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# Competencies in Hand Therapy

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**ABSTRACT:** The Hand Therapy Certification Commission, Inc., in consultation with the Professional Examination Service, completed a practice analysis of hand therapy in 2001. One goal was to obtain information about the competencies shown by therapists at specific points of experience. Six competency areas were identified and included in the final survey: scientific knowledge, clinical judgment/clinical reasoning, technical skills, interpersonal and communication skills, professionalism, and resource management. Certified Hand Therapists (CHTs) in the United States and Canada participated in the survey. All six competencies were rated moderately or highly critical to professional effectiveness. Thirty hypothesized behavioral progressions (from novice to expert) were included; 27 were validated by the results, indicating that CHTs show competence that is unique and increases over time. Potential uses of these results by CHTs and hand therapy organizations are proposed, especially in regard to candidate eligibility, self-assessment by CHTs, and planning for continuing education.

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## BACKGROUND

The Hand Therapy Certification Commission, Inc. (HTCC), in consultation with the Professional Examination Service, completed a practice analysis of hand therapy in 2001.<sup>1</sup> This analysis was a follow-up to 2 previous studies performed in 1985<sup>2</sup> and 1994.<sup>3</sup> The primary rationale for performing the analysis in 2000–2001 was to update the HTCC's profile of hand therapy practice, which includes domains, tasks, knowledge, and skills and to revise the existing test blueprint of the Hand Therapy Certification Examination (HTCE).

An additional goal of the study was to obtain information about the competencies shown by hand therapists at different times in their careers—before specialized practice, during the early years of specialization, and after several years of specialization in hand therapy. The HTCC concluded that the earlier studies had not attempted to identify the competencies of hand therapists but rather concentrated on the theory, tasks, and knowledge that were thought to be the basis of practice.

Establishing a continuum of competency from the first years of practice as an occupational therapist (OT) or physical therapist (PT) through the attainment of skills as an expert clinician would permit the HTCC or professional hand therapy organizations to:

- Determine the characteristics of a minimally competent hand therapist. In turn, this could assist therapists to determine their readiness to take the HTCE. It also provides benchmark information for item writers for the HTCE.
- Establish empirical descriptions of continued competency (e.g., as the basis for the development of a self-assessment tool that could be used by certified hand therapists [CHTs] who are renewing their credential via continuing education).
- Establish the content and educational and experience level of continuing education programs for practicing hand therapists.
- Develop evaluation tools that might be used by hand therapists for self-assessment or by employers, supervisors, or other professionals for the purposes of performance evaluation.

Hand Therapy Certification is a voluntary credentialing program that was established in 1989 by the HTCC to certify OTs and PTs in the advanced clinical specialty of upper quarter rehabilitation. A CHT is an OT or PT who has a minimum of 5 years of clinical experience, including 2000 hours or more in direct practice in hand therapy. The CHT has completed successfully the comprehensive HTCE, which is a test of advanced clinical skills and theory in upper quarter rehabilitation.

The HTCE covers the broad knowledge base required for clinical intervention and the basic science and theory that support clinical treatment. Test construction and administration services are provided by the Professional Examination Service. Certification is granted for a 5-year period, at which time

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a therapist must recertify by examination or with work experience and continuing education. The purpose of the recertification requirements is to ensure that individuals maintain clinical competence after initial certification. The first HTCE was administered in 1991. The HTCE has been given annually since then. The first 2 groups of CHTs have completed their second recertification cycle.

From its inception, the Board of Directors of the HTCC envisioned a 2-step process of certification and recertification. The program serves the public and the hand therapy community by maintaining high standards in the practice of hand therapy, enhancing the quality of patient care, recognizing OTs and PTs who have achieved an advanced level of professional knowledge; and encouraging participation in continuing education and professional development initiatives.

## COMPETENCY ASSURANCE AND CREDENTIALING

A competency is an underlying characteristic of an individual that is related causally to effective or superior performance in a job or situation.<sup>4</sup> Competencies may be categorized into 5 types: motives, traits, self-concepts, knowledge, and skills. Knowledge and skill competencies tend to be relatively visible and are amenable to training, whereas motive and trait competencies are less visible and more difficult to develop or assess. Self-concept competencies occupy a middle ground and can be developed over time, albeit with more difficulty and training.

The fundamental goal of professional credentialing is to provide an objective standard of competency against which to measure the performance of a practitioner. This goal generally translates into the development and implementation of a test of the identified knowledge base required for practice. Less frequently, this also translates into the measurement of specific skills used in practice. Practical examinations may be simulations of practice, or they may assess underlying skill components.

