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## Needs Assessment

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### INTRODUCTION

Increasing needs and diminishing resources are an all-too-common dilemma facing CME planners today. As a consequence, many CME professionals worry that they will not be able to do the kind of job they want to do. The challenge for them is to identify and respond to needs that ought to be addressed and that can be satisfied through educational interventions.

The approach to needs assessment described here will enable CME planners to obtain information to identify those educational needs and to develop responses to them. It is an approach that recognizes that there are not enough resources to conduct a comprehensive needs assessment for every educational activity. The fact is that needs assessment in practice frequently varies from the ideal approaches described in the educational research and medical education literature. Normally, needs assessment varies from the ideal to the extent that planners use professional intuition (Nowlen, 1980) to supplement objective data collected in a variety of ways.

The approach outlined here provides a structure that can help CME planners combine objective data with professional intuition to focus on those needs that can be met educationally and that will provide the greatest benefit to the physicians they serve.

The paragraphs that follow outline an ideal process. The more closely this process is followed, the closer CME planners will be to achieving the desired results.

### DEFINITIONS: NEEDS AND NEEDS ASSESSMENT

In education, the concept of "need" was introduced by John Dewey in the early twentieth century. Dewey and his followers, concerned about the "subject-centered" focus of most educational planning, developed the concept of educational need as a way to foster a "learner-centered" emphasis (Atwood and Ellis, 1971). In addition, educators have adopted a host of definitions from other fields and incorporated many of them into the definition of educational need. The most favored concept today views needs as a discrepancy between an existing set of circumstances and a more desirable set. In the educational context, circumstances can either be described in terms of knowledge, skills, and attitudes, or as levels of competencies.

The term "needs assessment" refers to any systematic approach to collecting and analyzing information about the educational needs of individuals or organizations. Basically, needs assessment is collecting information to identify "what is," gathering information about "what should be," and then making judgments about the difference.

### HOW TO ASSESS THE EDUCATIONAL NEEDS OF PHYSICIANS

The general approach described here for assessing educational needs of physicians draws primarily on the framework proposed by Grotelueschen and colleagues (1974) but also reflects observations in general adult and continuing education (Moore, 1980) and in CME (Mazmanian, 1980; Laxdal, 1982; Moore, 1984; Levine, et al., 1984). The approach contains seven steps:

1. Identifying a problem.
2. Deciding to respond to the problem.
3. Involving others.
4. Determining data collection strategy.
5. Collecting the data.
6. Analyzing the data.
7. Implementing the findings.

#### Identifying a Problem

In the ideal situation, issues would emerge as the result of careful analysis by CME planners and then be refined in subsequent needs assessment activities. Realistically, however, problems are identified from many sources, both verbal and written, as well as by drawing on professional intuition.

Problems (issues) can be categorized in two ways. *Development issues* emerge when an individual or an organization decides to change from some current

situation to another situation that represents growth and improvement. *Maintenance issues* emerge when an individual or organization decides to change from some current situation that is unsatisfactory to another that represents an accepted standard of performance.

Once a problem (issue) is identified, the CME planner should first examine its administrative implications and then proceed with assessment activities that will refine the issue into specific educational needs that can be used for planning.

#### Deciding to Respond to an Issue

There are two important administrative questions that the CME planner must consider: (1) should organizational resources be used to respond to an identified problem? and (2) Where does the needs assessment activity start?

*Organizational resources.* Here, two other questions arise: are organizational resources available, and, if so, can they be used?

Are sufficient organizational resources at hand to conduct needs assessment and to develop an educational response to identified needs? If not, the CME planner will have to look for external funding (including collaboration with other organizations and cosponsor arrangements). If external funding is not available, planning should not continue.

If organizational resources are available, deciding whether to use them is a complex (and sometimes political) matter. Usually, there are many needs but only a limited amount of resources. To resolve this question, one must examine the mission of the CME program, its stated priorities, educational philosophy, and policy restrictions—and only then make the commitment to continue.

For a typical needs assessment activity, a number of resources are needed, including staff time and salaries, office supplies, telephone, postage, travel, consultants, equipment, printing, and computer time.

