

Competency-Based Education in Acupuncture and Oriental Medicine

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Background and Purpose

Healthcare professions once regarded as providing alternative and complementary care, including acupuncture, are now frequently integrated into mainstream medicine. In order to meet this call for inclusion, training in acupuncture and Oriental medicine must be based on competencies aligned with current standards within mainstream health professions. "Competencies" and "competency models" refer to how the knowledge, skills, and abilities required by these standards are structured. This paper reviews how competencies are developed, structured, and used in planning curricula and measuring student-learning outcomes. It also explores the impact of competencies on the profession and on educational institutions.

The American Association of Acupuncture and Oriental Medicine (AAAOM) and its affiliate organizations have actively discussed the issue of professional competencies since 2009, when first professional doctorate (FPD) standards and revised master's standards were also being actively discussed throughout the profession.8 The AAAOM took an active role in the exploration and formation of a unified competency model for the field. To best inform this work, a profession-wide survey,1 the largest and most robust completed in the field to date, was launched in 2012. This survey, administered by the AAAOM with the assistance of many other organizations, evaluated a set of key topics, including degree consolidation, titling, and educational reform. The results of this survey, as well as an extensive literature review, subject matter expert interviews, community discussions, strategic planning, analysis, and evaluation, facilitated the development of the proposed competencies and competency models presented in this study.

Three sequential competency models have been proposed: Master in Acupuncture, Doctorate in Acupuncture and Oriental Medicine (Professional), and Doctorate in Acupuncture and Oriental Medicine (Research). A professional career lattice should correspond to these three levels. As with the competencies, the lattice is sequentially progressive, each successive level requiring greater skills and responsibilities. Within the models, strategies are offered to guide educational institutions in the transition to competency-based educational programs. The final focal point of this analysis is discussion of accreditation, credentialing, and the advantages of adopting a national competency standard. A glossary of competency-based educational terms and concepts is included in Appendix 1.

Methodology

This study covers current books, papers, and research articles on medical education competencies in the United States. Secondary focal points are educational assessment, psychometrics, comparable competency models in the United States, and medical education competencies outside the United States. Materials published between 2008 and 2013 were researched in PubMed/MEDLINE, Education Resources Information Center, PsycINFO, Web of Science (Social Sciences Citation Index), and Google Scholar. The criteria for selecting references were usefulness in answering the research questions, clarifying important issues, defining terms, and informing community stakeholders. This review includes the latest updates (e.g., ACGME Next Accreditation System.

The Affordable Care Act Opens the Door to Reimbursement for Acupuncturists

The Affordable Care Act (ACA) requires all insurance plans, including state Medicaid plans, to offer a comprehensive package of services equal in scope to the benefits of a typical employer plan. This is the Essential Health Benefits (EHB) provision. Acupuncture services may be included in several of 10 eligible categories, with reimbursement rates established by each insurance plan when approved by individual states. With the implementation of the EHB program, nearly 54 million residents gained access to insurance coverage for acupuncture beginning in 2014. The introduction of near-universal access to acupuncture through government-funded healthcare is a significant milestone for the profession.

Under the ACA, states have the flexibility to design coverage options that meet their own needs. Consequently, each state will be required to choose benchmark health insurance plans similar to existing state, federal, or health maintenance organization (HMO) plans in that state. Plans such as Kaiser and Blue Cross offer coverage ranging from no acupuncture to 24 visits per year. Licensed acupuncturists will need to collaborate and engage ardently in state-level advocacy efforts to ensure that LAc's are included under the Affordable Health Care Act plans in each state with an Acupuncture Practice Act.

Current State of Acupuncture Education

Pressure is building within and outside the profession to reorganize acupuncture training standards for greater consistency with the standards of comparable health professions. In the United States, United Kingdom, Australia, and Canada, health profession education is guided by national competency-based standards developed as a mechanism for self-regulation by professional associations.

There are currently two national competency standards within the United States. Acupuncture competencies have been developed by the Accreditation Commission for Acupuncture and Oriental Medicine (ACAOM)⁶ to guide the evaluation of training programs. Additionally, the National Certification Commission for Acupuncture and Oriental Medicine (NCCAOM) has developed a detailed list of acupuncture competencies based on its job task analyses.⁷ These competencies inform the NCCAOM's certification exams. While useful for their unique purposes, i.e., program evaluation and exam preparation, these two competencies cannot suffice as professional competency models.

