Abstract
This article presents a rationale for the development of professional occupational therapy doctorate (OTD) programs. As more universities transition to the entry-level OTD degree, opportunities are becoming available to advance the profession and increase benefits to clients. We analyzed the current health care environment and developed the following proposed outcomes for doctoral-trained practitioners: (1) Demonstrate advanced clinical skills; (2) attain proficiency in outcomes measurement and analysis and synthesis of outcomes data; (3) routinely use standardized evidence-based practice clinical guidelines that translate research into practice; (4) develop, implement, and lead health promotion services; and (5) excel as partners in interprofessional teams.

An increasing number of occupational therapy education programs are transitioning to the professional occupational therapy doctorate (OTD). In early 2013, the Accreditation Council for Occupational Therapy Education (ACOTE®) reported that 12 programs were in the applicant or candidate stage for establishing a professional OTD program. Although educators and practitioners have discussed the merits and risks of the profession transitioning to the doctoral level, few faculty, until recently, have favored developing professional doctoral programs. In the autumn 2012 American Occupational Therapy Association (AOTA) program directors’ meeting in Orlando, Florida, attended by the first author (Case-Smith), several directors indicated that they were developing or considering professional OTD programs. After this meeting, AOTA leadership met with invested program directors to discuss the OTD and to identify resources that could support educational programs in transitioning their entry-level programs to the doctoral level.

ACOTE standards for professional OTD programs were approved in 2006 and revised in 2011 (AOTA, 2012a). The revised OTD standards establish additional competencies in scholarship, program development, and advanced practice (AOTA, 2012a). Specifically, they place an increased emphasis on professional leadership and advocacy, integration of evidence into practice, demonstration of scholarship, and advanced practice skills. The standards emphasize consultation skills, care coordination, and advocacy roles. Of note, they require that students complete a doctoral experiential component of 16 wk (640 hr) after full-time fieldwork. The experiential component is guided by individualized specific objectives, and students produce a culminating project. Most OTD programs are 2–3 semesters (6 mo–1 yr) longer than traditional master’s degree programs in occupational therapy, although the additional program length varies among universities.

The Ohio State University faculty determined that transitioning to the professional OTD degree would allow our program to more completely address the goals of practice excellence and translation of evidence to practice. We viewed advancing to the OTD degree as an opportunity to increase the value and quality of graduates’ services and ultimately improve the outcomes of their clients. In preparing and planning to transition to a professional OTD program, we developed student outcomes that build on and advance those of the current master's degree in occupational therapy. These expected outcomes reflect the OTD's increased emphasis on clinical experience and scholarship and address the following pressing issues in today's health care environment: (1) the complexity of clients' diagnoses and health problems, (2) requirements to collect and analyze clinical data using online systems, (3) pressures to use standardized evidence-based practice (EBP) clinical guidelines, (4) emphasis on health promotion programs, and (5) emphasis on strengthening care coordination through interprofessional partnerships.
Current Issues in the Health Care Environment

Complexity of Diagnoses and Health Problems

The populations served by occupational therapy practitioners exhibit increasingly diverse and complex diagnoses that limit people's ability to participate in desired occupations. For example, approximately two-thirds (68%) of Americans are overweight or obese (Flegal, Carroll, Ogden, & Curtin, 2010). Adults with obesity are at risk of developing medical conditions that are commonly addressed by rehabilitation personnel, such as coronary heart disease, stroke, type 2 diabetes, or osteoarthritis (Centers for Disease Control and Prevention, 2012). The increasingly overweight population is experiencing health issues and physical impairments at earlier ages. In addition, the population is aging, increasing the incidence of chronic conditions that are managed with multiple medications (Crentsil, Ricks, Xue, & Fried, 2010). Occupational therapists working with adults with chronic conditions and complex pharmacology must possess increased knowledge and understanding of the interactions between disease and medication, as well as more advanced skills in clinical decision making.

As people live longer (Wang et al., 2012), they desire to engage in valued occupations and explore new ones despite a range of health problems or impairments. They require strategies to maximize participation in valued occupations, programming to maintain wellness, and interventions to restore function and reduce the impact of impairments. Of all the health care professions, only occupational therapy includes all of these activities in its scope of practice. Training programs must equip future practitioners with the appropriate breadth and depth of clinical skills to address these populations' diverse needs.