Although no credential can guarantee competency, a program that is based on the scientific study of professional practice does provide assurance to the public that the practitioner has met a set of objective standards. In the case of the CHT credential, competency is established through a combination of work experience as an OT or PT, the attainment of clinical practice experience in hand therapy, and passing the HTCE. Practitioners who choose not to become certified hand therapists also may show competency, but they have not been measured against a set of externally applied objective standards. For that reason, therapists who have obtained the CHT credential are recognized as experts in rehabilitation of the upper quarter.

When certified, the credential must be maintained to show ongoing competency in the field. The American Occupational Therapy Association defines continuing competency as “a dynamic, multidimensional process in which the professional develops and maintains the knowledge, performance, skills, interpersonal abilities, critical reasoning skills and ethical reasoning skills necessary to continue in his or her evolving roles throughout a professional career.”<sup>5</sup> In accordance with this definition, the goal of the present study was to identify the areas of competency critical to performance as a hand therapist and to describe the evolution of these competencies across the professional career of a practitioner.

## METHOD

### Development of Description of Hand Therapist Competencies

Hand therapist competencies were delineated as part of a larger study of hand therapy practice.<sup>1</sup> In that study, a 14-member Practice Analysis Task Force (PATF) developed a contemporary description of hand therapy practice, including tasks performed, knowledge required, patient populations served, and techniques and tools used, as well as a description of the essential competencies of hand therapists.

In their work, the PATF identified six areas of competency: clinical judgment/clinical reasoning, scientific knowledge, technical skills, interpersonal and communication skills, professionalism, and resource management. Within each competency area, the PATF identified professional practice exemplars and created snapshots along a continuum of competence from novice to expert. Definitions of the six competency areas with the numbers of exemplars associated with each area are presented in Table 1.

Anchor points were established to reflect 2 to 3 developmental points: entry-level OT or PT (novice); newly certified CHT (competent), and highly experienced hand therapist (expert). An exemplar of one competency and a hypothetical progression from novice to expert follows:

Competency area: technical skills

Exemplar: innovation

Behavioral progression:

Adheres to well-established techniques to achieve goals (*novice*)

Seeks out and applies information on emerging techniques (*competent*)

Develops new techniques based on experience, research, and exploration (*expert*)

Additional subject matter experts participated in telephone interviews, focus groups, or mail-based document reviews to augment and refine the competen-

**TABLE 1. Competencies of Hand Therapists**

| <i>Competency</i>  | <i>Number of Exemplars</i> |
|--|----------------------------|
| Clinical judgment/clinical reasoning<br>Use theory, clinical science knowledge, and experience to collect and interpret pertinent clinical data. Use those data to identify and prioritize clinical problems and provide optimal patient care. Use deductive and inductive reasoning to make clinical decisions  | 6                          |
| Scientific knowledge<br>Demonstrate knowledge of hand and upper quadrant: anatomy, physiology, histology, biomechanics, pathology, epidemiology, medical and surgical interventions; psychosocial and behavioral science; rehabilitation/adaptation/habitation; and research-based clinical interventions  | 2                          |
| Technical skills<br>Show technical skills related to patient assessment and treatment implementation   | 5                          |
| Interpersonal and communication skills<br>Demonstrate interpersonal and communication skills that result in effective information exchanges with patients, families, staff, and other relevant individuals and agencies (e.g., case managers, third-party payers, physicians, community groups, regulatory and legislative entities, employers). Exhibit sensitivity to a diverse patient population and advocate on behalf of patients. Collaborate with patients, families, and professionals to attain desired outcomes | 7                          |
| Professionalism<br>Show a commitment to the profession through continuing education, research, collaboration, and mentoring. Participate in activities and associations that advance professional practice and public welfare. Maintain ethical and legal standards  | 7                          |
| Resource management<br>Identify, access, and use existing resources (e.g., social, legal, financial assistance, community agencies and services) within or outside of health care systems to benefit patients, families, and patient populations   | 3                          |

cies, professional practice exemplars, and behavioral progressions developed by the PATF.

### **Validation of the Competencies**

A large-scale, mail-based survey was conducted to validate the competencies, exemplars, and behavioral progressions developed by the PATF and the other elements of the practice description developed as part of the study. To reduce the time demands on respondents, 2 versions of the survey were developed, each containing about half of the elements of the practice analysis. The competencies, exemplars, and the behavioral progressions of novice to expert performance were contained in one version of the survey.

For each competency, survey participants were asked, "How critical is this competency to your effectiveness in optimizing outcomes for your patients?" Response choices ranged from 1 to 4, with 1 indicating the competency was not critical to effectiveness and 4 indicating the competency was highly critical to effectiveness.