Conflicting competencies within the field signal to other professions that the acupuncture profession is not yet a fully self-regulating field; thus, a unified competency model is required. The adoption of a single competency model would further assure mainstream healthcare institutions and regulators of the integrity of the components of the scope of practice definitions for licensed acupuncturists nationally. These scope of practice definitions are designed, as in any other healthcare profession, to protect the public.

The new First Professional and Research Doctorate has created a tiered profession of practitioners,⁸ further necessitating the creation of modern standards by the profession that would serve to reorganize training in the profession. The sequential competencies to be established for each degree will guide education, clinical experiences, and student assessments.

Competencies

Origins of Competency Structure

The concept of competency models belongs to the science of measurement. It derives from the process by which psychological tests and opinion surveys were developed in the late 1800s. In the early 1900s, Thorndike proposed that educational and learning objectives be written as discrete, specific statements. This fundamental hierarchical structure for writing tests, surveys, and job competencies is still used today.

What Are Competencies?

Competencies are the knowledge, skills, and abilities (KSAs) needed to succeed in professional roles. ¹⁰ They are the traits or characteristics needed for successful job performance. Competencies define proficient performance of critical work functions in defined work settings. ¹¹ Well-written competencies are quantifiable and focused on performance and outcome.

Authentic, Workplace-Based Learning Activities

Competency-based learning objectives tie the curriculum to practical, experience-based teaching. Competencies reflect what learners must possess to be successful in the world in which they will exercise their professions and provide a framework for redesigning the curriculum around opportunities for early, structured, work-based experiential learning. Learners employ clinical, professional, and humanistic communication skills in authentic, patient-centered clinical situations and receive targeted feedback, which enables a smooth transition to working as an entry-level health professional. ¹² At the core of the experience is patient contact. Learners find these activities to be immediately meaningful and relevant.

Competency-based learning objectives guide curriculum design toward authentic situations relevant to learners and their future workplaces. Learning portfolios, DVDs, or videos can be used to monitor students' clinical skill performance and build confidence in future clinical practice. ¹³ Students develop skills in assessing their own performance and soliciting feedback from their peers. ¹⁴ Portfolios and critical-incident reflective reports can be used in independent-study formats to foster lifelong learning.

Draft AOM Competency Model

The current training model in the acupuncture profession has five tiers: a Master's Degree in Acupuncture, a Master's Degree in Acupuncture and Oriental Medicine, a First Professional Doctorate in Acupuncture and Oriental Medicine, a Research Doctorate in Acupuncture, and a Research Doctorate of Acupuncture and Oriental Medicine.

Migrating Existing AOM Competencies to a Professional Competency Model

The AAAOM Education Committee and third-party subject matter experts analyzed the competencies used by ACAOM and NCCAOM to form the basis for a draft unified competency model. ¹⁵ The AAAOM has also reviewed the ACGME and WHO standards along with other relevant sources for competency-based healthcare profession education. Appropriate competencies and models from the American Osteopathic Association are included, particularly the inter-professional collaboration and biomedical competencies models. The source competency models were coded and provided for reference in the appendices.

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Benefits of Competency-Based Medical Education

Competency-based health profession education is the national and international gold standard for professional education.

Competencies drive training, which creates professionals that can be relied upon to behave and perform similarly across states and national borders. Competencies created and adopted by practicing professionals provide the basis for a profession to regulate itself, which is an ethical necessity related to public concerns about patient safety and the increasing complexities of practice.

Once competencies are defined, didactic and clinical training can be targeted, especially for the inter-professional medical competencies currently used to guide training for physicians, nurses, physician assistants, and physical therapists.³⁷ "Patient safety is a current public and healthcare concern," and inter-professional collaboration can reduce medical errors and limit adverse effects while improving patient safety.¹⁶

Establishing curricula that are based on professional competencies is an acknowledgment that KSAs constitute an important base by which health profession students become competent clinicians.¹⁷ Effective education in practical skills beneficially alters clinician behavior, positively influences patient outcomes, and reduces the risk of patient harm.¹⁸ Professional competencies enhance credibility and increase public support at a time when demand for the accountability of the medical profession is mounting.^{19,20} Graduates of nationally recognized competency-based educational programs in acupuncture and Oriental medicine may work as additional healthcare providers, thereby reducing reliance on overworked physicians who are currently subjected to "time-based training."²¹

Competency Models

A competency model is a set of detailed statements that define successful performance in a particular work setting. The model clearly describes what a person needs to know and is able to do—the KSAs—to perform well in a specific job, occupation, or industry. A competency model is a descriptive tool that helps an organization or profession meet its strategic objectives.²²

