Infants & Young Children
Vol. 32, No. 4, pp. 280–293

Finding a Common Lens

Competencies Across Professional Disciplines Providing Early Childhood Intervention

Mary Beth Bruder, PhD; Tricia Catalino, DSc, PT; Lisa A. Chiarello, PT, PhD, FAPTA; Marica Cox Mitchell, MS; Janet Deppe, MS, CCC-SLP; Darla Gundler, MA; Peggy Kemp, PhD; Sarah LeMoine, MS; Toby Long, PhD, PT, FAPTA; Mary Muhlenhaupt, OTD, OTR/L, FAOTA; Patricia Prelock, PhD, CCC-SLP, BCS-CL; Sandra Schefkind, OTD, OTR/L, FAOTA; Vicki Stayton, PhD; Deborah Ziegler, EdD

The Early Childhood Personnel Center (ECPC) was funded by the Office of Special Education Programs at the U.S. Department of Education to provide technical assistance to State Systems of Early Childhood Intervention and Institutions of Higher Education on issues related to personnel development. One initiative of the ECPC has been to collaborate with professional organizations to identify core cross-disciplinary competencies for all personnel serving infants and young children aged birth through 5 years with disabilities and their families. Seven national organizations representing disciplines providing services in early childhood intervention have been participating in this initiative: the American Occupational Therapy Association; the American Physical Therapy

Author Affiliations: *Early Childhood Personnel Center, University of Connecticut (Dr Bruder); Hawai'i Pacific University, Academy of Pediatric Physical Therapy (Dr Catalino); Drexel University, Academy of Pediatric Physical Therapy (Dr Chiarello); Bainum Family Foundation (Ms Cox Mitchell); American Speech-Language-Hearing Association (Ms Deppe); Federation for Children with Special Needs, Early Childhood Personnel Center (Ms Gundler); Division for Early Childhood, Council for Exceptional Children (Dr Kemp); Zero to Three (Ms LeMoine); Georgetown University, Academy of Pediatric Physical Therapy (Dr Long); Thomas Jefferson University, American Occupational Therapy Association (Dr Muhlenhaupt); University of Vermont, American Speech-Language-Hearing Association (Dr Prelock); American Occupational Therapy Association (Dr Schefkind); Early Childhood Personnel Center (Dr Stayton); Council for Exceptional Children (Dr Ziegler).*

Marica Cox Mitchell worked at the National Association for the Education of Young Children during the writing of this article.

All authors contributed equally to this article.

The preparation of this article was supported, in part, with funding for the Early Childhood Personnel Center, University of Connecticut Health Center from the U.S. Department of Education, Office of Special Education Programs (H235B170008). The opinions expressed, however, are those of the author and do not necessarily reflect the positions of either the Department or the Office.

The authors declare no conflict of interest.

Supplemental digital content is available for this article. Direct URL citation appears in the printed text and is provided in the HTML and PDF versions of this article on the journal's Web site (www.iycjournal.com).

Correspondence: *Mary Beth Bruder, PhD, Early Childhood Personnel Center, University of Connecticut, 263 Farmington Ave, MC 6222, Farmington, CT 06030 (bruder@uchc.edu).*

DOI: 10.1097/IYC.0000000000000153

Association; the American Speech–Language–Hearing Association; the Council for Exceptional Children and the Division for Early Childhood; the National Association for the Education of Young Children; and Zero to Three. Alignments of personnel standards, practice guidelines, and competencies yielded 4 areas of competence that are common across service providers serving infants and young children with disabilities and their families. These are: Collaboration and Coordination; Family-Centered Practice; Evidence-Based Practice; and Professionalism. **Key words:** *early intervention, personnel competencies, standards*

AS EARLY CHILDHOOD PROGRAMS continue to grow and serve larger number of diverse infants, young children, and families, attention has focused on the qualifications, knowledge, and skills of the workforce who staff these programs (Allen & Kelly, 2015; Bruder, 2016). This is true also for those programs serving children with disabilities who qualify for services under the Individuals with Disabilities Education Act (IDEA). As reported in the 40th annual report to congress on IDEA, Parts B and C, 2018, approximately 372,896 infants and toddlers birth through 2 years of age were served in 2016. This number represents 3.1% of the total population of infants and toddlers in the United States, an increase from the 2.6% who were served in 2007. In regard to preschool-aged children under Part B of IDEA, 744,414 were served in 2016. This number represented 6.4% of the population of children aged 3 through 5 years and an increase from 5.8% of the population, which was served in 2007.