For each professional practice exemplar, the order of presentation of the novice, competent, and expert behavioral progressions was randomized to reduce response bias. Respondents were asked, "What is the first point at which you would expect a hand therapist to show this behavior consistently?" Response choices were:

- 1 = Before any specialized practice as a hand therapist
- 2 = During the first year of specialized practice as a hand therapist
- 3 = During the second through fifth years of specialized practice as a hand therapist
- 4 = After more than five years of specialized practice as a hand therapist

The version of the survey that contained the competencies, professional practice exemplars, and behavioral progressions was mailed to 539 CHTs in the United States and 47 CHTs in Canada. The U.S. survey recipients represented a stratified random sample of CHTs selected from the HTCC database of CHTs. Stratification was designed to ensure adequate representation of recently CHTs. The Canadian survey recipients represented half of the total population of Canadian CHTs. Surveys also were distributed in Great Britain, Australia, and South Africa. Procedures and results related to the international distribution of the validation survey are not reported here and will be presented in a separate publication.

An invitation to participate in the validation survey was mailed in July 2001. Two weeks later the validation survey was mailed, along with a cover letter, a postage-paid return envelope, and an application for continuing education credit. As an incentive, participants were offered 1.5 continuing education units for completing the survey. Finally, 10 days after the

**TABLE 2. Percentage of Respondents Rating Each Competency as Not Critical, Minimally Critical, Moderately Critical, or Highly Critical to Personal Effectiveness in Optimizing Patient Outcomes**

| <i>Competency</i>                      | <i>Not Critical</i> | <i>Minimally Critical</i> | <i>Moderately Critical</i> | <i>Highly Critical</i> |
|--|---------------------|---------------------------|----------------------------|------------------------|
| Clinical judgment/clinical reasoning   | 0%                  | 0%                        | 6%                         | 94%                    |
| Scientific knowledge                   | 0%                  | 0%                        | 10%                        | 90%                    |
| Technical skills                       | 0%                  | 1%                        | 27%                        | 72%                    |
| Interpersonal and communication skills | 0%                  | 1%                        | 33%                        | 66%                    |
| Professionalism                        | 0%                  | 4%                        | 44%                        | 52%                    |
| Resource management                    | 1%                  | 33%                       | 56%                        | 10%                    |

survey packets were mailed, a postcard was sent to each survey recipient. In the postcard, the survey recipients were thanked for their participation and asked to complete the survey if they had not already done so.

### Data Analysis

For the 6 competencies, the percentage of respondents endorsing each criticality rating scale point was documented. In association with each professional practice exemplar, the percentage of respondents endorsing the point of acquisition of each behavioral descriptor was documented. A composite score also was calculated for each behavioral descriptor by summing the scale points endorsed across the respondents. The lower the composite score, the greater the support for earlier demonstration of the behavior; the higher the composite score, the greater the support for later demonstration of the behavior.

## RESULTS

The return rate for the version of the survey that contained the competency statements was 71%. Respondents had an average of 11.5 years of experience in hand therapy. They represented a range of practice settings: 44% worked in hospital settings, 24% worked in therapist-owned practices, 17% worked in corporate-owned practices, 11% worked in physician-owned practices, and 4% worked in other types of practices. Overall, 82% of the respondents were OTs, 17% were PTs, and 1% were dually credentialed. In the Canadian subsample, the ratio of OTs and PTs was closer to 50/50.

Respondents' criticality ratings are presented in Table 2. Five of the six competencies were rated moderately or highly critical to professional effectiveness by more than 95% of the survey respondents. The 2 areas that received the highest ratings, clinical judgment/clinical reasoning and scientific knowledge, were rated as highly critical by over 90% of the respondents. Ratings for the competencies were similar for OTs and PTs and for respondents from the United States and Canada.

The ratings for the behavioral descriptors associated with the exemplars are summarized in Table 3. To facilitate review of the results, the behavioral descriptors are presented in the hypothesized sequence from novice to competent to expert.

The extent to which each scale point in each behavioral sequence was endorsed by respondents is displayed graphically. For example, for the "data collection" professional practice exemplar associated with clinical judgment/clinical reasoning, more than 50% of respondents rated the hypothesized novice descriptor, "collects basic data," as first consistently shown before any specialized practice in hand therapy. Less than 20% of respondents endorsed any of the other 3 points of acquisition. Ratings for the hypothesized competent level, "collects complex clinical data; synthesizes and interprets data," were concentrated in the 3 highest scale points. The largest percentages of respondents (36% to 50% each) indicated that this behavior is first consistently shown during the first year of hand therapy practice or during the second through fifth years of practice in hand therapy. Ratings for the hypothesized expert level of behavior, "synthesizes and interprets multiple, sometimes conflicting sources of data," fell largely within the 2 highest scale points. Of the respondents, 36% to 50% indicated that this behavior is first consistently shown during the second through fifth years of specialized practice, and an equivalent group indicated that this behavior is first consistently shown after 5 years of specialized practice as a hand therapist.

