant evaluation instruments. The level at which methodology and resources are most readily available for purposes of evaluation is, however, the most basic level to be evaluated. The acquisition of knowledge is the sine qua non of all of the hoped-for effects of training. At an absolute minimum, plans for evaluating the extent of this acquisition should be made concurrently with the planning of course content. Changes in attitudes (if, in fact, they can be brought about at all in short-term training programs), as well as changes in behavior, emerge from new learning. While there is no guarantee that what is known will be either felt or done, it is safe to say that if learning does not take place, or does not persist, neither attitudes nor behavior are likely to be

modified, nor will public health programs be affected.

### Objectives

Tests of knowledge could serve all of the following purposes, and more.

1. They could be used to: Assist in the selection of participants for a given course, and in the diagnosis of the specific instructional needs of participants. The present practice of election or self-selection for course attendance results inevitably in a wide range of "threshold" knowledge among participants, so that the same course may be at too high a level for some participants and at too low a level for others. Or, it may simply fail to meet the informational needs of others.

2. Two adjustments, based on evaluating the pre-course knowledge of participants could be made: either the course content could be held constant, while admitting to the course only those students who might reasonably be expected to benefit from it; or, the faculty, knowing the gaps that exist, could be guided accordingly in the preparation of their material. There is evidence to suggest that the improvement resulting from training is likely to be greatest at the low level of the distribution. This may be an artifact of limitations in the measuring device, or it may reflect a tendency to pitch the content of a course down rather than up, thereby failing to develop to the utmost those who are most gifted because of the more obvious claims of the less endowed.

3. The bench mark of the pretest information could be used to determine the effectiveness of the course by comparing it with post-course assessments. The focus might be on individual or group improvement, on general or specific attainments. The persistence of the learning could be gauged through subsequent follow-up testing.

4. Similarly, the relative effectiveness of different educational materials and procedures would be of value in suggesting improvements in teaching techniques.

5. One intriguing and as yet unexplored possibility is an analysis of wrong answers given on tests. These might provide a clue to misconceptions and errors that should be corrected.

Although the testing of knowledge is essential and possible, it is not to be supposed that it is easy. One of the prerequisites is the clear expression of

course objectives in measurable terms by all of the faculty members (a salutary experience in itself), and the subsequent translation of these objectives into the material of the course, on the one hand, and into the material of the tests, on the other.

There is a great need for the development of methods for measuring attitudes. In fact, the scarcity of techniques for such measurements, coupled with the undeniable importance of the effect of attitudes on behavior, sometimes seems to provoke a rejection of the importance of measuring anything else. It is well to remember, however, that the skills and techniques that make possible the measurement of knowledge have taken over half a century to develop, and were a response to as imperative a need. A similar dedication to the measurement of attitudes might be as fruitful. One promising technique involves the so-called structured interview. This empirically derived method has been used successfully to assess qualities of hospital administrators that are not readily measured by paper and pencil tests.

### Examples of Evaluating Continuing Education in Medicine

The *possibility* of evaluation has been impressively demonstrated in the continuing education program in medical education; in contrast with that in public health, it is marked by determined efforts to derive objective measures of its effectiveness. These investigations have depended on the use of objective instruments of evaluation, have followed careful experimental design, and have incorporated sound statistical analysis. They have dealt with the instructional value of new educational aids such as television and programmed material. Some attempt to bring the elusive task of evaluating clinical learning and performance down to an acceptably objective level; they show a concern with de-

veloping methods of evaluation that can correlate with and illuminate methods of teaching. A brief sampling of these is instructive.

There is ample evidence that significant learning occurs in experimental groups. McGuire, et al.,<sup>1</sup> report on a short-term course given to help practicing physicians improve their auscultatory skills. Scores on a 15-item identification test of unknown heart sounds, pre- and post-course, show similar gains for four experimental groups. However, a subsequent chart review of suspected cardiac cases in control and experimental hospitals revealed no influence of instruction on the quality of the cardiovascular examinations. Furthermore, a six-month follow-up test showed no significant difference from the pretest mean. Froehlich<sup>2</sup> reports that learning acquired from an intensive two-day course was sustained for the entire third year of medical school. Gildenberg<sup>3</sup> reports significant retention seven weeks after a three-day course using programmed instruction texts. Mensel, et al.,<sup>4</sup> tested 100 viewers and 100 non-viewers six months after a four-program educational television series. Differences in information level between the two groups were modest and variable.

A particularly critical analysis of the continuing education program in medicine may be found in Miller's "Continuing Education for What?"<sup>5</sup> One of his trenchant conclusions is that the content-oriented pattern is encouraging a dependence upon teaching that should be supplanted by an approach leading to self-reliance and self-education, an increased "concern for educational diagnosis and individualized therapy." Continuing education should mean, he says, continuing self-education and not continuing instruction. Miller does not suppose that there will be "an immediate abandonment of present program forms," but anticipates "a slow erosion of the faith which presently supports

them." These conclusions derive from a base of research into the effectiveness of continuing education in medicine. It will be worth the effort to discover what conclusions apply to continuing education in public health.

There is no doubt that assessment of continuing education courses is possible. This possibility should be exploited to the full, not only for the direct gains that are suggested, but also for indirect gains. Among these, one of the most significant would be the leads it would suggest for other levels and kinds of assessment. The results of such studies would provide a standard of information against which the results of explorations of changed attitudes and performance could be assessed.