Competent performance occurs when an individual achieves or produces some result or output at a defined, measurable standard of quality. By creating causal links between precisely defined behaviors and success, competencies ensure that professionals are successful in their roles, broadly construed as a healthcare provider's expected behavior.²³ A competency model may include professional roles, core and specific competencies, or key and enabling competencies. Competencies may include statements of values, personality traits, attitudes, emotions, and aptitudes because although these may be innate characteristics, they can still be influenced by training.²²

Most medical competency models are structured as a list, with detailed statements of KSAs organized into domains. The job or degree is at the top, followed by the domains (major categories), in turn followed by the sub-competencies (minor categories). The American Council on Graduate Medical Education's (ACGME) competency model for physician training has six general areas of equal importance, referred to as "domains." These are the core competency domains, together with principles and practices, for the profession.

- Patient care
- Medical knowledge
- Practice-based learning and improvement
- Systems-based practice
- Professionalism
- Interpersonal skills and communication

Osteopathy provides an important model for acupuncture. Osteopathy covers the physician competencies plus osteopathic principles and practices. Apart from these additional principles, the two lists of domains are identical. Competency domains are standard for osteopathy curricula, reflecting changes in the public's view of osteopaths as mainstream providers. Recent additions to osteopath competencies have included knowledge and abilities related to cultural competency, skills in counseling for health promotion / disease prevention, knowledge of public health systems, and knowledge of global health.²⁴ Inter-professional collaboration competencies are being added in response to the changing contexts of practice.

A helpful model based on the six domains is described by Canadian physicians association's updated CanMEDS framework.²⁵ The updated 2005 CanMEDS model is structured as a mandala with seven professional roles that define the physician (Figure 1).⁵

Figure 1. Canadian Physicians Association's Updated CanMEDS Framework²⁵





Copyright © 2005 The Royal College of Physicians and Surgeons of Canada. "The CanMEDS Physician Competency Framework describes the knowledge, skills and abilities that specialist physicians need for better patient outcomes. The framework is based on the seven roles that all physicians need to have, to be better doctors: Medical Expert, Communicator, Collaborator, Manager, Health Advocate, Scholar, and Professional." http://rcpsc.medical.org/canmeds. Reproduced with permission.

The seven professional roles intersect and overlap. Each role has its own set of key competencies (general professional categories) and enabling competencies (specific KSA statements grouped under the appropriate key competencies). The CanMEDS competencies have been adopted outside of medical education. For example, the model has been used to develop an essential competency profile for physiotherapists in Canada.²⁶

Competency Development

Drafting Competencies

Writing competencies typically involves complementary activities: (1) gathering information from job analyses, literature reviews, interviews, and focus groups; (2) using scientific methods of measurement and outcome-articulated procedures; and (3) collaborating with key stakeholders. Maintaining boundaries between these approaches is critical to ensuring a well-designed, unbiased, and comprehensive analysis.²⁷ A commitment to (and balance between) both scientific and participatory or collaborative processes is crucial.

A scientific approach to writing competencies is described by Klass. ¹⁰ The first step is to name and define the terminus for the occupation (e.g., a Doctorate in Acupuncture and Oriental Medicine). The second step is to distinguish this construct from similar constructs, such as masters and other doctoral degrees. For example, a PhD includes all the KSAs of a master's degree

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plus sequentially higher KSAs, such as creating knowledge and conducting research. The third step is to map out and define the competency domains or higher-level groupings of KSAs. Domains are written to be adaptable, flexible, and generalized across specialties. The final step is to write the sub-domains, each of which must describe the discrete knowledge and observable behaviors and skills.

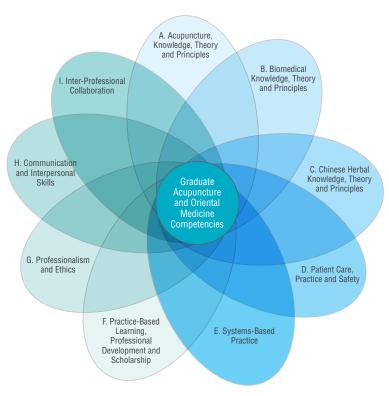
An important struggle at every stage is to determine which KSAs belong to the construct or degree to be earned, the domains, and the sub-domains. The overall process determines how specific the competencies should be.²⁸ The scientific work involves establishing clear, coherent, and interpretable patterns of KSAs.