Within each behavior progression, composite ratings were reviewed to determine whether the ratings reflected the hypothesized progression from novice to expert. For 27 of the 30 hypothesized sequences, the lowest composite rating corresponded to the novice performance descriptor, the midlevel composite rating corresponded to the competent performance descriptor, and the highest composite rating corresponded to the expert performance descriptor. For the 3 exemplars wherein the expected progression was not observed, the novice behavior descriptor received the lowest score, whereas the composite ratings for competent and expert performance were reversed from the expected order; that is, the compe-

**TABLE 3. Respondent Ratings of When Behaviors Are First Consistently Demonstrated**

|   | <i>Before any<br/>specialized<br/>HT practice</i> | <i>During 1st<br/>year of HT<br/>practice</i> | <i>In 2nd –5th<br/>years of<br/>HT practice</i> | <i>After &gt;5<br/>years of HT<br/>practice</i> |
|---|---|---|---|---|
| <b>Clinical judgment/clinical reasoning</b>   |   |   |   |   |
| Data collection   |   |   |   |   |
| Collects basic data   | ●   |   |   |   |
| Collects complex clinical data; synthesizes and interprets data   |   | ○   | ●   | ○   |
| Synthesizes and interprets multiple, sometimes conflicting sources of data  |   |   | ●   | ○   |
| Treatment progression   |   |   |   |   |
| Selects treatment based on established clinical approaches  | ○   | ●   |   |   |
| Recognizes when and how to modify established clinical approaches   |   | ○   | ●   |   |
| Develops innovative treatment approaches  |   |   | ●   | ○   |
| Clinical judgment   |   |   |   |   |
| Recognizes own limitations in clinical judgment and consults other clinicians before making decisions   | ●   | ●   |   |   |
| Recognizes limits in clinical judgment and seeks multidisciplinary collaboration  | ●   | ●   |   |   |
| Uses intuitive reasoning to enhance clinical judgment; recognizes need to collaborate when necessary and to serve as a resource when needed                           |   | ○   | ●   |   |
| Data interpretation   |   |   |   |   |
| Limited ability to sort through extraneous detail to identify pertinent information   | ●   | ●   |   |   |
| Focuses on key details while sorting out extraneous detail  |   | ○   | ●   |   |
| Continually reassesses, recognizes, responds to, and directs dynamic situations   | ○   |   | ●   |   |
| Standards and guidelines  |   |   |   |   |
| Follows standards and guidelines  | ●   | ●   |   |   |
| Appropriately questions standards and guidelines  |   | ○   | ●   |   |
| Improves, modifies, or individualizes standards and guidelines for particular patient situations/populations  |   |   | ●   |   |
| Treatment modification  |   |   |   |   |
| Provides and modifies treatment based on established clinical protocols   |   | ●   | ○   |   |
| Modifies treatment based on integration of patient response, clinical evidence, current literature, and continuing education/learning (i.e., evidence-based practice) |   | ○   | ●   |   |
| <b>Scientific knowledge</b>   |   |   |   |   |
| Basic and clinical science  |   |   |   |   |
| Shows knowledge of established basic and clinical sciences and medical/surgical interventions   | ●   | ●   |   |   |
| Shows knowledge of established basic and clinical sciences and medical/surgical interventions with particular focus on and detailed knowledge of the upper quadrant   |   | ●   | ●   |   |
| Shows critical appraisal of established and evolving basic and clinical sciences and medical/surgical interventions of the upper quadrant                             |   | ●   | ●   |   |
| Research  |   |   |   |   |
| Relies on general journals, textbooks, and continuing education courses as information sources  | ●   | ●   |   |   |
| Relies on specialized journals, textbooks, and continuing educational courses as information sources  |   | ●   | ●   |   |
| Evaluates critically current research and clinical publications and papers  |   |   | ●   | ●   |
| <b>Technical skills</b>   |   |   |   |   |
| Theory  |   |   |   |   |
| Uses basic theory on which standard treatment techniques are based  | ●   | ●   |   |   |
| Understands theory and shows proficiency in treatment techniques  | ○   | ●   | ○   |   |
| Interprets, shows, and explains theory to others; integrates knowledge of theory into treatment   |   | ○   | ●   |   |
| Application   |   |   |   |   |
| Applies therapeutic techniques within the context of established clinical approaches  | ●   | ●   |   |   |
| Uses multiple techniques to accomplish goals  |   | ○   | ●   |   |
| Instructs others and integrates multiple techniques to accomplish optimal outcome   |   |   | ●   | ○   |
| Safety  |   |   |   |   |
| Uses basic safety standards and is aware of risks and contraindications   | ●   | ○   |   |   |
| Understands risks and contraindications and takes an active part in preventing injury   | ●   | ●   |   |   |
| Anticipates risks and contraindications to prevent injury   | ●   | ●   |   |   |