The children receiving services under IDEA are a heterogeneous group (Bailey, Hebbeler, Scarborough, Spiker & Mallik, 2004). They qualify for IDEA early childhood intervention (ECI) services (Part C and Part B [619]) because their development has been compromised in some way (biological risk, environmental risk, established risk, or a combination), resulting in a documented discrepancy between what they are able to do and what is expected for their chronological age. Unfortunately, states have differing eligibility criteria for IDEA services, which creates challenges as to the type of condition or developmental delay that may qualify an infant or young child for services across the country (Hebbeler, Spiker, & Kahn, 2012). Nonetheless, all children who are eligible for ECI under IDEA are entitled to services that are individualized, monitored for effectiveness, and delivered within a variety of settings where infants, young children, and families spend their time (e.g., homes, public schools, child care, community programs, and Head Start classrooms). The unifying factor for these services is that they are individually designed and implemented through an assessment and planning process that is conducted by a team of service providers who must meet the personnel standards and state certification or licensure requirements to practice in the occupational category or professional discipline in which they were trained (for further information about state-specific personnel requirements of IDEA, (see http://www.ecpcta.org/personnel_standards/).

Most ECI is provided through five types of services as reported in a national study of infants and young children receiving IDEA Part C or Part B (619) services (Raspa, Hebbeler, Bailey, & Scarborough, 2010, p. 136). The study found that 94% of the children in the sample received at least one of the following services: speech–language pathology (services provided to 54% of the children and families), occupational therapy (OT; services provided to 39% of the children and families), physical therapy (PT; services provided to 39% of the children and families), child development (services provided to 33% of the children and families), and early childhood special education (services provided to 29% of the children and families; (Raspa et al., 2010, p. 136). These services are implemented by service providers who meet the state certification and licensing requirements of the discipline authorized to provide the service (e.g., a physical therapist provides PT). In addition, the service provider must

meet personnel standards and practice guidelines unique to the discipline in which they belong and provide services. For example, speech–language pathologists have personnel standards set forth by the American Speech–Language–Hearing Association (ASHA), which include family-centered services and cultural competence, promotion of participation in a natural environment, coordination and use of a team approach, and the use of evidence-based practices (American Speech–Language–Hearing Association, 2008). Occupational therapy higher education programs are designed to follow the American Occupational Therapy Association (AOTA) standards and guidelines, which focus on knowledge of human development, knowledge of OT delivery models, application of evidence in the implementation of OT interventions, and effective communication across disciplines (American Occupational Therapy Association, 2015). Physical therapy programs follow the standards from the American Physical Therapy Association (APTA), which include knowledge of human development (specific focus on motor development), age-appropriate client management, family-centered care, health promotion, and legislation, policy, and systems (Rapport et al., 2014). Early childhood education personnel preparation programs follow standards from the National Association for the Education of Young Children (NAEYC), and these standards include general knowledge and understanding for individuals working with infants and young children (National Association for the Education of Young Children, 2010). Standards specific to special education were developed by the Council for Exceptional Children (CEC; Council for Exceptional Children, 2015) as informed by a specialty set for ECI developed by the Division for Early Childhood (CEC; Council for Exceptional Children, 2007), a subdivision of CEC, to guide Early Intervention/Early Childhood Special Education (EI/ECSE) programs. Finally, child development specialists/teachers may use competencies developed by Zero to Three to guide practice (Dean, LeMoine, & Mayoral, 2016), focusing on three areas of learning: social emotional development; cognitive development; and language and literacy development.

It should be noted that personnel standards differ from state certifications or licenses. Certification, and licenses are granted by a legal entity (e.g., state department of education, national organization) to someone who meets specific requirements that can be measured (e.g., graduation from an approved and/or accredited Institution of Higher Education [IHE] program; passing a national examination) within a professional scope of practice unique to their discipline and program of study (e.g., physical therapists are licensed to provide PT). Personnel standards are broader descriptions of the knowledge, skills, and disposition of a professional discipline and, as such, inform and guide state certification and licensing requirements for each specific professional discipline, as well as higher education (IHE) programs that prepare students to practice in a discipline upon graduation.

EARLY CHILDHOOD INTERVENTION: COMMON COMPETENCIES ACROSS DISCIPLINES

The field of ECI has long been recognized for its interdisciplinary delivery of services and interventions to infants and young children and their families, there are no unifying standards or competencies to guide service delivery providers across different disciplines to jointly implement common areas of practice in ECI (Bruder, 2010; Bruder & Bologna, 1993; Kilgo & Bruder, 1997; Stayton & Bruder, 1999; Stayton, 2015). Though Core Competencies for Interprofessional Educational Collaborative Practice have been available from the Interprofessional Education Collaborative (2011, 2016) for health-related professionals, these are not specific to ECI, nor inclusive of the early care, child development, and education disciplines.