This process is both scientific and political as competencies are revised through negotiations among experts and stakeholders. Collaboration, compromise, and commitment are essential. Competencies must represent all stakeholders in defining provider performance. Stakeholders play critical roles in developing topic lists, searching literature, writing, categorizing competencies, contributing items, identifying competency gaps, and revising and rewording competency statements. Stakeholders may be members of a task force for internal and external reviews.²⁹ Work information from many unique perspectives is critical to developing a complete understanding of the profession.²⁸ Information is typically collected through interviews, observations, surveys, and Delphi studies. Collaborative input is critical to ensuring that stakeholders and professionals accept and *use* the competency model to design programs and curricula.

AOM Competency Model

Graduate-level acupuncture competencies can be conceptualized as nine overlapping domains or dimensions of professional competence [Figure 2]. The top three represent content knowledge, the second three represent the skills involved in professional practice, and the last three represents professional values, attitudes, and behaviors. Acupuncture graduates should have mastered the foundational knowledge, theories, and principles of acupuncture, biomedicine, and Chinese herbs required for professional practice [Facets A, B, and C]. In applying this knowledge to patient care settings, graduates prioritize patient safety, perform within systems of practice, and use practice-based learning, professional development, and scholarship to improve professional practice [Facets D, E, and F]. Finally, graduates are committed to professionalism and ethics and display communication, interpersonal, and inter-professional collaboration skills. Figure 2 is the principal model for both master's and doctoral competencies.

Figure 2. Graduate-Level AOM Competency Model



In Figure 2, the nine competency domains overlap and are therefore called "facets." This feature of the model, taken from Messick's framework of test validity, is important because any one item could conceivably be placed in more than one facet. Therefore, there is a need to eliminate redundant items, and there is less need for debate over which "facet" any particular item should be placed in. When items are imported from existing models, similar items are imported into more than one facet and need to be flagged for redundancy and reworded or deleted. To build consensus, stakeholders should be reminded that items may fit into more than one facet.

Designing Competency-Based Educational Programs

Curriculum Development

Competency-based curriculum development has four interrelated components: (1) program goals, values, and principles; (2) definitions, domains, key competencies, and descriptions; (3) learning objectives for teaching and learning strategies; and (4) outcomeoriented assessment methods.¹⁷ Institutional and professional values include trainee satisfaction, effectiveness, and patient safety, which are reflected in the program goals, discrete educational learning objectives, learning activities, and student assessments.³⁰

A curriculum blueprint aligns objectives, instructional activities, and assessments so that performance test scores closely reflect program goals, learning objectives, and expected outcomes.³¹ Once defined, competencies help establish appropriate curricular structures that allow learners to make and assess their own progress. "Doing so is essential to the development of a comprehensive and integrated curriculum, in which each competency is linked with learning [outcomes] to ensure they are achieved."¹⁷ Using a curriculum blueprint enables schools to develop master's, professional doctorate, and other doctoral curricula closely aligned with institutional program goals and evaluated by quantifiable means of assessing student achievement.¹⁷

Assessing Student Performance

Competencies can be used to design rating scales to measure student performance in authentic clinical contexts. In these categories, learners' progress in each competency is evaluated against professional standards of competence as represented by a continuum, for example, from "unsatisfactory" to "excellent." Typically, a supervisor fills in a category to evaluate the progress of a student in a clinical rotation. The supervisor checks off a specific performance level and/or writes narrative comments to support this judgment. By the end of their clinical training, residents will have had multiple evaluations from multiple supervisors. Clearly defined standards of performance can reduce the magnitude of rater error, so scores are more consistent across raters. Consistently low or significantly different scores from different raters on the same competencies will trigger reviews by supervisory teams.

One example is the National Health Service's clinical leadership scale.³² Clinician performance is scored on five core leadership domains: demonstrating personal qualities, working with others, managing services, improving services, and setting direction. Each domain is divided into four elements, each of which is further divided into four statements which describe the behaviors all staff should be able to demonstrate. Clinicians use the five domains of the Clinical Leadership Competency Framework (CLCF) throughout their career. The CLCF is a broadly progressive framework that helps clinicians identify the stages of their leadership development. Each item is rated as performed "a lot of the time," "some of the

time," or "very little / none of the time." The CLCF document can be downloaded from http://www.leadershipacademy.nhs.uk/lf-supporting-tools, where one finds a range of clinically based examples and learning scenarios. An online toolkit for supporting leadership development at any career stage is also available at http://www.leadershipacademy.nhs.uk/leadership-development-module.

