Practice Analysis of Certified Pedorthists

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Acknowledgements

On behalf of the American Board for Certification in Orthotics, Prosthetics and Pedorthics, Inc. (ABC) I am pleased to present this Practice Analysis of Certified Pedorthists. This report describes the contemporary practice of ABC certified pedorthists practicing in the United States. It represents the culmination of months of planning, execution, data analyses and writing.

A project of the magnitude depends on the hard work and commitment of many professionals, and we are pleased to acknowledge their contributions to the final product. We are indebted to the Practice Analysis Task Force (PATF) for the wisdom and direction it provided. Its members—Dennis Dillard, C.Ped., CTO (Chair); Dan Ballard, C.Ped.; John Brestovansky, CO, C.Ped.; Marcus Day, C.Ped., CFo; Carol Grettum, CP, C.Ped; Ed Hicks, CO, C.Ped.; Dennis Janisse, C.Ped.; Erick Janisse, CO, C.Ped.; Gordon Rabing, C.Ped. and Shelly Simmering, C.Ped.—worked with us throughout the conduct of the study.

Finally, we are grateful to Catherine A. Carter, Executive Director and Stephen B. Fletcher, CPO, LPO, Director of Clinical Resources at ABC. They provided thoughtful and consistent support during the conduct of the study.

This project represents a substantial investment of ABC's financial resources and personnel as related to our efforts in continuing to develop exemplary examination programs as well as providing information to primary and continuing education programs. We are proud to present this to the profession.

Eric Ramcharran, CPO
President

Introduction

In 2016 the American Board for Certification in Orthotics, Prosthetics, & Pedorthics, Inc. (ABC) contracted with Professional Examination Service (ProExam) to develop and implement a practice analysis and validation study for certified pedorthists. ABC performed a pedorthist practice analysis and validation study in 2009. In 2016, as planned, pedorthists were resurveyed in order to identify changes related to the delivery of care, the components available and the technology in use today.

The respondents to the survey have provided a great service to the profession. It is imperative that pedorthists and the profession recognize the importance of studies such as this that provide vital information to standard setting organizations.

WHY DO A PRACTICE ANALYSIS STUDY?

The goal of the practice analysis is to determine current trends in the provision of pedorthic services by pedorthists.

WHY DO A VALIDATION STUDY?

The goal of the validation study was to identify priorities unique in the delivery of pedorthic care, e.g., What highly critical tasks are performed by all pedorthists? What subset of knowledge and skills is essential? Which procedures are most frequently implemented?

WHAT WILL ABC DO WITH THE RESULTS OF THE STUDY?

The results are being used to generate defensible credentialing test specifications designed for entry-level pedorthists. The results will also be used to identify specific topics for in-service and/or continuing education and to provide guidance for educational program enhancement in regard to curriculum review and/or programmatic selfassessment.

The specific objectives of the study were to:

- Conduct an update of the practice analysis of pedorthists by delineating and validating the domains of practice, specific tasks performed and associated knowledge and skills required to perform each task
- Quantify time spent and tasks performed with regard to various pedorthic devices
- Describe the patients to whom credentialed pedorthists provide direct patient care
- Develop defensible test specifications for the multiple-choice certified pedorthist examination

Task Force Selection

BC selected a Practice Analysis Task Force (PATF) to undertake the major work involved in updating the delineation of practice. The PATF was selected to represent a wide range of key background characteristics, such as: certified pedorthists, including those solely certified as a C.Ped, as well as those with additional ABC credentials; those closer to the point of certification and more experienced practitioners; individuals from different types of work settings and representing various geographic regions; those with previous experience in ABC practice analysis studies; those having held leadership positions in ABC, or having served in other capacities such as member of the examination committees; and individuals new to the practice analysis process.

ProExam completed the following steps in collaboration with the PATF:

- Pre-meeting data collection with PATF
- Conducted two meetings of the PATF
- Developed and conducted an online survey of practice, the Practice Analysis Survey of Certified Pedorthists. The survey comprises two versions, wherein respondents answered some sections in common, but were randomly routed to one of two subsections of ratings for either tasks or knowledge. The survey included the following components:
  - Introduction: Including a description of the purpose of the survey and instructions for completing the survey
  - Screening Question: To determine if respondent had been practicing as a pedorthist in the past 12 months
  - Section 1: Respondents were randomly routed to rate either Tasks or Knowledge and Skills
  - Tasks, including 59 tasks delineated in association with six domains of practice, or
  - Knowledge and Skills, including 88 knowledge and skills statements
  - Section 2: Domains, including six domains of practice
  - Section 3: Patient Characteristics and Practice Descriptions
  - Section 4: Pedorthic Practice Area and Device Lists, including activities performed in connection with pedorthic devices
  - Section 5: Background Information, including questions about the respondent's educational and professional background, work setting and demographic characteristics
  - Section 6: Qualitative Comments, including open-ended questions regarding the changes in practice and benefits of certification

Survey Return Rate

The overall response rate was 27%. This was derived by taking the number of completed surveys and dividing it by the number of surveys that were eligible to be completed. The number eligible was defined as the total number of surveys emailed, minus those that were not deliverable. Five hundred thirty two respondents completed the survey. This is a very strong response rate for a detailed and comprehensive survey such as that used in the present study and is comparable to response rates achieved in surveys of other professions. Respondents occasionally left questions blank, therefore the number of respondents may have been less than 532.

