Board of Certification, Inc.

PRACTICE ANALYSIS, 7TH EDITION

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Report of Findings from the 2015 Athletic Trainer Practice Analysis Study

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INTRODUCTION

The Board of Certification, Inc. (BOC) was incorporated in 1989 to provide a certification program for entry-level Athletic Trainers. The BOC establishes and regularly reviews both the standards for the practice of athletic training and the continuing education requirements for BOC Certified Athletic Trainers. The BOC has the only accredited certification program for Athletic Trainers in the United States. The BOC's mission is to provide exceptional credentialing programs for healthcare professionals to ensure protection of the public.

Athletic trainers are healthcare professionals who collaborate with physicians. The services provided by Athletic Trainers comprise prevention, emergency care, clinical diagnosis, therapeutic intervention and rehabilitation of injuries and medical conditions. Athletic training is recognized by the American Medical Association (AMA) as a healthcare profession. Individuals become eligible for BOC certification through a bachelor's or master's professional athletic training program accredited by the Commission on Accreditation of Athletic Training Education (CAATE).

Consistent with its mission and to ensure that the examination bears a close relationship to current practice, the BOC conducts periodic studies of the profession. Doing so maintains close alignment with best practices in certification. The BOC identified a qualified group of Certified Athletic Trainers to meet with Castle Worldwide, Inc. (Castle) for two days in Omaha, Nebraska, to define performance domains, tasks and the knowledge and skill required for the competent performance of the tasks. The group delineated these elements of the role through intense analysis of the practice of newly certified Athletic Trainers, with particular attention to the divergent ways that it applies in different settings and with different patient conditions.

The purpose of BOC certification is to identify for the public those individuals who possess proficiency at a level that is required for entry to the athletic training profession. The BOC examination serves regulatory purposes in nearly all jurisdictions of the United States. For these reasons, it is essential that the examination have practice-related validity. Accordingly, the analysis concentrated on entry-level practice. Collecting data in a validation survey from a large sample of newly certified Athletic Trainers, the study identified the point in time that Athletic Trainers are expected to perform the tasks (Performance Expectation), the amount of harm that an inability to perform the tasks competently might bring about (Consequence) and how often newly certified Athletic Trainers perform the tasks (Frequency). The practice analysis consisted of the following major phases:

I. Initial Development and Validation. The panel of Certified Athletic Trainers identified the essential domains, tasks, knowledge and skill. Based on this work, Castle developed a validation survey.

II. Pilot Study. A sample of 200 newly certified Athletic Trainers was invited to review and validate the work of the panel by means of a pilot of the validation survey. The input of participants in this project was used to identify a number of changes in the survey and data collection strategy.

III. Validation Study. A large sample of newly certified Athletic Trainers was invited to participate in the BOC's large-scale national validation survey. The names and contact information for participants in the survey were drawn from BOC certification databases. A qualified group of participants representative of newly certified Athletic Trainers provided data in this phase.

The Practice Analysis Task Force provided oversight for the practice analysis study and wrote the literature reviews published as part of it. The task force is listed here:

NAME	RESPONSIBILITY
Christine Odell, PhD, ATC	Chair
Paul Bruning, DHA, ATC	Healthcare Administration and Professional Responsibility
Darryl Conway, MA, ATC	Immediate and Emergency Care
Peggy Houglum, PhD, ATC	Therapeutic Intervention
David Ruiz, MS, ATC, Cert. MDT	Examination, Assessment and Diagnosis
Jay Sedory, MEd, ATC, EMT-T	Injury and Illness Prevention and Wellness Promotion
Ericka Zimmerman, EdD, ATC, CES, PES	Program Director

The panel of experts appointed by the BOC defined the essential framework of the practice analysis study. The panel and other project personnel are listed here:

NAME	LOCATION
Esther Chou, MEd, L-AT, CSCS	Virginia
Jill Dale, MS, ATC	New York
Tiffany Duran, MS, LAT, ATC	Texas
Linda Fabrizio Mazzoli, MS, ATC, PTA, PES	Pennsylvania
Jena Hansen-Honeycutt, MS, LAT, ATC, PES	California
David Manning, MS, ATC, LAT	New Mexico
Marty Matney, MBA, AT/L, ATC, PTA/L, CEAS	Washington
Dani Moffit, PhD, ATC	Idaho
Kiley Nave, MEd, ATC	Florida
Forrest Pecha, MS, LAT, ATC, CSCS, OTC	Idaho
Kelvin Phan, MSEd, ATC, PES	West Virginia
Daniel Sonday, MS, ATR, ATC	Wisconsin/Minnesota
Bridget Spooner, MS, LAT, ATC	Pennsylvania
Jessica Viana, MEd, LAT, ATC	New Jersey
Rebecca Wardlaw, MA, LAT, ATC	Nebraska
Amanda Webster, ATC	South Carolina
Nathan Welever, MS, AT/L, ATC	Washington

EXECUTIVE SUMMARY

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Denise Fandel, MBA, CAE, Executive Director
Shannon Leftwich, MA, ATC, Director of Credentialing and Regulatory Affairs

CASTLE STAFF

James P. Henderson, PhD, Senior Psychometrician

The practice analysis study began with a preliminary review of documents and preparatory discussions in June and July 2014 and a meeting October 3-5, 2014, in Omaha, Nebraska, of the practice analysis panel. Assisted by Castle, the panel outlined domains, tasks and knowledge and skill statements that are essential to the proficient performance of newly certified Athletic Trainers. The validation survey resulting from this meeting was assessed by means of a pilot project, with changes incorporated as approved by the Practice Analysis Task Force. A large-scale validation study conducted March 18 through April 20, 2015, provided information that was used to assess the appropriateness of the domains and tasks as delineated by the panel of experts.

The panel of experts reviewed and reached consensus on the target audience definition. After this discussion, panelists expressed clear understanding that the purpose of certification was to ensure proficiency for the newly certified Athletic Trainer. The panel then focused on the existing content outline, in place since 2010, and the updates that would ensure its currency and adequacy for the upcoming five-year period. Through facilitated discussion, participants reached consensus on five domains appropriately expected of newly certified Athletic Trainers.

The domains are as follows:

I. Injury and Illness Prevention and Wellness Promotion;
II. Examination, Assessment and Diagnosis;
III. Immediate and Emergency Care;
IV. Therapeutic Intervention; and
V. Healthcare Administration and Professional Responsibility.

For each domain, panel experts worked in separate focus groups to draft tasks, which the whole group then reviewed and refined through a consensus process. The participants' diversity led to discussions that challenged terminology, phrasing and every aspect of the draft statements, with the resulting consensus on revisions representing a position that all members of the panel believed to be valid. The panel also developed a set of knowledge and skill statements for each task, making refinements and reaching consensus through additional small-group work and whole-group discussion.

Based on the work of the expert panel and in consultation with the BOC Practice Analysis Task Force and BOC staff, Castle developed an online questionnaire to be completed by BOC Certified Athletic Trainers. The purpose of the questionnaire was to collect data on the tasks that were developed by the panel of experts. The questionnaire phase of the practice analysis study was important because Certified Athletic Trainers should have input into the delineation of their field. The process for reviewing the survey with the BOC Practice Analysis Task Force and staff resulted in revisions and led to the pilot study that involved a sample of 200 recently certified Athletic Trainers. Castle collected data from this group from January 29 through February 18,

2015, with sufficient responses (≥ 15% of ratings for tasks and domains) from 31 participants. Castle summarized the ratings and other data (Appendix B) and made recommendations to the BOC Practice Analysis Task Force, which approved several minor modifications to the survey. The experience of collecting pilot data also led to a number of suggestions for collecting data, and the BOC and Castle implemented these changes together.

VALIDATION STUDY

The sampling plan for the large-scale validation study was quite simple—all individuals who had been certified in 2013 and working back in time to 2009 certificants until the desired sample size was achieved (n = 5,000) all were included and invited to participate in the study. Castle survey administration staff sent an invitation letter by email to this group on March 18, 2015, and data were collected through midnight on April 20. Castle monitored responses and sent email follow-up correspondence as appropriate.

To be included in the data set for analysis, respondents had to provide at least 15% of the ratings requested. Ultimately, Castle received 903 qualified, usable responses for most tasks. The 18% response rate accounting for this group is substantial, especially considering the survey's length and complexity. Also, the rate compares favorably to the level of participation for most practice analysis studies.

The BOC had two objectives for collecting demographic data from survey participants: to ensure that the people who participated in evaluating the domains and tasks were qualified to do so by virtue of their standing as newly certified Athletic Trainers and to support generalization from respondents to the newly certified population. To assess these objectives, the survey included 17 demographic questions, consistent with previous BOC surveys.

Responses to the demographic portion of the survey provide information that may be used to understand the characteristics of respondents. The substantial majority of the group was female. More than 85% of the respondents indicated that they were between 20 and 30 years of age. About one-third of the respondents are in the Midwestern states, although all regions were well represented. Respondents were largely of Caucasian descent. About one-third reported a bachelor's degree with athletic training as their major. About half report having a master's degree, but the major field was divided between athletic training and other disciplines.

Given the sampling strategy, it is not surprising that almost 80% of the respondents have been certified for five years or less. About 85% of the respondents have been in practice for five years or less. A small percentage of respondents are qualified in other fields in healthcare. When respondents hold credentials in other fields, the largest number are in physical therapy and emergency medical technology. The most frequent work settings are secondary schools (athletic training), universities and colleges (athletic training), and clinics and hospitals (athletic training).

Respondents were asked the number of Athletic Trainers who are employed in their current work setting. Overwhelmingly, most settings employ from one to five Athletic Trainers. Only about 15% indicated that they were the first Athletic Trainer to be employed in their workplace. The largest number of respondents reported their title as Athletic Trainer. About three-fourths of the respondents reported that there was an Emergency Action Plan in place at the time they were first employed in their current position. Given the request to report the portion of their work time that is devoted to athletic training, about half of the respondents reported that these responsibilities are 90% or more of their jobs. Well more than half reported that they spend more than 70% of their time in the delivery of patient care.

Most respondents reported that they do not supervise anyone who provides direct patient care, although about 30% do, to varying degrees. Finally, the survey asked respondents to provide information about their annual earnings from their work in athletic training. More than half of the respondents indicated that their athletic training income is between $30,000 and $50,000 annually.

Validation of the Domains and Tasks

Respondents were asked to evaluate each task using scales for Performance Expectation, Consequence and Frequency. A three-point scale was used for Performance Expectation, with the most desired response being "2" (within the first six months after certification). The Consequence scale employed five units (1 to 5), with a "5" indicating the potential for extreme harm. A five-point scale (1 to 5) was used for the Frequency scale, with a response of "5" representing the highest rating. The scales are listed below as a reference:

- **Performance Expectation:** At what point are newly certified Athletic Trainers first expected to perform the domain or task?
- **Consequence:** To what degree may the newly certified Athletic Trainer's lack of proficiency to perform duties in each domain or task be seen as causing harm to stakeholders? (Harm may be seen as physical, psychological, emotional, legal, financial, etc.)
- **Frequency:** Frequency refers to how often newly certified Athletic Trainers perform duties in each domain or task, considering a one-year period.

After rating the tasks, participants in the survey were asked to evaluate the domains as a whole, considering all tasks in the domain taken together. The evidence that newly certified Athletic Trainers are expected to perform the domains within the first six months after earning certification is very strong, with at least 88% of respondents attaching a "2" for all domains. See Table 1.1 for the details.

Table 1.1. Counts and Percentages for Performance Expectation of Domains

Domain	N	1	% 1	2	% 2	3	% 3
Injury and Illness Prevention and Wellness Promotion	898	5	0.6%	844	94.0%	898	5
Examination, Assessment and Diagnosis	840	4	0.5%	811	96.5%	840	4
Immediate and Emergency Care	819	5	0.6%	758	92.6%	819	5
Therapeutic Intervention	799	2	0.3%	755	94.5%	799	2
Healthcare Administration and Professional Responsibility	788	4	0.5%	696	88.3%	788	4

Performance Expectation: 1 = Not at all, 2 = Within first six months, 3 = Only after first six months

Consequence ratings suggest that the third domain (Immediate and Emergency Care) has the greatest criticality (substantial harm), and the degree to which harm might result from improper performance for the other domains ranges close to moderate. Domain-level responses for Consequence are summarized in Tables 1.2 and 1.3.

Examination, Assessment and Diagnosis is the domain that entry-level Athletic Trainers perform most frequently. Immediate and Emergency Care is performed about monthly, and the other domains are performed on at least a weekly basis. See Tables 1.4 and 1.5 for the detail on Frequency ratings.

Table 1.2. Counts and Percentages for Consequence of Domains

Domain	N	1	% 1	2	% 2	3	% 3	4	% 4	5	% 5
Injury and Illness Prevention and Wellness Promotion	873	47	5.4%	181	20.7%	386	44.2%	194	22.2%	65	7.4%
Examination, Assessment and Diagnosis	820	35	4.3%	96	11.7%	297	36.2%	284	34.6%	108	13.2%
Immediate and Emergency Care	795	24	3.0%	44	5.5%	102	12.8%	256	32.2%	369	46.4%
Therapeutic Intervention	781	30	3.8%	206	26.4%	416	53.3%	110	14.1%	19	2.4%
Healthcare Administration and Professional Responsibility	767	77	10.0%	241	31.4%	308	40.2%	104	13.6%	37	4.8%

Consequence: 1 = No harm, 2 = Minimal harm, 3 = Moderate harm, 4 = Substantial Harm, 5 = Extreme Harm

Table 1.3. Descriptive Statistics for Consequence of Domains

Domain	N	Median	Mean	SE Mean	Std Dev
Injury and Illness Prevention and Wellness Promotion	873	3	3.1	0.00	1.0
Examination, Assessment and Diagnosis	820	3	3.4	0.00	1.0
Immediate and Emergency Care	795	4	4.1	0.00	1.0
Therapeutic Intervention	781	3	2.8	0.00	0.8
Healthcare Administration and Professional Responsibility	767	3	2.7	0.00	1.0

Consequence: 1 = No harm, 2 = Minimal harm, 3 = Moderate harm, 4 = Substantial Harm, 5 = Extreme Harm

Table 1.4. Counts and Percentages for Frequency of Domains

Domain	N	1	% 1	2	% 2	3	% 3	4	% 4	5	% 5
Injury and Illness Prevention and Wellness Promotion	870	4	0.5%	41	4.7%	201	23.1%	255	29.3%	369	42.4%
Examination, Assessment and Diagnosis	816	4	0.5%	9	1.1%	23	2.8%	104	12.7%	676	82.8%
Immediate and Emergency Care	793	6	0.8%	202	25.5%	336	42.4%	135	17.0%	114	14.4%
Therapeutic Intervention	780	3	0.4%	7	0.9%	60	7.7%	204	26.2%	506	64.9%
Healthcare Administration and Professional Responsibility	769	7	0.9%	48	6.2%	141	18.3%	187	24.3%	386	50.2%

Frequency: 1 = Never, 2 = Once per year, 3 = Once per month, 4 = Once per week, 5 = Daily

Table 1.5. Descriptive Statistics for Frequency of Domains

Domain	N	Median	Mean	SE Mean	Std Dev
Injury and Illness Prevention and Wellness Promotion	870	4	4.1	0.0	0.9
Examination, Assessment and Diagnosis	816	5	4.8	0.0	0.6
Immediate and Emergency Care	793	3	3.2	0.0	1.0
Therapeutic Intervention	780	5	4.5	0.0	0.7
Healthcare Administration and Professional Responsibility	769	5	4.2	0.0	1.0

Frequency: 1 = Never, 2 = Once per year, 3 = Once per month, 4 = Once per week, 5 = Daily

Reliability Analysis for Domains

Reliability, reported in Table 1.6, was measured by estimating internal consistency (Cronbach's alpha) using the respondents' ratings for Consequence and Frequency for the tasks in each domain or subdomain. This procedure calculates the extent to which the task ratings within a domain consistently measure what other tasks within that performance domain measure. Reliability coefficients range from 0 to 1 and should be above 0.70 to be judged as adequate. The reliability coefficients obtained for this study were strong, especially for Therapeutic Intervention, and were almost as strong for Examination, Assessment and Diagnosis.

Table 1.6. Reliability

Reliability	Consequence	Frequency
Injury and Illness Prevention and Wellness Promotion	0.86	0.71
Examination, Assessment and Diagnosis	0.92	0.83
Immediate and Emergency Care	0.88	0.78
Therapeutic Intervention	0.93	0.88
Healthcare Administration and Professional Responsibility	0.81	0.58

CONCLUSION

The process for developing the outline of domains, tasks and knowledge and skill statements was drawn from established methodology for practice analysis studies. Panelists were well informed about the professional expectations of newly certified Athletic Trainers, and they participated in group discussions to clarify understanding, negotiate language and express opinions about all elements of the system. This work provided a strong basis for the validation study to follow.

Demographic data collected in the validation study indicate that respondents were qualified to participate in the survey and were aligned to the major characteristics of newly certified Athletic Trainers. They are distributed across practice settings, regions and other variables in ways that are consistent with previous BOC surveys.

Almost across the board, task validation data indicate strong support for the inference that tasks are valid with respect to entry-level practice. Additionally, ratings indicate that tasks are consequential to the safety and effectiveness of athletic training services and that they are performed often by newly certified Athletic Trainers. The only real disparity in opinion concerned the first two tasks in Healthcare Administration and Professional Responsibility, where it may be said that Athletic Trainers are responsible for the tasks but that not all settings require newly certified Athletic Trainers to perform them directly. Ratings for domains indicate their validity to the practice of Certified Athletic Trainers.

The purpose of the practice analysis study was to develop a current outline of domains, tasks and knowledge and skill statements that characterize the work of newly certified Athletic Trainers and define what proficiencies they should be expected to possess. Data collected in the validation study support the conclusion that this purpose was achieved and that the BOC may use the outline as the basis for its certification examination.

WEIGHTING OF DOMAINS

WEIGHTING OF DOMAINS

The *Practice Analysis, 7th Edition* defines the current entry-level knowledge, skills and abilities required for practice in the profession of athletic training. The practice analysis serves as the blueprint for determining the content of the exam. Exam questions represent all five domains of athletic training, with weighting distributed across domains as indicated in the table below.

Table 2.1. Weighting of Domains on the BOC Exam

Domain	Percent of Questions on Exam
Injury and Illness Prevention and Wellness Promotion	19.8
Examination, Assessment and Diagnosis	24.3
Immediate and Emergency Care	15.5
Therapeutic Intervention	27.4
Healthcare Administration and Professional Responsibility	13.0
Sum	100.0

DOMAIN 1

Injury and Illness Prevention and Wellness Promotion: Promoting healthy lifestyle behaviors with effective education and communication to enhance wellness and minimize the risk of injury and illness

Injury prevention has been defined as, "activities to prevent, ameliorate, treat, and/or reduce injury-related disability and death."[1] Injury prevention is arguably one of the most encompassing domains of the athletic training profession. Injury prevention not only reduces morbidity and cost, it increases quality of life. It requires general subject knowledge (anatomy, exercise physiology, biomechanics and health) and specific workplace knowledge (sport requirements, equipment fitting, OSHA regulations and environmental conditions). This domain is often synonymous with injury risk reduction or risk management. In this process risks are identified, interventions or plans are implemented, results are reviewed and the plan is further revised.

ATs are able to identify and understand intrinsic (patient history, demographics, education) and extrinsic factors (environmental, social, sport specific) that are relevant to the client, patient or population. While some risk factors are static or unchangeable, such as age or ethnic background, other factors may be within the patient's or client's ability to change, such as diet and exercise.

Evidence based medicine, metrics and research are important to all domains, including injury prevention. Epidemiological studies help identify the prevalence of an injury or disease within a population or group. ATs must be proficient in using national and local information to better serve their population and identify trends. ATs use research and position statements to help identify risk factors and provide plans for intervention.

This domain also includes concepts of health and wellness promotion. While the definition of wellness is varied, an accepted definition is, "Wellness is a multidimensional state of being describing the existence of positive health in an individual as exemplified by quality of life and a sense of well-being."[2] ATs are expected to promote a healthy lifestyle and environment to all

clientele and patients. A holistic approach includes promotion of physical, social, intellectual, emotional, mental and spiritual wellness. ATs must recognize associated risks and morbidity factors in order to provide the correct interventions. ATs educate or advise on health and wellness measures. ATs are in a position to influence the population in making health-conscious choices and dissuade against unhealthy behaviors such as using steroids, disordered eating and illicit drug use.

ATs are no longer limiting their influence to an individual, patient or team. Many are filling the role of a community advocate involved with promoting public health initiatives. As an example, ATs have been instrumental in educating the public about the consequences of traumatic brain injury (physical, mental, academic, social) beyond the initial injury. ATs have led efforts to prevent this injury and others like it by extending their knowledge to schools, parents and legislators.

TASK STATEMENT 1

Identify risk factors by administering assessment, pre-participation examination and other screening instruments, and reviewing individual and group history and injury surveillance data.