Categories can be used to assess performance. Targeted, constructive feedback to residents based on competencies can help minimize weaknesses. Learners attend to feedback that is crucial for success. The feedback should target their observed performance in the workplace. Categories enhance self-awareness and confidence and facilitate the transition to clinical practice after graduation. To be effective, rating scales should be based on a scientific process. Category scores can be used together with scores on multiple-choice tests as part of a comprehensive assessment plan based on multiple measures.

Competency models provide both "big picture" curriculum design guidelines and specific learning objectives and outcomes that enable acupuncturists to align their graduate programs with those of mainstream healthcare professions.³⁵

Validity and Reliability in Competency Models

Assessing Validity and Reliability

Competencies are based on constructs, that is, ideas about what composes any given KSA. How can we be confident we have described a valid competency? The first step is to draft competencies with expert stakeholders. Drafting through group collaboration ensures a form of content validity achieved when experts match KSAs to the domains. The next step is to test the model scientifically. Forms of validity verification include evaluations of construct validity (e.g., concurrent measures of the same domain) and criterion validity (e.g., predictive measures, such as workforce outcomes).

Like multiple-choice tests and opinion surveys, job competencies may be validated through statistical analysis (e.g., multi-trait, multi-method, or factor analysis). Validity demonstrates the extent to which an item captures the construct accurately. Validity is a measure of truth; it answers "are we measuring what we think we are measuring?" It is often assessed through multiple measures that are "triangulated" to fix on one point. On the other hand, reliability is the extent to which each item consistently measures the same construct repeatedly across all students. Reliability answers the question, "Are we measuring the same thing consistently?" It is possible to have reliability without validity—it is possible to measure the same thing consistently and still be measuring the wrong thing—but one cannot have validity without reliability.

Competency models have greater validity when the lists and items provide complete content coverage, when items are placed in their appropriate domains, and when items are written clearly and simply so that each measures only one thing. A perfect assessment

instrument has distinct domains. Items addressing a specific competency are grouped under *only one* domain. In the best competency models, items and domains are conceptualized and written in a way that minimizes overlap. In contrast, when items are too long, are poorly worded, or contain qualifiers, raters may not be sure about what these items are measuring. A high-quality competency model is easy to use for its intended purpose, which may be to align a curriculum, structure meaningful learning activities, assess student performance, or provide feedback to learners. The best competency models are feasible, quantifiable, cost-effective, and easy to use.

National Standards

History of Competencies in Health Professions

Competencies have been adopted by various healthcare professions at different historical periods (Table 1).

Table 1: Comparison Of Four Health Profession Essentials³⁶

PROFESSION	Uniform KSAs	Educational Conformity	National Practice Definition	National Scope of Practice
Medicine	1880s	1896	1920s	1920s
Physician Assistantship	2006	1986–1996	1965	1965
Physical Therapy	1920s	1950s-1977	1986	1986
Nursing	1917	1912–1952, 1969	1955	1972
Chiropractic	1981	1960s	no	no
Naturopathy	1910–1930	1980s-1990s	no	no
Acupuncture	no	1982–1985	no	no

The first four professions (in bold) have achieved conformity among themselves, including the adoption of professional competencies. Each of these professions is successfully established within the healthcare mainstream. In contrast, acupuncture, chiropractic, and naturopathy have not yet fully established themselves across the four criteria. The perception of these disciplines as standardized healthcare professions with a national presence will follow once consistency with the first four professions is complete and this information is disseminated to the users of the healthcare system.

Defining the Profession: AOM

AOM in the United States is a young profession. It has developed over three decades without widely accepted national standards. Existing AOM competency guidelines do not meet the criteria for establishing profession-based KSAs that can be tied to training curricula and workforce performance and planning. Given this gap, the ACGME's six-competency framework, a suitable model with construct validity, can be considered for the base. This competency

model is generally accepted by stakeholders in medicine who wish to see residency programs aligned with national accreditation standards.³⁷ The model can work for acupuncture without disrupting or degrading existing knowledge-building paradigms.

Each state in the nation has the right and authority to determine legal standards for all healthcare practitioners, including licensed and certified acupuncturists, as well as the actual legal requirements for specific hours and the type of acupuncture training. However, there is little uniformity among these standards. "There are relatively few acupuncture practice acts with a clear definition of practice that make a clear link to what guides education, training, credentialing, etc."36 Training and legal requirements vary considerably between states. Educational and training programs range from a four-year undergraduate degree to a two- or three-day continuing professional development course. The number of training hours varies widely, as do the types of jobs and areas of practice. Acupuncture practitioners can be categorized into four groups: acupuncture and Oriental medicine practitioners, medical practitioners, registered allied health practitioners, and non-registered health practitioners.4 Given these inconsistencies, the acupuncture and Oriental medicine profession needs to be defined by setting national standards for a tier of graduate-level training programs.