SECTION ONE

Results Related to Professional Background, Work Setting and Demographic Information

This section provides background information regarding the sample of ABC Certified Pedorthists. The survey included a questionnaire regarding professional history, work environment, ducational background and demographic information.

The overall sample responding to the survey was predominantly male, between 45 and 64 years old and Caucasian (77%) and shown in Tables 1, 2 and 3.

TABLE 1
Gender of Respondents

Female	32%
Male	65%
Prefer not to answer	3%
Total	100%

TABLE 2
Age of Respondents

25 to 34	10%
35 to 44	19%
45 to 54	28%
55 to 64	34%
65 or over	5%
Prefer not to answer	4%
Total	100%

TABLE 3
Racial/Ethnic Background

African-American/Black	2%
Asian	5%
Caucasian, not of Hispanic origin	77%
Hispanic/Latino/Spanish origin	4%
American Indian or Alaska Native	1%
Pacific Islander	1%
More than one race or ethnicity	1%
Other	1%
Prefer not to answer	8%
Total	100%

Many respondents have earned higher-level educational degrees than is required for entry into the profession, as seen in Table 4. Almost one-third (32%) of respondents have a Bachelor's degree 28% have some college, 16% have an Associate's degree and 9% have a Master's degree.

TABLE 4
Highest Educational Degree in any Discipline

High school or GED	10%
Some college	28%
Associate's degree	16%
Bachelor's degree	32%
Master's degree	9%
Doctorate	5%
Total	100%

As shown in Table 5, many respondents held multiple other ABC credentials, with certified orthotic fitter (CFo) being most common (14%); other fitter credentials were also represented, along with a smaller number of practitioners, technicians and assistants.

TABLE 5
ABC credential(s) held
Multiple responses permitted. Totals do not sum to 100%.

Certified Pedorthist–C.Ped.	100%
Certified Orthotist–CO	4%
Certified Prosthetist–CP	1%
Certified Prosthetist-Orthotist–CPO	1%
Certified Fitter-orthotics–CFo	14%
Certified Fitter-mastectomy–CFm	1%
Certified Fitter-orthotics and mastectomy–CFom	2%
Certified Fitter-therapeutic shoes–CFts	2%
Certified Technician-Orthotic–CTO	1%
Certified Technician-Prosthetic–CTP	1%
Certified Technician-Prosthetic Orthotic–CTPO	0%
Certified Orthotic Assistant–COA	3%
Certified Prosthetic Assistant–CPA	1%
Certified Prosthetic Orthotic Assistant–CPOA	3%

As seen in Table 6, respondents were relatively experienced in pedorthics, with an average of 14 years of experience.

TABLE 6
Years of Experience

Average	14.2

Respondents worked across a range of settings, with the greatest proportion in a privately owned, single location retail setting (21%), followed by privately-owned, single location pedorthic practice as shown in Table 7. Orthotic and prosthetic practices (single and multi-location, private and publically owned) combined to account for almost 25% of respondents.

TABLE 7
Primary Work Setting

Single location retail setting–privately owned	21%
Multi-facility retail setting–privately owned	9%
Single location pedorthic practice–privately owned	13%
Multi-facility pedorthic practice–privately owned	5%
Single location orthotic and prosthetic practice–privately owned	6%
Multi-facility orthotic and prosthetic practice–privately owned	11%
Multi-facility orthotic and prosthetic practice–publically owned	8%
Medical practice–privately owned	6%
Hospital-based practice	3%
DME/HME facility	7%
Sport/athletic company	<1%
University-based practice	1%
Central fabrication center/company	4%
Other	6%
Total	100%

In Table 8, most respondents reported that they work in settings with 1 to 5 pedorthic employees (88%).

TABLE 8
Number of Pedorthic Employees at Primary Work Site

1-5	88%
6-10	7%
11-15	3%
16 or more	2%
Total	100%

As shown in Table 9, respondents spent the largest percentage of their work time (41%) performing clinical pedorthic patient care, followed by pedorthic fabrication and administration (17% each), with retail pedorthics representing 16% of their time. Respondents also spent a significant amount of time (9%) in continuing education.

TABLE 9
Percentage of Pedorthic Work Time

Clinical pedorthic patient care (e.g., patient assessment, formulation of the treatment plan, implementation of pedorthic plan, follow-up patient care)	41%
Retail pedorthic services (e.g., provision of non-prescription shoes, inserts)	16%
Pedorthic fabrication	17%
Continuing education	9%
Administration (e.g., documentation, reimbursement, marketing, management)	17%
Other	<1%
Total	100%

As seen in Table 10, respondents' pedorthic patients were equally likely to be adults and geriatric patients (45% each) and the remaining 10% were pediatric.

TABLE 10
Percentage of Pedorthic Patients in each Age Range

Pediatric (0 to 18 years)	10%
Adult (19 to 65 years)	45%
Geriatric (more than 65 years)	45%
Total	100%

The percentage of patients in each diagnostic category is shown in Table 11. Diabetes accounted for the greatest percentage of patients (48%), about two-thirds of whom had diabetes only (diabetes only patients thus totaled about one-third of all pedorthic patients). The next most commonly seen diagnostic categories were arthritis (14%) and posterior tibial tendon dysfunction (13%). The most commonly mentioned Other diagnostic category was plantar fasciitis.