ATs must select examination tools, surveys or other instruments that may help identify risks to their population. Health questionnaires, screenings and initial testing are effective methods in gathering information and identifying risk prior to competition or participation in activity.[3] Several surveys and questionnaires can assist in identifying individuals with a higher risk of cardiac sudden death or cardiac disease.[4-7] ATs must also use functional exams or analyze individual movement patterns to help identify risks such as muscle imbalance or weakness.[8-11] A comprehensive screening will also review patient medications and allergies.[4,5,12,13]

ATs must use electronic health records, injury surveillance databases and other tools to identify injury and illness trends. ATs must also be familiar with data published by several national agencies including, but not limited to, The National Collegiate Athletic Association Injury Surveillance System (SFIA), Centers for Disease Control and Prevention, and National Electronic Injury Surveillance System (NEISS) report injury statistics.[14-16] ATs should consider implementing an injury surveillance system if one is not available.[17]

KNOWLEDGE OF	
a.	Disqualifying health-related factors
b.	Age-related and lifespan considerations that pertain to conditioning, wellness and baseline measurement
c.	Risk factors within activities, wellness and environment
d.	Policies, procedures, guidelines and regulations
e.	Behavioral risks (e.g., nutritional, sexual, substance abuse, personality, sedentary lifestyle, overtraining, psychosocial)
f.	Catastrophic risks (e.g., cardiorespiratory, neurological, thermoregulatory, immunological, endocrinological)
g.	Common risks (e.g., medical, musculoskeletal, respiratory, vestibular)
h.	Indications for referral
i.	Physiological adaptation to exercise
j.	Ergonomic and epidemiological factors
k.	Evidence-based principles and practices
l.	Implications of culture for practice
m.	Injury surveillance data

SKILL IN	
n.	Providing educational resources
o.	Performing baseline screening for concussions
p.	Administering screening tools
q.	Reviewing information systematically
r.	Analyzing data based upon collected outcomes
s.	Performing physical examinations
t.	Identifying conditions that may limit participation
u.	Interpreting injury surveillance data
v.	Exercising clinical judgment consistent with evidence-based principles and practices

TASK STATEMENT 2

Implement plans to aid in risk reduction using currently accepted and applicable guidelines.

Once a risk or trend has been identified, the AT must act and execute interventions to reduce the rate or prevalence of injury and illness. The interventions may range from implementations of emergency action plans[18] to prophylactic ankle bracing.[19,20] Position statements are good resources that offer measures and recommendations for implementation. The AT should review the current professional position statements on environmental and health conditions such as lightning safety,[21] heat illness,[22-25] cold illness,[26] head down contact,[21] hydration,[25,27] nutrition,[28] diabetes,[29] anterior cruciate ligament injuries,[30] concussion[31-33] and immune health.[34] Protocols, plans or regulations may not be universal to patient care setting, population or environment. The AT must be able to select the appropriate plan and modify it to fit the needs of the setting or patient population.

KNOWLEDGE OF	
a.	Policies, procedures, guidelines and regulations
b.	Principles of weight training, cardiovascular fitness and performance enhancement
c.	Pathological conditions
d.	Proper hygiene practices
e.	Facility cleaning and maintenance
f.	Evidence-based principles and practices
g.	Ergonomics and preventive measures
h.	Risk factors within activities, wellness and environment

SKILL IN	
i.	Communicating inherent risks
j.	Identifying pathologies
k.	Managing pathologies
l.	Interpreting and applying policies and procedures, position statements and consensus statements
m.	Recognizing safety and sanitation standards
n.	Providing educational resources
o.	Applying preventive measures (e.g., safety rules, accepted biomechanical techniques, ergonomics, nutrition guidelines)
p.	Communicating effectively

TASK STATEMENT 3

Educate individuals and stakeholders about the appropriate use of personal equipment.

Education is a primary method through which healthcare providers can effectively reduce injury and illness.[35-37] Several studies have evaluated the importance of injury prevention though proper equipment fitting[38,39] and mouth guards.[40-42] Personal protective equipment (PPE) is used to provide a level of safety for the individual. Personal protective equipment may range from sport specific equipment (helmets and shoulder pads) to occupational specific equipment (ballistic plate carriers and hard hats). While PPE provides a level of protection, the user and stakeholder need to be aware of the appropriate application and understand the level of protection that the PPE is designed to give.[43-46]

KNOWLEDGE OF	
a.	Interpersonal communication techniques
b.	Policies, procedures, guidelines and regulations
c.	Application of equipment
d.	Fitting of equipment
e.	Maintenance of equipment
f.	Industry standards for equipment
g.	Physical properties (e.g., absorption, dissipation, transmission of energy) of materials used in protective equipment
h.	Manufacturer recommendations
i.	Prophylactic (e.g., protective, supportive) and orthotic devices and their use

SKILL IN	
j.	Communicating effectively
k.	Educating all stakeholders on standard equipment
l.	Interpreting rules regarding protective equipment
m.	Identifying injuries, illnesses and related conditions that warrant the application of devices
n.	Complying with manufacturer recommendations for equipment and devices

TASK STATEMENT 4

Minimize the risk of injury and illness by monitoring and implementing plans to comply with regulatory requirements and standard operating procedures for physical environments and equipment.

It is important that clinics and treatment facilities are clean and safe to ensure those affected by illness and injury are not subjected to further harm or secondary disease. Exposure to communicable diseases such as HIV and MRSA[47-49] can be limited within a workplace environment.[50] The AT must incorporate instructional activities and national standards for clinic safety outlined by agencies such as Joint Commission on Accreditation of Healthcare Organizations,[51] OSHA,[44] and CDC.[1,14] The AT includes plans for sanitation, cleaning and equipment maintenance in daily operations and standard operating proceedures.[6,44,46-48] Following these guidelines will ensure patients and healthcare providers are working in a safe environment. Manufacturers of clinical equipment have recommendations on scheduled cleaning, maintenance and refurbishing; the AT must follow these guidelines to ensure the equipment functions appropriately.[6,9]

KNOWLEDGE OF	
a.	Policies, procedures, guidelines and regulations
b.	Wellness examinations
c.	Environmental conditions that pose risk (e.g., heat, cold, altitude, sunburn, insects, visibility, lighting, lightning, jet lag)
d.	Mechanisms of common and catastrophic injury
e.	Preventive measures (e.g., safety rules, accepted biomechanical techniques, ergonomics, nutrition guidelines)
f.	Conditions that may limit or compromise participation
g.	Manufacturer guidelines regarding selection, inspection and maintenance of equipment
h.	Physical properties (e.g., absorption, dissipation, transmission of energy) of materials used in protective equipment
i.	Methods for reducing risk from environmental conditions (e.g., activity scheduling, clothing selection, fluid replacement)

SKILL IN	
j.	Providing educational resources
k.	Maintaining a safe and sanitary environment in compliance with established standards
l.	Recognizing malfunction of therapeutic and rehabilitation equipment or furnishings in clinical and treatment areas
m.	Selecting and teaching appropriate exercises
n.	Communicating effectively
o.	Identifying appropriate resources
p.	Identifying and characterizing risks
q.	Identifying conditions that may limit or compromise participation

TASK STATEMENT 5

Facilitate individual and group safety by monitoring and responding to environmental conditions (e.g., weather, surfaces and client work setting).

Patients, athletes and clients may work in hazardous environments and inclement weather conditions. Weather conditions (heat, cold and lightning) may cause the most severe injuries and may have consequences for an entire group. The AT will have predetermined plans and protocols when environmental conditions become unsafe.[4,21,22,26,52] Some individuals work in dynamic environments, such as military settings, where surfaces, weather or obstacles may change instantly.[53-55] In any case, the AT must monitor and respond to the conditions. Not all groups are directly affected by the weather, however. ATs must also have a basic understanding of ergonomics and indoor workplace environments. Posture and ADLs may have a severe effect on an individual's health and productivity.[56]

KNOWLEDGE OF	
a.	Predisposing factors (e.g., environmental conditions, underlying medical conditions)
b.	Environmental conditions that create risk (e.g., heat, cold, altitude, sunburn, insects, visibility, lighting, lightning, jet lag)
c.	Signs and symptoms of illnesses and injuries that result from exposure to environmental conditions
d.	Risk factors associated with activities, wellness and environments
e.	Methods for reducing risk pertaining to environmental conditions (e.g., activity scheduling, clothing selection, fluid replacement)
f.	Policies and procedures for removing participants from environmental risk situations (e.g., heat index, lightning, activity scheduling)
g.	Policies, procedures, guidelines and regulations
h.	Ergonomic assessments

SKILL IN

i. Conducting inspections and recognizing hazards
j. Using monitoring techniques (e.g., weight charts, fluid intake, body composition)
k. Recognizing environmental conditions and ergonomic risks
l. Recognizing predisposing factors (e.g., environmental conditions, underlying medical conditions)
m. Recognizing characteristics in participants that would predispose them to environmental and ergonomic risks
n. Recognizing signs and symptoms of illnesses and injuries that result from exposure to environmental conditions
o. Recommending and implementing appropriate methods for addressing hazards
p. Communicating effectively

TASK STATEMENT 6

Optimize wellness (e.g., social, emotional, spiritual, environmental, occupational, intellectual, physical) for individuals and groups.

Wellness is defined by *Taber's Medical Dictionary* as, "Good health, as well as its appreciation and enjoyment. Wellness is more than a lack of disease symptoms; it is a state of mental and physical balance and fitness."[57] ATs have the ability to influence an individual's or group's health and wellness because they typically have daily contact and interaction with their population.

Nutrition plays an important role in illness and disease, such as diabetes,[29,58,59] obesity,[60-62] and stress injuries.[53] Proper nutrition may not only prevent injuries and illness,[3,59,63-65] it is also an important component for performance enhancement.[28,63,66-69] The AT needs to be well versed in understanding the role of nutrition in performance and in the injuries and illnesses associated with deficient nutrition.

In a very similar area, nutrition is related to disordered eating and body dysmorphia.[28,59,64,65,70-75] The mental and psychological health of patients and clients is a critical component of wellness.[76,77] Patients and clients may have multiple responsibilities to sport, academics, family and personal interests. Each of these areas presents challenges and stress factors that can lead to injury and illness.[78] In team sport, there are complicated cultural and social dynamics at all levels of competition.[77] The AT has an understanding of these dynamics and can anticipate potential problems. Body image, culture and sport weight requirements may have significant impacts on an individual's mental and physical health.[9,35,36,73,74,76,79] Even non-competitive clients or athletes may find it necessary to gain or lose weight through diet and exercise for wellness. The appropriate prescription of exercise will reduce the risk of acute or overuse injuries during the process.[10,62,67] There are a number of injuries and disorders that are gender specific, such as the female athlete triad, that have mental and nutritional components.[71-73,75,80] A positive self-esteem and effective management of stress can lead to performance enhancement and high quality of life.[76] The AT must be able to incorporate the comprehensive wellness of an individual when developing injury prevention programs.

Unfortunately, clients or patients may resort to unhealthy behaviors such as steroid use, blood doping and using performance enhancing drugs in order to achieve their goals. The AT will need to select programs and provide education in this area. The AT will also need to be familiar with testing for banned or illegal substances.

DOMAIN 1

Injuries such as low back pain have multiple components related to wellness. Obesity,[60] smoking[54,81] and depression[76] have all been linked to back pain and other conditions. The AT will be able to prescribe core exercises,[8] make recommendations for workplace ergonomics and provide resources to help reduce the incidence of low back pain and other conditions.[56]

ATs may be involved with performance enhancement of a group or individual. In some areas, their sole duty is working with a healthy population and optimizing the group's health. Athletes are typically training and conditioning, seeking optimal levels of function for competition. Even those trying to achieve the most modest changes are susceptible to dangerous choices.

If necessary, ATs should be able to react to and plan for such choices, and refer their group or individuals to the appropriate resources.

KNOWLEDGE OF	
a.	Risk factors associated with activities, wellness and environment
b.	Policies, procedures, guidelines and regulations
c.	Principles of weight training, cardiovascular fitness and performance enhancement
d.	Screening and baseline assessment tools and their use
e.	Professional resources for stress management, behavior modification, comorbidities and nutritional disorders (e.g., tobacco, alcohol, narcotics, anger management, HIV, other STIs, overtraining, stress-related disorders)
f.	Nutrition and supplements
g.	Human physiology
h.	Considerations for referral
i.	Wellness examinations

SKILL IN	
j.	Developing a comprehensive conditioning program
k.	Assessing appropriateness of participation in conditioning programs
l.	Correcting or modifying inappropriate, unsafe or dangerous activities
m.	Accessing information concerning accepted guidelines
n.	Educating individuals on nutrition guidelines, nutritional disorders, maladaptation, substance abuse and overtraining
o.	Recognizing signs and symptoms of social, emotional, mental and stress-related disorders
p.	Providing educational resources
q.	Administering and interpreting baseline screening tools
r.	Communicating effectively

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DOMAIN 2

Examination, Assessment and Diagnosis:
Implementing systematic, evidence-based examinations and assessments to formulate valid clinical diagnoses and determine patients' plan of care

Following an evidence-based model, the AT conducts examinations and assessments of injuries and illnesses to form relevant related diagnoses.[1–9] Evidence-based clinical decision-making relies on clinical expertise that integrates athletic training knowledge and skills, clinical experience, current best evidence, clinical circumstances and patient and societal values.[10,11] As part of the examination, assessment and diagnosis process, the AT utilizes clinical acumen to obtain a thorough patient history, problem-solve through confounding data, exclude and confirm varied presentations of injury and illness, and prioritize relevant examination, assessment and diagnostic techniques.[10,11]

TASK STATEMENT 1

Obtain an individual's history through observation, interview and review of relevant records to assess injuries and illnesses and to identify comorbidities.

ATs collect clinical data using their knowledge of standard medical questions and their ability to select and prioritize follow-up questions. ATs must have broad knowledge of the clinical trajectories of injuries, illnesses and comorbidities so they can focus their questions in a manner that leads to the most likely differential diagnosis. While focusing their clinical questions, ATs select the appropriate physical examination and diagnostic tests, recognize red flags and refer to other healthcare providers when necessary.[1–36]

DOMAIN 2

KNOWLEDGE OF	
a.	Psychosocial factors affecting injury, illness or other health-related conditions
b.	Evidence-based principles and practices
c.	Human anatomy and physiology
d.	Neuroscience
e.	Mechanism of injuries
f.	Pathological conditions and pathophysiology
g.	Biomechanical factors
h.	Risk factors associated with activities, wellness and environment
i.	Communication techniques
j.	Epidemiology of injury, illness and comorbidities
k.	Nutrition and supplements
l.	Basic pharmacology
m.	Mental, social, psychological and cultural barriers
n.	Standard medical terminology and nomenclature
o.	Use of medical records

SKILL IN	
p.	Communicating effectively
q.	Identifying signs and symptoms
r.	Building patient rapport
s.	Obtaining and recording information related to injuries, illnesses and conditions
t.	Identifying anatomical structures
u.	Identifying nutrition as a factor related to injuries, illnesses and conditions
v.	Identifying psychosocial factors related to injuries, illnesses and conditions
w.	Identifying the extent and severity of injuries, illnesses and conditions
x.	Identifying the impact of prescription and non-prescription medications and supplements
y.	Interpreting medical records and related reports
z.	Recognizing predisposing factors
aa.	Relating signs and symptoms to specific injuries, illnesses and conditions
bb.	Identifying valid and reliable information to assist in decision-making

TASK STATEMENT 2

Perform a physical examination that includes diagnostic testing to formulate differential diagnoses.

The AT performs a valid and reliable physical examination based on knowledge of medical, orthopedic, neurological and cognitive diagnostic testing and their expected outcomes. The AT excludes and confirms differential diagnoses through the assessment and reassessment of patient history, physical examination and diagnostic testing. The AT groups and classifies signs and symptoms to determine a likely and precise diagnosis. Furthermore, the AT prioritizes diagnostic testing by patient and societal values; clinical circumstances; and knowledge of the validity, reliability, sensitivity, specificity and predictive value of each physical examination and diagnostic test.[1–25,28–41]

KNOWLEDGE OF

a. Normal and abnormal human anatomy and physiology
b. Neuroscience
c. Mechanics, principles and techniques of special and specific tests (e.g., ROM, MMT, orthopedic, neurocognitive, neurological)
d. Normal and pathological clinical findings of special and specific tests
e. Mechanics, principles and techniques of physiological measurements (e.g., blood pressure, height, weight, blood glucose)
f. Normal and pathological clinical findings of physiological measurements
g. Human biomechanics
h. Palpation techniques and related principles
i. Principles of visual inspection
j. Mechanism of injuries
k. Pathological conditions
l. Immediate and delayed physiological response to injuries, illnesses and comorbidities
m. Signs and symptoms of injuries, illnesses and health-related conditions
n. Standard medical terminology and nomenclature
o. Clinical trajectories of concussions
p. Exercise physiology and its effect on the healing process
q. Functional testing methods
r. Changes in pain intensity and pain distribution in response to mechanical loading
s. Range-of-motion response to mechanical loading
t. Functional changes due to injury, illness and conditions
u. Evidence-based principles and practices

SKILL IN

v. Analyzing biomechanics
w. Assessing neurocognitive function
x. Assessing neurological response
y. Assessing balance
z. Assessing immediate and delayed physiological responses to injuries, illnesses and conditions
aa. Assessing pre-existing structural abnormalities and relating them to pathomechanics of injuries, illnesses and conditions
bb. Identifying bony surface landmarks and soft tissue abnormalities of specific and special injuries, illnesses and conditions
cc. Interpreting the relationships among and severity of pathological signs of injuries, illnesses and conditions
dd. Palpating appropriate structures in order to assess the integrity of human anatomical and physiological systems
ee. Recognizing severity of pathological signs and symptoms of injuries, illnesses and conditions
ff. Assessing muscle strength
gg. Assessing joint range of motion
hh. Identifying appropriate special tests
ii. Performing special tests

DOMAIN 2

SKILL IN (CONTINUED)

jj. Interpreting results of special tests
kk. Identifying location, type, function and actions of joints
ll. Identifying structural and functional integrity of anatomical structures
mm. Exercising clinical judgment consistent with evidence-based principles and practices
nn. Using valid and reliable information to assist in decision-making

TASK STATEMENT 3

Formulate a clinical diagnosis by interpreting history and the physical examination to determine the appropriate course of action.

The AT formulates valid clinical diagnoses that are confirmed by the interpretation of the history, physical examination and knowledge of varied presentations of injuries and illnesses. The AT distinguishes confounding data using systematic clinical reasoning, findings from physical examination and the interpretation of diagnostic testing.[11] The AT continually assesses and reassesses the data required to confirm or exclude the provisional diagnosis; determines if further physical examination and diagnostic testing are required; establishes a final diagnosis with targeted treatment strategies; and refers to other healthcare professionals when necessary.[1–9,11–26,28–38,42–44]

KNOWLEDGE OF

a. Pathological conditions
b. Indications for referral
c. Roles and responsibilities of associated healthcare providers
d. Guidelines for return to participation
e. Basic pharmacological considerations
f. Therapeutic intervention
g. Standard medical terminology and nomenclature
h. Psychosocial dysfunction and implications associated with injuries, illnesses and conditions
i. Evidence-based principles and practices

SKILL IN

j. Interpreting and integrating examination findings
k. Establishing differential diagnoses
l. Identifying appropriate courses of action
m. Interpreting the pertinent information from the examination and assessment
n. Synthesizing applicable information from the examination and assessment
o. Developing prognoses and plans of care
p. Implementing best practices
q. Using valid and reliable information to assist in decision-making

TASK STATEMENT 4

Interpret signs and symptoms of injuries, illnesses or other conditions that require referral, utilizing medical history and physical examination to ensure appropriate care.

ATs practice within their scope of practice and refer patients to appropriate healthcare practitioners when indicated by the results of the history and physical examination.[14–19,23–25,29,33,34,38,44–46] ATs must be competent in the recognition of red flags, medical emergencies and other injuries and illnesses (e.g. cardiac signs/symptoms, retinal detachment, psychological issues) that require referral to a physician, mental health practitioner or other healthcare provider.[1–9,14–26,29–31,33,34,38,44]

KNOWLEDGE OF	
a.	Roles and scopes of practice of relevant healthcare providers
b.	General medical conditions
c.	Psychosocial dysfunction and implications associated with injuries, illnesses and conditions
d.	Human anatomy and physiology
e.	Clinical findings of special tests
f.	Clinical findings of physiological measurements
g.	Biomechanics
h.	Palpation techniques and related principles
i.	Principles of visual inspection
j.	Mechanism of injuries
k.	Pathological conditions
l.	Immediate and delayed physiological response to injuries, illnesses and comorbidities
m.	Signs and symptoms of injuries, illnesses and conditions
n.	Standard medical terminology and nomenclature
o.	Clinical trajectories of concussions
p.	Exercise physiology and how it affects the healing process
q.	Movement testing and examination
r.	Changes in pain intensity and pain distribution in response to mechanical loading
s.	Quality and changes in range of motion in response to mechanical loading
t.	Quality and changes in function due to injury, illness and conditions
u.	Role and scope of practice for athletic training
v.	Evidence-based principles and practices

SKILL IN	
w.	Collaborating with interdisciplinary healthcare providers
x.	Directing referrals to the appropriate professionals
y.	Formulating differential diagnoses
z.	Identifying appropriate courses of action
aa.	Interpreting the pertinent information from examinations and assessments
bb.	Synthesizing applicable information from examinations and assessments
cc.	Using standard medical terminology and nomenclature

DOMAIN 2

TASK STATEMENT 5

Educate patients and appropriate stakeholders about clinical findings, prognosis and plan of care to optimize outcomes and encourage compliance.

