

STRATEGIES FOR DEVELOPING COMPETENCY MODELS

Anne F. Marrelli, Janis Tondora, and Michael A. Hoge

ABSTRACT: There is an emerging trend within healthcare to introduce competency-based approaches in the training, assessment, and development of the workforce. The trend is evident in various disciplines and specialty areas within the field of behavioral health. This article is designed to inform those efforts by presenting a step-by-step process for developing a competency model. An introductory overview of competencies, competency models, and the legal implications of competency development is followed by a description of the seven steps involved in creating a competency model for a specific function, role, or position. This modeling process is drawn from advanced work on competencies in business and industry.

KEY WORDS: behavioral health; competency; modeling.

There have been growing questions about the competency of the healthcare workforce in the United States. The pace of change within the healthcare field has raised concerns about whether providers have the necessary knowledge, skills, and abilities to navigate current systems of care. These concerns have been exacerbated by data on the frequency of patient injuries and deaths as a result of errors in care (Institute of Medicine, 2000, 2001).

Competency-based approaches to training, assessment, and staff development are increasingly viewed as a central strategy for improving the effectiveness of those who provide care (Institute of Medicine, 2003). The adoption of such approaches is occurring in behavioral health, as

At the time this work was conducted, Anne F. Marrelli, Ph.D., was Senior Managing Associate at Caliber Associates in Fairfax, VA. Janis Tondora, Psy.D., is an Assistant Clinical Professor of Psychology (in Psychiatry) at the Yale University School of Medicine in New Haven, CT. Michael A. Hoge, Ph.D., is Professor of Psychology (in Psychiatry) at the Yale University School of Medicine in New Haven, CT, and Co-Chair of the Annapolis Coalition on Behavioral Health Workforce Education.

This work was supported in part by contract No. 03M00013801D from the Substance Abuse and Mental Health Services Administration.

Address for correspondence: Anne F. Marrelli, Ph.D., 4819, Bentonbrook Drive, Fairfax, VA 22030.
E-mail: annemarrelli@earthlink.net.

evidenced by the release of numerous reports that identify competencies for various segments of the mental health and addictions treatment workforce (Coursey et al., 2000; National Panel for Psychiatric Mental Health Nurse Practitioner Competencies, 2003; U.S. Department of Health and Human Services, 1998).

The identification and application of the competencies required for effective job performance has become a complex and sophisticated endeavor as experience with this approach has furthered in business and industry. The purpose of this article is to draw on that reservoir of knowledge and describe a seven-step process for competency modeling. It is intended to offer a conceptual introduction to competency modeling by briefly explaining each step in the process. It is not possible, given space constraints, to provide sufficient guidance for readers to undertake competency modeling without further instruction or support. However, this article should serve as a useful orientation to the process, as well as a beginning guide for efforts to plan further development of competency models within the field of behavioral health. We begin with a brief review of key concepts, discuss relevant legal issues, and then describe the seven strategies.

OVERVIEW OF COMPETENCY CONCEPTS

A competency is a measurable human capability that is required for effective performance. A competency may be comprised of *knowledge*, a single *skill* or *ability*, a *personal characteristic*, or a cluster of two or more of these attributes. Competencies are the building blocks of work performance. The performance of most tasks requires the simultaneous or sequenced demonstration of multiple competencies (Hoge, Tondora, & Marrelli, in press). An example of a competency appears in Table 1.

Knowledge is awareness, information, or understanding about facts, rules, principles, guidelines, concepts, theories, or processes needed to successfully perform a task (Marrelli, 2001; Mirabile, 1997). The knowledge may be concrete, specific, and easily measurable, or more complex, abstract, and difficult to assess (Lucia & Lepsinger, 1999). Knowledge is acquired through learning and experience.

A *skill* is a capacity to perform mental or physical tasks *with a specified outcome* (Marrelli, 1998). Similar to knowledge, skills can range from highly concrete and easily identifiable tasks, such as filing documents alphabetically, to those that are less tangible and more abstract, such as

TABLE 1
Example of a Competency: Managing Performance

Definition	Using effective selection procedures to hire successful employees. Setting clear performance goals and expectations for employees and regularly monitoring their progress. Providing coaching and feedback to employees to maximize their performance. Analyzing the underlying causes of performance problems and taking action to resolve the problems.		
Descriptors	<ul style="list-style-type: none"> • Makes sound hiring decisions based on the requirements of the job. • Clearly defines performance expectations for employees. • Provides employees with the resources they need to accomplish their goals. • Regularly monitors employee work and goal achievement. • Promptly addresses performance problems. • Recognizes the achievements of employees on a regular basis. • Applies the organization's performance management process. • Provides employees with regular feedback to improve their performance. 		
	<i>Low Proficiency</i>	<i>Moderate Proficiency</i>	<i>High Proficiency</i>
Selects employees based on initial impressions developed from reading the resume and an interview.	Identifies the competencies required to perform the job and uses the competencies as a guide in selecting employees.		Selects employees based on a careful analysis of the competencies required for the job. Bases interview questions (or other selection techniques) on the required competencies.
Distributes assignments without providing adequate information to employees to successfully complete the tasks.	Explains assignments clearly to employees.		Clearly defines all assignments and associated performance expectations and checks to ensure the employee has understood.

TABLE 1 (*Continued*)

When giving assignments, does not consider the resources the employee will need.	When giving assignments, asks employees if they have the resources they need.	When giving assignments, reviews with employees the resources they will need and ensures the resources are available or provided.
Infrequently meets individually with employees to monitor progress and provide feedback.	Meets individually with employees at least every month to monitor progress and provide feedback.	Meets individually with employees at least every two weeks to monitor progress and provide feedback.
Delays addressing performance problems until they have escalated.	Promptly addresses performance problems. Provides feedback to the employee and develops an action plan for improvement.	Looks beneath symptoms to identify the root causes of performance problems and works with the employee to develop an effective solution.
Does not recognize employee accomplishments.	Recognizes and rewards employees for good performance.	Continuously recognizes and rewards employees, both formally and informally.
Fails to match assignments with employee strengths or development needs.	Organizes and assigns work to achieve objectives, and uses the strengths of each team member.	Organizes work to achieve objectives, leverage strengths of employees and provide development opportunities.
Implements some but not all components of the organization's performance management process.	Consistently implements the organization's performance management process.	Uses the organization's performance management process to monitor and maximize performance and develop employees.

managing a quality improvement project (Hoge, Tondora, & Marrelli, in press; Lucia & Lepsinger, 1999).