The Early Childhood Personnel Center (ECPC) was funded in 2013 by the Office of Special Education Programs at the U.S. Department of Education to provide technical

assistance to state systems of ECI and IHE on personnel preparation and workforce development for those disciplines providing ECI to infants and young children with disabilities and their families. One charge to the ECPC was to develop a common frame of reference for interdisciplinary practice and the delivery of ECI. To do this, the ECPC has been collaborating with seven national professional organizations to identify areas of competence common to all personnel serving infants and young children with disabilities, aged birth through 5 years, and their families. The professional organizations include:

- The American Occupational Therapy Association (AOTA),
- The American Physical Therapy Association (APTA),
- The American Speech–Language–Hearing Association (ASHA),
- The Council for Exceptional Children (CEC),
- The Division for Early Childhood (DEC) of the CEC,
- The National Association for the Education of Young Children (NAEYC), and
- Zero to Three (ZTT).

Representatives from these organizations began meeting as a work group 5 years ago. The group discussed areas of professional practice and identified areas common across disciplines serving infants and young children and their families. The term "core competency" was adopted to describe each area of practice that was shared among the disciplines.

The definition of competency used in the Competencies for Interprofessional Educational Collaborative Practice (2011) was adapted to frame the competencies described in the remainder of this article. This adapted definition is as follows: a competency is the integrated enactment of knowledge, skills, and values/attitudes that define working together across the professions, with others, and with infants and young children, their families and communities, as appropriate to improve outcomes in specific care contexts (Interprofessional Education Collaborative, 2011, p. 2)

Step 1: Initial crosswalk and collaborations across disciplines

The ECPC completed an initial crosswalk of early childhood practices across disciplines using the knowledge and skill statements from the early childhood specialty set of DEC as the standard. These were aligned with the personnel standards or practices of AOTA, APTA, ASHA, and NAEYC. This crosswalk was intended to inform the identification of common competency areas across the disciplines. Representatives on the work group received a copy of the draft crosswalk and collaboratively generated a preliminary list of common competency areas and subareas at a meeting in December 2015. These are shown in Table 1.

Collectively, the work group also identified the need for input from the field and the boards of their organizations as to the need for cross-disciplinary competencies. Between 2015 and 2017, a total of 18 presentations and workshops were implemented jointly by work group members representing different disciplines at professional organizations' national meetings. Five articles were also published by work group members to articulate both discipline-specific standards and interdisciplinary applications in ECI (Catalino, Chiarello, Long, & Weaver, 2015; Chen & Mickelson, 2015; Muhlenhaupt, Pizur-Barnekow, Schefkind, Chandler, & Harvison, 2015; Prelock & Deppe, 2015; Stayton, 2015). The work group continued to meet twice a year to discuss the four common core competency areas and to identify methods to disseminate them to discipline and cross-discipline audiences.

Step 2: Alignments across documents from each discipline organization

To further validate and systematize these areas, the ECPC conducted an alignment of all personnel standards and/or competencies across the organizations and disciplines (DEC and Zero to Three did not have personnel standards unique to their organizations) to identify similarities in structure and content across the discipline requirements and

Table 1. Preliminary List of Common Cross-Disciplinary Early Childhood Competency Areas

Coordination and Collaboration	Family-Centered Practice	Data-Based Intervention/Instruction	Professionalism
Knowledge and respect of other disciplines/preparation and skills	Listening to families	Individualized	Advocacy
Ability to develop and implement joint assessment, planning, interventions, and evaluation across disciplines and learning contexts	Respecting family background/ structure/culture and choices	Interaction based	Ethics
	Sharing information and skills with families	Knowledge of child development and learning theories	Accountability
Ability to collaborate with others in the community, including EC agencies, programs, and settings	Supporting and partnering with families	Application of learning theories	Responsibility
		Assessment	Orientation to professional service
		Curricula (DAP)	Leadership
		Using learning opportunities through activities and routines	
		Functional curricula (DAP)	
		Future orientation and transition	

Note. DAP = Developmentally Appropriate Practice; EC = Early Childhood.

guidelines for personnel. The work group members provided the most recent editions of their personnel standards or competencies specific to their disciplines to ECPC (see Supplemental Digital Content Appendix A, available at: http://links.lww.com/IYC/A14). This ranged from one to 11 documents. Two members of the ECPC project staff (one postdoctoral candidate and one research assistant) began the process of organizing the personnel standards, competencies, and practice documents of AOTA, ASHA, APTA, CEC, DEC, NAEYC, and ZTT. After reviewing each document, one document was identified from each organization as the document containing the organization's personnel standards (i.e., knowledge and skill statements), and two organizations had a secondary document also containing personnel standards. The remaining documents, including position statements, technical reports, and overviews of systematic reviews, were identified as supportive documents to provide context to the discipline's work.