The AT communicates clinical findings from the history, physical examination and diagnostic testing. Appropriate communication includes the explanation of treatment and rehabilitation options with regard to clinical circumstances and an emphasis on patient and societal values.[11] ATs counsel patients in such a manner that the patient fully understands the prognosis of the injury or illness and treatment options.[27,30,31,38] The AT documents clinical findings, diagnoses, counseling and referrals in accordance with established practices and in compliance with federal, state and local laws.[6,45,46]

KNOWLEDGE OF	
a.	Commonly accepted practices regarding the care and treatment of injury, illness and other conditions
b.	Effective communication techniques
c.	Patient confidentiality regulations
d.	Potential complications and expected outcomes
e.	Roles and scopes of practice of relevant healthcare providers
f.	Standard medical terminology and nomenclature
g.	Motivational techniques

SKILL IN	
h.	Building patient rapport
i.	Communicating effectively
j.	Collaborating appropriately with other healthcare providers
k.	Using appropriate counseling techniques
l.	Using standard medical terminology and nomenclature
m.	Implementing best practices

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DOMAIN 3

Immediate and Emergency Care:
Integrating best practices in immediate and emergency care for optimal outcomes

ATs manage many injuries that are considered relatively minor;[1] however, ATs are frequently challenged to react and respond to a wide variety of unpredictable emergency situations.[3-5] These immediate and emergency injuries and illnesses can occur during any physical activity,[1] thus requiring knowledge and skill in the preparation, implementation and management of emergency situations.[3,4]

ATs have a responsibility to identify and use evidence-based standards of care in preparation, implementation and management of emergency situations.[2-4] The preparation begins prior to an immediate and emergency situation through the development of an emergency action plan (EAP) identifying emergency personnel, equipment, transportation and communication.[1-4] When an EAP is implemented, an AT must triage and manage the situation using best practices,[2-4] followed by making an appropriate and timely transfer of care or referral.[4]

As the profession of athletic training continuously evolves and ATs practice in various settings, these healthcare providers must have the ability to maintain a high level of preparation and proficiency in all aspects of immediate and emergency care. This ability is critical to minimizing risk to the injured participant.

DOMAIN 3

TASK STATEMENT 1

Establish EAPs to guide appropriate and unified response to events and optimize outcomes.

For ATs to successfully prepare for immediate and emergent injuries and illnesses, they must be educated and trained in personnel management; know appropriate use and maintenance of equipment and supplies; and develop and implement an appropriate EAP for every event in which the AT is responsible.[1-3,5-7] The EAP should be adaptable and customized for the specific venue and event that is taking place.[1-3,5-7] ATs should annually review all aspects of the EAP with all involved parties to ensure coordinated actions and a unified response.[1-3,5-7] ATs should also take a "time-out" before beginning the activity to review the EAP with others who may be involved in patient care.[9]

KNOWLEDGE OF	
a.	Components of emergency action plans
b.	Effective communication techniques (e.g., multimedia videos, pamphlets, posters, models, handouts and oral communication)
c.	Roles of individual members of the medical management team and appropriate stakeholders
d.	National and state occupational, safety and health guidelines
e.	Standard protective equipment, removal devices and procedures
f.	Standard and emergency medical equipment
g.	Pharmacological agents and interventions for immediate and emergent conditions
h.	Personal protective equipment
i.	Organizational and institutional policies and procedures
j.	Legal considerations

SKILL IN	
k.	Communicating effectively
l.	Educating individuals (e.g., facilities, healthcare professionals, patients, guardians, organizational personnel) regarding standard emergency care procedures
m.	Developing, documenting, organizing and rehearsing emergency action plans

TASK STATEMENT 2

Triage to determine if conditions, injuries or illnesses are life-threatening.

The recognition of signs and symptoms of life-threatening conditions is the cornerstone of effective management of these conditions. ATs must have a vast knowledge of medical conditions that can quickly become emergencies, such as asthma, sickle cell trait, hypertension and diabetes.[2] Additionally, they must also have extensive knowledge of environmental conditions, such as heat, cold and lightning.[2] Quick and decisive action is imperative in preventing conditions from deteriorating and becoming life-threatening. It is essential that ATs are able to effectively provide emergency care for a wide range of injuries and conditions ranging from, but not limited to, sudden cardiac arrest,[4] compound fractures and dislocations, wound care, respiratory illness and distress, head and cervical trauma, infectious diseases and traumatic organ injuries. ATs must make appropriate clinical decisions and determinations of the seriousness of the injury or illness.

KNOWLEDGE OF	
a.	Epidemiology of catastrophic conditions
b.	Life-threatening medical situations (e.g., respiratory, central nervous and cardiovascular)
c.	Human anatomy and physiology
d.	National and state occupational, safety and health guidelines
e.	Pharmacological and therapeutic intervention for immediate and emergent conditions
f.	Roles and scopes of practice of relevant healthcare providers
g.	Standard and emergency medical equipment
h.	Triage systems

SKILL IN	
i.	Implementing emergency action plans
j.	Implementing national and state occupational, safety and health guidelines
k.	Using standard and emergency medical equipment
l.	Measuring, interpreting and monitoring vital signs
m.	Using a primary survey for life-threatening medical situations (e.g., respiratory, central nervous, cardiovascular)
n.	Applying pharmacological and therapeutic intervention usage for immediate and emergent conditions
o.	Managing patients in triage systems

TASK STATEMENT 3

Implement appropriate emergency and immediate care procedures to reduce the risk of morbidity and mortality.

ATs must be knowledgeable in appropriate management techniques, such as spine immobilization and airway management, and have the skills to implement these techniques. They must remain current in the types and varieties of equipment used by patients and in the emergency equipment and therapeutic interventions that may be used in emergency situations.

Once an emergent condition is identified, the AT must be proficient in the use of a variety of medical equipment, such as AEDs, splints, rectal thermometers, oral and nasal airway management (e.g., OPA, NPA), suction, supplemental oxygen, sphygmomanometers, stethoscopes and spine immobilization equipment (e.g., spine board, cervical immobilization). The AT must continue medical treatment until additional medical personnel and treatment becomes available. All ATs must maintain up-to-date emergency cardiac care certification and must be compliant with state, federal and licensing regulations that dictate scope of practice and implement referral when warranted.[1,3]

KNOWLEDGE OF	
a.	Appropriate management techniques for life-threatening conditions and conditions that are not life-threatening
b.	Appropriate use of emergency equipment and techniques (e.g., automated external defibrillator, airway management devices, suction, oxygen)
c.	Human anatomy and physiology
d.	Therapeutic intervention for immediate and emergent conditions
e.	National and state occupational, safety and health guidelines
f.	Roles and scopes of practice of relevant healthcare providers

SKILL IN	
g.	Performing cardiopulmonary resuscitation techniques and procedures
h.	Implementing emergency action plans
i.	Implementing national and state occupational, safety and health guidelines
j.	Implementing immobilization and transfer techniques
k.	Measuring, interpreting and monitoring vital signs and patient status
l.	Managing emergency situations and life-threatening conditions
m.	Managing non-life-threatening conditions
n.	Removing protective equipment using appropriate removal devices and/or manual techniques
o.	Using standard and emergency medical equipment
p.	Applying therapeutic interventions for immediate and emergent conditions
q.	Debriefing stakeholders

TASK STATEMENT 4

Implement referral strategies to facilitate the timely transfer of care.

Certain injuries and illnesses may require referral for advanced evaluation and care in order to prevent the exacerbation of the condition. In addition to recognizing these conditions, the AT must be skilled in critical thinking and efficient and effective communication as a means of facilitating the appropriate referral strategies and timely transfer of care. The AT must possess knowledge of and proficiency with various pieces of emergency equipment and immobilization and transfer techniques, even in the presence of complicated athletic equipment and/or atypical locations.[6-8]

KNOWLEDGE OF	
a.	Components of emergency action plans
b.	National and state occupational, safety and health guidelines
c.	Referral strategies for life-threatening conditions and conditions that are not life-threatening
d.	Effective communication
e.	Pertinent administrative practices
f.	Roles and responsibilities of relevant healthcare providers
g.	Triage systems

SKILL IN	
h.	Implementing emergency action plan(s)
i.	Measuring, interpreting and monitoring vital signs and patient status
j.	Documenting and communicating referrals
k.	Directing referrals to appropriate stakeholders

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DOMAIN 4

Therapeutic Intervention: Rehabilitating and reconditioning injuries, illnesses and general medical conditions with the goal of achieving optimal activity level based on core concepts (i.e., knowledge and skillsets fundamental to all aspects of therapeutic interventions) using the applications of therapeutic exercise, modality devices and manual techniques

According to the terms, "therapeutic" and "intervention," found within *Taber's Cyclopedic Medical Dictionary (Taber's)*,[1] therapeutic intervention can be defined as the applications of treatment, techniques and services designed to identify and prevent injuries and illness, as well as to provide optimal recovery for patients. As is mentioned in earlier domains, ATs routinely provide injury-prevention applications; however, when an injury or illness occurs, the AT's additional responsibilities include restoration of the patient to an optimal level.[2-8] Achieving this goal requires several functions and skills of the athletic training clinician. Some examples of these abilities include examination; assessment; communication; knowledge of injury and common surgical techniques; application of currently acceptable techniques; and planning for and progressing the patient in a treatment, rehabilitation and reconditioning program that achieves the goal of optimal patient restoration.[9,10]

Working within their state's practice act and *BOC Standards of Professional Practice*, ATs provide services to patients under the direction of a physician.[2,3] ATs are aware of the legal boundaries of these practice regulations and are bound to honor them. The AT provides regular and pertinent communication with the prescribing physician and other healthcare professionals who are involved in the patient's care. The AT examines and assesses the patient to develop a plan of care.[2,3,11-15] This plan of care includes the implementation and use of currently-accepted treatment techniques, practices and procedures to achieve short- and long-term goals that have been developed as part of the treatment plan.[6,10,12,16,17]

Selection of specific treatment applications is based on current evidence of efficacy and benefit, healthcare practice standards and rationale founded on evidence-based concepts.[18-20] Within the Therapeutic Intervention domain lie a number of task categories that are integral segments of knowledge and skills involved in returning an injured patient to full, optimal function.

TASK STATEMENT 1

Optimize patient outcomes by developing, evaluating and updating the plan of care

Examination and assessment are essential to a total therapeutic intervention program. After completing an examination and assessment of findings, the AT interprets these results to develop an initial plan of care. This plan of care outlines objectives of the patient's progressive treatment program and divides it into short- and long-term goals.[10,17,21] Long-term goals are those final goals that are, in essence, the final outcome of the patient's treatment and rehabilitation program: restoring optimal function in the patient. Final goals and desired outcomes are discussed and agreed upon by the patient and AT in advance of beginning the treatment and rehabilitation program.[10,17,21] Each treatment technique applied throughout the rehabilitation program is selected to resolve problems identified in the assessment and re-assessments; these techniques are also selected to achieve the established program goals.[10,13,22] As the patient achieves short-term goals, re-examination and re-assessment of the patient's new status necessitates new short-term goals for the patient and clinician to achieve within the next level of the program.[10,22,23] The final short-term goal is the long-term goal of restoring optimal patient function in all parameters.[10,13,22] Basic to this process of establishing rehabilitation goals is the AT's ability to interpret the results and findings of the patient's examination and assessment.[10,22-24] With each examination throughout the treatment and rehabilitation process, the AT assesses the patient's health and pathological status, interprets the results and findings of specific tests and assessments, and identifies problems and concerns which require resolution for patient recovery to optimal function.[10,22-24] Realizing that the patient's status changes while advancing through the program, the AT conducts routine re-examinations and re-assessments to provide new, appropriate short-term goals.[10,22-24]

The AT possesses specific knowledge and skills to develop a plan of care that ultimately leads to an appropriate treatment, rehabilitation and reconditioning program. Identification of what is normal and what is pathological is basic to creating a plan of care.[5,10,23,25-30] ATs understand the healing process of acute and chronic conditions of various tissues and systems. This process begins with injury and continues through inflammation, proliferation and maturation. Realizing where the patient is in the healing process – along with the treatment indications, contraindications and precautions involved within each phase – allows the clinician to provide optimal care and successful results.[5,10,21,23,25-37] Knowing the rehabilitation process from start to finish, regardless of where the patient is within the healing process, includes using evidence-based practice techniques from initial treatment through final stages of reconditioning.[16,18-20,38] Realizing the impact of each treatment and understanding the importance of timing within the rehabilitation and reconditioning program are included in the knowledge and skills required of the AT.[5,10,23,25-30]

The AT is sensitive to the multiple factors that affect an individual patient's plan of care. Anatomical, physiological and psychosocial factors (e.g., gender, age, culture) can all affect a patient's plan of care and, ultimately, the treatment, rehabilitation and reconditioning outcome.[5,10,23,25-30] Age-related and gender-related differences occur throughout the lifespan, and the AT understands these anatomical, biomechanical and physiological changes and how injury or illness affects the individual. The AT adjusts a plan of care and treatment program to take into consideration these influences.[5,10,23,25-30,39]

Sensitivity to an individual's culture, social environment and psychological status is important to understanding how these factors affect a patient's outcomes.[10,14,26,29,40,41] Depending on the specific illness, these factors may impede an individual's willingness to obtain treatment; the AT is aware of and sensitive to these issues.[10,14,25,28,39,40] The AT considers all of these elements when examining the patient, developing a plan of care and providing treatment.[10,14,26,29,40,41]

DOMAIN 4

Pain that occurs with injury and illness is an individual response based on the individual's physical, emotional and psychological influences.[21,37,42-49] Using knowledge of neurological pathways, physiological effects and current and historical theories of pain sources, the AT designs a plan of care and implements a treatment program to resolve that patient's pain.[21,37,42-49]
To assure a safe rehabilitation program, the AT is cognizant of indications, contraindications and precautions related to treatment and outcomes of patient care, regardless of whether patient pathology is a result of injury, illness or surgical techniques.[4,5,10,25,45,50-54] The AT is knowledgeable of the interactions, effects and side effects of any physician-prescribed pharmaceuticals used to treat the patient's current injury, illness or other condition.[55-58]

Treatment selection is based on a number of factors in addition to the patient's specific individual features. The AT is aware of current best practices and evidence-based indications of the myriad tools available. The AT possesses knowledge and understanding of these tools and their most appropriate functions, while incorporating appropriate clinical reasoning and decision-making skills to determine their most effective use.[4-6,8,10,13,15,16,18,21,23-25,30,39,41,52,54,59-85] These tools range from hands-on manual techniques to various electrical and thermal modalities to any number of exercise techniques, equipment and protocols. Knowledge of these tools also includes an awareness of when it is most appropriate to use them, their advantages, disadvantages, indications, contraindications and precautions.[4-6,8,10,13,15,16,18,21,23-25,30,39,41,52,54,59-85]

Identifying patient responses to treatment and communicating with the patient in a professional manner are factors the AT understands as important in being able to select the most appropriate treatment interventions.[10,21,23,82,86] The AT effectively manages communication with the patient, healthcare professionals and appropriate social support members regarding plan of care, goals, outcomes and aspects of therapeutic interventions (e.g., expected sensations, results and therapeutic effects) in advance of providing a rehabilitation and reconditioning treatment program.[10,21-23,82,86]

The AT knows and understands the roles and scopes of practice of various healthcare providers who may aid in achieving optimal patient outcomes. The AT incorporates this knowledge when communicating and considering appropriate referrals.[10,21-23,82]

One way the AT assures accurate communication with healthcare professionals is through maintenance of accurate documentation.[4,5,10,13,17,21,54,61] Records are kept for all examinations, re-evaluations and treatments provided.[4,5,10,13,17,21,54,61] The AT knows these records are legal documents that must be kept confidential, as they contain complete information on all care provided to the patient.[4,5,10,17,21,54,61]

The physician and AT work together to assure successful patient outcomes, and additional healthcare professionals may be invited to assist in patient care. In such cases, the AT often serves as the treatment coordinator and liaison among the providers.[2,3,7,14,21,85]

KNOWLEDGE OF	
a.	Evidence-based principles and practices
b.	Inflammation and healing process
c.	Acute and chronic injuries and illnesses and their healing processes
d.	Theories of pain
e.	Roles and scopes of practice of relevant healthcare providers and the implications of making a referral
f.	Principles of reconditioning
g.	Rehabilitation process and plan
h.	Rehabilitation progression
i.	Age-related and lifespan concerns
j.	Gender-related concerns
k.	Indications, contraindications and precautions
l.	Safety concerns
m.	Pharmacological concerns
n.	Cultural competence
o.	Surgical knowledge and precautions
p.	Legal risks and ramifications
q.	Psychosocial dysfunction and implications associated with injuries, illnesses and conditions

SKILL IN	
r.	Interpreting examinations and assessments
s.	Clinical reasoning
t.	Assessing outcomes
u.	Managing patient care
v.	Communicating effectively
w.	Establishing patient goals
x.	Examining and re-examining injuries and illnesses
y.	Assessing and reassessing therapeutic interventions
z.	Positioning and preparing patients for therapeutic intervention

TASK STATEMENT 2

Educate patients and appropriate stakeholders using pertinent information to optimize treatment and rehabilitation outcomes.

A successful treatment and rehabilitation program is dependent upon the AT's communication skills with the individuals who are important to the patient's optimal recovery. Appropriate communication with the patient assures patient compliance with treatment and rehabilitation protocols – especially when communication includes rationale for treatment and restrictions, the need for proper exercise execution, the importance of adherence to protocols and the benefits of home exercises.[10,21,23,82] Written instructions provided in addition to verbal instructions and demonstrations allow the patient additional reinforcement and recall on important instruction points once he or she has completed the treatment session. Clearly written and diagrammed instructions have proven to be most beneficial.[10,21,23,82] Sensitivity of cultural, gender and age-related influences and making appropriate adjustments in communication skills as indicated by these factors assures optimal communication

effectiveness.[10,21,23,82] Use of instructional videos, pamphlets, posters and models can also clarify more complex aspects of important information and treatment expectations.[10,21-23,82] To provide additional assurance of patient understanding and follow through with instructions, the AT communicates with the patient and social supporters in a manner that is easy to understand at the age, maturity, cognitive and psychological level of the individual receiving the instructions and information.[10,21-23,82] The AT must adjust his or her language and communication methods to assure correct understanding by the appropriate parties throughout the rehabilitation and reconditioning program.[10,21-23,82] Home instructions provided to the patient and appropriate social support members should take into consideration relevant safety issues, such as scatter rugs for a patient using crutches or overhead storage for individuals with restricted upper extremity movement.[54] The AT provides guidance for remedies and safety factors for home care and continually uses verbal and/or tactile communication to assure correct patient performance.

KNOWLEDGE OF	
a.	Evidence-based principles and practices
b.	Scope of practice and referral implications
c.	Age-related and lifespan concerns
d.	Gender-related concerns
e.	Indications, contraindications and precautions
f.	Safety concerns
g.	Cultural differences affecting attitudes and responses to treatment and rehabilitation
h.	Surgical procedures and precautions
i.	Legal risks and ramifications
j.	Nutrition concerns
k.	Homecare program concepts
l.	Educational materials and methods
m.	Potential resources (e.g., psychosocial, community, family and healthcare) related to the therapeutic intervention process
n.	Psychological aspects related to the therapeutic intervention process
o.	Available and appropriate referral resources

SKILL IN	
p.	Communicating effectively
q.	Providing guidance for the patient during the therapeutic intervention process
r.	Developing homecare programs
s.	Providing appropriate referral
t.	Clinical decision-making and reasoning

TASK STATEMENT 3

Administer therapeutic exercises to patients using appropriate techniques and procedures to aid recovery to optimal function.

Most treatment, rehabilitation and reconditioning programs include a progression of therapeutic exercises. These exercises often incorporate a variety of exercise modes such as flexibility, strength, endurance, balance, coordination, power and performance-specific activities. These are provided sequentially from the early-phase through the late-phase aspects of a

therapeutic exercise program.[4,5,10,13,16,23-25,52,67,73] The AT possesses knowledge and skills required to use a patient's examination and assessment results to determine the treatment goals and plan.[4,5,10,13,16,23-25,52,67,73] The AT then develops a therapeutic exercise program from the plan; provides a progressive exercise prescription using evidence-based methods and best-practice clinical reasoning; and continuously assesses treatment results to optimize patient outcomes and achieve treatment goa ls.[4,5,10,13,16,23-25,52,67,73] Performing duties under the direction of a physician, the AT guides and monitors the patient throughout the therapeutic exercise program with adjustments in short-term goals and exercises as these goals are achieved.[10,21,25] As the patient performs exercises, the AT examines and assesses the results, while managing the program and making appropriate changes (e.g., progressing, regressing, discontinuing therapeutic exercises) in accordance with the patient's performance.[10,21,25]

Creating the optimal rehabilitation program for a patient requires knowledge and skill in a number of topics, including the following: knowledge of the healing phases and differences between tissue regeneration and scarring; understanding the acute and chronic phases of injury and illness; and knowing how factors such as pain, age, gender, pharmacology, cultural background and psychosocial factors influence the patient's reactions to therapeutic exercises.[3,10,11,13,16,18,21,22,27,30,42,47,62,64,66,68,69,76,77,84,87-107] Additionally, the AT must have knowledge and understanding of the physiological impact exercise and overload have on the various body systems.[2,10,25,30,108-110] It is important for the AT to have knowledge of the physiological and biomechanical concepts and principles regarding how exercises alter flexibility, strength, conditioning, reconditioning, power, agility and performance-specific activities, as well as the various types of exercises and techniques used to improve these elements. Knowledge of normal human anatomy, biomechanics, physiology, growth and development, as well as the pathological conditions that can occur within the body's systems, is vital to the understanding of how therapeutic exercise affects the patient and these injured or ailing systems.[3,10,11,13,16,18,21,22,27,30,42,47,62,64,66,68,69,76,77,84,87-108,111-114]

The AT is well versed in identifying the neuromusculoskeletal and cardiovascular changes that occur with the applications of different types of exercise.[27,30,62,64,76,89,94,95,97,99,100,105,113,115] The AT also has knowledge of common and current surgical procedures used to treat injury and illness and is aware of the precautions, pre- and post-operative considerations and the impacts of therapeutic exercise on these surgical techniques.[25,35,51,88,116-139]

In addition to the above knowledge, the AT also possesses awareness and comprehension of the purpose, uses and indications of the various equipment, tools and substances used in the practice of various therapeutic exercise techniques.[4,5,10,13,16,23-25,52,66,67,69,71,73,77,87,140] Examples of these techniques include, but are not limited to, various stretching (static, dynamic, proprioceptive neuromuscular facilitation, long-term, etc.), strengthening (isometric, isotonic, isokinetic, etc.), balance and coordination, agility, plyometric and performance-specific techniques.[4,5,10,22-25,30,34,45,51,52,59,66,69,73,77,81,91,107,108,121,130,132-136,138,139,141-171] Therapeutic exercise equipment includes an extensive list. Some examples include straps and bands, weights and pulleys, computerized and electronic equipment, balls, sticks, hurdles, cones, balance devices and sport-specific or performance-specific equipment.[10,59,66,69,73,77,81,90,91,100,141,142,144,148,156,172-181]

ATs are legally responsible for maintaining official documentation and records of all aspects of examination, care and treatment throughout the patient's rehabilitation program. The AT is aware of legal risks and ramifications of all aspects of the patient's program, the need for physician-prescribed therapeutic exercise, and when accurate and reliable referral to other appropriate healthcare providers is indicated.[4,10,23,25,45] The AT is legally and ethically bound to follow these precepts.