*Phases of needs assessment.* Once the resource question is resolved, the next question is where to begin. Usually, the nature and scope of the identified problem will suggest a starting point. It will fall into one of the three phases of needs assessment activity: strategic, programmatic, individual. The CME planner need not pursue all three phases each time a needs assessment is carried out. Ordinarily, strategic needs assessment is conducted only every three to five years, programmatic assessment annually, and individual assessment with each educational offering. The desired final product of the three phases is an ordered specification of educational needs that can readily be used to develop educational interventions. The results of assessment during one phase help focus the activities of the next.

In a comprehensive needs assessment, all three phases are carried out, with the appropriate faculty and learner representatives involved. The outcome of strategic needs assessment is a definition of general health care issues and concerns to determine programming emphasis and priorities. Programmatic needs assessment identifies specific problems and concerns related to the general content area for which individual educational activities should be developed. Individual

activity needs assessment specifies areas for improvement in the present performance, skills, and attitudes of the target group of health professionals (Levine et al., 1984).

#### Involving Others

Once the decision is made to proceed with needs assessment, the CME planner then arranges to involve others to contribute to the planning process. Experts advocate a collaborative approach which calls for broad-based involvement of learners, faculty, content experts, educational planners, and administration, usually in a planning committee. Committee members work together to collect, compile, and analyze needs data that include data about current circumstances as well as standards, drawing on their different backgrounds and role perspectives.

#### Determining Data Collection Strategy

An important early decision for the CME planner is to determine how to describe and analyze the identified problem (issue) and translate it into an "educational need." Three questions relate to this decision: (1) what data will help describe the problem? (2) Where can that data be obtained? and (3) How can the data be collected?

*Types of data.* Only data related to the identified problem should be collected. The kinds of data that can be used are general socioeconomic, health systems, epidemiological, work setting, individual performance, and individual characteristics. The decision to select a certain kind of data should take into consideration the problem being addressed and the phase of needs assessment being conducted. For example, general socioeconomic data, health systems data, and epidemiological data are appropriate for strategic needs assessment; data about work setting are helpful at the programmatic level; and data describing individual performance and characteristics are useful for activity-level needs assessment.

*Data sources.* After deciding what types of data should be collected, the CME planner should identify sources for that data. Involvement of the potential learners should be sought whenever feasible because it will provide an important perspective and may create motivation for participants (Laxdal, 1982).

Several data sources exist: people, documents and special studies. The two most common people sources are course directors and potential learners (Osborne, 1982, Mason and Kappelman, 1977). Because data obtained from one source can be criticized as lacking objectivity, the CME planner may decide to collect data from other people sources, including peers of potential learners, planning committee members, experts in the field, potential faculty, representatives of professional groups, hospital administrators, detail persons, representatives of government agencies, researchers, and patients.

As to documents, a variety of records exists that constitutes a largely untapped

and potentially valuable source of data. Hospital patient records, despite some limitations, provide an excellent source of information for CME needs assessment. In addition, aggregate patient databases are stored in various computerized formats. Other hospital-based records include minutes of regularly convened committees, incident reports and patient complaints, morning reports, and site visits reports from regulatory groups (e.g., the JCAHO). The professional literature provides rich information about trends in biomedical science. The federal government publishes a wide range of reports summarizing and analyzing health statistics and technological developments.

As far as special studies are concerned, there are a number of studies that have been specifically designed to examine a specific issue, usually in a research context. Examples are health policy studies and the output of special PRO activities.

In general, the CME planner should ask four questions about sources of data:

- (1) Are the data accessible? (2) Does the source provide accurate and reliable data? (3) Does the source provide relevant and meaningful data? and (4) Is the cost of obtaining data from the source reasonable?

*Data collection techniques.* Because few studies have been made of the effectiveness of various needs assessment techniques, the CME planner will have to use judgment in deciding which techniques to use. Naturally, such decisions will reflect the problem to be addressed, the data to be collected, and the sources to be used as well as the analysis technique.

The CME planner can select from a wide variety of data collection techniques, ranging from very simple and unsystematic at one end to comprehensive and highly systematic at the other. Here is a summary of these techniques as reported in the literature.