TABLE 11
Percentage of Pedorthic Patients in each Diagnostic Category

Diabetes	48%
Diabetes only	32%
Diabetes with ulceration	10%
Diabetes with amputation	6%
Posterior Tibial Tendon Dysfunction	13%
Arthritis	14%
Trauma	8%
Congenital	11%
Other diagnostic categories	6%
Total	100%

More than half of diabetes patients (51%) had significant peripheral neuropathology, as shown in Table 12.

TABLE 12
Percentage of Diabetic Patients with Significant Peripheral Neuropathy (for example, drop foot, upper extremity involvement, balance difficulties)

51%

As shown in Table 13, respondents used CAD/CAM in 31% of their custom pedorthic devices.

TABLE 13
Percentage of Custom Pedorthic Devices Incorporating CAD/CAM

31%

Regarding custom foot orthoses, 47% of these were fabricated onsite and 53% were outsourced to a central fabrication facility. Regarding custom AFOs, 43% of respondents indicated these were outsourced to a central fabrication facility, 22% indicated these were fabricated onsite and 35% did not provide any custom AFOs, as shown in Table 14.

TABLE 14
Percentage of Custom Foot Orthoses and Custom AFOs Fabricated Onsite or at a Central Fabrication Facility

	Custom Foot Orthoses	Custom AFOs
Onsite	47%	22%
Central fabrication	53%	43%
Not applicable/do not provide	0%	35%
Total	100%	100%

Of the custom foot orthoses provided by respondents, more than half (56%) were fabricated utilizing impression foam, 25% were digitized/scanned and 17% were hand cast (see Table 15).

TABLE 15
Percentage of custom foot orthoses in each category

Hand cast	17%
Impression foam	56%
Digitized/scanned	25%
Other	2%
Total	100%

SECTION TWO

Results Related to Domains, Tasks and Knowledge and Skill Statements

Domains are global areas of responsibility performed by credentialed professionals; in the current delineation the domains were identified as Patient Assessment, Formulation of the Treatment Plan, Implementation of the Treatment Plan, Follow-up to the Treatment Plan, Practice Management and Promotion of Competency and Enhancement of Professional Practice.

Tasks are the activities performed within a domain of practice.

Knowledge and skill statements describe the organized body of information and the physical or mental manipulation of information or things required to perform the tasks associated with each domain.

Domain Ratings

This section presents the results of the ratings related to the six domains delineated in the survey. Respondents to the survey rated each of the domains on two ratings scales:

- *% of Time:* Overall, what percentage of your work time did you spend performing the tasks related to each domain during the past year?
- *Criticality:* How critical is this domain to optimizing outcomes for patients, caregivers and healthcare providers?

Table 16 presents the results of the percentage of time and criticality ratings. As can be seen, respondents spent the greatest amount of their pedorthic work in the Patient Assessment domain (27%), followed by Implementation of the Treatment Plan (22%) and Formulation of the Treatment Plan (18%). The other specifically delineated domains each accounted for 8% to 13% of work time.

All domains achieved criticality ratings of at least 3.1 indicating at least moderately critical. Patient Assessment, Formulation of the Treatment Plan and Implementation of the Treatment Plan were the most highly rated domains, with more than 80% of respondents rating them as highly critical. Accordingly, all six domains appropriately focus on activities that are critical to optimizing outcomes for patients, caregivers and healthcare providers.

TABLE 16
Descriptive Statistics for Domains Percentage of Time and Criticality

Domain	Work Time[1]	Criticality[2]
Domain 1– Patient Assessment Perform a comprehensive assessment of the patient to obtain an understanding of the patient's pedorthic needs.	27%	3.9
Domain 2–Formulation of the Treatment Plan Analyze and integrate information from patient assessment to create a comprehensive pedorthic treatment plan to meet the needs and goals of the patient.	18%	3.8
Domain 3–Implementation of the Treatment Plan Perform procedures necessary to provide the appropriate pedorthic services, including fabrication.	22%	3.8
Domain 4–Follow-up to the Treatment Plan Provide continuing patient care and periodic evaluation to assure/maintain/document optimal fit and function of the pedorthic device and achievement of desired outcomes.	13%	3.5
Domain 5–Practice Management Develop, implement and/or monitor policies and procedures regarding human resources, the physical environment, business and financial practices and organizational management.	11%	3.1
Domain 6–Promotion of Competency and Enhancement of Professional Practice Participate in personal and professional development through continuing education, training, research and organizational affiliations.	9%	3.2

1 Overall, what percentage of your work time did you spend performing the tasks related to each domain during the past year?
2 How critical is this domain to optimizing outcomes for patients, caregivers and healthcare providers?
1=Not critical, 2=Minimally critical, 3=Moderately critical and 4=Highly critical

Task Ratings

All survey respondents rated the tasks on two rating scales:

- **Frequency:** How frequently did you independently (without supervision) perform the task during the past year? 1=Never/rarely, 2=Occasionally, 3=Frequently, 4=Very frequently
- **Criticality:** How critical is the task to optimizing outcomes for patients, caregivers and healthcare providers? 1=Not, 2=Minimally, 3=Moderately, 4=Highly

Table 17 displays the mean of the Frequency and Criticality ratings for the task statements.