DOMAIN 4

KNOWLEDGE OF

a. Evidence-based principles and practices
b. Inflammation and healing process
c. Acute and chronic injuries and illnesses and their healing processes
d. Theories of pain
e. Roles and scopes of practice of relevant healthcare providers and the implications of making a referral
f. Principles of reconditioning
g. Rehabilitation process and plan
h. Rehabilitation progression
i. Age-related and lifespan concerns
j. Gender-related concerns
k. Indications, contraindications and precautions
l. Safety concerns
m. Pharmacologic concerns
n. Cultural differences affecting attitudes and responses to treatment and rehabilitation
o. Surgical procedures and precautions
p. Legal risks and ramifications
q. Equipment and tools related to therapeutic exercise
r. Exercise prescription and progression
s. Inflammatory process related to therapeutic exercise
t. Neurological concerns related to therapeutic exercise
u. Principles of adaptation and overload of tissues
v. Principles of adaptation of body systems
w. Principles of strength, conditioning and reconditioning of exercises (e.g., plyometrics, stabilizations, speed, agility, power)
x. Principles of exercise (e.g., musculoskeletal, neurological, cardiovascular)
y. Proprioception and kinesthesis related to therapeutic exercise
z. Psychology related to therapeutic exercise
aa. Structure, growth, development and regeneration of tissue

SKILL IN

bb. Interpreting examination results
cc. Clinical reasoning
dd. Assessing outcomes
ee. Managing patient care (e.g., progressions, regressions, discontinuation)
ff. Communicating effectively with appropriate professionals and individuals regarding referral and treatment
gg. Establishing patient goals
hh. Examining and re-examining injuries and illnesses
ii. Assessing and reassessing therapeutic interventions
jj. Developing therapeutic exercise programs
kk. Implementing therapeutic exercise programs
ll. Progressing patients through therapeutic exercise programs

TASK STATEMENT 4

Administer therapeutic devices to patients using appropriate techniques and procedures to aid recovery to optimal function

Therapeutic modalities are commonly used to relieve pain, reduce edema, improve function, optimize healing and prepare tissue for therapeutic exercise.[8,15,21,82] The AT is knowledgeable of the body's healing process and the impact each therapeutic device's application has on the tissue's healing.[8,15,21,82] The AT is also knowledgeable of the theories of pain; the physiological effects of therapeutic devices on pain; and the safety concerns, indications, contraindications and precautions of these devices for the treatment of pain and for other aspects of treatment.[8,15,21,82] The AT is aware of the potential systemic effects caused by the application of these devices.[8,15,21,82] Recognizing them and responding appropriately is included in the athletic training skill set.

The AT possesses knowledge and skill in the use and application of numerous types of therapeutic devices. These devices can be placed into four categories: electromagnetic, mechanical, thermal and acoustic.[8,15,21,82] Within these categories, the specific therapeutic devices include items such as traction devices, thermal modalities and various electrical machines used to provide therapeutic intervention. Pharmaceuticals are sometimes used with electrical or acoustical machines to enhance treatment effects; these pharmaceuticals are provided through a physician's prescription.[8,15,21,82] The AT combines skill, knowledge, evidence-based information and clinical reasoning to select and apply the most appropriate device for each patient's needs and goals.[8,15,21,82]

The AT is aware of legal risks and ramifications of all aspects of the patient's program, the need for a physician's prescription to use therapeutic devices, and when accurate and reliable referral to other appropriate healthcare providers is indicated.[4,5,10,17,21,54,61] Communication with the attending physician and any healthcare provider assisting in the care and treatment of the patient is an important function. The AT is also aware of state practice acts and how they impact one's ability to use therapeutic devices.[8,15,21,82]

ATs have knowledge and skill not only in examination and assessment, but also in communicating with patients to achieve concerted goals. Based on those goals, the AT establishes a rehabilitation plan that includes periodic and frequent re-examinations and re-assessments to revise short-term goals and make other appropriate revisions as the patient's status changes with treatment.[10,22,23] Maintaining accurate and appropriate records and documentation of all aspects of examination, assessment and application of therapeutic devices is a standard professional responsibility.

KNOWLEDGE OF	
a.	Evidence-based principles and practices
b.	Inflammation and healing processes
c.	Acute and chronic injuries and illnesses and their healing processes
d.	Theories of pain
e.	Scope of practice and referral implications
f.	Principles of rehabilitation process and progression
g.	Age-related and lifespan concerns
h.	Gender-related concerns
i.	Indications, contraindications and precautions
j.	Safety concerns

KNOWLEDGE OF (CONTINUED)	
k.	Pharmacological concerns
l.	Cultural differences affecting attitudes and responses to treatment and rehabilitation
m.	Surgical knowledge and precautions
n.	Legal risks and ramifications
o.	Equipment and tools related to therapeutic devices
p.	Inflammatory process related to therapeutic devices
q.	Neurologic responses to therapeutic devices
r.	Physiologic responses to therapeutic devices
s.	Principles of electromagnetic, mechanical, thermal and acoustical energy
t.	Psychology related to therapeutic devices

SKILL IN	
u.	Interpreting examination
v.	Clinical reasoning
w.	Assessing outcomes
x.	Managing patient care
y.	Communicating effectively
z.	Establishing patient goals
aa.	Examining and re-examining injury and illness
bb.	Assessing and reassessing therapeutic interventions
cc.	Applying electromagnetic, mechanical, thermal and acoustical devices
dd.	Recognizing the status of systemic response related to the application of therapeutic devices

TASK STATEMENT 5

Administer manual techniques to patients using appropriate methods and procedures to aid recovery to optimal function

According to *Taber's*,[1] the administration of manual techniques includes hand movements applied to mobilize joints and soft tissue, alleviate pain, improve motion, reduce edema, relax the patient and improve musculoskeletal function. Manual techniques in athletic training also include application of various taping and wrapping techniques and orthotic devices for improved musculoskeletal function and motion and reduction in pain and edema.

The AT possesses knowledge of manual techniques and orthotic devices; the theoretical and evidence-based findings regarding their principles, applications and physiological effects on the various body systems; indications, contraindications and precautions; use of various manual tools; and safety concerns and assessment of their effectiveness in achieving desirable goals and optimal patient function.[4,10,48,60,63,65,67,70,72,94,106,107,141,182-199] Many manual tools have been developed and are used to aid the AT in providing manual techniques. Examples of some of these available tools include, but are not limited to, sticks, myofascial tools, Graston® tools, gua sha scrapers, belts, straps and foam rollers. Basic to utilization of these manual techniques and tools is an understanding of the healing process in both acute and chronic injuries and how these techniques impact the different healing phases specifically and the status of injuries and illnesses generally.[4,10,48,60,63,65,67,70,72,94,106,107,141,182-200] The AT selects and adjusts manual techniques based on patient response, clinician knowledge, evidence-based and reported

findings, and treatment outcomes.[10,22,23] Prior to using manual techniques, the AT also considers altering the techniques based on factors such as the patient's age, gender, cultural influences, psychosocial impacts, neurological concerns and surgical results.[5,10,23,25-30,39] The AT understands and acknowledges how changes in design and style of taping techniques and orthotic devices alter internal and external stress applications, and the AT is able to fabricate and apply taping techniques and orthotic devices appropriately to meet the specific needs of the patient.[60,184,189,190,201-203]

Using knowledge, skill and clinical reasoning, the AT adds manual techniques to the total rehabilitation and reconditioning program to help achieve goals that have been mutually agreed upon by the AT and patient.[10,13,22] The goals are defined by the findings of the AT's examination and assessment and are revised as the patient progresses through the program.[10,22,23] Performing manual techniques under the direction of a physician, the AT guides and monitors the patient throughout the application of manual techniques, taping, wrapping or orthotics with adjustments in short-term goals as they are achieved.[10,21,25]

As with all other aspects of treatment, rehabilitation and reconditioning, records are kept, maintained and secured. Records are in accordance with the state practice act, HIPAA and professional ethical regulations.[4,5,10,13,17,21,54,61]

KNOWLEDGE OF	
a.	Evidence-based principles and practices
b.	Inflammation and healing process
c.	Acute and chronic injuries and illnesses and their healing processes
d.	Theories of pain
e.	Scope of practice and referral implications
f.	Principles of rehabilitation process and progression
g.	Age-related and lifespan concerns
h.	Gender-related concerns
i.	Indications, contraindications and precautions
j.	Safety concerns
k.	Pharmacologic concerns
l.	Cultural attitudes and responses to treatment and rehabilitation
m.	Surgical procedures and precautions
n.	Legal risks and ramifications
o.	Orthotic devices and materials and methods for taping
p.	Manual therapy tools and techniques
q.	Functions of taping and orthoses
r.	Adaptations of the cutaneous and musculoskeletal systems related to manual techniques
s.	Inflammatory process related to manual techniques
t.	Neurologic concerns related to manual techniques
u.	Psychology related to manual techniques
v.	Principles and theories of manual techniques (e.g., tissue adaptations, proprioception, kinesthesis)

DOMAIN 4

SKILL IN	
w.	Interpreting examinations and assessments
x.	Clinical reasoning
y.	Assessing outcomes
z.	Managing patient care
aa.	Communicating effectively with appropriate professionals and individuals regarding referral and treatment
bb.	Establishing patient goals
cc.	Examining and re-examining injuries and illnesses
dd.	Assessing and reassessing therapeutic interventions
ee.	Using manual techniques appropriately
ff.	Fabricating taping techniques and orthotic devices appropriately
gg.	Using taping techniques and orthotic devices appropriately

TASK STATEMENT 6

Administer therapeutic interventions for general medical conditions to aid recovery to optimal function

Prior to determining interventions for a patient with illness or general medical conditions, the AT must possess knowledge of the pathophysiology of systemic illness, communicable diseases, infections and general medical pathology; differentiate pathophysiology from normal physiological function; and be aware of appropriate referral and treatments for optimal treatment outcomes for these conditions.[27,29,30,62,89,92,100,102,103,105,115,212-215] Several categories of diseases fall under this dominion of systemic illness, communicable diseases, infections and general medical pathology; some of these categories include, but are not limited to, inflammatory diseases, conditions affecting each of the body's systems and organs, psychosocial issues, dermatological pathologies and chronic and open wounds, communicable diseases, acquired and genetic illnesses and other illnesses.[27,29,30,62,89,92,100,102,103,105,115,212-215] Understanding the changes and adaptations that occur when body systems are affected by diseases and general medical conditions is basic to the AT's ability to minimize pathological effects, obtain early diagnosis and initiate appropriate treatment procedures.[27,29,30,62,89,92,100,102,103,105,115,212-215] The AT possesses knowledge of common treatments used to manage pathological conditions and the pharmacology and pharmaceutical impact on disease and illness.[27,29,30,55,56,58,62,89,92,100,102,103,105,115,212-215] When treatment and diagnosis is beyond the athletic training scope of practice, the AT recognizes early signs and symptoms and refers the patient to appropriate medical and other healthcare personnel in a timely manner.[26,28,29,40,62,216]

As part of the patient examination, the AT includes special tests, such as cognitive assessment, to recognize systemic illnesses, communicable diseases and infections; interprets results; provides accurate documentation; and communicates with the physician and other appropriate healthcare providers as to patient's status, progress and changes, making referral when appropriate.[10,17,21,23,29,40,82,198,206,207] The AT is aware of safety concerns for the patient and others who may be affected by the patient's illness. The AT is also aware of the psychosocial impact illness may have on the patient.[26,28,29,40,55,56,216]

When the patient's illness or general medical condition prevents the patient from performing normal activities, a rehabilitation and reconditioning program may be required. Performing appropriate treatment, rehabilitation and reconditioning techniques

under the direction of a physician, the AT guides and monitors the patient throughout the program with adjustments in short-term goals as they are achieved.[10,21,25] The AT is able to provide the patient with a progressive rehabilitation and reconditioning program based on the AT's clinical reasoning, knowledge of illness, awareness of physiological and anatomical effects of deconditioning and reconditioning on the body's systems, and assessment and re-assessment of therapeutic intervention impact on the patient.[2,3,7,10,13,19-21,45,47,79]

As with other aspects of rehabilitation, the AT possesses knowledge and skill in examination and assessment of the patient and communicates with the patient to achieve concerted goals for rehabilitation following deconditioning secondary to illness, infection or disease.[10,21-23,82,86] Based on those goals, the AT establishes a rehabilitation and reconditioning plan that includes periodic and frequent re-examinations and re-assessments to establish revised short-term goals and appropriate revisions within the program as the patient's status changes with treatment.[10,22-24] Maintaining accurate and appropriate records and documentation of all aspects of examination, assessment and application of rehabilitation techniques is a standard responsibility of the AT.[5,10,13,23,41,66,73,96,204,205]

KNOWLEDGE OF	
a.	Evidence-based principles and practices
b.	Inflammation and healing process
c.	Acute and chronic injuries and illnesses and their healing processes
d.	Scope of practice and referral implications
e.	Principles of reconditioning
f.	Principles of rehabilitation process and progression
g.	Age-related and lifespan concerns
h.	Gender-related concerns
i.	Indications, contraindications and precautions
j.	Safety concerns
k.	Pharmacologic concerns
l.	Cultural differences affecting attitudes and responses to treatment and rehabilitation
m.	Surgical procedures and precautions
n.	Legal risks and ramifications
o.	Equipment and tools related to treating general medical conditions
p.	Adaptations of body systems related to general medical conditions
q.	Appropriate referral processes related to general medical conditions
r.	Inflammatory process related to general medical conditions
s.	Neurological concerns related to general medical conditions
t.	Psychosocial concerns related to general medical conditions
u.	Traumatic brain injury concerns related to general medical conditions
v.	Wound (e.g., chronic, open) concerns related to general medical conditions
w.	Pathophysiology of systemic illness, communicable diseases and infections
x.	Proprioception and kinesthesis related to general medical conditions
y.	Psychological reactions related to general medical conditions
z.	Structure, growth, development and regeneration of tissue

DOMAIN 4

SKILL IN	
aa.	Interpreting examination results
bb.	Clinical reasoning
cc.	Assessing outcomes
dd.	Managing patient care
ee.	Communicating effectively with appropriate professionals and individuals regarding referral and treatment
ff.	Establishing patient goals
gg.	Examining and re-examining injury and illness
hh.	Assessing and reassessing therapeutic interventions
ii.	Performing cognitive assessments
jj.	Basing interpretation and rehabilitation on cognitive assessments
kk.	Advocating for cognitive and functional return to optimal activity level decisions
ll.	Recognizing and managing systemic illnesses, communicable diseases and infections

TASK STATEMENT 7

Determine patients' functional status using appropriate techniques and standards to return to optimal activity level

The AT is aware of the factors that must be assessed in determining a patient's readiness to perform at an optimal level. The AT has knowledge and skills to identify, examine, assess and make decisions regarding the patient's status in such parameters as range of motion and flexibility; strength and endurance; balance and coordination; power and agility; and activity-specific skil ls.[5,10,13,23,41,66,73,96,204,205] Such parameters are tested using evidence-based techniques and recorded and accurately documented prior to determining the patient's readiness status.[5,10,13,23,41,66,73,96,204,205] Performing techniques under the direction of a physician, the AT guides and monitors the patient throughout the functional and activity-specific phase of the treatment, rehabilitation and reconditioning program with adjustments in short-term goals as they are achieved.[10,21,25] The AT communicates with the patient, physician and other stakeholders and maintains documentation using professional terminology regarding the patient's progress and status in accordance with current practice standards and legal requirements.[10,17,21,23,82,206,207]

Before a patient safely returns to former activities, the AT must determine the patient's functional status and ability to withstand the specific stresses demanded of the patient during normal-level activities. The AT has the knowledge, understanding and appreciation of the skill requirements of these normal activities and the stresses applied to the various body systems.[5,10,66,73,96,204] Such considerations include the following: implementing best practices utilizing current evidence-based information; understanding individual skill levels, age, gender, psychosocial factors, cultural factors, safety concerns and nutritional and pharmacological influences; and understanding normal levels of function in measures such as gait, flexibility, strength, power, agility and biomechanical performances of specific activities required during normal functions.[5,10,13,23,41,66,73,84,96,104,140,204,205,208,209]

The AT must periodically re-examine and re-assess the patient's progress throughout the rehabilitation and reconditioning process to determine that he or she returns to optimal function.[10,13,22,23] Being able to perform this task requires the AT to possess knowledge of the healing processes of acute and chronic injuries and illnesses.[10,13,15,21,82] The AT also understands the principles of rehabilitation, reconditioning and functional progression and possesses the knowledge and skills to perform and interpret biomechanical, functional and activity-specific assessments.[10,13,15,21,34,82,97,134,159,210,211] Using these qualities, the AT makes appropriate decisions regarding the patient's readiness to return to optimal performance levels.[5,10,13,23,41,66,73,96,204,205]

KNOWLEDGE OF	
a.	Evidence-based principles and practices
b.	Inflammation and healing process
c.	Acute and chronic injuries and illnesses and their healing processes
d.	Scope of practice and referral implications
e.	Principles of rehabilitation process and progression
f.	Age-related and lifespan concerns
g.	Gender-related concerns
h.	Indications, contraindications and precautions
i.	Safety concerns
j.	Cultural differences affecting attitudes and responses to treatment and rehabilitation
k.	Surgical knowledge and precautions
l.	Legal risks and ramifications
m.	Principles of reconditioning
n.	Principles of functional progression
o.	Gait analysis
p.	Gait training techniques
q.	Biomechanical and functional assessments
r.	Functional criteria for return to optimal activity level
s.	Psychosocial factors related to functional status
t.	Nutrition
u.	Pharmacology

SKILL IN	
v.	Interpreting examination results
w.	Clinical reasoning
x.	Assessing outcomes
y.	Managing patient care
z.	Communicating effectively with appropriate professionals and individuals regarding referral and treatment
aa.	Establishing patient goals
bb.	Examining and re-examining injury and illness
cc.	Assessing and reassessing therapeutic interventions
dd.	Performing biomechanical, functional and gait analyses
ee.	Interpreting biomechanical, functional and gait analyses
ff.	Making decisions about functional progressions
gg.	Making decisions about return to optimal activity level

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DOMAIN 5

Healthcare Administration and Professional Responsibility: Integrating best practices in policy construction and implementation, documentation and basic business practices to promote optimal patient care and employee well-being

TASK STATEMENT 1

Evaluate organizational, personal and stakeholder outcomes.

ATs across the various professional settings must understand and collect diverse data points. A plethora of data and outcomes measures are available.[1-5] However, before deciding which data and outcomes measure to monitor, the AT must determine the key performance indicators for his or her organization (e.g., return to activity days, number of patients seen, revenue generated, changes in production) and identify personal and stakeholder requisites.[1-6] Comprehension of data, benchmarking and analytics provides the AT, in any professional setting, the ability to manage various aspects of professional practice.

The medical care of individuals revolves around the concept of teamwork.[7-8] The AT plays a critical role within the team. The awareness of each medical care professional's roles and responsibilities helps form a patient-centered care team.[1, 7-8] No single provider, or AT, can provide every care need for a patient. The AT's knowledge of, respect for and development of relationships with various other healthcare providers improves patient care.[6, 7-9] These relationships also furnish and provide access to new approaches to care that are based on evidence and the clinical decision-making process.