#### 1. Unsystematic techniques include

*Hunches.* These are insights obtained from conversation, the mass media, and general observation. They are not considered a reliable source of data, but the professional intuition of CME planners has considerable value.

*Requests.* CME planners regularly respond to requests for programming, usually from potential course directors. The reliability of this approach is questionable, since it often reflects the perspective of one or more vocal individuals. Still, requests can be an important part of program planning since they can be used to trigger a more comprehensive needs assessment activity.

2. The next group of techniques is somewhat more formalized and systematic, but as a general rule, these techniques do not involve much interaction between planner and potential learner.

*External consultants.* Process or subject matter experts or specialists can participate in a needs assessment study or provide one-time consultation on a topic.

*Informal network.* Systematically developing and maintaining contact with a network of people—key individuals (sometimes called "educational influencers") in departments within an organization can serve a liaison function with the CME planner.

*Document analysis.* This approach involves studying documents such as committee minutes, reports, the medical literature, and other published materials. This approach is especially useful when employed in combination with other methods.

3. The most systematic techniques tend to involve the learner to a greater degree.

*Tests and examinations.* These are used both to evaluate learner progress and as a diagnostic tool to identify specific areas of learner deficiencies. Such techniques are better at measuring levels of knowledge than of performance.

*Observation.* One can observe either actual or simulated performance. Supervisors, peers, or outside experts can observe actual performance on the job by using rating schedules or checklists. A variety of techniques have been developed to observe performance in simulated situations, such as in-basket exercises, work sample tests, and role playing.

*Self-assessment.* A number of self-assessment techniques have been developed to help physicians assess their needs, either individually or in collaboration with peers. In one form, practice data are used to prepare an individual physician's practice profile. Other more elaborate and formal self-assessment programs have been developed by specialty societies for their members.

*Group meetings.* Some planners find that the use of groups, either formal or informal, helps them determine educational needs. Two popular techniques used are brainstorming and the nominal group process.

*Patient care evaluation studies.* This broad approach ranges from simple chart review to sophisticated research studies. The goal is to evaluate a specific aspect of patient care in a given setting by analyzing patient records (or, less frequently, by direct observation) and then designing a CME activity to address the deficiencies that are uncovered.

4. The most frequently used techniques for assessing educational needs today are surveys, in which potential learners are directly queried about their needs. There are two commonly used techniques.

*Questionnaires* are popular because they can reach a large number of people with relatively low expenditure of time, money, and manpower. They can be administered in person or be mailed to prospective respondents. Moreover, the data obtained can easily be summarized and analyzed. But their highly structured format can inhibit complete responses, and they usually collect self-reported data which may reflect perceptions rather than facts. Commercial questionnaires are not readily available, and the process of custom designing them is not easy.

*Interviews* are a means of interactive exchange with one individual or a group, either in person or by telephone. They can be formal and highly structured, with prepared questions (Sudman and Bradburn 1989, Dillman 1978), or they can be flexible and directed largely by the interviewee, with the topics emerging spontaneously (Patton 1981). Skilled interviewers can probe for specific answers, can examine complex issues, and can uncover feelings as well as facts. But, interviewers have to be trained, and the conduct of an interview—including staff time and travel—is costly. Interviewer bias can affect the outcome, and the data obtained are difficult to organize and analyze.

There is a general tendency today to equate needs assessment with surveys in general and with questionnaires in particular. Most experts in the field believe, however, that needs assessment achieves the most meaningful results if data are collected from multiple sources by using multiple techniques.

### Collecting the Data

Once CME planners have determined the data collection strategy, they must next decide what specific steps to take to collect the data. Resources and responsibilities must be determined, and time lines must be established.

As to resources, it is inappropriate to use a sophisticated technique involving computers and measurement specialists when the goal is to identify the learning needs of a small group of physicians on a specialized subject. Scaled-down data collection and analysis can accomplish needs assessment quite satisfactorily. Some ways to keep costs down are to decrease the size of the subject group, select less-expensive data sources, use less-expensive staff members, seek help from other departments in a cosponsorship effort, purchase existing assessment instruments instead of designing new ones, and choose a few key sources of data rather than many.