Using the main and supportive standards documents from each of the national organizations, the two ECPC staff members created operationalized definitions of the four previously agreed-upon core cross-disciplinary early childhood competency areas:

- Coordination and collaboration
- Family-centered practice
- Evidence-based practice
- Professionalism and ethics

The definitions were based upon the organizations' descriptions of these categories found in narrative statements such as introductions and other areas of the main documents and text of the supportive documents. Definitions did not come from individual items or standards, and no definition was solely attributable to one disciplinary field. In addition, evidence-based references were identified from peer-reviewed journals for each of the four categories. Alignment rules were created to standardize the process of organizing all personnel standard items into the four interdisciplinary areas. These rules included the following:

a. Individual items could be grouped into only one of the four categories.
b. All items would be categorized.
c. A tiebreaker by the director would be used for disagreements.

The two ECPC staff members individually grouped each item/standard into one of the four competency areas using the operationalized definitions. Once completed, the two staff members came together to discuss their findings. Uncategorized items were given to the director, who discussed items with the staff and categorized them as the tiebreaker. The category definitions were then updated and finalized on the basis of these newly categorized items. Documents were then created for the items assigned to each of the four cross-disciplinary competency areas, and two independent reviewers (early childhood professionals and graduate students in ECI) conducted a review of each document to ensure that items had been properly assigned to the most relevant interdisciplinary category using the operationalized definitions for reference.

A total of 752 standards were identified across the organizations' documents. Each standard was individually grouped into one of the four competency areas using the operationalized definitions. Of the items, 96% were coded the same between the two ECPC staff. Questions were brought up for 4% of the items ($n = 27$), which were discussed with the director, who categorized them. The two independent reviewers identified 37 items (5%) of disagreement with the original coders. An expert reviewed these items and identified only 20 items (3%) to be recategorized. These 20 items were recategorized in the master document. The frequency of item assignment into the four core cross-competency areas is provided in Table 2, and a sample alignment of items within four competency areas (Coordination and Collaboration; Family-Centered Practice; Evidence-Based Practice; and Professionalism) is shown in Tables 3–6.

Table 2. Organization of Early Childhood Personnel Standards Into the Four Core Cross-Disciplinary Early Childhood Competency Areas

		Competency Areas			
Organization	**Number of Items**	**Family-Centered Practice**	**Instruction/ Intervention**	**Collaboration and Coordination**	**Professionalism**
AOTA	40	1	20	6	13
APTA	40	8	17	11	4
ASHA	263	42	163	36	22
CEC	35	4	21	4	6
DEC	80	12	50	10	8
NAEYC	24	4	12	0	8
ZTT	270	78	123	31	38
Total	*752*	*149*	*406*	*98*	*99*

Note. AOTA = The American Occupational Therapy Association; APTA = American Physical Therapy Association; ASHA = American Speech–Language–Hearing Association; CEC = Council for Exceptional Children; DEC = Division for Early Childhood; NAEYC = National Association for the Education of Young Children; ZTT = Zero to Three.

Table 3. Sample Items From Discipline-Specific Standards/Practices and Competencies in Coordination and Collaboration

Organization	**Personnel Standard**
AOTA	An occupational therapy practitioner is an integral member of the interdisciplinary collaborative health care team. He or she consults with team and family members to ensure the client-centeredness of evaluation and intervention practices
APTA	Form a partnership and work collaboratively with other team members, especially the child's family: refer and coordinate services among family, other professionals, community agencies, and day care programs; demonstrate effective and appropriate interpersonal communication skills; implement strategies for team development and management; develop mechanism for ongoing team coordination; function as an interdisciplinary or transdisciplinary team member; and, if applicable, serve as a service coordinator.
ASHA	Skills in implementing strategies to function as an effective member of an interdisciplinary programming team
CEC	Beginning special education professionals use collaboration to promote the well-being of individuals with exceptionalities across a wide range of settings and collaborators
DEC	Collaborate with caregivers, professionals, and agencies to support children's development and learning
ZTT	Collaborate with other service providers and provide information, guidance, and support to assist families caring for a child with special needs.

Note. AOTA = The American Occupational Therapy Association; APTA = American Physical Therapy Association; ASHA = American Speech–Language–Hearing Association; CEC = Council for Exceptional Children; DEC = Division for Early Childhood; ZTT = Zero to Three.