KNOWLEDGE OF	
a.	Methods of gathering data
b.	Sources of data for benchmarking
c.	Methods and systems for comparing and analyzing data
d.	Processes for providing data to support the advancement of organizational or personal goals
e.	Budgeting principles and practices
f.	Methods for researching information
g.	Job expectations, personal goals and priorities (e.g., work-life balance, job satisfaction)
h.	Organizational resources available for professional development and personal support
i.	Role of the mission, vision and values of the organization
j.	Role of professional collaboration
k.	Leadership styles and theories
l.	Evidence-based principles and practices (including epidemiological studies and clinical outcomes assessments)

SKILL IN	
m.	Formulating and managing budgets
n.	Using computers, various software and various technologies
o.	Formatting and presenting data
p.	Applying various search methods for resource allocation
q.	Communicating effectively
r.	Collaborating with professionals (e.g., teamwork strategies)
s.	Providing leadership appropriate to situations and people

TASK STATEMENT 2

Develop policies, procedures and strategies to address risks and organizational needs.

Healthcare is the largest and most regulated industry within the United States.[1,7,9-10] The AT is a valuable team player within the industry. ATs in all settings require knowledge of basic business principles to promote value inherent in their practice.[1,6,10-13] In order to demonstrate value to the healthcare industry, ATs must measure outcomes and their contribution to caring for patients.

ATs work in a variety of settings that require management of individuals, various policies, risk, regulations and legislative compliance.[2,10,14-22] Depending on the setting, an AT may be responsible for supervision of other employees and must possess knowledge of the various federal and state regulations for management of these employees.[23-29] ATs require knowledge to not only manage these employees but also to maintain their personal employment protection by following appropriate human resource laws.

States vary in terms of healthcare legislative regulations and how to comply with these regulations. ATs need to know and understand the intricacies of state and federal legislation, have knowledge of obtaining resources to answer questions on regulations and value the need to comply with the various agencies involved with state and federal regulations.[2,14-20,22,23,30] Knowledge of these regulations helps ATs determine appropriate facility, scheduling, staffing and risk management practices.

DOMAIN 5

KNOWLEDGE OF	
a.	Components of emergency action plans
b.	Human resources (e.g., hiring, firing, coaching, disciplining, interviewing, insurance, job descriptions, FMLA, short term disability, annual review, maintaining employee files, PTO, federal-state-organizational labor practices, certification verification, compensation, staff development, Title IX, civil rights)
c.	Legal expectations and requirements: licensure, DEA, OSHA, BOC, NATA, AMA
d.	Organizational management styles and processes (e.g., LEAN, Six Sigma)
e.	Scheduling systems and techniques
f.	Drug testing policies and procedures
g.	Inventory and supply management (e.g., bidding, budgeting, requests for proposals, inventory tracking)
h.	Applicable resource allocation, facility and patient flow
i.	Legislative and regulatory updates and changes
j.	Basic business principles

SKILL IN	
k.	Developing, documenting, organizing and rehearsing emergency action plans
l.	Analyzing utilization rates and trends
m.	Using computer software applications (e.g., Microsoft Office platform)
n.	Implementing human resources policies
o.	Interacting with appropriate administrative leadership
p.	Writing policies and procedures
q.	Identifying and characterizing risks
r.	Identifying and characterizing organizational needs (e.g., SWOT)
s.	Formulating budgets
t.	Writing job descriptions

TASK STATEMENT 3

Practice within local, state and national regulations, guidelines, recommendations and professional standards.

A variety of organizations influence the practice of ATs. Standards of practice for ATs are determined by state and national legislation and various professional organizations.[6,31] ATs in every setting require knowledge of state and national regulations. Professional organizations provide position statements regarding various topics that ATs need to understand in order to maintain a strong knowledge base. These position statements must align with the most current evidence based practice methods.[24-25]

ATs are required to be knowledgeable of professional standards of practice and ethical standards. ATs also require various criteria for documentation of patient care and treatment, depending on setting and state requirements. Appropriate knowledge of medical terminology is inherent in meeting these professional obligations.[32-33]

KNOWLEDGE OF	
a.	Standards of professional practice for ATs and other healthcare professionals
b.	NATA position statements
c.	Professional position statements (e.g., Centers for Disease Control and Prevention, state department of health)
d.	Documentation requirements and procedures
e.	Consent-to-treat requirements and documentation
f.	Standard medical terminology and nomenclature
g.	Local, institutional, state and national regulations, guidelines, recommendations and professional standards (e.g., Title IX, Americans with Disabilities Act, practice acts)
h.	Ethics requirements
i.	Process for reporting violations of professional standards and practice acts

SKILL IN	
j.	Creating and completing medical documentation
k.	Making ethical decisions that are consistent with professional practice and guidelines
l.	implementing current position statements, regulatory changes and legislated requirements
m.	Using standard medical terminology and nomenclature
n.	Accessing professional practice acts and requirements
o.	Communicating effectively

TASK STATEMENT 4

Use established documentation procedures to ensure best practice.

Healthcare is a complex industry with various professionals and settings.[1,7] Teamwork across the continuum is required to provide high quality healthcare.[7] Documentation of care is important to provide consistency and continuity of care across the healthcare team.[32-33] ATs require the knowledge of various forms of written and electronic patient care documentation processes. The use of consistent medical nomenclature helps to guarantee the passage of valuable information from one team member to the next.[32-33,35] The combination of clear and concise communication and teamwork between ATs and other healthcare professionals helps produce improvements in care coordination resulting in quality patient care and outcomes.[1,7, 33-35]

Using appropriate documentation, no matter the athletic training setting, permits meeting of state, professional and ethical standards of practice. Appropriate levels and specificity of documentation permit ATs to increase their value in the healthcare system, as appropriate documentation is required to develop charges and coding of patient care in those settings that charge for care.[34-37]

DOMAIN 5

KNOWLEDGE OF	
a.	Documentation procedures (e.g., SOAP, progress notes, screenings, assessments, examinations)
b.	Standard medical terminology and nomenclature
c.	Appropriate documentation requirements (e.g., Electronic Health Record, Centers for Medicare and Medicaid Services, consent)
d.	Documentation systems (e.g., software, paper)
e.	Appropriate computer software applications
f.	Healthcare coding
g.	Legal considerations and ramifications

SKILL IN	
h.	Prescreening participation guidelines
i.	Creating and completing the documentation process
j.	Obtaining, interpreting, evaluating and applying relevant data
k.	Using computer software applications (e.g., word processing, database spreadsheet and Internet applications)
l.	Reviewing documentation
m.	Interpreting documentation
n.	Updating documentation

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PRACTICE ANALYSIS STUDY

INTRODUCTION

The Board of Certification, Inc. (BOC) was incorporated in 1989 to provide a certification program for entry-level Athletic Trainers. The BOC establishes and regularly reviews both the standards for the practice of athletic training and the continuing education requirements for BOC Certified Athletic Trainers. The BOC has the only accredited certification program for Athletic Trainers in the United States. The BOC's mission is to provide exceptional credentialing programs for healthcare professionals to assure protection of the public.

Consistent with its mission and to ensure that the examination bears a close relationship to current practice, the BOC conducts periodic studies of the profession. Doing so maintains close alignment with best practices in certification. The BOC identified a qualified group of Certified Athletic Trainers to meet with Castle Worldwide, Inc. (Castle) for three days in Omaha, Nebraska, to define performance domains, tasks, and the knowledge and skill required for the competent performance of the tasks. The group delineated these elements of the role through intense analysis of the practice of newly certified Athletic Trainers, with particular attention to the divergent ways that it applies in different settings and with different patient conditions.

As the primary process for identifying the competency areas and knowledge needed for proficient performance in athletic training, practice analysis offers a clear and useful basis for defining the essential components of the certification examination. This is because practice analysis studies help to establish content validity, which is the most commonly applied and accepted validation strategy for examinations that are used in professional licensure and certification. Validation through systematic practice analysis studies helps to document that the competence inferred when a candidate has passed the BOC examination bears a sound linkage to practice. This was the underlying intent of the study.

The purpose of BOC certification is to identify for the public those individuals who possess proficiency at a level that is required for entry to the athletic training profession. The BOC examination serves regulatory purposes in nearly all jurisdictions of the United States. It is essential that the examination have practice-related validity. Accordingly, the analysis concentrated on entry-level practice. Collecting data in a validation survey from a large sample of newly certified Athletic Trainers, the study

identified the point in time that Athletic Trainers are expected to perform the tasks (Performance Expectation), the amount of harm that an inability to perform the tasks competently might bring about (Consequence) and how often newly certified Athletic Trainers perform the tasks (Frequency). Ratings addressing these issues and provided by new certificants play an important role in determining the content of the examination.

The BOC desired to adhere to established standards for the conduct of job analysis studies, the general family of methods to which practice analysis belongs. These guidelines have their foundation in procedures drawn from psychometric literature and case law. Essential principles and procedures are outlined in federal regulation (*Uniform Guidelines on Employee Selection Procedures*) and manuals such as *Standards for Educational and Psychological Testing* (published by the American Educational Research Association, 2014). Castle employed these standards as well as those of the National Commission for Certifying Agencies (NCCA, 2014) in all phases of the study.

In order to provide leadership for the practice analysis, Castle conducted preliminary activities to update its understanding of the role and major responsibilities of newly certified Athletic Trainers. Castle reviewed relevant material on the BOC website and other documents, talked with key individuals and participated in discussions with the BOC's Practice Analysis Task Force. Castle then prepared a booklet of instruction for use in meeting with the panel of Athletic Trainers. The practice analysis consisted of the following major phases, which provide the organization of this report:

I. Initial Development and Validation. The panel of Certified Athletic Trainers identified the essential domains, tasks, knowledge and skill. Based on this work, Castle developed a validation survey.

II. Pilot Study. A sample of 200 newly certified Athletic Trainers was invited to review and validate the work of the panel by means of a pilot of the validation survey. The input of participants in this project was used to identify a number of changes in the survey and data collection strategy.

III. Validation Study. A large sample of newly certified Athletic Trainers was invited to participate in the BOC's large-scale national validation survey. The names and contact information for participants in the survey were drawn from BOC certification databases. A qualified group of participants representative of newly certified Athletic Trainers provided data in this phase.

The Practice Analysis Task Force provided oversight for the practice analysis study and wrote the literature reviews published as part of it. The task force is listed here:

NAME	RESPONSIBILITY
Christine Odell, PhD, ATC	Chair
Paul Bruning, DHA, ATC	Healthcare Administration and Professional Responsibility
Darryl Conway, MA, ATC	Immediate and Emergency Care
Peggy Houglum, PhD, ATC	Therapeutic Intervention
David Ruiz, MS, ATC, Cert. MDT	Examination, Assessment and Diagnosis
Jay Sedory, MEd, ATC, EMT-T	Injury and Illness Prevention and Wellness Promotion
Ericka Zimmerman, EdD, ATC, CES, PES	Program Director

The panel of experts appointed by the BOC defined the essential framework of the practice analysis study. The panel and other project personnel are listed here:

NAME	LOCATION
Esther Chou, MEd, L-AT, CSCS	Virginia
Jill Dale, MS, ATC	New York
Tiffany Duran, MS, LAT, ATC	Texas
Linda Fabrizio Mazzoli, MS, ATC, PTA, PES	Pennsylvania
Jena Hansen-Honeycutt, MS, LAT, ATC, PES	California
David Manning, MS, ATC, LAT	New Mexico
Marty Matney, MBA, AT/L, ATC, PTA/L, CEAS	Washington
Dani Moffit, PhD, ATC	Idaho
Kiley Nave, MEd, ATC	Florida
Forrest Pecha, MS, LAT, ATC, CSCS, OTC	Idaho
Kelvin Phan, MSEd, ATC, PES	West Virginia
Daniel Sonday, MS, ATR, ATC	Wisconsin/Minnesota
Bridget Spooner, MS, LAT, ATC	Pennsylvania
Jessica Viana, MEd, LAT, ATC	New Jersey
Rebecca Wardlaw, MA, LAT, ATC	Nebraska
Amanda Webster, ATC	South Carolina
Nathan Welever, MS, AT/L, ATC	Washington

BOC Staff

Denise Fandel, MBA, CAE, Executive Director

Shannon Leftwich, MA, ATC, Director of Credentialing and Regulatory Affairs

Castle Staff

James P. Henderson, PhD, Senior Psychometrician

INITIAL DEVELOPMENT AND EVALUATION

Consistent with its mission, BOC certification for Athletic Trainers requires that candidates for this credential pass a standardized assessment of professional knowledge. As part of the many quality assurance measures that BOC employs to ensure fairness and appropriate rigor, the BOC has conducted a practice analysis study over the past year to define current practice. The primary purpose of the practice analysis study was to determine the knowledge that newly certified Athletic Trainers must have in order to provide proficient service. The practice analysis study focuses on relevant elements of responsibility in the variety of settings in which newly certified Athletic Trainers are employed. Of particular interest in the study is the degree to which they are expected to be proficient in the domains and tasks within the first six months of certification.

The practice analysis study began with a preliminary review of documents and preparatory discussions in June and July 2014 and a meeting October 3-5, 2014, in Omaha, Nebraska, of the practice analysis panel that was appointed by the BOC. Assisted by Castle, the panel outlined domains, tasks and knowledge and skill statements that are essential to the proficient performance of newly certified Athletic Trainers. The validation survey resulting from this meeting was assessed by means of a pilot project, with changes incorporated as approved by the Practice Analysis Task Force. A large-scale validation study conducted March 18 through April 20, 2015, provided information that was used to assess the appropriateness of the domains and tasks as delineated by the panel of experts.

PRACTICE ANALYSIS STUDY

Athletic Trainers are healthcare professionals who collaborate with physicians. The services provided by Athletic Trainers comprise prevention, emergency care, clinical diagnosis, therapeutic intervention and rehabilitation of injuries and medical conditions. Athletic training is recognized by the American Medical Association (AMA) as a healthcare profession. Individuals become eligible for BOC certification through an athletic training program (bachelor's or entry-level master's) accredited by the Commission on Accreditation of Athletic Training Education (CAATE). Students engage in rigorous classroom study and clinical education in a variety of practice settings such as high schools, colleges/universities, hospitals, emergency rooms, physician offices and healthcare clinics over the course of the degree program. Students enrolled in their final semester are eligible to apply for BOC certification. In order to qualify as a candidate for BOC certification, an individual must be confirmed by the recognized program director of the CAATE-accredited program.

Employers of athletic training services include the following:

- professional and collegiate sports,
- secondary and intermediate schools,
- sports medicine clinics,
- hospital emergency departments and rehabilitation clinics,
- occupational settings,
- physician offices,
- performing arts, and
- law enforcement and military.

EARLY STEPS IN THE PRACTICE ANALYSIS

The first steps in conducting the practice analysis study included a preliminary review of documents addressing the role and knowledge base of Athletic Trainers, as well as discussions with key individuals and the Practice Analysis Task Force. Building on the previous practice analysis study in athletic training, the purpose of the preliminary analysis was to identify the essential responsibilities of newly certified Athletic Trainers and key terminology used in the discipline.

Members of the expert panel appointed by the BOC used instructional materials to inform their participation in a three-day meeting that was held to analyze practice. The materials also helped Castle to convey essential explanations. The objective of the meeting was to use the existing content outline as the starting point to define the current domains of practice, tasks and knowledge required for each task at a level commensurate with certification.

Preliminary Analysis

In order to prepare for the project, Castle engaged in a number of preliminary activities. First, discussions with Denise Fandel, BOC Executive Director, and Christine Odell, chair of the Practice Analysis Task Force, helped in determining what documents Castle should review as part of its preparation. Castle then reviewed the practice analysis published by the BOC in 2010 as well as the Athletic Training Education Competencies (2011) published by the National Athletic Trainers Association. In addition, Castle reviewed the content outline of several professions whose scope of practice has an impact on athletic training.

Next, Castle met by conference call with the Practice Analysis Task Force for a high-level discussion about the current state of athletic training, and members of the committee provided written opinion about changes they believe had affected practice or were on the horizon. These activities were helpful in acquainting Castle staff with the basic activities and terminology of the discipline and to ensure that the current study was appropriate to its purpose. With this information, Castle prepared instructional materials that the Practice Analysis Task Force reviewed and helped to refine.

Instructional Materials

Key to the success of the practice analysis panel meeting were the materials used to inform panelists about key concepts (Appendix A). The instruction booklet included the target audience for BOC certification, essential definitions and examples of domains, tasks and knowledge and skill statements. The instruction booklet also included a set of validation scales that are commonly used in practice analysis surveys and worksheets that were used for various purposes. Instructional materials were used during the meeting of the panel of experts as a means of building understanding among participants about key concepts and terms and to orient the essential thought processes and activities of the meeting.

Practice Analysis Meeting

The panel of experts reviewed and reached consensus on the target audience definition. After this discussion, panelists expressed clear understanding that the purpose of certification was to ensure proficiency for the newly certified Athletic Trainer and that while the level of proficiency expected for the program requires rigorous preparation, the required level does not imply complete mastery. The panel then focused on the existing content outline, in place since 2010, and the updates that would ensure its currency and adequacy for the upcoming five-year period. Through facilitated discussion, participants reached consensus on five domains appropriately expected of the newly certified. The domains are as follows:

I. Injury and Illness Prevention and Wellness Promotion
II. Examination, Assessment and Diagnosis
III. Immediate and Emergency Care
IV. Therapeutic Intervention
V. Healthcare Administration and Professional Responsibility

For each domain, panel experts worked in separate focus groups to draft tasks, which the whole group then reviewed and refined through a consensus process. The participants' diversity led to discussions that challenged terminology, phrasing and every aspect of the draft statements, with the resulting consensus on revisions representing a position that all members of the panel believed to be valid. The panel also developed a set of knowledge and skill statements for each task, making refinements and reaching consensus through additional small-group work and whole-group discussion.

At the end of the meeting, all panelists evaluated each domain and task, rating them on Performance Expectation, Consequence and Frequency relative to entry-level practice. This experience led to the panel's refinement of the validation scales that should be employed in the validation survey.

PILOT STUDY

Questionnaire Design and Distribution

Based on the work of the expert panel and in consultation with the Practice Analysis Task Force and BOC staff, Castle developed an online questionnaire to be completed by BOC Certified Athletic Trainers. The purpose of the questionnaire was to collect data on the tasks that were developed by the panel of experts. The questionnaire phase of the practice analysis study was important because Certified Athletic Trainers should have input into the delineation of their field. Such input is critical because the panel of experts, although highly qualified and representative in many key ways, constituted only a small sample of the certified population. Evaluation by the larger professional community is essential in order to make generalizations. The questionnaire also was designed to solicit demographic information to ensure that the respondents were adequately representative of the population.

PRACTICE ANALYSIS STUDY

The process for reviewing the survey with the Practice Analysis Task Force and staff resulted in revisions and led to the pilot study that involved a sample of 200 recently certified Athletic Trainers. Castle collected data from this group from January 29 through February 18, 2015, with sufficient responses (≥15% of ratings for tasks and domains) from 31 participants. Castle summarized the ratings and other data (Appendix B) and made recommendations to the Practice Analysis Task Force, which approved several minor modifications to the survey. The experience of collecting pilot data also led to a number of suggestions for collecting data, and the BOC and Castle implemented these changes together. Castle then prepared to conduct a full-scale national validation survey.

VALIDATION STUDY

The sampling plan was quite simple—all individuals who had been certified in the years 2009 through 2013 (n = 5,000) were included in the sample and invited to participate in the study. Castle survey administration staff sent an invitation letter (Appendix C) by email to this group on March 18, 2015, and data were collected through midnight, April 20. Eleven emails bounced back to Castle because of incorrect or out-of-date addresses, and 27 people opted out of the survey. Castle monitored responses and sent email follow-up correspondence as appropriate.

The survey (Appendix D) was long and complex—20 to 25 minutes were required to complete it. A number of individuals opened the survey and answered a few questions, but Castle found their response to be insufficient to be analyzed. To be included in the data set for analysis, respondents had to provide at least 15% of the ratings requested. Ultimately, Castle received 903 qualified, usable responses for most tasks. The 18% response rate accounting for this group is substantial, especially considering the survey's length and complexity. Also, the rate compares well when compared to the level of participation for most practice analysis studies. Not all individuals responded to every question, so the total number of responses per question varies.

Who Responded to the Survey?

The BOC had two objectives for collecting demographic data from survey participants: to ensure that the people who participated in evaluating the domains and tasks were qualified to do so by virtue of their standing as newly certified Athletic Trainers and to support generalization from respondents to the newly certified population. To assess these objectives, the survey included 17 demographic questions, consistent with previous BOC surveys. The following summary of responses to the demographic portion of the survey provides information that may be used to understand the characteristics of respondents.

The first demographic survey question addressed respondents' gender. The substantial majority of the group was female.

Table 3.1. What is your gender?

Gender	Count	Percent
Male	281	35.2%
Female	518	64.8%

Given that the sampling plan targeted the newly certified, the finding that more than 85% of the respondents indicated that they were aged from 20 to 30 is not surprising.

Table 3.2. What is your age?		
Age	**Count**	**Percent**
Under 25	147	18.7%
25 to 30	538	68.4%
31 to 40	81	10.3%
41 to 45	7	0.9%
46 to 55	**10**	**1.3%**
More than 55	**4**	**0.5%**

Respondents identified the state in which they practice athletic training. Castle then grouped the responses according to regions of the United States as shown below, with the results shown in Table 3.3.