An *ability* is a demonstrated cognitive or physical capability to successfully perform a task with a *wide range of possible outcomes* (Marrelli, 1998). An ability is often a constellation of several underlying capacities that enable us to learn and perform. These are often time-consuming and difficult to develop, and usually have a strong component of innate capacity. For example, the ability of analytical thinking comes more naturally to some than to others, and can be quite challenging for many individuals to develop.

Competency experts note that many *personal characteristics* may be required for or may influence effective performance. These characteristics, such as attitudes, values, and traits, often have an emotional or personality component. Marrelli (1998, 2001) has argued that it is useful to define these personal characteristics as “enabling behaviors.” These include work habits, ways of interacting with others, or manners of conducting oneself that contribute to effective work performance. Examples of enabling behaviors are managing work priorities and assignments to meet schedule commitments, developing rapport with others, and treating others with respect (Marrelli, 1998, 2001). Enabling behaviors can emerge through learning, experience, innate predisposition, or a combination of these determinants. For example, developing rapport with others appears to be an almost instinctive behavior for some, while others have to consciously learn how to develop rapport and then practice assiduously before they can achieve it routinely.

A *competency model* is an organizing framework that lists the competencies required for effective performance in a specific job, job family (i.e., group of related jobs), organization, function, or process. Individual competencies are organized into competency models to enable people in an organization or profession to understand, discuss, and apply the competencies to workforce performance (Hoge, Tondora, & Marrelli, in press).

The vast majority of expenditures on mental health care and substance use disorders treatment are expenditures on personnel.

The competencies in a model may be organized in a variety of formats. No one approach is inherently best. Rather, organizational needs will determine the optimal framework. A common approach is to identify several “core” or “key” competencies that are essential for all employees, and then identify several additional categories of competencies that apply

only to specific subgroups. Some competency models are organized according to the type of competency, such as leadership, personal effectiveness, or technical capacity. Other models may employ a framework based on job level, with a basic set of competencies for a given job family and additional competencies added cumulatively for each higher job level within the job family.

LEGAL IMPLICATIONS

Before considering the steps in the competency modeling process, it is important to briefly examine the legal implications in the application of competency models. If a model will be used to make employment decisions, the process of identifying the competencies must adhere to rigorous standards. Employment decisions include hiring, promotion, selection of employees for training opportunities that may lead to promotion, reassignment, evaluation, compensation, termination, and in many cases, certification. The organization's ability to successfully defend these decisions depends heavily on the reliability and validity of the competency model, and the organization may be asked to demonstrate that the model was created and utilized according to acceptable professional standards. The federal *Uniform Guidelines on Employee Selection Procedures* (Equal Employment Opportunity Commission, 1978) provides detailed guidance on the requirements for validation. As an example of appropriate implementation, in a competency-based selection process, the required competencies for the position are used as the selection criteria.

If a completed competency model is to be used in employment selection decisions, it is important to distinguish between the competencies that are "essential" for job performance and those that are "non-essential." As an example, the federal Americans with Disabilities Act (ADA) is designed to ensure that qualified persons with disabilities have the same access to employment as those without disabilities. The competencies assessed in selection procedures must be demonstrably related to the "essential" job functions. Information about the definition of "essential" can be found in the ADA regulations (Equal Employment Opportunity Commission, 1991; Marrelli, 1994).

If the competencies will be used for employee development, strategic workforce planning, or career planning, less rigor in the competency modeling process is required because there is less legal risk to the organization in these applications. In these situations, the level of rigor will be determined by the importance to the organization of the accuracy and thoroughness of the identified competencies.

THE PROCESS OF DEVELOPING COMPETENCY MODELS

A thorough competency modeling process has seven steps. Each of these is described below. While presented in a logical sequence, in practice, the process can be somewhat less orderly due to the interrelationship among these steps.

Step One: Defining the Objectives

The first and most important step in a competency modeling effort is to clearly and specifically define the objectives. There are four essential questions to be answered in this process.

A competency may be comprised of knowledge, a single skill or ability, a personal characteristic, or a cluster of two or more of these attributes.

Why is there a need to develop a competency model? Consider carefully the problems to be solved, the benefits to be gained, and the opportunities to be pursued through the development and application of a competency model. Because competency modeling requires a significant investment of time and money, a strong need should drive the decision to conduct such a project.

What is the unit of analysis? Is the objective to identify the competencies required for effective performance for a job family, a specific job, or a more narrow function? Will the results apply to a single work group, a department, or an entire organization? Or will they apply to a consortium of several organizations, or all the members of a profession?

What is the relevant timeframe? Does the concern with the competencies need to be addressed now, or is it necessary to identify these competencies in the future? Many organizations choose to identify both the competencies currently needed and the competencies that will likely be needed in the foreseeable future. The ability to predict future needs will vary greatly depending on the rate of change and the type of factors that influence the field being studied.

How will the competency model be applied? Will it be used for strategic workforce planning, employee selection, promotion, performance management, training and development, certification, succession planning, compensation, rewards and recognition, or career planning? Many of the decisions made about methodology and the resulting competency model will depend on the intended applications. Table 2 contains a sample statement of the objective for a competency modeling project.

TABLE 2
Sample Statement of Objectives

Need	The job requirements of clinical supervisors have changed significantly over the past several years due to internal organizational factors, state and federal regulations, and health care system changes. Further changes are expected over the next three to five years. Frequent problems in the quality of patient care have also arisen because some clinical supervisors have not adequately monitored the work of their staff.
Objective (unit of analysis and time-frame)	Identify the competencies that are essential for effective performance for clinical supervisors in the State's 10 mental health centers now and in the next three years.
Application	The identified competencies will be used: <ul style="list-style-type: none"> • In the selection of new clinical supervisors to ensure they demonstrate the competencies required for successful job performance. • To manage and evaluate the performance of clinical supervisors. • To identify the development needs of current clinical supervisors and create development programs to meet these needs.