(Table continued on next page)

**TABLE 3. Respondent Ratings of When Behaviors Are First Consistently Demonstrated** (continued)

|   | Before any<br>specialized<br>HT practice | During 1st<br>year of HT<br>practice | In 2nd –5th<br>years of<br>HT practice | After >5<br>years of HT<br>practice |
|---|--|--------------------------------------|--|-------------------------------------|
| <b>Effectiveness</b>  |  |                                      |  |                                     |
| Recognizes when treatment is ineffective and seeks consultation with others   | ○  | ●                                    |  |                                     |
| Recognizes the effectiveness of a technique and is confident making a change when indicated   |  | ○                                    | ●                                      |                                     |
| Instructs others in recognizing the effectiveness of a technique and the need for change  |  |                                      | ●                                      | ○                                   |
| <b>Development</b>  |  |                                      |  |                                     |
| Adheres to well-established techniques to achieve goals   | ○  | ●                                    |  |                                     |
| Seeks out and applies information on emerging techniques  |  | ○                                    | ●                                      |                                     |
| Develops new techniques based on experience, research, and exploration  |  |                                      | ○                                      | ●                                   |
| <b>Interpersonal and communication skills</b>   |  |                                      |  |                                     |
| <b>Ability to express opinion</b>   |  |                                      |  |                                     |
| Exhibits limited expression of opinion; defers to experienced clinicians  | ●  | ○                                    |  |                                     |
| Interacts in discussions and expresses opinion; aware of limitations in knowledge and experience  | ○  | ●                                    | ○                                      |                                     |
| Analyzes situation and offers opinion to others based on experience and multiple frames of reference  |  |                                      | ●                                      | ○                                   |
| <b>Appropriateness of communication</b>   |  |                                      |  |                                     |
| Exhibits limited recognition of appropriate communication with physicians and others  | ●  |                                      |  |                                     |
| Initiates appropriate communication with physicians and others  | ○  | ●                                    | ○                                      |                                     |
| Maintains collaborative relationships with physicians and others  | ○  | ○                                    | ○                                      |                                     |
| <b>Communication with colleagues</b>  |  |                                      |  |                                     |
| Obtains guidance from other professionals   | ●  | ○                                    |  |                                     |
| Obtains from and/or provides guidance to other professionals  |  | ○                                    | ●                                      |                                     |
| Provides guidance to other professionals and advocates on behalf of patients  |  |                                      | ●                                      | ○                                   |
| <b>Patient education</b>  |  |                                      |  |                                     |
| Follows established guidelines in designing patient education   | ●  | ●                                    |  |                                     |
| Modifies and adapts patient education program to patient needs  |  | ○                                    | ●                                      |                                     |
| Develops new educational programs based on clinical experience  |  |                                      | ●                                      | ●                                   |
| <b>Patient goals</b>  |  |                                      |  |                                     |
| Sees patient as having input into goals   | ●  |                                      |  |                                     |
| Begins to integrate patient goals into treatment  | ●  | ○                                    |  |                                     |
| Sees patient as an active participant who makes choices and accepts consequences  | ●  | ○                                    |  |                                     |
| <b>Therapeutic relationships</b>  |  |                                      |  |                                     |
| Establishes therapeutic relationship with patients focusing on communicating information to the patient and gathering specific information from the patient     | ●  | ○                                    |  |                                     |
| Develops therapeutic relationships with patients and families based on experience, self-knowledge, and perception of patients' needs and personalities          | ●  | ○                                    | ○                                      |                                     |
| Uses therapeutic relationship creatively to facilitate achievement of goals   | ●  | ○                                    | ○                                      |                                     |
| <b>Dissemination of information</b>   |  |                                      |  |                                     |
| Communicates required information in a timely manner; may include extraneous information  | ●  | ●                                    |  |                                     |
| Synthesizes and selects the most pertinent information to communicate   | ○  | ●                                    | ●                                      |                                     |
| Elicits desired responses through effective, concise communication  | ○  |                                      | ●                                      |                                     |
| <b>Professionalism</b>  |  |                                      |  |                                     |
| <b>Ethical and legal standards</b>  |  |                                      |  |                                     |
| Follows ethical, legal, regulatory, and practice standards  | ●  |                                      |  |                                     |
| Promotes ethical, legal, regulatory, and practice standards   | ●  |                                      | ○                                      |                                     |
| <b>Enhancing competency</b>   |  |                                      |  |                                     |
| Exhibits willingness to be taught, coached, and mentored; attends continuing education  | ●  | ○                                    |  |                                     |
| Seeks opportunities to be taught, coached, and mentored; attends and provides continuing education  | ○  | ●                                    | ○                                      |                                     |
| Enhances competency through advanced study, research, publication, teaching, and mentoring; promotes continued competency efforts of professional organizations |  |                                      | ●                                      | ●                                   |