Northeast (ME, NH, VT, MA, RI, CT, NY, NJ, PA)
South (DE, MD, DC, VA, WV, NC, SC, GA, FL, KY, TN, AL, MS)
Midwest (IN, OH, MI, IL, WI, IA, NE, MN, SD, ND, MO, KS, AR, LA, OK, TX)
West (MT, ID, WY, CO, NM, AZ, UT, NV, WA, OR, CA, AK, HI)
U.S. Territories

Table 3.3. In which state do you practice athletic training?		
Region	**Count**	**Percent**
Northeast	94	11.9%
South	196	24.7%
Midwest	266	33.6%
West	234	29.5%
U.S. Territories	2	0.3%

Asked to classify themselves in one of several ethnic identities, respondents were largely of Caucasian descent, although other identities were represented in the respondent group.

Table 3.4. What is your ethnicity?		
Ethnicity	**Count**	**Percent**
African American	26	3.3%
Caucasian	648	81.9%
Asian American	29	3.7%
Hispanic	40	5.0%
Native American or Alaska Native	5	0.6%
Hawaiian or Other Pacific Islander	10	1.3%
Multi-Ethnic	33	4.2%

Given a selection of degree fields and levels, respondents provided information about the highest level of education that they have achieved. About one-third reported a bachelor's degree with athletic training as their major. About half reported having a master's degree, but with the major field divided between athletic training and other disciplines. A small number have doctoral degrees. Survey participants were offered the opportunity to provide their highest education if different from the choices offered. Other doctoral degrees included medicine, physical therapy and chiropractic. Other master's degrees were in sports medicine with an athletic training physician extender fellowship, and one respondent holds a Certificate of Advanced Study that is not in athletic training.

Table 3.5. What is your highest level of education?		
Education	**Count**	**Percent**
Bachelor's degree - AT major	257	32.4%
Bachelor's degree - other major	6	0.8%
Some graduate program	55	6.9%
Master's degree - AT major	201	25.3%
Master's degree - other major	232	29.3%
Doctoral degree - AT major	2	0.3%
Doctoral degree - other major	40	5.0%

Given the sampling strategy, it is not surprising that almost 80% of the respondents have been certified for five years or less.

Table 3.6. How many years have you been a CERTIFIED Athletic Trainer?		
Number of Years	**Count**	**Percent**
3 years or less	344	43.8%
4 to 5 years	272	34.7%
6 to 10 years	169	21.5%

About 85% of the respondents have been in practice for five years or less.

Table 3.7. How many years have you practiced as a CERTIFIED Athletic Trainer?		
Number of Years	**Count**	**Percent**
3 years or less	392	49.6%
4 to 5 years	265	33.5%
6 to 10 years	134	16.9%

A small percentage of respondents are qualified in other fields in healthcare. When respondents hold credentials in other fields, the largest number are in physical therapy and emergency medical technology.

Table 3.8. Besides the BOC certification, which of the following healthcare professional credentials do you hold?	
Credential	**Count**
Chiropractor	6
Dietitian	1
Emergency Medical Technician (any level)	22
Massage Therapist	15
Medical Doctor, Doctor of Osteopathics	3
Nurse	3
Occupational Therapy Professional	0
Orthopedic Technologist	16
Orthotist	3
Physical Therapy Professional (any level)	37
Physician Assistant	10
Surgical Technologist	5

Next, respondents were asked to indicate the type of organization in which they are employed. The most frequent work settings are secondary schools (athletic training), universities and colleges (athletic training), and clinics and hospitals (athletic training). See Table 3.9.

Table 3.9. Please select the best description for the organization you work for from the list provided.

Description	Count
Clinic/Hospital - Administrative	21
Clinic/Hospital - AT	247
Health/Fitness Industry	31
Industrial/Corporate	25
Military/Government/Law Enforcement	12
Professional Sports & Performing Arts	33
Sales/Marketing	7
Secondary School - Administrative	11
Secondary School - AT	309
Student	58
Univ/College/JC - Administrative	9
Univ/College/JC - AT	263
Univ/College/JC - Educator	56
Youth Sports	65
Not Currently Practicing	42
Other	68

Respondents were given the opportunity to mark Other, and several dozen did so. A wide variety of responses were listed specifically by these individuals, and the responses are included in Appendix E. The next question asked if respondents were the first Athletic Trainer to work in their current workplace. Most indicated that they were not.

Table 3.10. Are you the first CERTIFIED Athletic Trainer to be employed where you currently work?

Response	Count	Percent
Yes	112	14.6%
No	657	85.4%

Respondents were asked the number of Athletic Trainers who are employed in their current work setting. Overwhelmingly, most settings employ from one to five Athletic Trainers, as may be seen in Table 3.11.

Table 3.11. How many CERTIFIED Athletic Trainers are employed where you work?

Number of Athletic Trainers	Count	Percent
0	33	4.4%
1	164	21.7%
2	114	15.1%
3-5	152	20.1%
6-10	131	17.3%
11-15	82	10.8%
16-20	36	4.7%
21-30	38	5.0%
31-400	7	0.9%

The largest number of respondents report their title as Athletic Trainer; however, approximately 67% have the words *Athletic Trainer* in their job title. The Other responses are listed in Appendix F. Many of those also include the words *Athletic Trainer*.

Table 3.12. What is your job title/responsibility?

Job Title/Responsibility	Count	Percent
Administrator	6	0.8%
Head Athletic Trainer	132	17.1%
Staff Athletic Trainer	114	14.7%
Athletic Trainer	289	37.4%
Physician extender	25	3.2%
Not practicing	45	5.8%
Program director	6	0.8%
Educator	24	3.1%
Other	132	17.1%

The survey then requested information on whether there was an Emergency Action Plan in place at the time that the respondent was first employed in his or her current position. About three-fourths of the respondents reported that there was.

Table 3.13. When you were first employed in your CURRENT job, was there an established Emergency Action Plan already in place?

Response	Count	Percent
Yes	583	75.9%
No	185	24.1%

Given the request to report the portion of their work time that is devoted to athletic training, respondents reported that these responsibilities are a very significant part of their jobs, as indicated in Table 3.14.

Table 3.14. What percentage of your work time is related to your role as an Athletic Trainer?

Percentage of Work Time	Count	Percent
0%	38	5.0%
1% to 10%	24	3.2%
11% to 20%	8	1.1%
21% to 30%	22	2.9%
31% to 40%	23	3.0%
41% to 50%	36	4.7%
51% to 60%	37	4.9%
61% to 70%	38	5.0%
71% to 80%	84	11.1%
81% to 90%	88	11.6%
91% to 100%	360	47.5%

The next question was related, but asked about the portion of work time that is related to the delivery of patient care. As above, it is clear that the vast majority of work time is devoted to responsibilities that fall into patient care.

Table 3.15: What percentage of your work time is related specifically to the delivery of patient care?

Percentage of Work Time	Count	Percent
0%	36	4.7%
1% to 10%	17	2.2%
11% to 20%	14	1.8%
21% to 30%	30	3.9%
31% to 40%	46	6.0%
41% to 50%	54	7.1%
51% to 60%	75	9.9%
61% to 70%	75	9.9%
71% to 80%	129	17.0%
81% to 90%	127	16.7%
91% to 100%	158	20.8%

Most respondents reported that they do not supervise anyone who provides direct patient care, although about 30% do, to varying degrees.

Table 3.16. How many employees, Athletic Trainers or other healthcare professionals engaged in direct patient care do you supervise?

Employees Supervised	Count	Percent
None	539	70.6%
1 to 5	186	24.4%
6 to 10	17	2.2%
More than 10	21	2.8%

Finally, the survey asked respondents to provide information about their annual earnings from their work in athletic training. More than half of the respondents indicated their athletic training income to be between $30,000 and $50,000 annually.

Table 3.17. What is your annual gross earnings from employment as an Athletic Trainer?

Annual Gross Earnings	Count	Percent
Less than $20,000	168	22.6%
$20,000-$29,999	78	10.5%
$30,000-$39,999	241	32.5%
$40,000-$49,999	171	23.0%
$50,000-$59,999	51	6.9%
$60,000-$69,999	18	2.4%
$70,000-$79,999	10	1.4%
$80,000-$89,999	3	0.4%
$90,000-$100,000	2	0.3%
More than $100,000	0	0.0%

VALIDATION OF THE DOMAINS AND TASKS

Validation Scales

Respondents were asked to evaluate each task using scales for Performance Expectation, Consequence and Frequency. A three-point scale was used for Performance Expectation, with the most desired response being "2" (within the first six months after certification). The Consequence scale employed five units (1 to 5), with a "5" indicating the potential for extreme harm. A five-point scale (1 to 5) was used for the Frequency scale, with a response of "5" representing the highest rating. The scales are listed below as a reference:

Performance Expectation: At what point are newly certified Athletic Trainers first expected to perform the domain or task?

1 = Not at all
2 = Within the first six months after certification (includes exactly six months)
3 = Only after the first six months of certification (does not include exactly six months)

Consequence: To what degree may the newly certified Athletic Trainer's lack of proficiency to perform duties in each domain or task be seen as causing harm to stakeholders? (Harm may be seen as physical, psychological, emotional, legal, financial, etc.)

1 = No Harm
2 = Minimal Harm
3 = Moderate Harm
4 = Substantial Harm
5 = Extreme Harm

Frequency: Frequency refers to how often newly certified Athletic Trainers perform duties in each domain or task, considering a one-year period. The following scale is used to record frequency:

1 = Never
2 = Rarely (once per year)
3 = Sometimes (once per month)
4 = Often (once per week)
5 = Repeatedly (daily)

Performance Expectation responses may be considered categorical values. As such, Castle's analysis for this scale is restricted to the number and percentage of respondents selecting the classifications. Castle determined the number and percentage of respondents who selected the various options for Frequency and Consequence as well, but Castle also computed various descriptive statistics for these responses, which may be considered ordinal in nature. The descriptive statistics include means, which are the simple arithmetic average of the scale values given by the respondents. The standard errors of the mean describe the theoretical range within which the means of other samples drawn from this population would lie. The standard deviation statistics describe the spread of the response distributions, with small estimates indicating tight groupings and agreement among the respondents.

TASKS IN DOMAIN 1

Injury and Illness Prevention and Wellness Promotion: Promoting healthy lifestyle behaviors with effective education and communication to enhance wellness and minimize the risk of injury and illness

The first domain, Injury and Illness Prevention and Wellness Promotion, comprises six tasks that address the steps that newly certified Athletic Trainers take concerning this area of practice. In this domain, Certified Athletic Trainers promote healthy lifestyle behaviors with effective education and communication to enhance wellness and minimize the risk of injury and illness. The tasks in the domain, which are abbreviated with key words in Tables 3.18 to 3.22, are presented in full below:

A. Identify risk factors by administering assessment, pre-participation examination and other screening instruments and reviewing individual and group history and injury surveillance data.
B. Implement plans to aid in risk reduction using currently accepted and applicable guidelines.
C. Educate individuals and stakeholders about the appropriate use of personal equipment.
D. Minimize the risk of injury and illness by monitoring and implementing plans to comply with regulatory requirements and standard operating procedures for physical environments and equipment.
E. Facilitate personal and group safety by monitoring and responding to environmental conditions (e.g., weather, surfaces, client work setting).
F. Optimize wellness (e.g., social, emotional, spiritual, environmental, occupational, intellectual, physical) for individuals and groups.

As may be seen in Table 3.18, newly certified Athletic Trainers are expected to perform all tasks in Injury and Illness Prevention and Wellness Promotion. The level of support is overwhelming, with more than 70% of respondents finding that Athletic Trainers are expected to perform them in the first six months after earning certification.

Table 3.18. Counts and Percentages for Performance Expectation for Tasks in Injury and Illness Prevention and Wellness Promotion

Task (Key Words)	N	1	% 1	2	% 2	3	% 3
Identify risk factors.	903	7	0.8%	835	92.5%	61	6.7%
Implement plans to aid in risk reduction.	902	24	2.7%	699	77.5%	179	19.8%
Educate about personal equipment.	901	27	3.0%	814	90.3%	60	6.7%
Minimize risk in environments and equipment.	903	24	2.7%	756	83.7%	123	13.6%
Facilitate safety given the environment.	903	12	1.3%	856	94.8%	35	3.9%
Optimize wellness for individuals and groups.	903	35	3.9%	665	73.6%	203	22.5%

Performance Expectation: 1 = Not at all, 2 = Within first six months, 3 = Only after first six months

There is also substantial support for the hypothesis that tasks in this domain must be performed proficiently, in that the overwhelming majority of respondents indicate that moderate to substantial harm would result from poor performance (Table 3.19), to a lesser extent only for wellness. The means (Table 3.20) for all tasks in the domain are close to or above the scale midpoint of 2.5, most remarkably so. More than 50% of the respondents indicated a Consequence rating of 3 or 4 for these tasks.

Table 3.19. Counts and Percentages for Consequence for Tasks in Injury and Illness Prevention and Wellness Promotion

Task (Key Words)	N	1	% 1	2	% 2	3	% 3	4	% 4	5	% 5
Identify risk factors.	880	71	8.1%	240	27.3%	311	35.3%	187	21.2%	71	8.1%
Implement plans to aid in risk reduction.	879	106	12.0%	266	30.3%	320	36.4%	150	17.1%	37	4.2%
Educate about personal equipment.	880	88	10.0%	202	23.0%	341	38.7%	191	21.7%	58	6.6%
Minimize risk in environments, equipment.	879	63	7.2%	167	19.0%	362	41.2%	227	25.8%	60	6.8%
Facilitate safety given the environment.	881	57	6.5%	125	14.2%	282	32.0%	290	32.9%	127	14.4%
Optimize wellness for individuals, groups	880	126	14.3%	363	41.3%	288	32.7%	85	9.7%	18	2.0%

Consequence: 1 = No harm, 2 = Minimal harm, 3 = Moderate harm, 4 = Substantial harm, 5 = Extreme harm

Table 3.20. Descriptive Statistics for Consequence for Tasks in Injury and Illness Prevention and Wellness Promotion

Task (Key Words)	N	Median	Mean	SE Mean	Std Dev
Identify risk factors.	880	3.0	2.9	0.0	1.1
Implement plans to aid in risk reduction.	879	3.0	2.7	0.0	1.0
Educate about personal equipment.	880	3.0	2.9	0.0	1.1
Minimize risk in environments and equipment.	879	3.0	3.1	0.0	1.0
Facilitate safety given the environment.	881	3.0	3.3	0.0	1.1
Optimize wellness for individuals and groups.	880	2.0	2.4	0.0	0.9

Consequence: 1 = No harm, 2 = Minimal harm, 3 = Moderate harm, 4 = Substantial harm, 5 = Extreme harm

Given that new certificants perform the tasks in Injury and Illness Prevention and Wellness Promotion and they must perform them proficiently, the question becomes how often they do so. Frequency ratings indicate that these tasks are performed at least monthly, if not weekly or daily. Counts and percentages for each response option bear this out (Table 3.21). Descriptive statistics as given in Table 3.22 indicate that all tasks have an average rating close to or above 3.0 (monthly) on the five-point scale.

Table 3.21. Counts and Percentages for Frequency for Tasks in Injury and Illness Prevention and Wellness Promotion

Task (Key Words)	N	1	% 1	2	% 2	3	% 3	4	% 4	5	% 5
Identify risk factors.	878	7	0.8%	398	45.3%	240	27.3%	105	12.0%	128	14.6%
Implement plans to aid in risk reduction.	877	16	1.8%	267	30.5%	285	32.5%	150	17.1%	159	18.1%
Educate about personal equipment.	876	24	2.7%	125	14.3%	258	29.5%	262	29.9%	207	23.6%
Minimize risk in environments, equipment.	875	20	2.3%	165	18.9%	254	29.0%	178	20.3%	258	29.5%
Facilitate safety given the environment.	877	9	1.0%	54	6.2%	198	22.6%	204	23.2%	412	47.0%
Optimize wellness for individuals, groups.	878	28	3.2%	108	12.3%	223	25.4%	177	20.1%	342	39.0%

Frequency: 1 = Never, 2 = Once per year, 3 = Once per month, 4 = Once per week, 5 = Daily

Table 3.22. Descriptive Statistics for Frequency for Tasks in Injury and Illness Prevention and Wellness					
Task (Key Words)	**N**	**Median**	**Mean**	**SE Mean**	**Std Dev**
Identify risk factors.	878	3.0	2.9	0.0	1.1
Implement plans to aid in risk reduction.	877	3.0	3.2	0.0	1.1
Educate about personal equipment.	876	4.0	3.6	0.0	1.1
Minimize risk in environments and equipment.	875	3.0	3.6	0.0	1.2
Facilitate safety given the environment.	877	4.0	4.1	0.0	1.0
Optimize wellness for individuals and groups.	878	4.0	3.8	0.0	1.2

Frequency: 1 = Never, 2 = Once per year, 3 = Once per month, 4 = Once per week, 5 = Daily

TASKS IN DOMAIN 2

Examination, Assessment and Diagnosis: Implementing systematic, evidence-based examinations and assessments to formulate valid clinical diagnoses and determine patients' plan of care

Examination, Assessment and Diagnosis, the second domain, involves the implementation of systematic, evidence-based examinations and assessments to formulate valid clinical diagnoses and determine patients' plan of care. It comprises five tasks that address the steps that newly certified Athletic Trainers take concerning this area of practice. The tasks are listed here, and they are indicated with key words in Tables 3.23 through 3.27.

A. Obtain an individual's history through observation, interview and review of relevant records to assess injuries and illnesses and to identify comorbidities.
B. Perform a physical examination that includes diagnostic testing to formulate differential diagnoses.
C. Formulate a clinical diagnosis by interpreting the history and the physical examination to determine the appropriate course of action.
D. Interpret signs and symptoms of injuries, illnesses or other health-related conditions that require referral using medical history and physical examination to ensure appropriate care.
E. Educate patients and appropriate stakeholders about clinical findings, prognosis and plan of care to optimize outcomes and encourage compliance.

Even more than was the case with the first domain, tasks in Examination, Assessment and Diagnosis are regarded overwhelmingly as work that newly certified Athletic Trainers are expected to perform (Table 3.23). All five tasks are endorsed by at least 90% of the respondents as being performed in the six months following certification.

Table 3.23. Counts and Percentages for Performance Expectation for Tasks in Examination, Assessment and Diagnosis							
Task (Key Words)	**N**	**1**	**% 1**	**2**	**% 2**	**3**	**% 3**
Obtain an individual's history.	843	4	0.5%	829	98.3%	10	1.2%
Perform a physical examination.	841	32	3.8%	772	91.8%	37	4.4%
Formulate a clinical diagnosis.	840	11	1.3%	795	94.7%	34	4.0%
Interpret signs and symptoms.	841	3	0.4%	809	96.2%	29	3.4%
Educate about clinical findings, prognosis and care.	840	4	0.5%	780	92.8%	56	6.7%

Performance Expectation: 1 = Not at all, 2 = Within first six months, 3 = Only after first six months

Responses for potential for harm if the tasks are performed improperly (Consequence) indicate that poor performance of some tasks is associated with moderate harm, while substantial harm would result from incorrect interpretation of signs and symptoms. The interpretation task has the highest Consequence, with a mean of 3.6 on the five-point scale. No task has an average rating lower than 2.9.

Table 3.24. Counts and Percentages for Consequence for Tasks in Examination, Assessment and Diagnosis

Task (Key Words)	N	1	%1	2	%2	3	%3	4	%4	5	%5
Obtain an individual's history.	822	63	7.7%	142	17.3%	287	34.9%	236	28.7%	94	11.4%
Perform a physical exam.	817	54	6.6%	112	13.7%	308	37.7%	261	31.9%	82	10.1%
Formulate a clinical diagnosis.	816	46	5.6%	107	13.1%	298	36.5%	273	33.5%	92	10.1%
Interpret signs and symptoms.	820	35	4.3%	71	8.6%	265	32.3%	291	35.5%	158	19.3%
Educate about clinical findings, prognosis and care.	820	64	7.8%	199	24.2%	350	42.7%	158	19.3%	49	6.0%

Consequence: 1 = No harm, 2 = Minimal harm, 3 = Moderate harm, 4 = Substantial harm, 5 = Extreme harm

Table 3.25. Descriptive Statistics for Consequence for Tasks in Examination, Assessment and Diagnosis

Task (Key Words)	N	Median	Mean	SE Mean	Std Dev
Obtain an individual's history.	822	3.0	3.2	0.0	1.1
Perform a physical examination.	817	3.0	3.3	0.0	1.0
Formulate a clinical diagnosis.	816	3.0	3.3	0.0	1.0
Interpret signs and symptoms.	820	4.0	3.6	0.0	1.0
Educate about clinical findings, prognosis and care.	820	3.0	2.9	0.0	1.0

Consequence: 1 = No harm, 2 = Minimal harm, 3 = Moderate harm, 4 = Substantial harm, 5 = Extreme harm

Frequency ratings presented in tables 3.26 and 3.27 make it clear that the tasks in Examination, Assessment and Diagnosis are performed on a daily basis, with at least 70% of respondents indicating 5 (Repeatedly). Average ratings, shown in Table 3.27, are at least 4.5 on the five-point scale.