Accreditation and Credentialing in AOM

In higher education, program quality is ensured through accreditation, a peer review process based on established standards and guidelines. International and national accreditation and credentialing standards for AOM have not yet been universally adopted because they are not yet fully representative of the profession. ACAOM is the only national accrediting agency recognized by the US Department of Education for the accreditation and pre-accreditation (candidacy) of master's degree, first professional doctorate, and postgraduate clinical doctoral programs in AOM.

The NCCAOM establishes, assesses, and promotes recognized standards of competence and safety. Established in 1982, NCCAOM is the only national organization that validates entry-level competency in the practice of AOM through professional certification. NCCAOM certification or, in most states, a passing score on a combination of the NCCAOM examinations provides evidence of competency for licensure as an acupuncturist by 43 states and the District of Columbia. Because state laws vary so widely, the assessment models used by ACAOM and NCCAOM must also vary from state to state. In order to reach a uniform standard of excellence nationwide, uniformity in acupuncture regulation will be required in addition to a professional competency model.

All NCCAOM certification exams (e.g., those on acupuncture, Chinese herbology, and Oriental medicine) are governed by the National Commission for Certification Agencies (NCCA). To maintain accreditation, the NCCAOM must adhere to national standards for exam development and administration. All diplomate-level certification exams must meet the examination content-validity

standards set forth by the NCCA. A job task analysis (JTA) is the first step of the examination development process and an ongoing step in maintaining an exam item bank. The NCCAOM's 2008 Job Task Analysis was conducted to develop and validate a list of hundreds of discrete competencies. These discrete competencies are the basis for drawing competency-based test items for use on the certification qualifying exams. Similar to the NCCAOM, the National Board of Osteopathic Medical Examiners internally verifies competencies by using comprehensive exams that test these competencies through representative samples of exam questions. Competencies are then integrated directly into the educational program and course goals, performance categories, and institutional performance indicators.³⁹

California is the only state with an independent licensing exam, the California Acupuncture Licensing Exam (CALE). California competencies are written into state Business and Professions Regulations. These competencies are more similar to the lists drafted by the WHO than to the six-competency matrices used in medicine or the allied health professions.

Competencies and Scope of Practice

Each state has laws, licensing bodies, and regulations that define scope of practice. Scope of practice laws and regulations govern any healthcare profession that requires a license to practice in a certain state. A profession's scope of practice is a dynamic entity continually molded to reflect the techniques and procedures commonly used in clinical practice. Six states currently have no acupuncture practice act.³⁸

Scope of practice is a legal term that delineates what a profession does, and limits or confines the functions people within the profession may lawfully perform. The scope of practice of a licensed healthcare professional describes what the practitioner is legally allowed to do or prohibited from doing. Few acupuncture practice acts include a definition of practice that is clearly linked to education, training, and credentialing. Similarly, scope of competence defines or limits what an individual within a profession may do. Scope of competence is determined by education, training, and experience. These two scopes overlap and, in some cases, go hand in hand. Scope of practice is defined for the profession as a whole; scope of competence is defined or determined for each healthcare practitioner.

Licensed practitioners may expand their scope of competence by continuing their education, taking additional courses, reading literature, watching videos, and seeking consultations or supervised experiences. However, practitioners may have the competence to provide treatment but may be limited because of their scope of practice. For example, a marriage and family therapist (MFT) licensed only as such may have the competence to extract a tooth, but that extraction would be prohibited by law and would be outside of the MFT's scope of practice. Working outside of one's scope of practice and working outside of one's scope of competence are both violations of the law.⁴⁰

Competency-Based AOM Graduate Degrees

Masters' Degrees

A master's degree is the entry-level standard for professional practice in acupuncture and/or Oriental medicine in the United States. A bachelor's degree, relevant and standard pre–health profession training, and an entrance exam should be evaluated as potential admission standards for every applicant as required in comparable health profession training programs.³⁶

AOM colleges use many names for these graduate degrees—for example, Master of Acupuncture, Master of Science in Traditional Chinese Medicine, Master of Science in Acupuncture and Oriental Medicine, Master of Science in Oriental Medicine, Diploma in Acupuncture, and Master in Traditional Oriental Medicine. ⁴¹ By contrast, health professions with professional national standards commonly agree on uniform degree titles.