Thirty seven of the 59 tasks achieved mean frequency ratings of at least 3.0 on a 4-point scale, indicating they were performed frequently to very frequently. The two highest rated tasks both had mean frequency ratings of 3.7 and were:

- Select the appropriate footwear and/or pedorthic device(s) and materials consistent with the patient's condition to maximize the effectiveness of pedorthic treatment
- Operate the pedorthic practice in accordance with sound business principles and governmental requirements

Thirteen tasks had mean frequency ratings of 2.5 to 2.9, indicating they were performed at least occasionally to frequently. Five tasks had mean frequency ratings of 2.0 to 2.5 and only four tasks had mean frequency ratings below 2.0, meaning they are performed on average never/rarely to occasionally. Three of these four lowest-rated tasks were in the Promotion of Competency and Enhancement of Professional Practice domain.

In general, tasks were rated quite highly on the criticality scale, with 56 of 59 tasks achieving a mean criticality rating of at least 3.0 on a 4-point scale, indicating they are at least moderately critical to optimizing outcomes. Of these, 43 achieved criticality ratings of 3.5 or higher, indicating they are moderately to highly critical. The four highest-rated tasks on the criticality scale all had mean ratings of 3.8 and included:

- Assess the patient's feet for deformities and pedal disorders by performing a biomechanical evaluation; and assessing range of motion, alignment, muscle functioning/strength and gait to assist in the development of the pedorthic treatment plan
- Evaluate the assessment findings to formulate a pedorthic treatment plan
- Select the appropriate footwear and/or pedorthic device(s) and materials consistent with the patient's condition to maximize the effectiveness of pedorthic treatment
- Operate the pedorthic practice in accordance with sound business principles governmental requirements

Only three tasks had mean criticality ratings below 3.0. All three of these had mean ratings of 2.8 and were in the Promotion of Competency and Enhancement of Professional Practice domain.

TABLE 17
Task Frequency and Criticality Ratings

	Mean Frequency	Mean Criticality
Domain 1 – Patient Assessment		
Evaluate the assessment findings to formulate a pedorthic treatment plan.	3.6	3.8
Formulate treatment goals and expected pedorthic outcomes to prevent injury, reduce pain, increase comfort, provide stability, reduce risk of deformity, prevent disability and promote healing to enhance function and independence.	3.6	3.7
Develop an appropriate pedorthic treatment plan using assessment data, including the prescription and reimbursement status, to provide optimal patient care, including education and follow-up.	3.4	3.6
Identify design, materials and components to support treatment plan.	3.5	3.7
Consult with physician/referral source/appropriately licensed healthcare provider to modify, if necessary, the original prescription and/or treatment plan.	2.6	3.4
Communicate to patient and/or caregiver about the recommended treatment plan and any optional plans, including disclosure of potential risks/benefits in pedorthic care.	3.4	3.6
Document treatment plan using established record-keeping techniques.	3.4	3.6
Confirm that patient or responsible parties are informed of their financial responsibilities pertaining to the proposed treatment plan (for example, insurance verification/authorization, deductibles, co-pays).	3.2	3.5
Domain 2 – Formulation of the Treatment Plan		
Evaluate the assessment findings to formulate a pedorthic treatment plan.	3.6	3.8
Formulate treatment goals and expected pedorthic outcomes to prevent injury, reduce pain, increase comfort, provide stability, reduce risk of deformity, prevent disability and promote healing to enhance function and independence.	3.6	3.7
Develop an appropriate pedorthic treatment plan using assessment data, including the prescription and reimbursement status, to provide optimal patient care, including education and follow-up.	3.4	3.6

Frequency: 1=Never/rarely, 2=Occasionally, 3=Frequently, 4=Very frequently
Criticality: 1=Not, 2=Minimally, 3=Moderately, 4=Highly

	Mean Frequency	Mean Criticality
Consult with physician/referral source/appropriately licensed healthcare provider to modify, if necessary, the original prescription and/or treatment plan.	2.6	3.4
Communicate to patient and/or caregiver about the recommended treatment plan and any optional plans, including disclosure of potential risks/benefits in pedorthic care.	3.4	3.6
Document treatment plan using established record-keeping techniques.	3.4	3.6
Confirm that patient or responsible parties are informed of their financial responsibilities pertaining to the proposed treatment plan (for example, insurance verification/authorization, deductibles, co-pays).	3.2	3.5
Domain 3 – Implementation of the Treatment Plan		
Inform patient and/or caregiver of the pedorthic treatment plan potential risks, goals and time involved in the procedure.	3.5	3.6
Select the appropriate footwear and/or pedorthic device(s) and materials consistent with the patient's condition to maximize the effectiveness of pedorthic treatment.	3.7	3.8
Refer to manufacturer's specifications and other technical resources regarding components/materials.	2.7	3.1
Measure/fit shoes using assessment data to maximize the effectiveness of pedorthic treatment.	3.6	3.7
Measure/fit prescription and non-prescription lower extremity compression garments and diabetic socks/hosiery using assessment data to maximize the effectiveness of pedorthic treatment.	2.4	3.1
For custom-molded foot orthoses and/or partial foot prostheses, obtain a negative foot impression using appropriate casting or computer-assisted technology to facilitate fabrication of the device.	3.4	3.7
For custom shoes, obtain a negative model of the patient's foot using appropriate casting or computer-assisted technology to facilitate fabrication.	2.4	3.5
Document specifications/instructions for fabrication of device.	3.3	3.6
Prepare and modify patient model/image for fabrication.	2.8	3.5