(Table continued on next page)

**TABLE 3. Respondent Ratings of When Behaviors Are First Consistently Demonstrated** (continued)

|   | <i>Before any specialized HT practice</i> | <i>During 1st year of HT practice</i> | <i>In 2nd –5th years of HT practice</i> | <i>After &gt;5 years of HT practice</i> |
|---|---|---------------------------------------|---|---|
| <b>Collaboration</b>  |   |                                       |   |   |
| Recognizes the need to collaborate with other professionals to optimize patient care  | ●   | ●                                     |   |   |
| Initiates and advocates collaboration with other professionals to optimize patient care   | ○   | ○                                     | ●                                       |   |
| Develops and maintains professional relationships to advocate for hand therapy, optimize patient care, and improve treatment outcomes |   | ○                                     | ●                                       |   |
| <b>Professional organization</b>  |   |                                       |   |   |
| Belongs to professional organizations   | ●   | ○                                     |   |   |
| Participates in professional associations   | ○   | ○                                     | ●                                       |   |
| Participates and volunteers for leadership in professional associations and professionals advocacy efforts/groups                     |   |                                       | ●                                       | ●                                       |
| <b>Political issues</b>   |   |                                       |   |   |
| Aware of political issues surrounding the profession  | ●   | ○                                     | ○                                       |   |
| Participates in a supportive role to effect political change  |   |                                       | ●                                       | ○                                       |
| Actively works to effect political change   |   |                                       | ○                                       | ●                                       |
| <b>Diversity</b>  |   |                                       |   |   |
| Is aware of diverse patient populations and recognizes need for patient advocacy  | ●   | ○                                     |   |   |
| Incorporates awareness of patient diversity into therapeutic approach, and advocates on behalf of patients and families               | ●   | ○                                     | ○                                       |   |
| Tailors activities to meet the diverse needs and strengths of the target populations; anticipates patient needs                       | ○   | ○                                     | ●                                       |   |
| <b>Research</b>   |   |                                       |   |   |
| Is aware of research methods; relies on others to perform research  | ○   | ●                                     |   |   |
| Participates in research in supportive role   |   | ○                                     | ●                                       |   |
| Acts as a principal investigator/author   |   |                                       |   | ●                                       |
| <b>Resource management</b>  |   |                                       |   |   |
| <b>Patient resources</b>  |   |                                       |   |   |
| Uses a limited array of strategies in coordinating services   | ●   | ●                                     |   |   |
| Develops strategies based on needs and strengths of patient/ family to coordinate available resources                                 |   | ○                                     | ●                                       |   |
| Develops, integrates, and applies a variety of strategies that are driven by the needs and strengths of the targeted population       |   |                                       | ●                                       | ○                                       |
| <b>Facility resources</b>   |   |                                       |   |   |
| Knows and begins to use resources available within the work environment (e.g., support staff, colleagues)                             | ●   | ●                                     |   |   |
| Recognizes how to obtain resources beyond the immediate work environment  |   | ●                                     | ●                                       |   |
| Creatively uses untapped and alternative resource as necessary  |   |                                       | ●                                       | ●                                       |
| <b>Health system resources</b>  |   |                                       |   |   |
| Accesses available resources; may not recognize negotiation as an alternative   | ●   | ●                                     |   |   |
| Recognizes opportunities to negotiate resources but may not have strategies to do so  | ○   | ●                                     | ○                                       |   |
| Knows when and how to negotiate and navigate though the health care system to maximize resource use                                   |   |                                       | ●                                       | ○                                       |

○ Endorsed by 21% to 35% of survey respondents.

● Endorsed by 36% to 50% of survey respondents.

● Endorsed by more than 50% of survey respondents.

tent-level descriptor received a slightly higher composite score than the expert-level descriptor.