Table 4. Sample Items From Discipline-Specific Standards/Practices and Competencies in Family-Centered Practice

Organization	Personnel Standard
APTA	Evaluate family strengths, resources, concerns, and priorities: (a) conduct family interview; (b) select and administer supplemental family surveys
ASHA	Skills (ability): to interview families in family friendly, culturally competent manner to obtain background history
DEC	Integrate family priorities and concerns in the assessment process
CEC	Beginning special education professionals in collaboration with colleagues and families use multiple types of assessment information in making decisions about individuals with exceptionalities
NAEYC	Knowing about assessment partnerships with families and with professional colleagues
ZTT	Assess family strengths and risk factors and connect the family to appropriate resources to both enhance the family's ability to build on their strengths and protect children and family members from risks

Note. APTA = American Physical Therapy Association; ASHA = American Speech–Language–Hearing Association; CEC = Council for Exceptional Children; DEC = Division for Early Childhood; NAEYC = National Association for the Education of Young Children; ZTT = Zero to Three.

Table 5. Sample Items From Discipline-Specific Standards/Practices and Competencies in Evidence-Based Research

Organization	Personnel Standards/Practices and Competencies
AOTA	An occupational therapist is responsible for all aspects of the screening, evaluation, and reevaluation process
APTA	Use valid, reliable, and nondiscriminatory examination instruments and procedures for (a) identification and eligibility, (b) diagnostic evaluation, (c) individual program planning, and (d) documentation of child's progress, family outcomes, and program impact
ASHA	Knowledge of methods of evaluation and assessment appropriate for the birth-to-3 population (including interview, parent report, observational, and criterion-referenced tools)
DEC	Alignment of assessment with curriculum, content standards, and local, state, and federal regulations
NAEYC	Understanding the goals, benefits, and uses of assessment
ZTT	When available, use evidence-based screening, observation, and assessment tools and strategies to inform planning and provision of appropriate services for the unique needs of each individual child, including children with special needs and dual language learners

Note. AOTA = The American Occupational Therapy Association; APTA = American Physical Therapy Association; ASHA = American Speech–Language–Hearing Association; DEC = Division for Early Childhood; NAEYC = National Association for the Education of Young Children; ZTT = Zero to Three.

Table 6. Sample Items From Discipline-Specific Standards/Practices and Competencies in Professionalism

Organization	Personnel Standards/Practices and Competencies
AOTA	An occupational therapy practitioner is an effective advocate for the client's intervention and/or accommodation needs
APTA	Promote public awareness of early intervention services: (a) disseminate information about the availability, criteria for eligibility, and methods of referral; and (b) collect and use data from multiple sources for child-find systems
ASHA	Skills in disseminating information related to early intervention services through a variety of print, media, technology, and professional organization networks
CEC	Beginning special education professionals advance the profession by engaging in activities such as advocacy and mentoring
DEC	Advocacy for professional status and working conditions for those who serve infants and young children and their families
NAEYC	Engaging in informed advocacy for children and the profession
ZTT	Understand and take a leadership role in advocating for families and young children with special needs at the programmatic, local, state, and federal levels

Note. AOTA = The American Occupational Therapy Association; APTA = American Physical Therapy Association; ASHA = American Speech–Language–Hearing Association; CEC = Council for Exceptional Children; DEC = Division for Early Childhood; NAEYC = National Association for the Education of Young Children; ZTT = Zero to Three.

Step 3: Organizing standards/competency statements into subareas of the four cross-disciplinary ECI competency areas

The same two members of the ECPC staff used a process of thematic analysis to group personnel standard/competency items from each of four cross-disciplinary competency areas into subareas. Each item was placed on an individual index card and physically grouped by theme or idea; for example, "transitions". All subarea titles were developed on the basis of the information in the personnel standard/competency items. The two staff grouped and named the subareas together. When unsure about a certain competency item, they left it to the side. This categorizing process was iterative, and the two staff reviewed and rereviewed the areas once grouped, and regrouped items on the basis of discussion. The ECPC director then reviewed the groupings and the subarea names for each of the four competency areas. She acted as tiebreaker and categorized the previously undecided items. The items were then recorded in a word document and coded in an excel document by competency area, subarea, and organization. The following is a listing of the subareas in each of the four competency areas in order of the subareas with the most items across disciplines.

Within the area of Coordination and Collaboration, there were 98 items (13%) across disciplines, with 10 subareas. These subareas included the following: General Teaming; Resources and Referral; Effective Communication; Transitions; Teaming with Families; Role as a Consultant; Problem Solving; Leader of a Team; Medical Home; and Positive and Respectful Relationships. The Resources and Referral subarea had the majority of items within this core area (27%). However, none of these subareas had at least one item across disciplines (e.g., there were no subarea items in the competency area of Coordination and Collaboration items from the NAEYC standards).