Table 3.26. Counts and Percentages for Frequency for Tasks in Examination, Assessment and Diagnosis

Task (Key Words)	N	1	% 1	2	% 2	3	% 3	4	% 4	5	% 5
Obtain an individual's history.	818	5	0.6%	36	4.4%	33	4.0%	103	12.6%	641	78.4%
Perform a physical exam.	814	32	3.9%	37	4.6%	45	5.5%	108	13.3%	592	72.7%
Formulate a clinical diagnosis.	815	14	1.7%	11	1.4%	19	2.3%	109	3.4%	662	81.2%
Interpret signs and symptoms.	818	4	0.5%	10	1.2%	38	4.6%	152	8.6%	614	5.1%
Educate about clinical findings, prognosis and care.	818	4	0.5%	20	2.4%	45	5.5%	176	21.5%	573	0.1%

Frequency: 1 = Never, 2 = Once per year, 3 = Once per month, 4 = Once per week, 5 = Daily

Table 3.27. Descriptive Statistics for Frequency for Tasks in Examination, Assessment and Diagnosis					
Task (Key Words)	**N**	**Median**	**Mean**	**SE Mean**	**Std Dev**
Obtain an individual's history.	818	5.0	4.6	0.0	0.8
Perform a physical examination.	814	5.0	4.5	0.0	1.1
Formulate a clinical diagnosis.	815	5.0	4.7	0.0	0.7
Interpret signs and symptoms.	818	5.0	4.7	0.0	0.7
Educate about clinical findings, prognosis and care.	818	5.0	4.6	0.0	0.7

Frequency: 1 = Never, 2 = Once per year, 3 = Once per month, 4 = Once per week, 5 = Daily

TASKS IN DOMAIN 3

Immediate and Emergency Care: Integrating best practices in immediate and emergency care for optimal outcomes

There are four tasks in Immediate and Emergency Care. In this area of responsibility, Athletic Trainers work to integrate best practices in immediate and emergency care for optimal outcomes. The tasks are presented in their entirety below and in abbreviated form in the tables.

A. Establish, review and/or revise emergency action plans to guide appropriate and unified response to events and optimize outcomes.
B. Triage to determine whether conditions, injuries or illnesses are life threatening.
C. Implement appropriate emergency and immediate care procedures to reduce the risk of morbidity and mortality.
D. Implement referral strategies to facilitate the timely transfer of care.

Performance Expectation data indicate unequivocally that Athletic Trainers are expected to perform these tasks within their first six months of certification, with more than 75% of respondents indicating the expectation that newly certified Athletic Trainers perform all four tasks within the first six months.

Table 3.28. Counts and Percentages for Performance Expectation for Tasks in Immediate and Emergency Care							
Task (Key Words)	**N**	**1**	**% 1**	**2**	**% 2**	**3**	**% 3**
Establish emergency action plans.	823	15	1.8%	619	75.2%	189	23.0%
Triage.	823	12	1.4%	756	91.9%	55	6.7%
Implement immediate care procedures.	822	9	1.1%	731	88.9%	82	10.0%
Implement referral strategies.	823	11	1.3%	712	86.5%	100	12.2%

Performance Expectation: 1 = Not at all, 2 = Within first six months, 3 = Only after first six months

Consequence ratings for tasks in this domain are high, with the majority of respondents indicating a rating of either 4 (substantial harm) or 5 (extreme harm). Mean ratings hover around substantial harm. See Table 3.29 and Table 3.30 for detail.

Table 3.29. Counts and Percentages for Consequence for Tasks in Immediate and Emergency Care											
Task (Key Words)	**N**	**1**	**% 1**	**2**	**% 2**	**3**	**% 3**	**4**	**% 4**	**5**	**% 5**
Establish emergency action plans.	803	39	4.8%	85	10.6%	170	21.2%	221	27.5%	288	35.9%
Triage.	802	30	3.7%	28	3.5%	68	8.5%	193	24.1%	483	60.2%
Implement immediate care procedures.	801	19	2.4%	43	5.3%	76	9.5%	180	22.5%	483	60.3%
Implement referral strategies.	800	35	4.4%	106	13.2%	202	25.3%	245	30.6%	212	26.5%

Consequence: 1 = No harm, 2 = Minimal harm, 3 = Moderate harm, 4 = Substantial harm, 5 = Extreme harm

Table 3.30. Descriptive Statistics for Consequence for Tasks in Immediate and Emergency Care					
Task (Key Words)	**N**	**Median**	**Mean**	**SE Mean**	**Std Dev**
Establish emergency action plans.	803	4.0	3.8	0.0	1.2
Triage.	802	5.0	4.3	0.0	1.0
Implement immediate care procedures.	801	5.0	4.3	0.0	1.0
Implement referral strategies.	800	4.0	3.6	0.0	1.1

Consequence: 1 = No harm, 2 = Minimal harm, 3 = Moderate harm, 4 = Substantial harm, 5 = Extreme harm

Respondents report that newly certified Athletic Trainers establish, review and/or revise emergency action plans once per year, on average, but that they perform the other tasks in this domain more frequently, generally at least once per month. Table 3.31 and Table 3.32 present these data.

Table 3.31. Counts and Percentages for Frequency for Tasks in Immediate and Emergency Care											
Task (Key Words)	**N**	**1**	**% 1**	**2**	**% 2**	**3**	**% 3**	**4**	**% 4**	**5**	**% 5**
Establish emergency action plans.	801	16	2.0%	477	59.6%	261	32.6%	29	3.6%	18	2.2%
Triage.	799	13	1.6%	166	20.8%	277	34.7%	152	19.0%	191	23.9%
Implement immediate care procedures.	799	12	1.5%	294	36.8%	289	36.2%	96	12.0%	108	13.5%
Implement referral strategies.	797	12	1.5%	205	25.7%	308	38.7%	158	19.8%	114	14.3%

Frequency: 1 = Never, 2 = Once per year, 3 = Once per month, 4 = Once per week, 5 = Daily

Table 3.32. Descriptive Statistics for Frequency for Tasks in Immediate and Emergency Care					
Task (Key Words)	**N**	**Median**	**Mean**	**SE Mean**	**Std Dev**
Establish emergency action plans.	801	2.0	2.4	0.0	0.7
Triage.	799	3.0	3.4	0.0	1.1
Implement immediate care procedures.	799	3.0	3.0	0.0	1.0
Implement referral strategies.	797	3.0	3.2	0.0	1.0

Frequency: 1 = Never, 2 = Once per year, 3 = Once per month, 4 = Once per week, 5 = Daily

TASKS IN DOMAIN 4

Therapeutic Intervention: Reconditioning injuries, illnesses and general medical conditions to promote optimal activity level based on core concepts (i.e., knowledge and skillsets fundamental to all aspects of therapeutic interventions) using the applications of therapeutic exercise, modality devices, pharmacology and manual therapy techniques

In Therapeutic Intervention, Certified Athletic Trainers recondition injuries, illnesses and general medical conditions for optimal activity level based on core concepts (i.e., knowledge and skillsets fundamental to all aspects of therapeutic interventions) using the applications of therapeutic exercise, modality devices and manual techniques. The domain includes seven tasks, as follows:

A. Optimize patient outcomes by developing, evaluating and updating the plan of care.
B. Educate patients and appropriate stakeholders using pertinent information to optimize treatment and rehabilitation outcomes.

C. Administer therapeutic exercises to patients using appropriate techniques and procedures to aid recovery to optimal function.

D. Administer therapeutic devices to patients using appropriate techniques and procedures to aid recovery to optimal function.

E. Administer manual techniques to patients using appropriate methods and procedures to aid recovery to optimal function.

F. Administer therapeutic interventions for general medical conditions to aid recovery to optimal function.

G. Determine patients' functional status using appropriate techniques and standards to return to optimal activity level.

Overwhelmingly, survey participants indicate the expectation that newly certified Athletic Trainers perform all seven tasks in this domain. Depending on the task, at least 85% and up to almost 96% selected that indication.

Table 3.33. Counts and Percentages for Performance Expectation for Tasks in Therapeutic Intervention

Task (Key Words)	N	1	% 1	2	% 2	3	% 3
Develop, evaluate and update plan of care.	803	4	0.5%	724	90.2%	75	9.3%
Educate patients and stakeholders.	804	7	0.9%	744	92.5%	53	6.6%
Administer therapeutic exercises.	802	6	0.7%	769	95.9%	27	3.4%
Administer therapeutic devices.	803	9	1.1%	760	94.7%	34	4.2%
Administer manual techniques.	803	9	1.1%	690	85.9%	104	13.0%
Determine patients' functional status.	803	3	0.4%	743	92.5%	57	7.1%
Administer therapeutic interventions.	803	26	3.3%	694	86.4%	83	10.3%

Performance Expectation: 1 = Not at all, 2 = Within first six months, 3 = Only after first six months

The potential for harmful consequences in the event that newly certified Athletic Trainers are not proficient in performing tasks in Therapeutic Intervention may be characterized as moderate, with task ratings generally at 3. Only the patient education task is seen as having minimal potential for harm. Table 3.34 presents the number of ratings at each scale point, and Table 3.35 presents descriptive statistics for the tasks.

Table 3.34. Counts and Percentages for Consequence for Tasks in Therapeutic Intervention

Task (Key Words)	N	1	% 1	2	% 2	3	% 3	4	% 4	5	% 5
Develop, evaluate, update plan of care.	784	48	6.1%	275	35.1%	381	48.6%	63	8.0%	17	2.2%
Educate patients and stakeholders.	785	72	9.2%	341	43.4%	315	40.1%	40	5.1%	17	2.2%
Administer therapeutic exercises.	783	41	5.3%	232	29.6%	391	49.9%	100	12.8%	19	2.4%
Administer therapeutic devices.	782	38	4.8%	243	31.1%	352	45.0%	128	16.4%	21	2.7%
Administer manual techniques.	784	40	5.1%	256	32.7%	364	46.4%	107	13.6%	17	2.2%
Determine patients' functional status.	784	37	4.7%	135	17.2%	376	48.0%	206	26.3%	30	3.8%
Administer therapeutic interventions.	781	50	6.4%	246	31.5%	371	47.5%	92	11.8%	22	2.8%

Consequence: 1 = No harm, 2 = Minimal harm, 3 = Moderate harm, 4 = Substantial harm, 5 = Extreme harm

Table 3.35. Descriptive Statistics for Consequence for Tasks in Therapeutic Intervention					
Task (Key Words)	**N**	**Median**	**Mean**	**SE Mean**	**Std Dev**
Develop, evaluate and update plan of care.	784	3.0	2.7	0.0	0.8
Educate patients and stakeholders.	785	2.0	2.5	0.0	0.8
Administer therapeutic exercises.	783	3.0	2.8	0.0	0.8
Administer therapeutic devices.	782	3.0	2.8	0.0	0.9
Administer manual techniques.	784	3.0	2.8	0.0	0.8
Determine patients' functional status.	784	3.0	3.1	0.0	0.9
Administer therapeutic interventions.	781	3.0	2.7	0.0	0.9

Consequence: 1 = No harm, 2 = Minimal harm, 3 = Moderate harm, 4 = Substantial harm, 5 = Extreme harm

Tasks in Therapeutic Intervention are performed routinely by newly certified Athletic Trainers. Except for determining patients' functional status and the administration of therapeutic interventions, more than half of the respondents provided the highest Frequency rating possible. Even for that task, respondents gave a higher rating than any other rating on the scale. The average Frequency ratings for tasks in this domain were no lower than 4.0. Table 3.36 and Table 3.37 provide this information.

Table 3.36. Counts and Percentages for Frequency for Tasks in Therapeutic Intervention											
Task (Key Words)	**N**	**1**	**% 1**	**2**	**% 2**	**3**	**% 3**	**4**	**% 4**	**5**	**% 5**
Develop, evaluate, update plan of care.	781	5	0.7%	16	2.0%	70	9.0%	265	33.9%	425	54.4%
Educate patients and stakeholders.	782	7	0.9%	14	1.8%	78	10.0%	290	37.1%	393	50.2%
Administer therapeutic exercises.	780	4	0.5%	9	1.1%	28	3.6%	120	15.4%	619	79.4%
Administer therapeutic devices.	781	7	0.9%	14	1.8%	71	9.1%	169	21.6%	520	66.6%
Administer manual techniques.	780	8	1.0%	14	1.8%	82	10.5%	197	25.3%	479	61.4%
Determine patients' functional status.	783	5	0.7%	8	1.0%	87	11.1%	314	40.1%	369	47.1%
Administer therapeutic interventions.	781	23	2.9%	35	4.5%	176	22.5%	248	31.8%	299	38.3%

Frequency: 1 = Never, 2 = Once per year, 3 = Once per month, 4 = Once per week, 5 = Daily

Table 3.37. Descriptive Statistics for Frequency for Tasks in Therapeutic Intervention					
Task (Key Words)	**N**	**Median**	**Mean**	**SE Mean**	**Std Dev**
Develop, evaluate and update plan of care.	781	5.0	4.4	0.0	0.8
Educate patients and stakeholders.	782	5.0	4.3	0.0	0.8
Administer therapeutic exercises.	780	5.0	4.7	0.0	0.6
Administer therapeutic devices.	781	5.0	4.5	0.0	0.8
Administer manual techniques.	780	5.0	4.4	0.0	0.8
Determine patients' functional status.	783	4.0	4.3	0.0	0.8
Administer therapeutic interventions.	781	4.0	4.0	0.0	1.0

Frequency: 1 = Never, 2 = Once per year, 3 = Once per month, 4 = Once per week, 5 = Daily

TASKS IN DOMAIN 5

Healthcare Administration and Professional Responsibility: Integrating best practices in policy construction and implementation, documentation and basic business practices to promote optimal patient care and employee well-being

Working in Healthcare Administration and Professional Responsibility, Certified Athletic Trainers integrate best practices in policy construction and implementation, documentation and basic business practices to promote optimal patient care and employee well-being. The four tasks are as follows:

A. Evaluate organizational, personal and stakeholder outcomes.
B. Develop policy, procedure and strategy to address risks and meet organizational needs.
C. Practice within local, state and national regulations, guidelines, recommendations and professional standards.
D. Use established documentation procedures to ensure best practice.

As may be seen in Table 3.38, survey participants are divided in their expectation about when Certified Athletic Trainers are expected to perform the first two tasks. For task A, just over half of the respondents expect performance in the first six months after certification, but 40% expect it only after the first six months. For the second task, about 45% of the respondents expect performance within the first six months, and over half expect it only after that time has elapsed. Respondents are almost uniform in their belief that newly certified Athletic Trainers are expected to perform the last two tasks within the first six months of certification.

Table 3.38. Counts and Percentages for Performance Expectation for Tasks in Healthcare Administration and Professional Responsibility

Task (Key Words)	N	1	% 1	2	% 2	3	% 3
Evaluate goals and outcomes.	794	35	4.4%	437	55.0%	322	40.6%
Develop policies, procedures and strategies.	795	29	3.7%	354	44.5%	412	51.8%
Practice within regulations, guidelines, recommendations and standards.	795	9	1.1%	747	94.0%	39	4.9%
Use documentation procedures.	795	4	0.5%	763	96.0%	28	3.5%

Performance Expectation: 1 = Not at all, 2 = Within first six months, 3 = Only after first six months

The potential for harm as a result of poor performance (Consequence) of tasks in this domain is minimal to moderate. The majority of respondents indicate minimal harm for task A. There is no clear pattern of agreement for the other tasks on Consequence, although the large majority of respondents indicate that there is potential for at least minimal harm for all four.

Table 3.39. Counts and Percentages for Consequence for Tasks in Healthcare Administration and Professional Responsibility

Task (Key Words)	N	1	% 1	2	% 2	3	% 3	4	% 4	5	% 5
Evaluate goals and outcomes.	770	209	27.1%	399	51.8%	136	17.7%	21	2.7%	5	0.7%
Develop policies, procedures and strategies.	772	144	18.7%	341	44.2%	227	29.4%	49	6.3%	11	1.4%
Practice within regulations, guidelines, recommendations and standards.	773	81	10.5%	126	16.3%	202	26.1%	191	24.7%	173	22.4%
Use documentation procedures.	774	102	13.2%	194	25.1%	235	30.3%	158	20.4%	85	11.0%

Consequence: 1 = No harm, 2 = Minimal harm, 3 = Moderate harm, 4 = Substantial harm, 5 = Extreme harm

Table 3.40. Descriptive Statistics for Consequence for Tasks in Healthcare Administration and Professional Responsibility

Task (Key Words)	N	Median	Mean	SE Mean	Std Dev
Evaluate goals and outcomes.	770	2.0	2.0	0.0	0.8
Develop policies, procedures and strategies.	772	2.0	2.3	0.0	0.9
Practice within regulations, guidelines, recommendations and standards.	773	3.0	3.3	0.0	1.3
Use documentation procedures.	774	3.0	2.9	0.0	1.2

Consequence: 1 = No harm, 2 = Minimal harm, 3 = Moderate harm, 4 = Substantial harm, 5 = Extreme harm

Because tasks in this domain address things that Athletic Trainers are responsible for but may not actively think about or engage in every day, the Frequency scale applies differently in this domain. For instance, newly certified Athletic Trainers perform tasks related to the development of policies once per year or once per month, as the ratings indicate. However, Athletic Trainers must practice in accordance with regulations, guidelines, recommendations and standards every day, but they may not consciously think about these requirements as they practice. Table 3.41 and Table 3.42 display this information.

Table 3.41. Counts and Percentages for Frequency for Tasks in Healthcare Administration and Professional Responsibility

Task (Key Words)	N	1	% 1	2	% 2	3	% 3	4	% 4	5	% 5
Evaluate goals and outcomes.	801	16	2.0%	477	59.6%	261	32.6%	29	3.6%	18	2.2%
Develop policies, procedures and strategies.	799	13	1.6%	166	20.8%	277	34.7%	152	19.0%	191	23.9%
Practice within regulations, guidelines, recommendations and standards.	799	12	1.5%	294	36.8%	289	36.2%	96	12.0%	108	13.5%
Use documentation procedures.	797	12	1.5%	205	25.7%	308	38.7%	158	19.8%	114	14.3%

Frequency: 1 = Never, 2 = Once per year, 3 = Once per month, 4 = Once per week, 5 = Daily

Table 3.42. Descriptive Statistics for Frequency for Tasks in Healthcare Administration and Professional Responsibility

Task (Key Words)	N	Median	Mean	SE Mean	Std Dev
Evaluate goals and outcomes.	770	3.0	3.0	0.0	1.1
Develop policies, procedures and strategies.	771	2.0	2.4	0.0	0.8
Practice within regulations, guidelines, recommendations and standards.	773	5.0	4.6	0.0	1.0
Use documentation procedures.	773	5.0	4.7	0.0	0.7

Frequency: 1 = Never, 2 = Once per year, 3 = Once per month, 4 = Once per week, 5 = Daily

Domain Ratings

The five domains as developed by the panel are as follows:

I. Injury and Illness Prevention and Wellness Promotion
II. Examination, Assessment and Diagnosis
III. Immediate and Emergency Care
IV. Therapeutic Intervention
V. Healthcare Administration and Professional Responsibility

After rating the tasks, participants in the survey were asked to evaluate the domains as a whole, considering all tasks in the domain taken together. The evidence that newly certified Athletic Trainers are expected to perform the domains within the first six months after earning certification is very strong, with at least 88% of respondents attaching a 2 for all domains. See Table 3.43 for the details.

Table 3.43. Counts and Percentages for Performance Expectation of Domains

Domain	N	1	% 1	2	% 2	3	% 3
Injury and Illness Prevention and Wellness Promotion	898	5	0.6%	844	94.0%	49	5.4%
Examination, Assessment and Diagnosis	840	4	0.5%	811	96.5%	25	3.0%
Immediate and Emergency Care	819	5	0.6%	758	92.6%	56	6.8%
Therapeutic Intervention	799	2	0.3%	755	94.5%	42	5.2%
Healthcare Administration and Professional Responsibility	788	4	0.5%	696	88.3%	88	11.2%

Performance Expectation: 1 = Not at all, 2 = Within first six months, 3 = Only after first six months

Consequence ratings suggest that the third domain (Immediate and Emergency Care) has the greatest criticality (substantial harm), and the degree to which harm might result from improper performance for the other domains ranges close to moderate. Domain-level responses for Consequence are summarized in Tables 3.44 and 3.45.

Table 3.44. Counts and Percentages for Consequence of Domains

Domain	N	1	% 1	2	% 2	3	% 3	4	% 4	5	% 5
Injury and Illness Prevention and Wellness Promotion	873	47	5.4%	181	20.7%	386	44.2%	194	22.2%	65	7.5%
Examination, Assessment and Diagnosis	820	35	4.3%	96	11.7%	297	36.2%	284	34.6%	108	13.2%
Immediate and Emergency Care	795	24	3.0%	44	5.6%	102	12.8%	256	32.2%	369	46.4%
Therapeutic Intervention	781	30	3.8%	206	26.4%	416	53.3%	110	14.1%	19	2.4%
Healthcare Administration and Professional Responsibility	767	77	10.0%	241	31.4%	308	40.2%	104	13.6%	37	4.8%

Consequence: 1 = No harm, 2 = Minimal harm, 3 = Moderate harm, 4 = Substantial Harm, 5 = Extreme Harm

Table 3.45. Descriptive Statistics for Consequence of Domains

Domain	N	Median	Mean	SE Mean	Std Dev
Injury and Illness Prevention and Wellness Promotion	873	3	3.1	0.00	1.0
Examination, Assessment and Diagnosis	820	3	3.4	0.00	1.0
Immediate and Emergency Care	795	4	4.1	0.00	1.0
Therapeutic Intervention	781	3	2.8	0.00	0.8
Healthcare Administration and Professional Responsibility	767	3	2.7	0.00	1.0

Consequence: 1 = No harm, 2 = Minimal harm, 3 = Moderate harm, 4 = Substantial Harm, 5 = Extreme Harm

Examination, Assessment and Diagnosis is the domain that entry-level Athletic Trainers perform most frequently. Immediate and Emergency Care is performed about monthly, and the other domains are performed on at least a weekly basis. See Tables 3.46 and 3.47 for the detail on Frequency ratings.