## DISCUSSION

The results of the survey validated the 6 competency areas developed by the PATE. The validated areas are consistent with the key elements of the American Occupational Therapy Association definition of continuing competency: a “dynamic, multidimensional process in which the professional devel-

ops and maintains knowledge, performance and skills” and “interpersonal abilities, critical reasoning skills and ethical reasoning skills.”<sup>5</sup> The competencies also are consistent with the competencies categories described by Spencer and Spencer.<sup>4</sup>

The results of the survey validated behavioral progressions in general (by comparing percentage ratings and composite scores). This progression of acquisition of competencies in hand therapy suggests that there is an “induction” process that begins with basic skills (acquired during the 5 years of generalized practice)

and advances to the unique skills of a hand therapist (which are generally in place by the end of the second to fifth year of specialization). This induction process reflects the 2 categories into which competencies can be divided: *threshold* competencies (that everyone in the job needs to be minimally effective) versus *differentiating* competencies (representing the factors that distinguish superior from average performers).

It was noted that there were some discrepancies between the hypothesized behavioral progressions and the actual results of the ratings, with less agreement than expected as to when behaviors are *first* shown. Many behaviors were rated as consistently shown earlier than hypothesized (expert in 2 to 5 years). This may be because the description of the behavioral progression was insufficiently discriminating. An example of this can be seen in connection with the technical skills competency, including the safety exemplar, in which little distinction was made across the 3 elements of the behavioral progression, and the item was not validated by the results. It seems that there was overlap between the actions of using, understanding, and anticipating safety standards. It is also reasonable that respondents were indicating that the safe use of equipment must be mastered before any specialized practice as a hand therapist to prevent injury to a patient.

Hand therapists also may believe a behavior should be present earlier than hypothesized by the task force. In the interpersonal communications skills competency and in particular the patient goals exemplar, no progression was validated and the elements within the competency were expected to be consistently shown by the most respondents before specialization in hand therapy. Based on the early acquisition of skill, this may be considered a threshold competency.

The respondents may have minimized the distinctions along the various points of acquisition; that is, there may have been a tendency for respondents to identify the *initial* rather than the *consistent* demonstration of the elements within the behavioral progression. During the developmental process, a specific behavior may be seen first sporadically and in limited contexts, and only over time does it become consistent and generalized to all contexts.

In general, the results permit differentiation between a generalist OT or PT and a specialized hand therapist. The results established that some competent and expert level behaviors may be acquired before specialized hand therapy practice, most notably behaviors associated with exemplars of Interpersonal and communication skills and professionalism. The results confirmed that competent and expert level behaviors were more likely to be acquired with specialized practice, most notably those associated with exemplars of clinical judgment/clinical reasoning, scientific knowledge, and resource management. Competent and expert level behaviors that are acquired earlier rather

than later are more likely to be considered generic, and competent and expert behaviors that are acquired later rather than earlier are more likely to be considered profession-specific rather than generic.

Professional educational programs and the early years of practice prepare therapists to perform many of the skills needed during (or for) therapeutic intervention. Although there is a universal quality to the competency categories, the results of the study confirm that the particular behavioral progressions associated with the exemplars may be used to distinguish hand therapists from OTs and PTs who are not specialists in hand therapy.

One competency, clinical judgment/clinical reasoning, stood out as being an area that develops after specialization as a hand therapist. The ability to collect and synthesize complex data, use intuitive reasoning, and focus on key details seems to be experiential and develops with professional maturity. The results of the survey provide empirical evidence that the uniqueness of hand therapy is related to proficiency in clinical judgment/clinical reasoning.

Even after the first year of hand therapy practice, skills continue to develop so that by the fifth year of specialized practice, the components are well established. In the clinical judgment/clinical reasoning competency area and in particular the treatment modification exemplar, there is a clear progression that occurs from providing and modifying treatment using established protocols to being able to modify treatment based on a variety of contributing factors, a skill that is acquired in the second to fifth year of hand therapy practice.

## APPLICATION OF RESULTS

### Revision of Hand Therapy Certification Commission Policies

As a result of the practice analysis, 2 policy changes were endorsed by HTCC. From 1991 through 2002, one eligibility requirement for the HTCE was 2000 hours of direct practice experience in hand therapy. The results of the most recent practice analysis suggest that some skills are not acquired until *after* the first year of specialization. Because the examination is a comprehensive test of advanced knowledge, it was concluded that 4000 hours of direct practice experience would be a more realistic reflection of the expected level of knowledge and skill development. As a result, the eligibility requirements for the credential were changed to 4000 hours of direct practice experience beginning in 2003.

The HTCC board eliminated the requirement for continuous clinical practice in the second recertification cycle (the sixth through tenth years after becoming a CHT) because by the fifth year of specialization, the skill base is well developed. This was shown by



the minimal support for the initial acquisition of competencies after 5 years of hand therapy practice.