Frequency: 1=Never/rarely, 2=Occasionally, 3=Frequently, 4=Very frequently
Criticality: 1=Not, 2=Minimally, 3=Moderately, 4=Highly

	Mean Frequency	Mean Criticality
Fabricate foot orthoses using assessment data to implement the pedorthic treatment plan	2.6	3.4
Fabricate partial foot prostheses using assessment data to implement the pedorthic treatment plan.	3.4	3.6
Fabricate custom-molded shoes using assessment data to implement the pedorthic treatment plan.	3.4	3.6
Assess device prior to patient fitting/delivery for structural safety and ensure that manufacturers' guidelines have been followed.	3.2	3.5
Ensure that design was followed and materials and components are provided as specified in the treatment plan.	3.5	3.6
Conduct trial fittings of a pedorthic device(s), making adjustments as needed, to ensure proper fit and function of device(s)	3.7	3.8
Provide the patient and/or caregiver with oral and written instructions on the proper use and care of pedorthic device(s).	2.7	3.1
Document treatment using established record-keeping techniques to verify implementation of treatment plan.	3.6	3.7
Refer patient and/or caregiver to other appropriate healthcare providers as needed.	2.4	3.1
Domain 4 – Follow-up to the Treatment Plan		
Obtain feedback from patient and/or caregiver to evaluate outcome (for example, proper usage and function, wear schedule/tolerance, ability to don and doff, comfort, perceived benefits, perceived detriments, overall patient satisfaction).	3.3	3.6
Assess and document patient's function, outcomes of pedorthic device(s) and achievement of treatment goals.	3.3	3.6
Assess patient's skin condition (for example, integrity, sensation, color, temperature and volume) and document any changes.	3.2	3.6
Assess fit of pedorthic device(s) with regard to anatomical relationships (for example, trimlines, strategic contact, static/dynamic assessment) to determine need for changes relative to initial treatment goals.	3.4	3.7
Make or supervise modifications to pedorthic device(s) (for example, relieve pressure, change alignment and/or components) and inform patient and/or caregiver of modifications.	3.3	3.8
Evaluate results of modifications and assess modified device(s) for structural integrity.	3.3	3.7

Frequency: 1=Never/rarely, 2=Occasionally, 3=Frequently, 4=Very frequently
Criticality: 1=Not, 2=Minimally, 3=Moderately, 4=Highly

	Mean Frequency	Mean Criticality
Reassess patient's and/or caregiver's knowledge of goals and objectives to ensure proper use of pedorthic device(s) relative to modifications.	3.2	3.5
Document all findings and pedorthic interventions and communicate, as necessary, with physicians, referral sources and other healthcare providers to ensure patient status is updated.	3.2	3.6
Develop a long-term follow-up plan.	2.9	3.4
Domain 5 – Practice Management		
Comply with standard precaution procedures, occupational safety and health rules and disability accommodation guidelines to protect patients and employees.	3.5	3.7
Plan, implement, evaluate, document policies and procedures in compliance with all applicable federal and state laws and regulations and professional and ethical guidelines (for example, CMS, HIPPA, FDA, ADA, OSHA, ABC Code of Professional Responsibility).	3.2	3.6
Develop, document and implement personnel policies and procedures (for example, benefits, training, staff recognition, regular performance evaluations).	2.7	3.2
Maintain adequate inventory, equipment and supplies to provide pedorthic services in a professional and timely manner.	3.4	3.6
Develop, document and implement a quality assurance plan in order to identify and address deficiencies in current operations and improve overall pedorthic care by reviewing outcomes and addressing complaints from patients, payment sources and/or referral.	2.8	3.3
Develop, document and implement procedures for patient care that comply with current medical and legal requirements.	3.1	3.5
Develop and implement procedures for comprehensive documentation of patient care.	3.1	3.5
Operate the pedorthic practice in accordance with sound business principles and governmental requirements.	3.7	3.8
Domain 6 – Promotion of Competency and Enhancement of Professional Practice		
Participate in continuing education.		
Provide education for pedorthic practitioners and other health care providers (for example, podiatrists, physical therapists and orthopedists).	3.6	3.8

Frequency: 1=Never/rarely, 2=Occasionally, 3=Frequently, 4=Very frequently
Criticality: 1=Not, 2=Minimally, 3=Moderately, 4=Highly

	Mean Frequency	Mean Criticality
Participate in education of pedorthic interns, students and trainees.	3.6	3.7
Conduct and participate in evidence-based practice, clinical trials, outcome studies, product development and research.	2.4	3.1
Participate in/with consumer organizations and nongovernmental organizations to promote competency, enhancement and awareness of the pedorthic profession.	3.4	3.7
Promote a collaborative working relationship with other health care providers to enhance their understanding of the pedorthic scope of practice.	2.4	3.5
Document specifications/instructions for fabrication of device.	3.3	3.6
Participate in the development, implementation and monitoring of public policy regarding pedorthics (for example, provide testimony/ information to legislative/regulatory bodies, serve on professional committees and regulatory agencies).	2.8	3.5

Frequency: 1=Never/rarely, 2=Occasionally, 3=Frequently, 4=Very frequently
Criticality: 1=Not, 2=Minimally, 3=Moderately, 4=Highly

In summary, the overall pattern of the Frequency and Criticality ratings on these task statements indicates that the practice analysis delineation included critical tasks performed by pedorthists. The pattern of Frequency and Criticality ratings validates the use of these tasks in initiatives related to item writing and examination development.