Step Two: Obtain the Support of a Sponsor

A sponsor is necessary for each competency modeling project to provide the information, resources, support, and authorization required to ensure its success. A key element of the support that the sponsor will provide involves gaining the commitment and participation of the employees, managers, professionals, or others from whom data will be collected. Thus, sponsors must have influence and jurisdiction over the relevant units of analysis, and might be a chief executive, department head, program manager, or the board or management of a professional association.

Convincing the sponsor that the competency modeling project is a worthwhile investment of organizational resources can be accomplished by preparing answers to the following questions:

- What specific organizational needs will the competency model address?
- How will the model address these needs?
- What additional potential applications will the model have?
- How will the model be developed? Why is this approach being used?
- How will employees, managers, professionals, and other stakeholders be involved?
- How long will it take to develop and apply the model?
- What actions will be taken to ensure the success of both the model development and its application? What are some of the potential barriers, and what are the plans for addressing them?
- What are the tangible and intangible costs of developing the model?

It is crucial to be clear in explaining what is needed, including authorization to conduct the project, staff time, facilities, equipment and supplies, other resources, and most especially, the sponsor's commitment to ensure the full cooperation and participation of the employees, managers, and other stakeholders involved in or affected by the project. It is best to provide this information both orally and in writing.

Step Three: Develop and Implement a Communication and Education Plan

A key element of success in any competency project is convincing those who will participate or be affected of its value. Buy-in, commitment, and the cooperation of these stakeholders are vital.

Work with people who know the organization well in order to identify all the stakeholders in the project. These include the individuals and groups who will benefit, be negatively impacted, be inconvenienced, or affected in any way from the competency study. Assess the probable level of support that can be expected from each individual or stakeholder group by informally classifying them into one of three categories:

- *Committed.* These stakeholders will participate willingly in data collection or pilot testing, provide funding or other resources, and will influence others to support the study.
- *Compliant.* These stakeholders will do what they are asked, but will not go beyond what is required of them.
- *Resistant.* Active resisters may strongly oppose the study by refusing to cooperate with requests to supply information or people, delaying requested actions, or even attempting to stop the study. Passive resisters may outwardly appear to comply with project requirements, but actually attempt to undermine the study (Lucia & Lepsinger, 1999).

Plan a communication strategy to address probable concerns. For example, organizational leaders may fear their autonomy in selecting and assessing their employees will be replaced by a competency model that dictates criteria for making these decisions. To decrease their anxiety, emphasize in the communications that the completed competency model will provide tools and guidelines for decision-making, rather than rigid requirements.

Create a schedule for communicating with each stakeholder group, planning the amount and type of information to be provided. Inform all stakeholders about the study in the early planning phases, and communicate at periodic intervals throughout the study to keep everyone informed of the progress being made and what they can expect next. The stakeholders who will be directly involved in the study, such as those who will be interviewed or will complete a survey, will need more detailed and frequent communications.

Benchmarking interviews with other organizations is especially useful in achieving a broader view of the job.

The communication plan should specify the media to be used. Possibilities include in-person briefings, conference calls, e-mail bulletins, voicemail bulletins, posters, staff meetings, town halls, newsletters, videos, memos, and more. The effectiveness of each media will vary with the message, the organizational culture, and the stakeholders. The impact of the communication will also vary with the person who delivers the message, so the delivery also needs to be carefully planned. For example, a memo from a senior manager will receive much more attention than a memo from the competency project leader.

Step Four: Plan the Methodology

In Step Four, the methodology is designed that will lead to development of the competency model. This involves selecting the sample of individuals who will contribute data for the project, as well as the methods to be used for obtaining the data. For the sake of simplicity, we will hereafter refer principally to a “job,” but the discussion also applies to other units of analysis, such as a job family, specialization within a job, or a specific function.

Sample Selection

Using Multiple Groups. It is essential to collect data about required competencies from both job incumbents and others familiar with the work. Self-reports about competencies from incumbents can be flawed, as people sometimes report that their job requires more socially prestigious competencies than those actually needed. For example, employees might report that “problem-solving” is a key competency, when in reality what they need is the “ability to follow directions.”

The managers or supervisors who directly oversee the work of the target job should always be included in the sample, along with job incumbents. If those in the target job supervise others, include the supervisees in the sample, as they can provide information about the competencies needed to be an effective supervisor. If the target job involves a high level of interaction with clients or patients, it is important to include them as a source of data, since they can provide a useful perspective on the competencies they value in the job incumbents. For some job roles, it is also appropriate to include colleagues or team members to obtain their unique perspective.

Focus on High Performers. The accuracy of the competency model will depend heavily on the accuracy of the data collected. Data accuracy is dependent on the people from whom data is collected. These individuals should be highly knowledgeable about what is needed for effective performance. In developing a competency model, the goal should be to identify the competencies required for *excellent* performance, not average or poor performance. The people most likely to provide accurate data about the competencies required for excellent job performance are those who perform the job the best—the high, top, or exemplary performers (Gilbert, 1996; Kelley & Caplan, 1993). Traditional job analysis and other common approaches to identifying competencies include all employees in their data collection, often without differentiating among the data provided by low, average, and high performers. The problem with this approach is that low and average performers may not fully understand what is required to do an exceptional job.

Some methods of competency identification compare the information provided by low and high performers and assume that the competencies identified by the high performers, but not by the low or average performers, are the competencies that should be included in the competency model. However, only identifying the *differentiating* competencies is a flawed approach because it is important to include all the competencies required for high performance, not just those that differentiate between low and high performers. Failure to do so can lead to serious consequences when the model is applied.

Desirable Characteristics of the Sample. It is important to ensure that the people selected to identify competencies have strong analytical and verbal abilities. A high level of analytical thinking is required, as many of the competencies needed to perform a job duty are not readily apparent. For many jobs, analytical ability is not necessary to perform competently. Therefore, we cannot assume for all jobs that a competent or high performing job incumbent or manager will have the required analytical ability to identify all competencies. The ability to express oneself well in oral speech or in writing is another important attribute in identifying competencies so that the input is clear and concise.