Family-Centered Practice included 149 items (20%) across disciplines with 11 subareas: Parent Partnership; Advocacy and Help-Giving; Parent Education in Child

Development and Interventions; Family Involvement in Assessment; Cultural, Linguistic, and Socioeconomic Competency; Family Systems Theory, Laws, and Policies; Supporting Language Development; Stress, Trauma, and Safety; Parent/Caregiver Social Emotional/Attachment; Communicating with Families; and Nutrition. The subareas of Cultural, Linguistic, and Socioeconomic Competency and Parent Partnership, Advocacy, and Help-Giving had the highest percentage of subitems in this core area (both with 21% of the items). However, none of these subareas had at least one item across disciplines. The Family Involvement in Assessment subarea included competencies from six of the seven organizations.

Within the area of Evidence-Based Practice, there were 406 items (54%) across disciplines, with 11 subareas. These subareas included the following: Intervention; Assessment; Knowledge of Typical Child Development and Behavior; Communicating and Interpreting Assessment Results; Progress Monitoring; Evidence-Based Practice; Health and Safety; IEP/IFSP; Knowledge of Risk Factors and Atypical Child Development; Accommodations and Adaptations; and Service Delivery Models. The subareas of Intervention and Assessment had the highest percentage of items and were the only subareas that had at least one item across disciplines (i.e., competencies were found in each of the seven organizations), with Intervention consisting of 44% and Assessment consisting of 15% of the total competencies. Service Delivery Models had the fewest competencies in this subarea across the organizations (2%).

The area of Professionalism had 99 items (13%) across disciplines, with nine subareas. These subareas included the following: Advocacy/Public Awareness; Laws, Policies,

Table 7. Definitions of Each Competency Area

Competency Area	Definition
Coordination and Collaboration	The alignment of early childhood services, interventions, and community resources to support a collaborative, cross-disciplinary, and cross-agency service delivery process for infants and young children with disabilities and their families.
Family-Centered Practice	The delivery of culturally competent and family-responsive early childhood intervention that respects and facilitates a family's active partnership and participation in the assessment, planning, implementation, and monitoring of the interventions delivered to their child and themselves.
Evidence-Based Practice	The use of scientifically based evidence to inform all screening, assessment, intervention, and evaluation practices implemented with a child and family, and the collection of reliable data to document, monitor, and make decisions about the effectiveness of the intervention practices used with each individual child and family.
Professionalism	The application of ECI and discipline-specific laws, policies, ethical standards, and practice guidelines by service providers who take responsibility for continued learning through self-reflection and professional development, which they share with others through teaching, mentoring, and coaching, and the demonstration of advocacy and leadership skills at the local, state, and national levels.

Note. ECI = early childhood intervention.

Table 8. Competency Areas and Indicators

Coordination and Collaboration	Family-Centered Practice	Evidence-Based Intervention	Professionalism
Coordinates and collaborates with the family and service providers across disciplines and agencies throughout the service delivery process	Builds a relationship and a partnership with each child's caregiving family to support their participation in their child's intervention and learning	Demonstrates knowledge of typical and atypical child development (including risk factors) throughout the intervention process	Follows all IDEA and professional discipline policies, advocacy guidelines, ethics codes, and practice standards for early childhood intervention
Uses effective communication skills (listening, speaking, writing) with others	Supports families in their caregiving role of their child	Uses valid, reliable, nondiscriminatory child-focused assessment procedures and instruments to document (a) Eligibility for IDEA services; (b) child and family strengths and needs; and (c) child and family progress as a result of interventions	Demonstrates ethical decision making and professional behavior
Shares information and resources with service providers and agencies	Uses effective communication (listening, speaking, writing) skills with all families across cultural, linguistic, and socioeconomic backgrounds	Identifies and includes evidence-based practices on the intervention plan (IEP/IFSP)	Demonstrates knowledge of one's own discipline-specific practice standards and guidelines
Coordinates the delivery of early childhood intervention services, resources, and supports with service providers and agencies	Includes the family in all components of the early childhood intervention service delivery process	Uses evidence-based practices during interventions with a child, family, and/or other caregivers/teachers	Demonstrates awareness of other discipline's practice standards and guidelines for early childhood intervention
Collaborates with service providers and agencies to facilitate a team approach to early childhood intervention	Provides information, guidance, and education to families about child development and their child's health and safety needs	Incorporates evidence-based practices across learning opportunities (activities and routines) within the child's home, community, and classroom	Learns from, with, and about all team members within an interprofessional collaborative practice framework
Collaborates with the family, service providers, and agencies to develop, implement, and monitor an Individualized Family Service Plan (IFSP), Individualized Education Plan (IEP), or an intervention or learning plan	Provides information, guidance, and education to families about regulations, policies, and procedures for eligibility, intervention, and transitions under IDEA and other early childhood programs		Uses self-reflection and professional development to stay current in evidence-based disciplinary and interdisciplinary practices
			Uses collaborative consultation practices when working with service providers and families