Concurrently, the health care environment in which occupational therapy practitioners treat clients is changing. U.S. health indicators have long lagged behind those of other nations in spite of higher health care expenditures (Patient Protection and Affordable Care Act [ACA]; Pub. L. No. 111–148); Americans spend 2.4 times more per capita on health care than citizens of other developed countries (Swensen, Dilling, Harper, & Noseworthy, 2012). Furthermore, 20%-30% of the $2.7 trillion spent on health care in the United States can be considered non-value-added expense that is directly attributable to providers, hospitals, and clinics (Emanuel & Fuchs, 2008; Jette, 2012). In recognition of mounting health care costs and lack of improvement in outcomes, the Institute of Medicine recommended initiatives and system changes to advance personalized medicine, improve safety, increase efficiencies in service delivery, and increase evidence-based practices (Committee on the Quality of Health Care in America, 2001). These recommended changes were supported in ACA and its associated health care reform initiatives. As systems increasingly focus on cost-effectiveness, health care services that result in positive outcomes and documented benefits will be funded (Lee, 2012; Porter, 2009). These trends are complemented by an increased focus on health promotion and personalized medicine, including medical homes and bundling of specialized services (Patient-Centered Primary Care Collaborative, 2013).

The changing populations that occupational therapy practitioners serve and the reform mandates necessitate training focused on increasing the value and scope of occupational therapy services in collaboration with health and rehabilitation partners. Doctoral-level training can better prepare new practitioners to fully confront these clinical challenges, develop and implement comprehensive interventions, and take on a variety of roles in care delivery, including leadership roles in health care teams.

Requirements to Collect and Analyze Data Using Online Systems

Using powerful health information technology (HIT), providers have enhanced their ability to collect, analyze, and report intervention outcomes and are encouraged to make decisions based on outcomes. To take advantage of this opportunity, occupational therapy practitioners must develop, deploy, and systematically use tools that collect meaningful data, such as occupational outcomes and indicators of quality of life. Gawande (2009) recommended that health care professionals learn to “love their data,” using data routinely to change the course of intervention, make decisions about intervention, and share progress with clients and families so that they can collaborate on choices and plans.

The current U.S. health care system does not necessarily facilitate these capabilities because it is organized primarily around cost and reimbursement (e.g., minutes) rather than value for patients and their care partners. In the near future, however, health outcomes, not the number of service minutes or procedures, will drive service delivery and funding. By consistently measuring and disseminating the outcomes of health services, the system will be driven to produce better outcomes (Porter, 2009). The challenge is to develop a system that pays for services that have greater value and produce more beneficial outcomes (Swensen et al., 2012). OTD programs can increase the emphasis on measuring and analyzing patient outcomes by providing methods to document and analyze outcomes in parallel with recording minutes, building expertise in using HIT, and educating students on methods to communicate with clients and their caregivers in client-specific ways.

Pressures to Use Evidence-Based Practice Guidelines

It is widely recognized that methodical use of EBP guidelines can improve patient outcomes (Law & MacDermid, 2008). As in other medical practices, standardized protocols, such as checklists for specific medical problems, reduce medical errors and result in more positive outcomes (Gawande, 2011). Yet, EBP involves more than translating the research literature into practice recommendations (Hetrick, Parker, Callahan, & Purcell, 2010; Hockenberry, Walaen, Brown, & Barrera, 2008). Full
implementation of EBP that translates into positive outcomes for clients involves piloting, monitoring, and testing to identify or develop systems that can support consistent application of EBP clinical guidelines. Reder (2012) recommended that a quality assurance process be used to monitor outcomes of EBP guideline implementation. By monitoring how well guidelines are implemented and how well clients are responding, procedures can be modified and appropriately individualized for client groups. Armed with outcomes data, the practitioner has additional data for making decisions and additional information on how to appropriately modify or adjust the treatment protocol for each patient (Grube et al., 2012).

An increase in the availability of EBP protocols gives occupational therapy practitioners tools that increase the probability of positive outcomes. However, implementation of research-based protocols necessitates that they be adapted to the practitioners’ populations and then further modified for individuals. Therefore, protocol refinement is informed by outcomes data, and data collection on intervention progress becomes integral to evidence-based practice.