### **Readiness for the Hand Therapy Certification Examination**

The certification in hand therapy was developed to recognize advanced knowledge and skills in hand therapy practice. Until 2002, a candidate was required to have been licensed or certified as an OT or PT for 5 years with a minimum of 2000 hours of direct practice experience in hand therapy. The eligibility requirements were considered to be reflective of the practice of a minimally competent practitioner. HTCC did not have objective data on which to base the description of the minimally competent therapist, however. The results of the current practice analysis study, including a focus on competencies, clarify the definition of minimally competent.

Candidates also can review the results as a self-assessment tool to help them determine if they are ready to take the HTCE. Consider the scientific knowledge competency and specifically the research exemplar. A candidate who is ready to take the HTCE would most likely be one who "relies on specialized journals, textbooks, and continuing educational courses as information source" and is able to "evaluate critically current research as well as clinical publications and papers."

### **Development of a Self-Assessment Tool for Experienced Practitioners**

Competencies create a framework in which to understand the performance of a professional, allowing comparison with the performance of others. One application of the results of the current study may be the development of a self-assessment tool for experienced practitioners. In this case, a questionnaire would be developed, including the descriptors in each behavioral progression. Respondents would be required to identify the behavioral descriptors that most closely resemble their own approach to professional practice. Procedures for self-scoring would permit respondents to compare themselves with other hand therapists working in similar settings or having equivalent levels of experience. The respondents' analyses of their performance patterns, compared with various criterion groups, would be used to determine the focus of their subsequent professional development initiatives.

### **Evolving Career Path**

Continuous professional development is an important aspect of professional behavior. The results of the competency study can be used as a tool for self-assessment (e.g., to determine areas that should be targeted

by the therapist in planning a continuing education program). Providers of continuing education also can use the behavioral progressions to determine the educational level of the material being presented. This also assists therapists who wish to engage in continuing education programs that are geared toward their own level of professional maturity.

Expert therapists often serve as mentors to therapists with less experience. A competency-based perspective can be used in a mentoring relationship to determine areas that need to be addressed in the mentoring process and to gauge the achievement of goals. Such an approach also could be integrated into fellowship programs for advanced hand therapy as a benchmark for the acquisition of new knowledge and skills.

### **Integration of Competency and Knowledge**

The behaviors described by the competencies can be integrated with the theory and knowledge that comprise the scientific basis of hand therapy to develop a rich description of hand therapy practice. One task identified by the practice analysis was "integrate theoretical knowledge bases and patient goals into treatment." This task can be considered within the context of the interpersonal and communication competency area, including the patient goals exemplar wherein the therapist "sees patient as an active participant who makes choices and accepts consequences." This leads to a more robust description of the task that then can be used to provide more effective feedback to practitioners.

## **CONCLUSION**

Since 1985, the members of each task force who have worked on the 3 practice analysis surveys have observed that hand therapy is distinct from general OT and PT practice. Although OT and PT programs train therapists to perform many of the tasks and techniques used in hand therapy, a specialist in this advanced practice area seems to apply knowledge of the upper quarter in a unique way. Respondents reported that the previous practice analysis studies did not capture fully this uniqueness. The approach to the conduct of the practice analysis in 2001, including the identification of competencies, professional practice exemplars, and behavioral progressions, resulted in a better understanding of the unique aspects of hand therapy.

There is a continuous process of learning that makes professionals unique. Within the context of hand therapy, the study of clinical competencies has led to the identification of a distinct set of behaviors that defines professional development. It is the hope of HTCC that this perspective that incorporates the notion of competency will be applied in a variety of enterprises within the practice of the profession to

allow the development of new tools and paths for professional growth, especially through self-assessment and educational programs.

As professionals' careers evolve, the various roles that hand therapists assume change. The entry-level or novice therapist comes into the workplace with limited skills and knowledge, mostly based on didactic learning. The first few years of practice are rich with growth and experiential learning. Exposure to a variety of areas of practice may lead a therapist toward specialization. A new body of information must then be addressed to learn the discrete scientific core of knowledge required in that field. This results in competent practice within the specialty. Application of that knowledge leads to refinement and expertise. An expert can be expected to be a leader in the field—to promote, define, develop, guide, and collaborate. Experts write, teach, do research and serve as mentors. This theoretical framework of professional development can serve as a guideline to hand therapists at any level. Incorporating competencies into the framework of continuous professional growth will assist the therapist in establishing and meeting learning goals.

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For more information on hand therapy certification, contact the Hand Therapy Certification Commission at 800-760-7097 or on the Internet at <http://www.htcc.org>.

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