Tasks in the *Promotion of Competency and Enhancement of Professional Practice* were reviewed using slightly different criteria. The tasks in this domain are generally performed only after certification is awarded and the pedorthist is in practice. Therefore, while the tasks in this domain are included as part of the overall profile of pedorthic practice, all of the tasks and the domain itself was excluded from the entry-to-practice test blueprint.

Knowledge and Skills Statements

The results in this section document the quantitative ratings of the respondents on the knowledge and skills statements delineated in association with each of the six domains. All survey respondents rated the knowledge and skill statements on two rating scales:

- **Criticality**—How critical is this knowledge or skill to optimizing outcomes for patients?

The knowledge and skill statements were generally rated highly on the criticality scale, with 85 of the 88 statements achieving criticality ratings of 3.0 or higher with five statements rated at 3.9.

- **Point of Acquisition**—At what point should this knowledge or skill be acquired by a Certified Pedorthist?

The *Acquisition* rating scale is used to determine the point at which a knowledge or skill is required for practice. To the degree that respondents support *Acquisition primarily before passing the ABC examinations*, a body of knowledge or a skill may be considered as validated for inclusion in a credentialing program such as ABC's programs for Certified Pedorthists.

Seventy nine of the 88 statements were rated by more than 50% of respondents as a knowledge or skill that should be acquired before the point of certification as a pedorthist.

TABLE 18
Knowledge and Skills Statements

Knowledge of:
Musculoskeletal anatomy
Basic neuroanatomy
Basic neurophysiology
Anatomical landmarks (surface anatomy)
Basic kinesiology
Basic pathokinesiology
Normal human locomotion
Gait training
Pathological gait
Tissue characteristics/management
Volumetric control

TABLE 18 CONT.
Knowledge and Skills Statements

Planes of motion
Biomechanics
Pathomechanics
Pathologies
Basic pharmacology
Medical terminology
Pedorthic terminology
Referral documents
Radiological images and/or reports
Data recording procedures
Policies and procedures regarding privileged information
Roles and responsibilities associated with other healthcare professions
Reimbursement protocols
Material safety procedures and standards (for example, OSHA, MSDS)
Standard precautions, including sterile techniques and infection control
Ethical standards regarding proper patient management, including ABC Code of
Professional Responsibility
Scope of practice related to pedorthic credentials
The extent and limitations of the scope of pedorthic practice (that is, when to refer a patient to other healthcare providers/caregivers)
Pedorthic design
Shoe anatomy and construction
Properties of various footwear styles, modifications and designs
Shoe fit
Normal and abnormal wear patterns of footwear and other pedorthic devices
Therapeutic and protective characteristics and features of various types of hosiery
Pedorthic fitting criteria
Clinical examination techniques (for example, range of motion (ROM), manual muscle tests, sensation, palpation)
Impression-taking techniques, materials, devices and equipment
Rectification/modification procedures as they relate to specific pedorthic designs
Pedorthic measurement tools and techniques
Pedorthic forms (for example, assessment, orthometry, measurement, evaluation, outcomes)
Properties of pedorthic materials

TABLE 18 CONT.
Knowledge and Skills Statements

Componentry
Alignment devices and techniques
Hand and power tools
Mechanics (for example, levers and force systems)
Theory and application of intrinsic and extrinsic posting
Internal and external shoe modifications and their purpose
Care and maintenance of pedorthic device(s)
Computer-aided design and manufacturing (CAD/CAM)
Item warranty and warranty limitations
Loss control (for example, risk management, inventory control)
Professional liability insurance requirements
Research methodology and literature
Human development and aging as they relate to pedorthic treatment
Patient compliance issues
The psychology of the disabled
Patient educational materials
Federal and state rules, regulations and guidelines (for example, FDA, ADA, HIPPA)
ABC Facility Accreditation Standards
ABC Code of Professional Responsibility

Skill in:

Interpreting referral documents (for example, prescriptions, orders)
Communicating with patient/family/caregiver
Communicating with referral sources and appropriately licensed healthcare providers
Performing physical examinations
Identifying gross surface anatomy
Interpretation of physical findings (for example, recognizing skin pressures, dermatological conditions, osseous deformity)
Analysis of normal gait/motion
Analysis of pathological gait/motion
Interpreting wear patterns
Managing patients relative to their diagnosis or condition
Impression-taking/measuring for pedorthic device(s)
Using mechanical measuring devices

TABLE 18 CONT.
Knowledge and Skills Statements

Using electrical measuring devices
Using computer-based measuring devices
Patient delineation, rectification and/or modification of patient model
Pedorthic fabrication
Use of safety equipment
Using hand and power tools
Using materials and components
Using alignment devices
Aesthetic finishing
Evaluating fit and function of pedorthic device(s)
Adjusting and modifying pedorthic device(s)
Maintaining and repairing pedorthic device(s)
Restoring optimal fit and function of pedorthic device(s)
Solving patient's problems related to ADL
Documenting

SECTION THREE

Results Related to Practice Areas and Devices

All survey respondents were asked to characterize the nature of their work in regard to an extensive list of pedorthic devices. The results of these rating activities should be reviewed very carefully, as they provide guidance with regard to the development and/or refinement of ABC's certification examinations. The results also provide guidance to the National Commission on Orthotic and Prosthetic Education (NCOPE) in the development of pedorthic education standards.