(*continues*)

Table 8. Competency Areas and Indicators (*Continued*)

Coordination and Collaboration	Family-Centered Practice	Evidence-Based Intervention	Professionalism
Collaborates with service providers and agencies to identify roles and responsibilities when delivering intervention Demonstrates negotiation and leadership skills with service providers and agencies to problem solve and take necessary actions to benefit the child and family Facilitates transitions from the Part C or 619 programs to another program with the family and service providers from different disciplines and agencies	Provides information, guidance, and education to families about early childhood intervention and inclusive service delivery models Collaborates with the family to identify the family's strengths, need, concerns, and priorities Prepares the family to participate and contribute to the development, implementation, and evaluation of their child's IFSP or IEP, including transition options Refers families to resources and services to help them meet the needs of their child, their family, and themselves Provides information to the family about parental rights and safeguards and how to advocate for themselves, their family, and their child	Implements evidence-based assessment and intervention practices, which includes the collection of data to make decisions and document child and family progress Uses evidence-based accommodations, modifications, and adaptations to enable a child to participate and learn in inclusive school and community environments Systematically collects and uses data to monitor child and family progress to revise intervention plans as necessary and document intervention effectiveness	Mentors, teaches, and provides performance feedback and reflective supervision to other service providers Demonstrates disciplinary and interdisciplinary leadership skills at the service delivery, program administration, and systems level of early childhood intervention. Advocates at the local, state, and national levels for high-quality, timely, and effective early childhood intervention services to improve outcomes for children and families

Note. IDEA = Individuals with Disabilities Education Act.

and Practice Standards; Professional Development and Self-Reflection; Knowledge of the Field; Ethics; Administrative Leadership; Supervision; Communication; and Wellness. The Professional Development and Self-Reflection subareas had the most items within this core area (20%). The subarea of Advocacy/Public Awareness was the only area that had at least one item across disciplines and consisted of 14% of the total items in this core area. The Communication and Wellness (personal) subareas consisted of items only from one organization each (i.e., Communication: APTA; Wellness: ZTT). These subareas were further reduced by identifying the items that appeared in at least two discipline documents, which led to a reduction of four items across three areas (Positive and Respectful relationships, Nutrition, Communication, and Wellness).

Step 4: Approval by professional discipline organizations

During 2017, the work group members reviewed the alignments and presented them at national professional meetings for further input. The competency areas were finalized as Coordination and Collaboration, Family-Centered Practice, Evidence-Based Practice, and Professionalism. The ECPC developed an executive summary of the methodology used to align the discipline documents under the four cross-disciplinary competency areas. This was presented to the executive boards of AOTA, ASHA CEC, DEC, NAEYC, and the Academy of Pediatric Physical Therapy of the APTA. In 2017, each of these executive boards endorsed the four competency areas as unifying cross-disciplinary themes for those practicing ECI in their respective disciplines. It should be noted that the boards of the organizations were asked to endorse only the four areas of common competencies across the disciplines.

Step 5: Indicators of practice within the cross-disciplinary ECI competency areas

The cross-disciplinary work group continued to work with the ECPC to identify and review resources, materials, and tools as guides and exemplars to demonstrate the cross-disciplinary ECI competency areas. These were identified for two audiences: IHE faculty as they prepared service providers to demonstrate discipline-specific and interdisciplinary competencies; and state systems of ECI under IDEA for use in the in-service support of service providers across disciplines and the facilitation and supervision of cross-disciplinary teams of service providers. To this end, the ECPC and members of the work group developed descriptions of each competency area and indicators of practice for each competency area (see Tables 7 and 8) to inform the development of learning opportunities and products for the field. These will include checklists, practice briefs, case studies and other guidance documents for service providers, IHE faculty, and those in state and local systems of ECI. It is hoped that this work of identifying and defining areas of common practice across disciplines will contribute to service providers adopting and implementing an interdisciplinary model of intervention and service delivery for all infants and young children and their families receiving ECI.

REFERENCES

Allen, L., & Kelly, B. B. (Eds.). (2015). *Transforming the workforce for children age birth through 8: A unifying foundation*. Washington, DC: The National Academies Press. Retrieved from http://www/nap.edu/catalog.phprecord_id19401

American Occupational Therapy Association. (2015). Standards of practice for occupational therapy. *American Journal of Occupational Therapy*, *69*(Suppl. 3), 6913410057.

American Speech-Language-Hearing Association (2008). Core knowledge and skills in early intervention speech language pathology practice. [Knowledge and Skills]. Available from www.asha.org/policy.