Thirdly, is evaluation irrelevant? Only if evaluation is viewed narrowly, in the most limited academic tradition—as a process by which students are graded, ranked, passed or failed—could it be considered irrelevant and not consonant with the purposes of the education of mature persons. Students in continuing education programs are patently not there to "pass" a course; nor is it expected that participation in a course will earn academic credit. But if evaluation is viewed as a process through which better pedagogy can be developed, more learning take place, and more lasting effects insured, it is unlikely that any responsible person would not support it, at least in theory.

Finally, there may be objections based on the cost and time required for evaluation. Effective evaluation is undeniably costly. Initially, while resources and methodology are being developed, it may even equal the cost of training. On the other hand, if continuing education programs in public health are not evaluated, the cost in time and money may ultimately prove to be an extravagance. Certainly a significant portion of the time, effort, and money that go into developing continuing edu-

cation programs ought to be spent on a determination of their effectiveness.

### Guidelines for Research

There are a number of assumptions underlying the management of continuing education courses that deserve to be subjects of research. One is that a suitable way to determine what shall be the content of continuing education courses is to conduct periodic surveys to allow health workers to specify their needs. A further assumption is that the needs that are most frequently mentioned in such surveys correlate with high priority needs of the public and of public health.

In a more stable situation this might be true, but in the present situation, characterized by great fluidity in the patterning of public health programs, it may not be. Some of the needs that are listed may express exacerbations and frustrations arising from administrative disorder, and may shift with the next turn of the organizational kaleidoscope. An additional precaution attached to these assumptions is inherent in the general unreliability of the questionnaire method.

A third assumption that deserves to be investigated is that people who elect, or who are selected, to attend courses are highly motivated to profit from them and are, in fact, the people who should be trained. Among the most elusive of personal attributes is motivation, and probably none is a stronger determinant of the value to the individual of the training experience. A study of the motivation of the people who attend continuing education courses should be high on the list of research priorities. Establishment of the relationship of motives to attainments would be of great help in evaluating the suitability of the patterning of continuing education courses.

More attention should certainly be directed to providing each faculty member

with as much information as possible, as long in advance as possible, about the students he is to teach. Their backgrounds, their experience, their capacities are all relevant to his presentation and are significant factors in determining its content and structure, as well as its effectiveness. As a guide to an evaluation program it may be useful to summarize a few major assumptions that appear to underlie the program of continuing education in public health.

1. The expanding needs of public health have created manpower problems which can be met to an important degree by retraining present public health workers, and by transfusions to them of new information and new techniques.

2. An effective way to bring about this retraining and updating is through short-term, content-oriented instructional programs attended by relatively small groups of participants.

3. The content of these courses can be effectively determined by asking health workers what they think they need to know.

4. The needs that are most frequently mentioned in such surveys may be expected to correlate highly with the needs of the public and of public health programs.

5. By their election or self-selection, people who attend courses may be judged to be strongly motivated to profit from them, and are the people who should attend.

6. An expression of satisfaction with the course on the part of faculty and participants correlates positively with the attainment of course objectives.

7. New knowledge, new points of view, new orientation acquired in courses will be retained and translated into improved attitudes and behavior which will, in turn, enrich public health programs.

Some, all, or none of these hypotheses may be true, partially true, or false. But they do not need to be taken on faith. All of them can be examined and tested.

## Conclusion

The great need in continuing education reflects the great need in public health for a master plan. Sooner or later the energy and creativity of skilled pub-

lic health leadership will absorb the impact of new legislation, and forces will be regrouped for a more effective attack upon health problems. It is probable that larger regional planning units will help to coordinate the efforts of all agencies involved in health training and health services. This will make possible a more relevant assessment of educational needs; it will expand the resources for meeting them and will provide greater opportunities for efficient utilization and deployment of retrained personnel.

The levels at which the effects of continuing education can be measured radiate outward and upward from a base of testing the relative effectiveness of different kinds of methodologies and presentations upon learning, to assessing the over-all improvement of the participants (as a group and individually) in terms of stated course objectives, to evaluating the changed impact of the participants on the health programs in which they work and on the public they serve, to assaying the benefits to public health in larger and larger areas. A start really ought to be made.

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## American Academy of Comprehensive Health Planning Formed

Directors of state comprehensive health planning agencies have joined forces to found the American Academy of Comprehensive Health Planning (AACHP). The new organization will serve as an information exchange among national, state, and local comprehensive health planning authorities and agencies. Dr. Eugene H. Guthrie, AACHP chairman, and executive director of the Maryland Comprehensive Health Planning Agency, announced that the objectives of the academy will be: to improve intercommunications; public education on comprehensive health planning; the encouragement of more public participation; and the provision of a central organization platform from which states can voice their comprehensive health planning concerns.

Membership of AACHP will be comprised of all states designated for comprehensive health planning by their governors. Area agencies and other organizations may also join, but only the states and territories may vote. For further information, write: AACHP, Office of Comprehensive Health Planning, Cathedral and Read Streets, Baltimore, Md. 21201.

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## Practical Nursing School Recruits Indian Women

Young women who are high school graduates, and who have at least a quarter degree of Indian blood, are being urged to take a 17-week course in practical nursing leading to a civil service

position as a licensed practical nurse in a hospital. Write: Director, Indian School of Practical Nursing, 1015 Indian School Road, N.W., Albuquerque, N. Mex. 87107