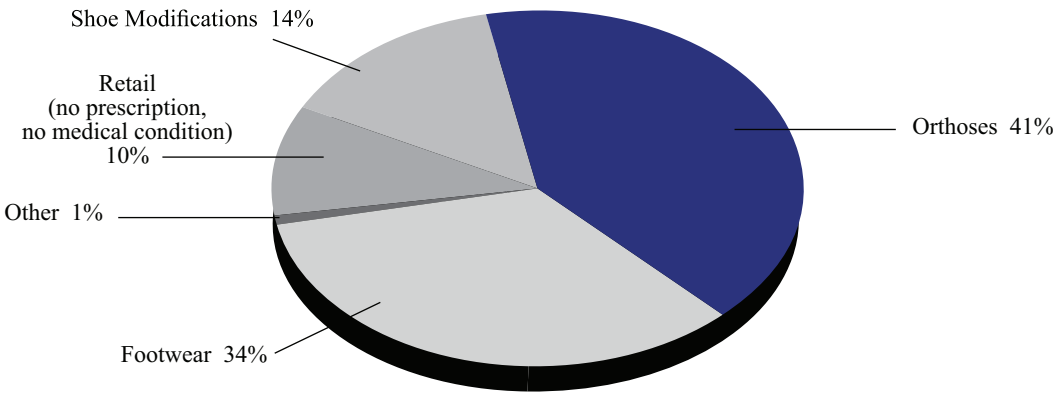
Respondents indicated whether they provided clinical patient care and/or performed pedorthic fabrication activities. As shown in Table 19, more than 80% do perform such activities.

TABLE 19
Perform clinical patient care and/or fabrication-related activities

Yes	81%
No	19%
Total	100%

Respondents who indicated they did provide clinical patient care and/or fabrication-related activities responded to the practice area and devices section of the survey. As shown in Figure 1, the greatest percentage of these respondents pedorthic time was spent, on average, in the orthoses practice area (41%), followed by footwear (34%), shoe modifications (14%) and retail (10%). Less than 1% of time was spent in some other pedorthic practice area.

Figure 1 - Percentage of Time in Pedorthic Practice Areas



Detailed allocations of percentages of time within pedorthic practice areas are found in Table 20.

TABLE 20
Percent of Time in Pedorthic Practice Areas and Devices

Practice Areas and Pedorthic Devices	
Footwear	**34.3%**
Therapeutic/Diabetic Shoes	16.0%
Extra-depth Shoes	7.9%
Custom Shoes	2.5%
Pediatric Corrective Footwear	1.4%
Athletic Shoes	5.9%
Other	0.6%
Orthoses	**41.0%**
Pre-fabricated Therapeutic/Diabetic Inserts	5.6%
Custom Therapeutic/Diabetic Inserts	8.7%
Pre-fabricated Accommodative Foot Orthoses	2.6%
Pre-fabricated Rigid Foot Orthoses	1.4%
Custom Accommodative Foot Orthoses	6.7%
Custom Functional/Rigid Foot Orthoses	7.1%
UCBL Orthoses	1.4%
Gait Plates	0.5%
Toe Filler Foot Orthoses/Partial Foot Prostheses	2.0%
Custom Fabricated SCFO (leather ankle gauntlet)	1.1%
Dorsi-assist Orthoses (pre-fabricated nighttime)	0.7%
Pre-fabricated Walking Boot/Shoe (wound off-loading)	1.1%
Custom Fabricated Articulated AFO (for example, free motion low profile orthosis)	1.8%
Other	0.2%
Shoe Modifications	**14.2%**
Shoe Modifications (sole)	9.0%
Shoe Modifications (upper)	3.8%
Other	1.3%
Retail (no prescription, no medical condition)	**9.5%**
Extra-depth Shoes	2.5%
Athletic Shoes	2.2%
Pre-fabricated Accommodative Foot Orthoses	1.0%
Pre-fabricated Rigid Foot Orthoses	0.6%
Compression Garments	0.7%
Accommodative Foot Orthoses *	1.1%
Custom Rigid Foot Orthoses *	0.9%
Other	0.5%

***Custom pedorthic devices can be provided without a prescription ONLY when they are not addressing a medical condition and not addressing the patient's biomechanical function.**

Respondents indicated if they performed a number of activities with respect to specific pedorthic devices at any time during the past year; results are shown in Table 21.