Selecting a Representative Sample. The accuracy of the data collected about competencies will depend heavily on how closely the sample represents the population of interest. The high performers, their managers or supervisors, and others selected should be proportionately similar to the entire population in terms of job responsibilities, functional area, tenure, ethnicity, gender, geographic location, or other characteristics relevant to the job. If a competency study addresses several levels of a job role, it is necessary to ensure that the sample includes employees from all levels.

Selecting Data Collection Methods

At least two different methods of collecting data should be used in a competency identification project. Every method of data collection has relative strengths and weaknesses, so multiple methods can complement each other and compensate for the weaknesses in singular approaches. If the resulting data obtained from one method is similar to the data collected in a second approach, there is greater credibility and greater assurance that required competencies have been accurately identified. Multiple methods are also useful in assuring that a competency is not missed all together.

The ideal subject matter expert is a superior performer who previously functioned in the job, but has been promoted to a higher level.

The factors to consider in selecting the data collection methods include:

- *Validity.* Is there evidence that a particular method will more accurately reflect the required competencies for the job role being studied?
- *Reliability.* Will the method provide reliable data, such that similar results would be obtained in repeated administrations?
- *Application.* How will the identified competencies be applied? When the competencies will be used in hiring, promotion, evaluation, or

compensation of employees, more evidence for the validity of the method is required than for development, strategic workforce planning, or recognition programs.

- *Efficiency*. How much time and other resources will the method require in instrument development, administration, and analysis of results?
- *Practicality*. Will the method be practical given the constraints of the project, such as the geographical dispersion or staggered schedules of employees?
- *Acceptance*. Will the job incumbents, managers, and other stakeholders in the study accept the method as a reasonable way to collect data? Are they likely to participate and cooperate with this method?

Seven different data collection methods follow. For each method, we summarize the advantages and disadvantages. Space limitations do not permit us to provide guidelines for the use of each method. This information can be found in the sources included in the annotated bibliography provided at the conclusion of the paper.

Literature Review. A preliminary approach for defining job content and identifying required competencies is to conduct a review of the literature to learn about previous studies of the job or similar jobs. Quite often, no previous studies have been conducted. However, if they do exist, they can be extremely helpful in providing an introduction to the job and a preliminary list of competencies to consider. The literature review supplements, but does not replace, other data collection methods. It simply provides a quick overview.

Sources of published literature include books, professional journals, association magazines, theses, and dissertations. Unpublished studies may be available from professional associations, consulting firms, colleges and universities that offer training programs for the target job, and through the Internet. The quality of these studies will vary widely, and they need to be critically evaluated before use.

Focus Groups. In focus groups, a facilitator works with a small group of job incumbents, their managers, supervisees, clients, or others to define the job content or to identify the competencies they believe are essential for performance. A series of focus groups is often conducted to allow many people in the organization to provide input.

There are different approaches to conducting focus groups. Typically, the facilitator will use a prepared protocol of questions to guide a structured discussion. For example, if the purpose of the focus group is to identify required competencies, the facilitator may go through each element of work behavior and ask the participants to describe the competencies that these require. Sometimes the participants are asked to individually list the competencies they think are important. They then

work as a group to identify additional competencies and reach consensus regarding a final list. Another approach is to base the discussion on previously collected data, such as the findings from a questionnaire. In this situation, the facilitator will methodically lead the group through the results, asking them to confirm the data or explain their perspective if they differ.

Expert panels are a special type of focus group where persons who are considered highly knowledgeable about the job and its requirements meet to develop a list of the competencies required for success. The members of expert panels are typically those who write about or do research in the relevant discipline, such as published academics.

Focus group advantages:

- They can facilitate support for the competency study and its application, because many people can be involved in the panels and provide input.
- A large amount of data can be collected quickly and relatively inexpensively.
- Participants build on each other's ideas to provide an in-depth and broad perspective that is not possible in individual interviews.
- The rapport that group members build with each other and the facilitator often encourages participants to contribute more information than they would when working alone.

Focus group disadvantages:

- Focus groups can be difficult to organize because they require that numerous people with varying schedules and commitments be present at the same place and time.
- A skilled facilitator is required to encourage a productive discussion where all participate.
- The quality of the information produced is heavily dependent on the analytical ability and depth of experience of the group members.
- Focus groups often identify competencies that reflect the values and traditions of an organization or those that are socially desirable, but not actually required for the target job.
- Group members are often not as candid in a group setting as they are when questioned individually.
- Group members who are not good collaborators can frustrate the group and slow progress.
- The more extroverted group members can dominate the conversation.
- The quality of the data can be negatively impacted by "group think," such as confining thinking to a certain perspective.
- The large amount of qualitative data typically collected can be time-consuming and difficult to analyze.

Structured Interviews. In structured interviews, carefully planned questions are asked individually of job incumbents, their managers, or others familiar with the job. Benchmarking interviews with other organizations are especially useful in achieving a broader view of the job or determining which competencies are more universally deemed necessary for a particular job. However, it is important to be cautious in applying the information collected from other organizations. There are many variables such as work environment, culture, and differences in job responsibilities that may limit the relevance of the information.

Structured interview advantages:

- A skillful interviewer can establish rapport with the interviewee and encourage a frank and full discussion. Interviewees usually are more candid in an individual setting than in focus groups, and thus may provide a more accurate and comprehensive perspective of the job.
- Skilled interviewers can probe for either more detailed information or to clarify the interviewee's responses.
- The words of the interviewee's responses are augmented by gestures, tone of voice, and posture that can reveal feelings and attitudes about selected competencies.