**Emphasis on Health Promotion Programs**

Using data on disease and health outcomes from the research literature or their own clinics, all health care professionals can promote health and wellness by promoting healthy lifestyles. Occupational therapy practitioners have developed and provided health and wellness services for the past 4 decades. In her seminal paper on wellness, Johnson (1986) explained that health promotion involves more than education and awareness; it must include strategies to promote behavioral change and to support practice of healthy lifestyles. Although society recognizes the benefit of healthy practices, people continue to adopt lifestyles that create health risks. At the same time, U.S. medical and educational systems do not invest in health promotion services and have established fragmented services that are not effective in promoting overall health outcomes (Committee on the Quality of Health Care in America, 2001; Lee, 2012). Health promotion concepts need to be embedded in community services to facilitate ease of access and full incorporation into people’s lifestyles. With occupational therapy practitioners’ emphasis on individual behaviors and on the contexts in which these behaviors occur, they are well situated to positively influence healthy living, disease prevention, and wellness.

Although occupational therapy recognized the importance of health promotion before other health professions (Johnson, 1985, 1986), practitioners have not capitalized on their skills to provide preventive services. Limited by reimbursement systems and medical system funding, occupational therapy practitioners have not always had adequate funding structures to move into health promotion programs. With health care reform, these resources should become more available and community-based services more established, allowing practitioners to develop and establish a range of health promotion services. Furthermore, occupational therapy practitioners have held leadership roles in many areas of health promotion, including universal design, aging in place (Canadian Association of Occupational Therapists, 2003), energy conservation (Mathiowetz, Finlayson, Matuska, Chen, & Luo, 2005), Lifestyle Redesign® (Clark et al., 2012), ergonomics and prevention of workplace injury (Darragh, Stallones, Bigelow, & Keefe, 2004), and environmental modification for improved participation and safety (Leland, Elliott, O’Malley, & Murphy, 2012). These roles in prevention will become more important and grow as health care systems orient toward disease prevention. The OTD standards emphasize program development, affording students opportunities to conceptualize and develop health and wellness programs.

**Emphasis on Care Coordination and Interprofessional Partnerships**

Cohesive teams that communicate throughout the care continuum are critical to improving health outcomes and lowering costs. With HIT, recording and review of health information have become standardized processes, but HIT does not necessarily facilitate more valued or improved outcomes. Health care professionals must integrate and coordinate their actions by adopting the same goals for patient outcomes. Coordination of services will reduce health care costs (e.g., Swensen et al., 2012; Wickizer et al., 2004) and produce better patient outcomes. Improving interprofessional coordination of care may be one of the most effective and efficient ways to improve the nation’s health care outcomes (Lee, 2012). Gawande (2011), a surgeon who advocates for the use of standardized checklists to guide health care procedures, recommended to new graduates of Harvard Medical School that health care teams learn to function like NASCAR pit crews, perfecting their coordination of effort, standardization of procedures, and reliance on each other.

Occupational therapy practitioners are often effective partners in health care teams, with genuine interest and well-honed skills in collaboration. We must continue to enhance our skills in using HIT to promote care coordination and to facilitate all levels of communication (e.g., patient, team, external stakeholders). Care coordination and transition services are specifically identified as occupational therapy interventions (AOTA, 2012b). Occupational therapy practitioners contribute a unique perspective on daily life function and the effect of occupation on quality of life (Hafez & Brockman, 1998). With this perspective, in addition to our knowledge of systems and service, occupational therapy leadership in care coordination has strong potential to improve client outcomes.