TABLE 21
Percentage of Respondents Performing Each Activity with Respect to Pedorthic Devices During Past 12 Months

	Perform Initial Assessment	Measure/ mold/ digitize/ scan	Modify	Fabricate	Fit	Perform Follow-Up/ evaluation
Footwear						
Therapeutic/Diabetic Shoes	84%	76%	63%	22%	86%	81%
Extra-depth Shoes	81%	73%	58%	17%	81%	76%
Custom Shoes	58%	54%	38%	13%	57%	56%
Pediatric Corrective Footwear	38%	33%	26%	10%	39%	36%
Athletic Shoes	65%	55%	42%	12%	64%	57%
Orthoses						
Pre-fabricated Therapeutic/ Diabetic Inserts	72%	62%	57%	18%	73%	67%
Custom Therapeutic/ Diabetic Inserts	77%	76%	69%	42%	80%	76%
Pre-fabricated Accommodative Foot Orthoses	65%	54%	50%	15%	64%	56%
Pre-fabricated Rigid Foot Orthoses	51%	45%	37%	13%	52%	46%
Custom Accommodative Foot Orthoses	76%	74%	69%	45%	78%	75%
Custom Functional/Rigid Foot Orthoses	68%	67%	60%	37%	69%	67%
UCBL Orthoses	52%	48%	44%	27%	51%	49%
Gait Plates	34%	30%	24%	13%	32%	31%
Toe Filler Foot Orthoses/ Partial Foot Prostheses	67%	64%	55%	36%	67%	64%

TABLE 21 cont.
Percentage of Respondents Performing Each Activity with Respect to Pedorthic Devices During Past 12 Months

	Perform Initial Assessment	Measure/ mold/ digitize/ scan	Modify	Fabricate	Fit	Perform Follow-Up/ evaluation
Custom Fabricated SCFO (leather ankle gauntlet)	35%	32%	25%	9%	34%	33%
Dorsi-assist Orthoses (pre-fabricated nighttime)	35%	29%	20%	6%	35%	31%
Pre-fabricated Walking Boot/Shoe (wound off-loading)	41%	34%	28%	9%	41%	38%
Custom Fabricated Articulated AFO (for example, free motion low profile orthosis)	39%	35%	29%	11%	38%	36%
Shoe Modifications						
Shoe Modifications (sole)	72%	58%	55%	39%	67%	68%
Shoe Modifications (upper)	64%	51%	52%	33%	61%	61%
Retail (no prescription, no medical condition)						
Extra-depth Shoes	66%	56%	39%	10%	65%	54%
Athletic Shoes	59%	50%	35%	9%	59%	49%
Pre-fabricated Accommodative Foot Orthoses	57%	47%	36%	9%	56%	47%
Pre-fabricated Rigid Foot Orthoses	46%	38%	31%	8%	44%	39%
Compression garments	42%	35%	13%	5%	40%	34%
Custom Accommodative Foot Orthoses	53%	49%	43%	27%	52%	48%
Custom Rigid Foot Orthoses	45%	42%	36%	23%	45%	41%

Highlights Related to Professional Background, Work Setting and Demographic Information

- Respondents came from 53 different geographical areas, were predominantly male (65%) and Caucasian (77%).

- The most frequent educational level of respondents was a bachelor's degree (32%), followed by some college (28%) and an associate's degree (16%).

- Respondents had an average of 14 years of pedorthic experience.

- The most predominant primary work settings for respondents were single location retail setting–privately owned (21%), single location pedorthic practice—privately owned (13%) and multi-facility orthotic and prosthetic practice—privately owned (11%).

- A large majority of respondents (88%) work with one to five other pedorthic employees, while a much smaller percentage works with six to 10 other pedorthic employees (7%).

- Respondents spent the largest percentage of their work time (41%) performing clinical pedorthic patient care, followed by pedorthic fabrication and administration (17% each), with retail pedorthics representing 16% of their time. Respondents also spent a significant amount of time (9%) in continuing education.

- Diabetes accounted for the greatest percentage of patients (48%), about two-thirds of whom had diabetes only (diabetes only patients thus totaled about one-third of all pedorthic patients). The next most commonly seen diagnostic categories were arthritis (14%) and posterior tibial tendon dysfunction (13%).

Highlights Related to Domains, Tasks and Knowledge and Skill Statements

- Respondents spent the greatest amount of their pedorthic work in the Patient Assessment domain (27%), followed by Implementation of the Treatment Plan (22%) and Formulation of the Treatment Plan (18%).

- Patient Assessment, Formulation of the Treatment Plan and Implementation of the Treatment Plan were the most highly rated domains, with more than 80% of respondents rating them as highly critical.

- Thirty seven of the 59 tasks achieved mean frequency ratings of at least 3.0 on a 4-point scale, indicating they were performed frequently to very frequently. The two highest rated tasks both had mean frequency ratings of 3.7 and were: Select the appropriate footwear and/or pedorthic device(s) and materials consistent with the patient's condition to

maximize the effectiveness of pedorthic treatment and Operate the pedorthic practice in accordance with sound business principles and governmental requirements.

- The knowledge and skill statements were generally rated highly on the criticality scale, with 85 of the 88 statements achieving criticality ratings of 3.0 or higher with five statements rated at 3.9.

- Seventy nine of the 88 statements were rated by more than 50% of respondents as knowledge or skill that should be acquired before the point of certification as a pedorthist.

Highlights Related to Practice Areas and Devices

- Eighty percent indicated that they provide clinical patient care and/or perform pedorthic fabrication activities

- Of the respondents who indicated they provide clinical patient care and/or fabrication related activities, the greatest percentage of their pedorthic time was spent in the orthoses practice area (41%), followed by footwear (34%), modifications (14%) and retail (10%).

- Pedorthists performed six listed activities at different rates depending on the practice area. Overall, Perform initial assessment and Fit were both performed most frequently (57%), followed closely by Perform follow up/evaluation (52%) and Measure/mold/digitize/scan (51%).