Structured interview disadvantages:

- Skilled interviewers are needed to ensure productive interviews. It can require extensive training for novices to develop good interviewing skills.
- The knowledge of the interviewees about the job can vary significantly. It can be difficult to assess the accuracy of the information they provide, especially when interviewees present conflicting perspectives.
- Individual interviews are very time-consuming and expensive to conduct, and require many interviews to obtain adequate information about a job. Each interview will typically require three hours—one hour to conduct the interview, and an additional two hours to document the results.
- Analysis of the qualitative data obtained in interviews is also labor-intensive and difficult.
- There is the potential for considerable bias in the way the questions are asked by the interviewer, how they are heard and answered by the interviewee, and in how the interviewer filters and documents the responses. Situational variables such as the time of day, deadlines, and degree of privacy can also affect the data.
- Some interviewees are uncomfortable in an individual, face-to-face setting, and will provide less information than they would through a more anonymous method such as a survey.

Behavioral Event Interviews. In behavioral event interviews (BEI), top performers are interviewed individually about what they did, thought, said, and felt in challenging or difficult situations. The competencies that were instrumental in their success are extrapolated from their stories. Often, average and low performers are also interviewed to provide a comparison. The interviewer will ask questions such as, “Tell me about a time when you had an extremely challenging client,” or, “Give me an example of a situation at work in which you had to make a difficult decision.”

Behavioral event interview advantages:

- The interviews provide an in-depth perspective of the job’s challenges and the competencies needed to master them.
- When average and low performers are interviewed as well as high performers, BEIs clearly discriminate between the competencies required for top performance and the baseline competencies needed for acceptable performance.
- BEIs are an excellent method for identifying the interpersonal and management competencies that are often difficult to define.
- The very specific descriptions of effective and ineffective behaviors produced in BEIs can be used to develop behavioral examples for competency models or case studies, role-plays, or other simulations for training.

Behavioral event interview disadvantages:

- BEIs are time and labor intensive. Up to a full day can be required to conduct an interview and then analyze the data.
- A highly trained and skilled interviewer is essential to obtain accurate information. The interviewer must have strong analytical ability and experience in competency identification to accurately infer the competencies.
- BEIs are not practical for analyzing a series of jobs because of the time, expense, and expertise required for administration and data analysis.
- BEIs focus solely on current and past behaviors, which may be different from those needed in the future.
- Because BEIs focus on critical incidents, the competencies needed for the more routine aspects of work may be missed.
- The data collected may not be widely accepted by stakeholders because it is provided by a small number of interviewees.

Surveys. In surveys, job incumbents, their supervisors, and perhaps senior managers complete a questionnaire administered either in print or electronically. The survey content is based on previous data collection efforts such as interviews, focus groups, or literature reviews. The respondents are typically asked to assign ratings to each listed job element or competency. For example, respondents may be asked how critical a competency is to effective job performance, how frequently the competency is used on the job, the degree to which the competency differentiates superior from average performers, and if the competency is needed on entry to the job or can be developed over time. Survey respondents are usually asked to provide in writing any additional information that they feel is important.

Survey advantages:

- Considerable data can be collected quickly and inexpensively.
- Information can be easily collected from geographically-dispersed respondents.
- Respondents may complete the survey at a time and place that is convenient for them.
- Surveys permit the input of many people in the organization and thus facilitate acceptance of the competency study.
- The survey questionnaires can be easily customized for subgroups of respondents.
- The anonymity of surveys encourages candid responses.
- The multiple-choice or rating-type questions result in quantitative data that can be easily summarized and analyzed.

Survey disadvantages:

- The data collected is often limited to the job content or competencies included in the survey. For example, respondents may be asked to list additional job competencies that they believe are important, but there is no opportunity to probe their responses as you might in interviews and focus groups.
- There is no mechanism to check for respondents' understanding of the questions.
- Response rates are typically low, so it can be challenging to secure an adequate representative sample.
- It is difficult to summarize and analyze the responses to open-ended questions.

Competency-based approaches are increasingly viewed as a central strategy for improving the effectiveness of those who provide care.

Observations. In this data collection method, the research team visits high-performing incumbents and observes them at work. The more complex the job and the greater the variety in job tasks, the more time is required for an observation. For a very routine job where the same task is repeated over and over throughout the day, an observation of a couple hours might suffice. For very complex jobs, observation of a week or more may be required. If the job changes based on work cycles, seasons, or other factors, the observations may have to be conducted over a period of weeks or months. The observation process may include asking employees to explain what they are doing and why. Sometimes observations of average and low performers are also conducted to establish a basis for comparison. The competencies required for effective performance are then inferred from the observations by experts in competency identification.

Observation advantages:

- Because observations provide a sample of what the job is like in “real life,” they are often used in competency studies to provide preliminary information. This serves as an excellent orientation to the job for the research team.
- If representative samples of employees are observed, the validity of the competencies identified is high because actual job behavior is viewed.
- Observations can provide a full perspective of the job when incumbents’ interactions with colleagues, managers, and clients are observed.
- Both verbal and non-verbal behavior can be observed.
- Many employees in an organization tend to have greater confidence in competencies identified through observations.

Observation disadvantages:

- The primary disadvantage is that these are very time-consuming and expensive, especially for complex jobs.
- If only a relatively small proportion of job incumbents are observed, the validity and credibility of the results can be low.
- Extensive experience in competency work and strong analytical ability is required to accurately infer the competencies from the observations.
- There is considerable opportunity for bias by the observer in filtering and documenting the job behavior. Training of observers is important to minimize bias.

- Job incumbents may feel anxious when they are being observed and may modify their usual behavior. However, after a few hours of observation, behavior typically returns to normal.

Work Logs. In the work log method of data collection, job incumbents enter into logs or diaries their daily work activities with stop and start times for each activity. Depending on the complexity and variety of the job, incumbents may be asked to make log entries for several days, weeks, or months. Here is a sample excerpt from a work log for a Clinical Supervisor:

Monday, May 17, 2003

8:30–8:45 Reviewed critical incident reports from prior week.

8:45–9:00 Read and responded to team member requests for schedule changes and time off.

9:00–10:00 Met with a clinician on the team to review clinical case-load, high-risk cases, and written documentation.

10:00–11:00 Participated in team case review conference. Three clients discussed.

11:00–12:00 Observed treatment provided by new counselor and provided feedback.