**Implications for Occupational Therapy Education**

The health care trends described in the preceding sections were instrumental to The Ohio State University faculty’s vision for a
professional doctoral program. Furthermore, we believe that the value of occupational therapy services can improve by advancing educational programs for occupational therapy to the doctoral level. To guide our efforts in refining the curriculum, we established the following as desired outcomes for a professional OTD graduate: A doctoral-prepared occupational therapist

1. Attains a breadth and depth of clinical experiences to appropriately prepare for practice
   a. Understands complex disease states and impairments, including emerging current health care challenges
   b. Becomes skilled in a wide range of intervention methods in health and education, institutional, and community settings
   c. Becomes competent in using a variety of information technology systems to document client goals and progress

2. Values and is skilled in data collection and outcomes measurement
   a. Administers valid measures that link to functional performance, participation, and quality of life
   b. Interprets data for the purposes of upgrading services and reporting outcomes

3. Routinely uses standardized EBP clinical guidelines and translates research into practice
   a. Consistently applies EBP protocols
   b. Reasons how to adapt and modify protocols for individual clients
   c. Uses quality assurance processes to increase consistency in EBP

4. Develops, implements, and leads health promotion services
   a. Provides injury and disease prevention services
   b. Develops and administers programs that support ongoing health and participation for people with chronic conditions or disability
   c. Designs or modifies environments to promote quality of life and participation of people with chronic conditions and disability

5. Excels as a partner in interprofessional teams
   a. Demonstrates high-level communication skills, including advanced skills in using HIT
   b. Leads interprofessional teams, partners with team members, and advocates for clients.

The following sections briefly describe methods to achieve these outcomes in a professional OTD program.

**Advanced Clinical Training**

The primary—and most recognized—capacity in which occupational therapists and occupational therapy assistants function is as practitioners treating clients. Advanced coursework will increase students' exposure to both standard and advanced interventions, and additional clinical experiences will build competence in interventions across diagnoses and across the continuum of care. Intensive and extended opportunities for supervised hands-on intervention and guided practice are needed to deepen entry-level practice skills and prepare graduates to work with complex diagnoses.

**Emphasis on Outcomes Data and Evidence-Based Practice**

Recognition of occupational therapy as a “powerful, widely recognized, science-driven, and evidence-based profession” (AOTA, 2007, p. 613) depends on practitioners' ability to create, consume, and integrate evidence into practice. With additional structured clinical experiences, OTD graduates can gain advanced competence in making decisions using empirical evidence, measuring and analyzing outcomes, and appropriately modifying EBP protocols to meet individualized client and family priorities.

Although occupational therapy courses introduce students to analyzing the research and applying it to practice, many programs fall short in helping students integrate evidence into their everyday services. Through review of research, students can identify interventions that are effective and known to produce positive outcomes. However, EBP also includes reliably implementing the EBP protocol, adapting the intervention for the individual client, monitoring and measuring its effects, and adjusting the protocol on the basis of that response. To succeed in achieving better outcomes using the research evidence, occupational therapy practitioners need to apply the principles of quality assurance by collecting data on how well they implement EBP protocols, how well clients follow recommendations, and what outcomes are achieved.

To fully integrate EBP, we plan to use guided doctoral experiences (AOTA, 2012a) as opportunities for students to apply EBP protocols, collect data during intervention, and measure outcomes. We hope students will gain an understanding of the benefits of EBP, including the cost–benefit trade-offs and long-term benefits for clients. Graduates who have fully integrated EBP will be less likely to adopt trends that come and go in occupational therapy practice and techniques that have popular appeal but are a poor fit to the profession's focus on meaningful occupation and participation.

Additional, in-depth practica can immerse students in EBP and give them opportunities to embed data collection in their intervention. If practitioners are more skilled in outcomes measurement and data collection and analysis, then communication to stakeholders about service effects and benefits will increase, and practitioners can more effectively advocate for their services.
Leadership in Health Promotion Services

Health care reform initiatives emphasize primary care and disease prevention to create a healthier society (Muir, 2012; Porter, 2009). The role of multidisciplinary teams and service integration (bundling) in providing comprehensive services is likely to increase (Braveman & Metzler, 2012). Occupational therapy practitioners need to aggressively move into roles that promote health and full participation. Aspects of health care reform in which practitioners should take leadership roles include

1. Providing community services and home-based care
2. Designing environmental accommodations, including workplace modifications, that enable full participation of people with disabilities
3. Developing and administering health promotion services for people with chronic and other health conditions that limit participation
4. Providing health promotion services through primary care offices and practices.