ACAOM standards require a total of 1905 hours of professional acupuncture curricula. This total includes at least 47 semester credits (705 hours) in Oriental medical theory, diagnosis and treatment techniques in acupuncture, and related studies; 22 semester credits (660 hours) in clinical training; 30 semester credits (450 hours) in biomedical clinical sciences; and 6 semester credits (90 hours) in counseling, communication, ethics, and practice management.

ACAOM standards for the professional Oriental medicine curriculum require a total of 2925 hours. This total includes at least 47 semester credits (705 hours) in Oriental medical theory, diagnosis and treatment techniques in acupuncture, and related studies; 30 semester credits (450 hours) in didactic Oriental herbal studies; 29 semester credits (870 hours) in integrated acupuncture and herbal clinical training; 34 semester credits (510 hours) in biomedical clinical sciences; and 6 semester credits (90 hours) in counseling, communication, ethics, and practice management.⁴¹

First Professional Doctorate

The profession has recently endorsed a professional doctorate as the entry degree to achieve licensure. This degree could coexist with established master's-level programs, creating a tiered profession of practitioners. Healthcare executives require management competencies—that is, managerial capabilities—including the skills (technical expertise), knowledge (facts and principles), and abilities (physical, mental, or legal power) necessary to support the achievement of these competencies. Leadership and resource management, including the cost and finance dimensions, are the highest-rated management professional executive competencies. These standards vary from state to state. Having nationally accepted professional competencies is an important step toward excellence in training and professional stature.

Postgraduate Research Doctorate

The research doctorate will include competencies in research ethics, design and methods, data collection and analysis, and report

writing and presentation. Chinese-medicine authors and researchers are widely published but rarely referenced, and their research must be recognized as a branch of legitimate acupuncture scholarship. The topics they represent include (a) evidence for the existence of *qi* and meridians; (b) the origins of needling therapy outside China; (c) placebo controls in acupuncture research; and (d) the pinpoint placement of needles.³⁷ These and other important issues merit evidence-based international dialogue.

Aligning Health Profession Competencies

Institute of Medicine Core Competencies Recommendations

The Institute of Medicine recommends a core set of competencies across all healthcare professions for optimum 21st-century healthcare. These competencies include information literacy and quantitative and qualitative research methods related to evidence-based practice. All other biomedical healthcare professions have integrated these competencies into their entry-level standards of practice. Additional competencies in other medical professions should be included in the AOM competency model. These competencies are information literacy, research, clinical judgment, and evidence-based practice skills.

Inter-Professionalism

Inter-professional skills are linked to positive patient and provider outcomes and can significantly reduce medical errors and improve patient care. Inter-professional competencies include understanding and appreciating professional roles and responsibilities, demonstrating teamwork in monitoring patients, communicating effectively, and negotiating changes in working practices between healthcare professions.

These competencies have been developed by comparable organizations (e.g., the Academic Consortium for Complementary and Alternative Health Care) and should be a primary focus of student education aimed at increasing collaborative practice skills.⁴² Inter-professional competency-based training validates that the acupuncturist possesses sufficient clinical experience in mainstream medicine settings to work within his or her scope of practice in an integrated setting, such as a community or safety-net clinic, and that, like a physician assistant, nurse practitioner, or medical or osteopathic doctor, the acupuncturist can assign patients to appropriate treatment, including triage.

Inter-professional competency may be expressed in a language of caution since a new role—that of the acupuncturist—is being explored. Alternatively, a specific call to revise clinical training alongside conventional providers may be introduced. Regardless of the phraseology, however, inter-professional competencies must be present.

Multiculturalism

Acupuncture is a multicultural discipline often requiring efficient cross-cultural communication skills. Such clinical and linguistic

cross-cultural skills must be required of competent professionals so that practitioners from different cultural contexts do not misunderstand one another while working together. Multicultural skills can be local and international. Sensitivity to cultural differences also comes into play in everyday professional interactions, in which something as apparently innocuous as laughter can be easily misinterpreted across cultures. While communication is a domain of all medical education competency models, English language proficiency is *not* a sub-domain of communication but should be required when colleagues of different cultural backgrounds work together in Anglophone countries. Likewise, Anglophones working in Asia or other countries should be expected to be linguistically and culturally competent in the native context to ensure patient safety and clarity in communications.

Three-Tiered Career Lattice

A career lattice for the master's, professional doctorate, and research doctorate was created as part of the AAAOM's Draft Competency Model. This lattice will be posted in its final form on the US Department of Labor's CareerOneStop website⁴⁴ to guide acupuncturists in charting their career paths.