Work log advantages:

- Work logs provide an excellent overview of a target job and its everyday work activities and outputs. They offer a picture of the rhythm of the employee's day that can be especially valuable.
- Most individuals find work logs easy to understand and complete.
- Work logs are a good substitute for observations if these are not feasible due to logistics or expense, or if incumbents are not comfortable being observed.

Work log disadvantages:

- Employees need to have a strong incentive for completing the work logs because it can be tedious to continuously enter the information.
- Reporting errors are common because people may not enter information accurately or completely.
- It is time-consuming and challenging to summarize and analyze the data collected.

Competency Menus and Databases. Lists of competencies for jobs or job families that are found in many different organizations can be purchased from publishers and consulting firms. These competencies are organized into menus or databases. While such databases are not currently available

for behavioral health treatment staff, there are several databases of competencies for leaders, managers, and administrative support positions that may be relevant to the field.

Some of these competency lists are available in electronic databases. The user selects the desired competencies for the target job from a list of those that are potentially applicable, and the software program creates a customized list. Some competency menus are available in a printed card format with one competency listed on each card. Users select the cards containing the relevant competencies and behavioral descriptors.

Menu and database advantages:

- These are inexpensive, quick, and easy to use.
- Menus can provide a preliminary list of competencies to be incorporated in surveys, focus groups, or interviews.

Menu and database disadvantages:

- The validity of competencies derived with this method can be poor, as they may fail to accommodate for significant differences in work environment, culture, and specific job responsibilities among organizations for the same job or family of jobs. They must be combined with other methods.

Complementary Data Collection Methods

As we noted above, if multiple data collection methods are applied within a single study, the methods can complement each other and offset the inherent disadvantages of each. For example, a large group survey is a good way to test the validity of focus group results, which are typically based on small sample sizes. Surveys are also a good way to confirm the results of observations.

Another excellent combination of data collection methods is the structured interview and survey. The job content and competencies identified in the interviews subsequently can be used to construct the survey questionnaire. A large group of respondents can then be asked through the survey to rate the importance of each job element or competency. Interviews can also be used following surveys to collect more in-depth information from a sample of the survey respondents.

Plan the Data Recording and Analysis

Before collecting data, it is necessary to plan how data will be recorded so that it is accurately and consistently documented by all who partici-

pate in data collection. This must be done simultaneously with development of the plan for data analysis to ensure that the recording strategies will support the planned analyses. Data collection and analysis almost always take more time than estimated. Thus, allow extra time in the competency project schedule for these activities.

Pilot Testing. It is important to pilot test the selected data collection methods and refine them as needed before full administration. This is necessary to ensure that the data collection methods and recording procedures yield the type, depth, and breadth of information desired.

Step Five: Identify the Competencies and Create the Competency Model

In this step, three inter-related tasks are accomplished. The content of the job is broadly defined. This information is then used to identify the specific competencies required for effective performance. Once these individual competencies are identified, they are organized into a framework that constitutes a competency model.

Job Definition

Because competencies are specific to job content, the competencies required for success in a job cannot be identified until the content of the job has been delineated. An important preliminary step in understanding the job is to review available job documentation to acquire a basic knowledge of the responsibilities of the job, its place in the organization or profession, and the education and experience required for job incumbents. Job documentation includes job descriptions, recruitment materials, previous studies of the job, policies and procedures, organization charts, technical reference or training manuals, work samples such as reports or memos, regulatory materials, and performance records. It is also productive to meet with a human resources representative familiar with the job, and with a manager or supervisor one level above the target job. The gathering of such information will probably begin in an informal way in the early phases of planning the competency project.

The shelf life of competency models varies with the job or discipline and the rate of change.

The preliminary review should lead to a detailed definition of the job role content, describing each of the key elements of the job. "Job analysis" and "job modeling" are two terms frequently used for this type of process. There is a divergence of opinion among practitioners on the most effective approach. For example, some job study methods focus on identifying job

duties and tasks, and then quantifying the importance, frequency, and criticality of each. Other methods emphasize work processes and products.

We suggest that a comprehensive job study method be used to define the job where six elements related to work behavior are described (Langdon, 2000; Langdon & Marrelli, 2002):

- Input (resources, triggers for action)
- Processes (the actions taken to create the outputs)
- Outputs (deliverables such as products or services)
- Consequences (desired results for the client, organization, and individual)
- Feedback (communication about the work)
- Conditions (rules, regulations, policies)

This approach results in the full definition of the job role that is essential to subsequently and accurately identifying the specific competencies required for effective performance in that role. The “Further Reading” section at the conclusion of this article lists several resources for learning more about job study methods.

Identification of Competencies

Competency identification directly follows the definition of job content. For example, if the job-study approach focused on the six elements of work, then the identification of competencies is based on a methodical examination of the competencies required to address each of the six elements, beginning with inputs and ending with work conditions. If the job study method focused on duties and tasks, then the identification begins with the first task in the first duty and continues through the last task in the last duty.

The initial list of competencies required for effective job performance is developed by conducting a content analysis of the data collected. The themes and patterns that repeatedly appear in the data will be noted. This is best accomplished by working with the interviewers, observers, focus group facilitators, and others who collected the data.

There are many approaches to developing the initial competency list, including the following:

- Identify the knowledge, skills, abilities, and personal characteristics required to execute each element or perform each duty. As the competencies are named, note them on index cards, adhesive-backed notes, or in an electronic spreadsheet or database.
- Group very similar knowledge, skills, abilities, and personal characteristics to create a competency category (e.g., “works well under pressure,” “tolerance for stress,” and “maintains productivity in difficult situations,” would be placed into one group).

- Set aside the categories for which there are just a few notes, and focus on the frequently mentioned categories.
- Give each competency category a preliminary label. Each category becomes a preliminary competency.
- If identifying competencies for multiple levels within a job role, such as treatment providers and their supervisors, create a separate list of competencies for each level. Identify the competencies common to all the levels, and note the competencies specific to each level.
- Compare the findings from this process with the initial literature review and available benchmarking information.
- Create an initial list of required competencies.
- Write a tentative definition for each competency.
- If there are repeated differences between superior and average performers, create two separate lists of competencies. One list will consist of the competencies that distinguish superior performers from others. The second list will consist of the competencies that both superior and average performers demonstrate.