### Analyzing the Data

At this stage, the CME planner should ask three questions: (1) Do any needs exist? (2) If so, are the identified needs real "educational needs"? and (3) What are the priorities among the educational needs?

*Identifying needs.* Data analysis, which should be carried out during each phase of needs assessment, can either be quantitative or qualitative. In the quantitative approach, data are analyzed statistically (either descriptive or inferential) to decide if needs really exist (Fitz-Gibbon and Morris, 1987). Qualitative approaches have gained favor in recent years because they can better capture the many-sided reality of a complex situation. A popular qualitative technique is the case study, which is an intense, detailed description and analysis of a single phenomenon within its environment (Patton 1981).

The ultimate decision about which analytical approach to take should be made at the same time that decisions are being made about data collection strategies. Although there are no hard and fast rules, quantitative techniques are generally used with questionnaires and qualitative techniques are usually employed to analyze data obtained by interview or observation.

*Determining which needs are educational.* True educational needs are those in which deficits in knowledge, skills, and attitudes have been identified. Non-educational needs require administrative action, such as changes in staffing patterns, purchase of new equipment, and policy changes. The growing concept of "continuous quality improvement" says that most problems within health care

are not due to physician staff deficiencies but to system problems that are controlled by management (Berwyck, 1989). The fact is that some needs contain elements of both; careful attention should be paid to identifying them and their interaction.

*Priorities of educational needs.* While initial priorities were established by examining problems in the context of the mission and priorities of the CME program, there will be a great many other educational needs that should be addressed, all within the framework of insufficient educational resources. Ways to make additional judgments about educational priorities include the severity of the problems, the potential impact of an educational activity, the number of patients affected, the number of staff involved, available resources, time investment required, capability and willingness of learners, and availability of previously developed programming protocols.

### Implementing the Findings

This phase involves two steps: documenting the findings and translating needs into educational objectives.

*Documenting the findings.* No matter what the size or scope of a needs assessment is, it must always result in a written report. The findings can be used to document decisions for programming and later for evaluation activities. The detail and thoroughness of the report will range from sketchy notes (sufficient to remind the CME planner) to full reports (needed by management to justify funding or to satisfy accreditation requirements).

In general, the kind of information needed for documentation includes (1) a description of purpose and issues for the needs assessment project and (2) a brief review of those involved in the assessment, the information sought, the data collection process used, and the analytical procedures.

*Translating needs into objectives.* The results of a comprehensive needs assessment should be a list of educational needs for a target audience of physicians (that have been prioritized through the three phases—strategic, programmatic, and individual activity—of needs assessment). The list of educational needs is used to formulate learning objectives for an educational activity. The CME planner, working with faculty, potential learners, and others, will then restate the educational needs into behavioral descriptions of what the learner is expected to learn and how the learner is expected to change as the result of participation in the educational activity. If an educational need can be thought of as a continuum that ranges from current circumstances to some desired circumstances, then educational objectives should describe how far along that continuum the learners should be when the activity concludes; some needs will be completely reduced (full movement along the continuum), while others will be only partially reduced.

## CONCLUSION

The approach described here combines elements of many other approaches to needs assessment. The result is a set of interrelated decisions in which educational and administrative issues can interact. The approach helps the CME planner answer questions, including

- When do I know if I should do a needs assessment?
- What needs are appropriate for me to address?
- What kind of data should I use?
- Where can I get the data I need?
- How do I get the data I need?
- What do I do with the data when I get it?

The consensus of most observers is that effective needs assessment involves the dynamic interaction of faculty, learners, and experienced CME planners. The approach given here—describing the questions that should be asked and the decisions that should be made—places some structure on the needs assessment process without stifling it.

In essence, the major goal of CME planners is to offer educational activities that are attractive to practicing physicians, meet important learning needs, and improve physician capability. Well-done needs assessment will contribute to the accomplishment of this goal. The approach described here—a blend of objective data and professional intuition—is designed to help CME planners provide effective CME to the physicians they serve.

## SUPPLEMENTARY READING

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