As the professionals who possess the most expertise in understanding how active participation in life's occupations promotes physical and mental health (AOTA, 2012b), occupational therapy practitioners are instrumental to health care teams that support people with chronic conditions, including mental illness. Leadership is needed to design community and home-based services that promote health and wellness for people with chronic conditions. With additional training, OTD graduates will be able to move fluidly into the roles of establishing community health programs, promoting aging in place with redesign of homes, and promoting a balance of life activities. Moreover, as models are developed for integrated teams providing medical homes for patients, occupational therapy practitioners need to be at the table with equal status as other health care providers. Doctoral-level training can give occupational therapists increased independence in decision making and more equal footing with psychologists, pharmacists, physical therapists, nurse practitioners, and physicians.

Excellence as Partners in Interprofessional Teams

Occupational therapy practitioners traditionally have not been in positions of institutional, academic, and health care leadership. Strong team leaders are needed in health and rehabilitation settings who have holistic perspectives on client needs, including mental health, and a comprehensive understanding of systems and environments. Tomorrow's rehabilitation leaders need to have a vision for forming teams into cohesive, coordinated units that provide optimal client care.

To increase the power of the occupational therapy profession, its graduates must be positioned to assume leadership in teams and systems. We believe that our OTD graduates will be more prepared to work with systems on behalf of their clients and will be skilled in coordinating and streamlining services to avoid fragmentation and inefficiencies. With an enhanced understanding of systems and care management, and increased skills in identifying health issues that warrant referral, these graduates can help build more cohesive services.

Health care professionals also need communication skills that cross disciplines, accommodate people with different levels of literacy, and present relevant and accurate information. We plan for our OTD students to have multiple opportunities to gain oral and written communication skills throughout the program, both in the classroom and during clinical experiences. With enhanced communication skills, occupational therapy practitioners can move with confidence and professionalism among systems, multidisciplinary teams, and different client groups.

We believe that the value-added services of an OTD graduate will better address client priorities, focus on community participation, demonstrate needed standardization while continuously adapting to client needs and system change, and demonstrate cost-effectiveness. We hope that our OTD graduates will develop a complex set of communication and teaming skills that promote efficiencies, individualized client-centered services, and positive outcomes.

Conclusion

We believe that the development of professional OTD programs will prepare occupational therapy graduates to address emerging health care trends and population changes. Specifically, doctoral training will position graduates for leadership roles in health care by producing professionals that have

1. Advanced skills in clinical care of people with a variety of diagnoses using comprehensive intervention, documentation, evaluation, and assessment methods
2. Proficiency in outcomes measurement, program evaluation, and analysis and synthesis of outcomes data
3. Competence and confidence to consistently use EBP, including appropriately adapting protocols for individual clients and measuring the outcomes of such practices
4. Leadership skills in developing community-based programs and services that provide health promotion services, particularly
those that target people with chronic health conditions, families of children with special needs, and people at risk for occupational loss or limitations

5. Communication and collaboration skills to move fluidly within health care teams serving in leadership and care management positions, advocating for clients, and supporting efficiencies that improve client outcomes.

We are hopeful that these professional education outcomes will enable the occupational therapy profession to progress toward attainment of the Centennial Vision and beyond.

References


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All pre-professional occupational therapy degree programs require fieldwork or an internship to be completed before graduation. Occupational therapists must be licensed by the state in which they practice. Licensing requirements vary by state, but most require graduation from an accredited occupational therapy program and successful completion of a national examination. Administrative work is a large component of the job. They may schedule appointments, answer phones, and order supplies. An occupational therapist aide can work in any location that an occupational therapist does. They are found most frequently in hospitals, but may also work in nursing homes, private practices, and home health care agencies. Aides work with a variety of age groups. Earning a Doctor of Occupational Therapy (OTD) positions you to take a leadership and mentoring role in this burgeoning field. The University of Wisconsin–Madison’s Doctor of Occupational Therapy online degree program is designed as a post-professional clinical doctorate that prepares you for advanced-level practice, leadership, and the application of research in occupational therapy. Our mission is to educate advanced occupational therapists to become visionary leaders in inter-professional practice. You create a personalized professional development plan, and translate and apply current evidence to achieve your goals. As more universities transition to the entry-level OTD degree, opportunities are becoming available to advance the profession and increase benefits to clients. This article presents a rationale for the development of professional occupational therapy doctorate (OTD) programs. As more universities transition to the entry-level OTD degree, opportunities are becoming available to advance the profession and increase benefits to clients.