Transitioning Professionals into a New Practitioner Model

Professional competencies describe a reconfigured model for how acupuncturists are trained and how they practice. Harden describes⁴⁵ three patterns of behavior in relation to the implementation of an outcome-based approach. Resisting change is quite commonplace. "Ostriches" ignore this new approach, believing it to be a passing fad or irrelevant style. "Peacocks" (show-offs) display a specified set of outcomes but stop there. "Beavers" (engaged learners) prepare and use their learning outcomes as a basis for curriculum decisions. Harden also provides a useful inventory to review and assess progress in implementing an outcome-based model during the interim period when educational institutions are establishing transitional curricula.

Prior-Learning Assessment

Acupuncture education could avail itself of prior-learning assessment, as does the American Physical Therapy Association (APTA). The APTA uses competencies as the base of its prior-learning assessment. Applicants' knowledge and skills already acquired through prior training or years of experience are assessed with the Physical Therapist Evaluation Tool, a mechanism to document their competence prior to entering the doctoral program. The tool consists of a list of tasks performed linked to items in a professional portfolio. Once documented, these competencies are compared with those taught in the doctorate in physical therapy, also known as a t-DPT or transitional doctorate. By clearly identifying these gaps, faculty advisors can design customized graduate programs that teach to these specific gaps, and can thereby eliminate unnecessary training. This competency-based approach is cost-effective because it reduces the training time required to complete doctoral degrees.

Summary and Conclusions

Competencies describe the KSAs and judgment needed for success in healthcare professions. Competencies are used in the health professions for accreditation and alignment with program goals, learning activities, and student assessments. The shortage of healthcare professionals who can provide basic care to the nation is being filled by a steady expansion of the scopes of practice of mid-level healthcare providers. The acupuncture profession needs to provide masters' and doctoral graduates that are trained to function as a part of healthcare in order to be a part of the greatest expansion of provider roles in US history. Education programs must be aligned with competency-based training in the healthcare professions. The proposed competency models and career lattices for AOM master's, first professional doctorate, and research doctorate graduates will allow for universal acceptance across healthcare professionals, healthcare institutions, and the public.

"The acupuncture profession needs to provide masters' and doctoral graduates that are trained to function as a part of healthcare in order to be a part of the greatest expansion of provider roles in US history."

APPENDIX 1: GLOSSARY

ACGME- The Accreditation Council for Graduate Medical Education

Career Ladders and Lattices- Pictorial representations of vertical and horizontal job progression in a career, including detailed job descriptions and experiences

Category- A rating scale to evaluate the predefined levels or "amounts" of professional competence of individual learners

Competencies- The knowledge, skills, abilities, and judgment needed for success in professional roles¹⁰

Competency Model- A list or diagram with detailed statements of knowledge, skills, abilities, and judgment needed for success in a profession

CBME- Competency-based medical education

Construct- The job or degree described by a competency model

Curricular Blueprint- A spreadsheet used to align objectives, instructional activities, and assessments so that performance test scores closely reflect program goals and learning objectives

Curriculum Alignment- Program goals, learning activities, and student assessments are consistent with each other

Domains- Higher-level categories of knowledge, skills, and abilities; general competencies

First Professional Doctorate- A doctoral degree with a focus on advanced clinical practice, management, and supervision

Inter-Professional Competencies- Communication skills with health professionals in various specialties and areas of practice

Competency Items- Statements of specific, detailed knowledge, skills, and abilities

Job Task Analysis- A detailed investigation of the knowledge, skills, abilities, and judgment needed for success in a job

KSAs- Knowledge, skills, and abilities

Milestones- Abilities expected of physicians or trainees at specific points in their development as professionals and fundamental to CBME

Next Accreditation System- ACGME's single, unified accreditation system for graduate medical education programs across the United States

Outcomes- Student learning assessment scores, e.g., percentage of correct answers on a test, final grades, category scores

Performance Assessment- Evaluating individual learners' job competencies by observing them in the workplace or in simulations, such as objective structured clinical examinations

Portfolio- A document used to record, track, and assess the development of professional skills

Prior-Learning Assessment- An applicant's knowledge and skills acquired from prior training and years of work experience are assessed prior to the applicant's entry into a doctoral program

Standard- A defined level or "amount" of competence. Standards are used for accreditation and for defining/measuring the levels of student performance on a rating scale.

Scope of Practice- The functions that define a profession and that may be lawfully performed by qualified persons within the profession

Scope of Competence- Defines or limits what an individual within the profession may do, and is determined by one's education, training and experience

Validity- The measurement quality of a test, category, or competency model

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