Assemble the Competency Model

Cluster similar knowledge, skills, abilities, and personal characteristics together to avoid creating an extensive list of competency categories. Remember that the objective is not to create an exhaustive list of competencies for research purposes. The goal is to create a list of the most critical competencies for practical, everyday application in training and personnel management. This set of competencies, with a clear definition for each, constitutes the competency model. In most cases, to remain manageable, the number of competencies should be 20 or fewer.

Review by Subject Matter Experts

Draft lists of competencies and their definitions should be reviewed by subject matter experts (SMEs) and revised based on their feedback. These SMEs should have extensive experience with the target job and knowledge of the job content. There should be diversity among reviewers in perspectives, experience, and familiarity with the different work units or functions encompassed in the competency project. The ideal SME is a superior performer who previously functioned in the job, but has been promoted to a higher level, creating a broader perspective of the job and its requirements. Other potential SMEs are managers of the current job and current incumbents who are superior performers.

To be successful, the project must be carefully planned and supported by the leadership of an organization or profession.

Provide SMEs the list of competencies and instructions before meeting with them, and plan on meeting for several hours. If schedules prohibit extended or multiple meetings, SMEs can be asked to review the competencies independently and supply feedback in a specified format. However, this situation is far from ideal, which makes it imperative to ensure that the SMEs have a good understanding of how to review the competencies.

Suggested steps when meeting with an SME are as follows:

- Explain what a competency model is and how it will be used.
- Review the target job, its responsibilities, and place in the organization.
- Summarize the process followed in developing the preliminary list of competencies.
- Explain that the SME role is to verify that competencies have been correctly identified.
- Describe the process SMEs will use to review the competencies and provide feedback.
- If conducting the review in person, discuss each competency individually, asking the SMEs for their feedback on the competency and its definition. Ask probing questions to verify the importance of the competency and the appropriate wording of the competency label and its definition.

Develop Behavioral Examples

To complete the competency model, behavioral examples should be developed for each competency at three or more levels of proficiency. These behavioral examples can be based on the information collected while defining the job content and identifying the competencies. Alternatively, job incumbents and their supervisors can be asked, as a separate process, to provide examples of how the competencies are applied on the job. The purpose of these behavioral examples is to illustrate how the competencies are actually demonstrated. If competencies have been identified for multiple levels of a job, it will usually be necessary to draft different behavioral examples for each, even for those competencies that are common to the different levels. Although two levels may require the same competency, the manner in which it is demonstrated may vary with each level.

The completed competency model will include a list of competencies, organized by type (e.g., core, personal effectiveness, technical), with a definition and several behavioral examples at three or more levels of proficiency for each competency. It is good practice to have a second group of subject matter experts review the model for accuracy before it is finalized.

Step Six: Apply the Competency Model

The value of a competency model lies in its application. The value is maximized if it is applied in all aspects of human resource management. In a fully-integrated, competency-based human resource system, the competencies identified as required for effective performance for a target job are used to select, develop, manage, reward, and compensate employees. The employees know precisely what competencies are required for success and how they will be evaluated. Below are the key areas of application and some of the tools that can be created to foster the use of the competency models, once developed.

Strategic Workforce Planning

- Develop assessment tools to determine if the current workforce possesses the competencies necessary to effectively meet organizational goals.

Selection

- Develop criteria for screening and evaluating resumes based on the competencies.
- Develop content specifications for written tests, performance tests, or other selection instruments.
- Create interview questions that are designed to elicit examples of how candidates have demonstrated each competency in their past work experience. Prepare accompanying interview guides and rating scales.

Training and Development

- Use the competencies to design a curriculum for training and other workforce development activities.
- Create a multi-rater feedback instrument to assess employee needs for competency development.
- Produce development planning guides that provide employees with specific suggestions for how to build or strengthen each competency.

Performance Management

- Develop guides for managers to help them conduct discussions with their employees about their performance of the competencies.
- Create rating guides to assist managers in the assessment of each competency.
- Develop a performance appraisal process and forms that incorporate the competencies.

Succession Planning

- Design tools to help senior leaders assess the critical competency gaps in the pool of succession candidates.
- Develop instruments to assess the competencies of managers who appear to have high potential for advancement.
- Create guides describing senior-level career paths and the competencies required for each step in those paths.

Rewards and Recognition

- Design a recognition program based on the demonstration of highly-valued competencies or clusters of competencies.
- Create a guide for managers with suggestions on rewarding the demonstration of specific competencies by their employees.

Compensation

- Design a competency-based compensation program where employees' salaries are increased as they provide evidence of proficiency in selected competencies.

Step Seven: Evaluate and Update the Competency Model

After the competency model has been developed and applied, it is important to evaluate both the competency model development process and the value of the resulting model to the organization. The evaluation should examine how the competency modeling process could be improved, as well as the utility of the model that was developed. Standard program evaluation techniques can be applied in this process.

Competency modeling is a continuous process. To be valuable, the list of required competencies must be revised as organizational strategies, environmental conditions, job design, regulations, professional practices, or other key factors change. The shelf life of competency models varies

with the job or discipline and the rate of change. In addition, individual competencies within a model will have varying shelf lives. For example, technical competencies usually become outdated long before personal effectiveness or leadership competencies require revision.

A schedule for reviewing the currency of a competency model should be established. At the time of review, if there have been no significant changes to the target job or the organization, then interviews, focus groups, surveys, or SME groups can be used to revise and update the model. If the target job or the organization has changed significantly since the model was developed, a new competency study will need to be conducted. The existing model may be useful as a departure point for the development of a new model.

CONCLUSION

From this review, it should be clear that the development and use of competencies is a complex endeavor. To be successful, the project must be carefully planned and supported by the leadership of an organization or profession, and concerted efforts must be made to communicate with those involved or potentially affected. Multiple methods of data collection are optimally used to define the job and to build a competency model, with attention to assuring the reliability and validity of the information gathered. This work sets the stage for application of the model, which should occur in an integrated fashion at multiple levels of the organization. The utility of the model should be evaluated, and it must be revised as the demands of a job change.