Bailey, D. B., Hebbeler, K., Scarborough, A., Spiker, D., & Mallik, S. (2004). First experiences with early intervention: A national perspective. *Pediatrics*, *113*, 887–896.

Bruder, M. B. (2010). Early childhood intervention: A promise to children and families for their future. *Exceptional Children*, *76*(3), 339–355. doi:10.1177/001440291007600306

Bruder, M. B. (2016). Personnel development practices in early childhood intervention. In B. Reichow, B. Boyd, E. E. Barton, & S. L. Odom, (Eds.), *Handbook of early childhood special education* (pp. 289–333). New York, NY: Springer.

Bruder, M. B., & Bologna, T. M. (1993). Collaboration and service coordination for effective early intervention. In W. Brown, S. K. Thurman,, & L. Pearl (Eds.), *Family-centered early intervention with infants and toddlers: Innovative cross-disciplinary approaches* (pp. 103–127). Baltimore, MD: Brookes.

Catalino, T., Chiarello, L. A., Long, T., & Weaver, P. (2015). Promoting professional development for physical therapists in early intervention. *Infants & Young Children*, *28*(2), 133–149. doi:10.1097/IYC0000000000000034

Chen, C., & Mickelson, A. (2015). State licensure/certification requirements for personnel serving infants and young children with special needs and their families. *Infants & Young Children*, *28*(4), 294–307.

Council for Exceptional Children (2007). Initial specialty set: Early childhood special education/early intervention, revalidated 2017. Retrieved from: https://www.cec.sped.org/~/media/Files/Standards/CEC%20Initial%20and%20Advanced%20Specialty%20Sets/Initial%20Specialty%20Set%20%20ECSE%20%20Revalidated%202017.pdf

Council for Exceptional Children. (2015). What Every Special Educator Must Know: Professional Ethics and Standards. Arlington, VA: CEC

Dean, A., LeMoine, S., & Mayoral, M. (2016). *ZERO TO THREE critical competencies for infant-toddler educators*. Washington, DC: ZERO TO THREE.

Hebbeler, K., Spiker, D., & Kahn, L. (2012). Individuals with Disabilities Education Act's early childhood programs: Powerful vision and pesky details. *Topics in Early Childhood Special Education*, *31*(4), 199–207. doi:10.1177/0271121411429077

Interprofessional Education Collaborative Expert Panel. (2011). *Core competencies for interprofessional collaborative practice: Report of an expert panel*. Washington, DC: Interprofessional Education Collaborative.

Interprofessional Education Collaborative. (2016). *Core competencies for interprofessional collaborative practice: 2016 update*. Washington, DC: Interprofessional Education Collaborative.

Kilgo, J., & Bruder, M. B. (1997). Creating new visions in institutions of higher education: Interdisciplinary approaches to personnel preparation in early intervention. In P. J. Winton, J. McCollum, & C. Catlett (Eds.), *Reforming personnel preparation in early intervention: Issues, models, and practical strategies* (pp. 81–102). Baltimore, MD: Brookes.

Muhlenhaupt, M., Pizur-Barnekow, K., Schefkind, S., Chandler, B., & Harvison, N. (2015). Occupational therapy contributions in early intervention: Implications for personnel preparation and interprofessional practice. *Infants & Young Children*, *28*(2), 123–131. doi:10.1097/IYC0000000000000031

NAEYC/National Association for the Education of Young Children (2010). 2010 NAEYC Standards for initial & advanced early childhood professional preparation programs for use by associate, baccalaureate and graduate degree programs. National Association for the Education of Young Children. Washington, D.C. 20005.

Prelock, P. A., & Deppe, J. (2015). Speech-language pathology: Preparing early interventionists. *Infants & Young Children*, *28*(2), 150–164. doi:10.1097/IYC0000000000000035

Rapport, M. J., Furze, J., Martin, K., Schriber, J., Dannemiller, L. A., DiBiasio, P. A., & Moerchen, V. A. (2014). Essential competencies in entry-level pediatric physical therapy education. *Pediatric Physical Therapy*, *26*(2), 7–67.

Raspa, M., Hebbeler, K., Bailey, D., & Scarborough, A. (2010). Service provider combinations and the delivery of early intervention services to children and families. *Infants & Young Children*, *23*(2):132–144.

Stayton, V. D. (2015). Preparation of early childhood special educators for inclusive and interdisciplinary settings. *Infants & Young Children*, *28*(2), 113–122. doi:10.1097/IYC0000000000000030

Stayton, V. D., & Bruder, M. B. (1999). Early intervention personnel preparation for the new millennium: Early childhood special education. *Infants & Young Children*, *12*(1), 59–69. doi:10.1097/00001163-199907000-00009