The cost of this approach, in terms of both time and expense, can be significant. However, the potential benefits are significant as well. The development and application of competency models is a proven approach for investing in human resources in order to achieve a more effective and productive workforce. Since the vast majority of expenditures on mental health care and substance use disorders treatment are expenditures on personnel, there is a compelling rationale for using a competency-based approach for the training and development of all segments of the behavioral health workforce.

REFERENCES

- Coursey, R.D., Curtis, L., Marsh, D.T., Campbell, J., Harding, C., & Spaniol, L., et al. (2000). Competencies for direct service staff members who work with adults with severe mental illnesses in outpatient public mental health/managed care systems. *Psychiatric Rehabilitation Journal*, 23(4), 370–377.

- Equal Employment Opportunity Commission, Civil Service Commission, Department of Labor, & Department of Justice. (1978). Uniform guidelines on employee selection procedures. *Federal Register*, 43(166), 38295–38309.
- Equal Employment Opportunity Commission (1991). Equal employment opportunities for individuals with disabilities: Final rule. *Federal Register*, 56(144), 35726–35753.
- Gilbert, T. (1996). *Human competence: Engineering worthy performance*. Washington, DC: International Society for Performance Improvement.
- Hoge, M.A., Tondora, J., & Marrelli, A.F. (in press). The fundamentals of workforce competency: Implications for behavioral health. *Administration and Policy in Mental Health*.
- Institute of Medicine (2000). *To err is human: Building a safer health system*. Washington, DC: National Academy Press.
- Institute of Medicine (2001). *Crossing the quality chasm: A new health system for the 21st Century*. Washington, DC: National Academies Press.
- Institute of Medicine (2003). *Health professions education: A bridge to quality*. Washington, DC: The National Academies Press.
- Kelley, R., & Caplan, J. (1993). How bell labs creates star performers. *Harvard Business Review*, 71(4), 128–139.
- Langdon, D. (2000). *Aligning performance: Improving people, systems and organizations*. San Francisco: Jossey-Bass/Pfeiffer.
- Langdon, D., & Marrelli, A.F. (2002). *A performance-based model for competency identification: The workshop*. Bellingham, WA: Performance International.
- Lucia, A., & Lepsinger, R. (1999). *The art and science of competency models: Pinpointing critical success factors in organizations*. San Francisco: Jossey-Bass/Pfeiffer.
- Marrelli, A.F. (1994). The Americans with disabilities act and selection. *Human Resources Bulletin*, 1(2), 1–4.
- Marrelli, A.F. (1998). An introduction to competency analysis and modeling. *Performance Improvement*, 37(5), 8–17.
- Marrelli, A.F. (2001). *Introduction to competency modeling*. New York: American Express.
- Mirabile, R. (1997). Everything you wanted to know about competency modeling. *Training and Development*, 73–78.
- National Panel for Psychiatric Mental Health Nurse Practitioner Competencies (2003). *Psychiatric mental health nurse practitioner competencies*. Washington, DC: National Organization of Nurse Practitioner Faculties.
- U.S. Department of Health and Human Services (1998). *Addiction counseling competencies: The knowledge, skills and attitudes of professional practice*. Rockville, MD: U.S. Department of Health and Human Services, Substance Abuse and Mental Health Services Administration, Center for Substance Abuse Treatment.

FURTHER READING

Behavioral Event Interviews

- Angelides, P. (2001). The development of an efficient technique for collecting and analyzing qualitative data: The analysis of critical incidents. *International Journal of Qualitative Studies in Education*, 14, 429–442.
- Keatinge, D. (2002). Versatility and flexibility: Attributes of the critical incident technique in nursing research. *Nursing & Health Sciences*, 4(1–2), 33–39.

Focus Groups

- Barbour, R.S., & Kitzinger, J. (1999). *Developing focus group research: Politics, theory, and practice*. Thousand Oaks, CA: Sage.
- Bloor, M., Frankland, J., Thomas, M., & Robson, K. (2001). *Focus groups in social research*. Thousand Oaks, CA: Sage.
- Fern, E.F. (2001). *Advanced focus group research*. Thousand Oaks, CA: Sage.

Job Studies

- Brannick, M.T., & Levine, E.L. (2002). *Job analysis: Methods, research, and applications for human resource*

management in the new millennium. Thousand Oaks, CA: Sage.

Hartley, D.E. (1999). *Job analysis at the speed of reality*. Amherst, MA: Human Resource Development Press.

Langdon, D. (2000). *Aligning performance: Improving people, systems and organizations*. San Francisco: Jossey-Bass/Pfeiffer.

Literature Reviews

Cooper, H.M. (1998). *Synthesizing research: A guide for literature reviews*. Thousand Oaks, CA: Sage.

Fink, A. (1998). *Conducting research literature reviews: From paper to the internet*. Thousand Oaks, CA: Sage.

Pan, M.L. (2004). *Preparing literature reviews*. Glendale, CA: Pyczak.

Observations

Jorgensen, D.L. (1989). *Participant observation: A methodology for human studies*. Thousand Oaks, CA: Sage.

Sharpe, T.L., & Koperwas, J. (2003). *Behavior and sequential analyses: Principles and practice*. Thousand Oaks, CA: Sage.

Structured Interviews

Holstein, J., & Gubrium, J.F. (2003). *Inside interviewing: New lenses, new concerns*. Thousand Oaks, CA: Sage.

Wengraf, T. (2001). *Qualitative research interviewing: Biographic narrative and semi-structured methods*. Thousand Oaks, CA: Sage.

Surveys

Fink, A. (2002). *How to ask survey questions* (2nd ed.) Vol. 2. Thousand Oaks, CA: Sage.

Fink, A. (2002). *How to design survey studies* (2nd ed.) Vol. 6. Thousand Oaks, CA: Sage.

Fink, A. (2002). *How to manage, analyze and interpret survey data* (2nd ed.) Vol. 9. Thousand Oaks, CA: Sage.

Fowler, F.J. (2001). *How to ask survey questions* (3rd ed.). Thousand Oaks, CA: Sage.

Punch, K.F. (2003). *Survey research: The basics*. Thousand Oaks, CA: Sage.