Table 3.46. Counts and Percentages for Frequency of Domains											
Domain	**N**	**1**	**% 1**	**2**	**% 2**	**3**	**% 3**	**4**	**% 4**	**5**	**% 5**
Injury and Illness Prevention and Wellness Promotion	870	4	0.5%	41	4.7%	201	23.1%	255	29.3%	369	42.4%
Examination, Assessment and Diagnosis	816	4	0.5%	9	1.1%	23	2.8%	104	12.8%	676	82.8%
Immediate and Emergency Care	793	6	0.7%	202	25.5%	336	42.4%	135	17.0%	114	14.4%
Therapeutic Intervention	780	3	0.4%	7	0.9%	60	7.7%	204	26.1%	506	64.9%
Healthcare Administration and Professional Responsibility	769	7	0.9%	48	6.3%	141	18.3%	187	24.3%	386	50.2%

Frequency: 1 = Never, 2 = Once per year, 3 = Once per month, 4 = Once per week, 5 = Daily

Table 3.47. Descriptive Statistics for Frequency of Domains					
Domain	**N**	**Median**	**Mean**	**SE Mean**	**Std Dev**
Injury and Illness Prevention and Wellness Promotion	870	4	4.1	0.0	0.9
Examination, Assessment and Diagnosis	816	5	4.8	0.0	0.6
Immediate and Emergency Care	793	3	3.2	0.0	1.0
Therapeutic Intervention	780	5	4.5	0.0	0.7
Healthcare Administration and Professional Responsibility	769	5	4.2	0.0	1.0

Frequency: 1 = Never, 2 = Once per year, 3 = Once per month, 4 = Once per week, 5 = Daily

RELIABILITY ANALYSIS FOR DOMAINS

The reliability of the scales for domains was assessed in order to determine how consistently the tasks performed as measures. Reliability refers to the degree to which tests or surveys are free from measurement error. With inconsistency (i.e., unreliability), it would be difficult to interpret the results of the study. Reliability analysis expresses the adequacy of data reported for the Consequence and Frequency ratings of each performance domain based on the tasks. (Reliability for Performance Expectation, which may be a categorical variable, was not assessed.)

Reliability, reported in Table 3.48, was measured by estimating internal consistency (Cronbach's alpha) using the respondents' ratings for Consequence and Frequency for the tasks in each domain or subdomain. This procedure calculates the extent to which the task ratings within a domain consistently measure what other tasks within that performance domain measure. Reliability coefficients range from 0 to 1 and should be above 0.70 to be judged as adequate. The reliability coefficients obtained for this study were strong, especially for Therapeutic Intervention and Examination, Assessment and Diagnosis.

Table 3.48. Reliability		
Reliability	**Consequence**	**Frequency**
Injury and Illness Prevention and Wellness Promotion	0.86	0.71
Examination, Assessment, and Diagnosis	0.92	0.83
Immediate and Emergency Care	0.88	0.78
Therapeutic Intervention	0.93	0.88
Healthcare Administration and Professional Responsibility	0.81	0.58

CONCLUSION

The process for developing the outline of domains, tasks and knowledge and skill statements was drawn from established methodology for practice analysis studies. Panelists were well informed about the professional expectations of newly certified Athletic Trainers, and they participated in group discussions to clarify understanding, negotiate language and express opinions about all elements of the system. This work provided a strong basis for the validation study to follow.

Demographic data collected in the validation study indicate that respondents were qualified to participate in the survey and aligned to the major characteristics of newly certified Athletic Trainers. They are distributed across practice settings, regions and other variables in ways that are consistent with previous BOC surveys.

Almost across the board, task validation data indicate strong support for the inference that tasks are valid with respect to entry-level practice. Additionally, ratings indicate that tasks are consequential to the safety and effectiveness of athletic training services and that they are performed often by the newly certified. The only real disparity in opinion concerned the first two tasks in Healthcare Administration and Professional Responsibility, where it may be said that Athletic Trainers are responsible for the tasks but that not all settings require newly certified Athletic Trainers to perform them directly. Ratings for domains indicate their validity to the practice of Certified Athletic Trainers.

The purpose of the practice analysis study was to develop a current outline of domains, tasks and knowledge and skill statements that characterize the work of newly certified Athletic Trainers and define what proficiencies they should be expected to possess (refer to Appendix G for the final content outline). Data collected in the validation study support the conclusion that this purpose was achieved and that the BOC may use the outline as the basis for its certification examination.

BOARD OF CERTIFICATION
FOR THE ATHLETIC TRAINER
25 Years of Certainty

Practice Analysis Study for the Athletic Training Profession

INSTRUCTION BOOKLET

Castle
Design.
Develop.
Deliver.

Practice Analysis Study	Omaha, NE, October 3 – 5, 2014
Facilitator: James P. Henderson, Ph.D.	
Agenda	
Friday, October 3	
8:30 a.m.	**Meeting begins** o Introduce participants o Review practice analysis processes and objectives o Discuss the target audience o Review current domains
10:00 a.m.	**Morning break**
10:15 a.m.	**Meeting resumes** o Reach consensus on domains o Review procedures and considerations for evaluating and modifying task statements o Review and suggest revisions to task statements, working in small groups
12:00 p.m.	**Lunch**
1:00 p.m.	**Meeting resumes** o Continue reviewing and suggesting revisions to task statements in small groups o Review task statements and suggested revisions as a whole group
2:50 p.m.	**Afternoon break**
3:00 p.m.	**Meeting resumes** o Continue reviewing task statements and suggested revisions as a whole group
5:00 p.m.	**Adjourn for the day**
Saturday, October 4	
8:30 a.m.	**Meeting resumes** o Continue reviewing task statements and suggested revisions as a whole group o Review procedures and considerations for evaluating and modifying knowledge statements o Review and suggest revisions to knowledge statements, working in small groups
10:00 a.m.	**Morning break**
10:15 a.m.	**Meeting resumes** o Continue reviewing and suggesting revisions to knowledge statements in small groups
12:00 p.m.	**Lunch**
1:00 p.m.	**Meeting resumes** o Review knowledge statements and suggested revisions as a whole group
2:45 p.m.	**Afternoon break**

3:00 p.m.	**Meeting resumes** o Continue reviewing knowledge statements and suggested revisions as a whole group
5:00 p.m.	**Adjourn for the day**
Sunday, October 5	
8:30 a.m.	**Meeting resumes** o Continue reviewing knowledge statements and suggested revisions as a whole group
9:45 a.m.	**Morning break**
10:00 a.m.	**Meeting resumes** o Continue reviewing knowledge statements and suggested revisions as a whole group o Validation exercise
12:20 p.m.	**Meeting wrap up**
12:30 p.m.	**Meeting adjourns**

TABLE OF CONTENTS

OVERVIEW OF MEETING ACTIVITIES

The Board of Certification, Inc. (BOC) was incorporated in 1989 to provide a certification program for entry-level Athletic Trainers (ATs). The BOC establishes and regularly reviews both the standards for the practice of athletic training and the continuing education requirements for BOC Certified ATs. The BOC has the only accredited certification program for ATs in the US. The BOC's mission is t*o provide exceptional credentialing programs for healthcare professionals to assure protection of the public.*

Consistent with its mission and to ensure the examination bears a close relationship to current practice, the BOC conducts periodic studies of the profession. Doing so maintains close alignment with best practices in certification. We anticipate a substantial amount of group interaction and activity. It is important for each member of the panel to be realistic, cooperative, and focused on teamwork. We hope panelists will appreciate the common goal of collaboration concerning the various elements of the study.

DEFINITION OF TERMS

Target Audience Statement

Target audience statements describe the basic characteristics of the group that is expected to seek certification in the specialty. The characteristics include the prerequisites and other qualifications that distinguish athletic trainers as a unique professional specialty.

Target Audience

Athletic Trainers (ATs) are health care professionals who collaborate with physicians. The services provided by ATs comprise prevention, emergency care, clinical diagnosis, therapeutic intervention and rehabilitation of injuries and medical conditions.* Athletic training is recognized by the American Medical Association (AMA) as a health care profession. *(This definition is approved by the NATA's nomenclature work group and the NATA Board of Directors, January 2013).*

Students become eligible for BOC certification through an athletic training degree program (Bachelor's or entry-level Master's) accredited by the Commission on Accreditation of Athletic Training Education (CAATE). Students engage in rigorous classroom study and clinical education in a variety of practice settings such as high schools, colleges/universities, hospitals, emergency rooms, physician offices and healthcare clinics over the course of the degree program. Students enrolled in their final semester are eligible to apply for the BOC exam. In order to qualify as a candidate for the BOC certification exam, an individual must be confirmed by the recognized Program Director of the CAATE accredited education program.

Employers of Athletic Training Services

- Professional and Collegiate Sports
- Secondary and Intermediate Schools
- Sports Medicine Clinics
- Hospital ER and Rehab Clinics
- Occupational Settings
- Physician Offices

Domains

Domains are the major responsibilities or duties that characterize the practice of a discipline like athletic training. Domains are denoted as major headings in an outline format and may include brief behavioral descriptions. The domains listed below provide the organizational framework for the BOC's current practice analysis. They are illustrative of the scope and generality intended for the current study. In developing your own list of domains during the meeting, you may use any from this list, if they are appropriate, or devise your own.

The following domains are in effect as of January 1, 2012:

- Injury/Illness Prevention and Wellness Protection
- Clinical Evaluation and Diagnosis
- Immediate and Emergency Care
- Treatment and Rehabilitation
- Organizational and Professional Health and Well-being

Task Statements

A task statement defines an activity that elaborates on a domain. The set of task statements for a domain offers a comprehensive and detailed description of the domain. In particular, task statements should answer the following questions:

- What activity is performed? (active verb)
- To whom or to what is the activity directed? (direct object or another phrase clarifying who or what receives the activity or how it is performed)
- How is the activity performed? (if helpful)
- Why is the activity performed? (if helpful)

Selected Task Statements from the Current Content Outline (Modified for Format)

1. Establish a caregiver relationship by fostering trust and open communication in order to optimize care.

2. Minimize risk of injury and illness of individuals and groups impacted by or involved in a specific activity through awareness, education, and intervention.

3. Promote healthy lifestyle behaviors using appropriate education and communication strategies to enhance wellness and minimize the risk of injury and illness.

4. Obtain an individual's history through observation, interview, and/or review of relevant records to assess injury, illness, or health-related condition.

5. Formulate a clinical diagnosis by interpreting the signs, symptoms, and predisposing factors of the injury, illness, or health-related condition to determine the appropriate course of action.

6. Apply appropriate immediate and emergency care procedures to prevent the exacerbation of health-related conditions to reduce the risk factors for morbidity and mortality.

How to Write Task Statements

1. Make sure that the task statements are complete.
   1. What? 2. To whom/what? 3. How (if helpful)? 4. Why (if helpful)?

2. Begin the task statements with active verbs: assess, collect, identify, diagnose, document, plan, manage, collaborate, consult, etc.

3. Some verbs that are not as definitive as others are: be responsible for, help, assist, keep, participate, or handle. Please avoid the use of such verbs.

4. Task statements are to be recorded on the worksheet provided in this manual or a word processing document.

5. We anticipate developing approximately 5 to 12 task statements for each domain.

Knowledge and Skill Statements

For each domain, it is valuable to understand what knowledge and skill are required for proficient performance. The set of knowledge and skill statements clarifies what is expected of the athletic trainer. Each knowledge and skill statement will be coded to the task(s) to which it pertains most closely.

Selected Knowledge Statements from the Current Content Outline

1. Human physiology: normal and compromised functions
2. Federal and state occupational, safety, and health guidelines
3. Age-specific considerations related to treatment, rehabilitation, and reconditioning
4. Principles of therapeutic exercise (e.g., isometric, isotonic, isokinetic, work, power, and endurance)
5. Physical assessment techniques
6. Criteria for determining the legal standard of care in athletic training (e.g., state statutes and regulations, professional standards and guidelines, publications, customs, practices, and societal expectations)

Selected Skill Statements from the Current Content Outline

1. Directing a referral to the appropriate professionals
2. Implementing relevant administrative practices (e.g., Injury reports, documentation, case reports)
3. Interpreting standard medical terminology and nomenclature and describing the nature of injuries, illnesses, and health-related conditions in basic terms
4. Identifying anatomical structures involved in injuries, illnesses, and health-related conditions
5. Assessing appropriateness of individual or group participation in conditioning programs
6. Identifying injuries, illnesses, and health-related conditions that warrant the application of custom-made or commercially available devices

VALIDATION RATING SCALES

Please consider newly certified athletic trainers when evaluating the domains and tasks using the following scales.

Performance Expectation: At what point in time are newly certified athletic trainers first expected in most settings to perform the domain or task?

0 = Not at all
1 = Within the first six months of athletic trainer certification (includes exactly six months)
2 = After the first six months of athletic trainer certification (does not include exactly six months)

Example: *Certified Public Accountants are expected to conduct financial audits in the first six months after certification, but client management would be performed later in the career.*

Consequence: To what degree the newly certified athletic trainer's lack of proficiency to perform duties in each domain or task be seen as causing harm to stakeholders? (Harm may be seen as physical, psychological, emotional, legal, financial, etc.)

0 = No harm
1 = Minimal harm
2 = Moderate harm
3 = Substantial harm
4 = Extreme harm

Example: *It is consequential that workers on high-rise buildings maintain a grip on their hammers. (Failure could cause extreme harm to the public walking below and impacts other stakeholders such as employers, insurers, etc.)*

Frequency: Frequency refers to how often newly certified athletic trainers perform duties in each of the domains, subdomains, or tasks, considering a one-year period. The following scale is used to record frequency:

0 = Never
1 = Rarely (once per year)
2 = Sometimes (once per month)
3 = Often (once per week)
4 = Repeatedly (daily)

Example: *Flight attendants open soft drinks for passengers repeatedly, yet this job duty is neither important nor consequential.*

WORKSHEET FOR DOMAINS

The domains listed below provide the organizational framework for the current content outline. They are illustrative of the scope and generality intended for the study. In developing your own list of domains during the meeting, you may use any from this list, if they are appropriate, or devise your own.

- Injury/Illness Prevention and Wellness Protection
- Clinical Evaluation and Diagnosis
- Immediate and Emergency Care
- Treatment and Rehabilitation
- Organizational and Professional Health and Well-being

Please list below the domains that you believe characterize the work of newly certified athletic trainers.

WORKSHEET FOR TASK STATEMENTS

On this sheet, please list the task statements for Domain I: _____

Task Statement #1: _____

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Task Statement #2: _____

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Task Statement #3: _____

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Task Statement #4: _____

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Task Statement #5: _____

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Task Statement #6: _____

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Task Statement #7: _____

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Task Statement #8: _____

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Task Statement #9: _____

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Task Statement #10: _____

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Task Statement #11: _____

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Task Statement #12: _____

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Task Statement #13: _____

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Task Statement #14: _____

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Task Statement #15: _____

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WORKSHEET FOR KNOWLEDGE STATEMENTS

DOMAIN: _____

KNOWLEDGE STATEMENTS

Knowledge Statement #1: _____

Knowledge Statement #2: _____

Knowledge Statement #3: _____

Knowledge Statement #4: _____

Knowledge Statement #5: _____

Knowledge Statement #6: _____

Knowledge Statement #7: _____

Knowledge Statement #8: _____

Knowledge Statement #9: _____

Knowledge Statement #10: _____

Knowledge Statement #11: _____

Knowledge Statement #12: _____

Knowledge Statement #13: _____

Knowledge Statement #14: _____

Knowledge Statement #15: _____

Knowledge Statement #16: _____

Knowledge Statement #17: _____

Knowledge Statement #18: _____

WORKSHEET FOR SKILL STATEMENTS

DOMAIN: _____

SKILL STATEMENTS

Skill Statement #1: _____

Skill Statement #2: _____

Skill Statement #3: _____

Skill Statement #4: _____

Skill Statement #5: _____

Skill Statement #6: _____

Skill Statement #7: _____

Skill Statement #8: _____

Skill Statement #9: _____

Skill Statement #10: _____

Skill Statement #11: _____

Skill Statement #12: _____

Skill Statement #13: _____

Skill Statement #14: _____

Skill Statement #15: _____

Skill Statement #16: _____

Skill Statement #17: _____

Skill Statement #18: _____

Castle Worldwide, Inc.

900 Perimeter Park Drive, Suite G, Morrisville, North Carolina 27560

Summary of the BOC Pilot Survey, Practice Analysis 7

James P. Henderson, Ph.D.
February 25, 2015

Castle sent survey invitation emails to 200 ATCs on January 29, 2015, informing those individuals of their selection into the sample for the pilot survey, offering a gift card incentive, and requesting their participation by February 13. BOC staff and Castle agreed to extend the deadline to February 18, with a reminder notice sent on February 11. When the pilot survey closed at midnight on February 18, a total of 46 had opened the survey and 31 had provided data. Totally complete responses were received from 21 individuals.

Domain I: Injury and Illness Prevention and Wellness Promotion
Performance Expectation ratings clearly indicate that newly certified athletic trainers are expected to perform the tasks in this domain. Tasks in this domain were seen as having criticality at almost the scale midpoint, with an average of 2.95; however the average rating for the domain was 3.19. Task frequency ratings averaged 3.37, indicating the tasks are performed often, even though the average frequency rating for the domain was higher at 4.00.

Domain II: Examination, Assessment, and Diagnosis
As for the first domain, survey participants believe that newly certified athletic trainers are expected to perform the tasks in the second domain. The tasks have substantial criticality (average rating was 3.24), with an average overall criticality rating of 3.46. Tasks in the domain are performed frequently, with an average rating of 4.42, just lower than the average frequency rating for the domain at 4.67.

Domain III: Immediate and Emergency Care
There is clear consensus that newly certified athletic trainers are expected to perform tasks in this domain; however, some respondents believe that tasks 1 and 3 should be performed only after the first six months of certification. The tasks in this domain are seen as having high potential for harm in the event the newly certified athletic trainer lacks proficiency, with an average of 4.27 for the tasks and 4.32 for the domain. These tasks are performed with reasonable frequency at an average task rating of 2.89 and 3.07 for the domain.

Domain IV: Therapeutic Intervention
There is near complete consensus that proficient performance of the tasks in this domain is expected of newly certified athletic trainers. All Performance Expectation task ratings are tightly grouped around the average of 2.05 and 2.04 for the domain rating. These tasks are associated with an average Criticality rating of 2.66 and 2.88 for the domain, and they are performed very often (average task rating of 4.28 and average domain rating of 4.08).

Domain V: Healthcare Administration and Professional Responsibility
Some respondents found that the first two tasks in this domain are not expected of newly certified athletic trainers, with average Performance Expectation ratings of 2.56 and 2.67 respectively, although the third and fourth tasks are clearly expected of newly certified. The average domain rating for this scale was 2.08. Likewise, there was a noticeable demarcation in average task ratings for Criticality, although for this scale tasks three and four have higher potential for harm than the first two (averages of 3.63 and 3.11 in comparison to 2.92 and 2.07). The average domain rating for Criticality was 2.92. The

pattern of findings for Frequency parallel those for Criticality. Tasks 3 and 4 are performed more often (4.84 and 4.81) and tasks 1 and 2 less often (2.84 and 2.54).

Castle did not finding anything unusual about the ratings for tasks and believes that the task force should review the findings as reported above, determine if modification to language is indicated, and advise about ways to improve the response rate when the actual survey is conducted.

Use the following subject line: YPs: Help shape athletic training's future - and have a chance to win $50

Dear XXXXX XXXXXXXXXXXXX,

You have been selected to participate in a survey about updates to the Board of Certification, Inc. (BOC) practice analysis. As a young professional, you have the best perspective on the knowledge and skills needed to ensure the safe practice of athletic training.

The purpose of this survey is to get your feedback on the revisions being made to the practice analysis. The practice analysis contains task descriptions that:

- Define the roles and responsibilities of a newly certified AT
- Serve as a blueprint for the BOC exam
- Guide the creation of continuing education programs

Completing the survey should take approximately 25 minutes. You do not need to finish the survey at one sitting, and you can return to the survey multiple times.

Your participation in this effort is invaluable in defining the practice of newly certified Athletic Trainers.

Once you have completed the survey, you will be entered into a drawing to win a $50 Visa gift card. Five participants will be selected at random to receive a prize, courtesy of the BOC. Only completed surveys will be eligible, and your identifying information will NOT be tied to your survey answers.

Please complete the survey by **April 13, 2015** to be entered in the drawing.

To begin the survey, go to https://www.research.net/r/BOC_REVIEW, and enter the code: 11111.

This survey is being administered with the assistance of Castle Worldwide, Inc., a company that specializes in the development and validation of high-stakes tests. If you encounter any issues with this survey, please contact the survey administrator at surveyadmin@castleworldwide.com.

Please note that the URL and code provided above are unique to your invitation. **Please do not forward this message to others.** If the survey link is inactive, please contact the survey administrator.

Thank you for your participation.

Denise Fandel, CAE
Executive Director
Board of Certification

James P. Henderson, Ph.D.
Psychometrician
Castle Worldwide

Athletic Trainer Practice Analysis

Log In

Thank you in advance for participating in this very important survey.

The survey will close on **April 20, 2015**.

Please enter the access code found in your invitation.

If you experience technical problems, please contact the survey administrator at surveyadmin@castleworldwide.com

Page 1

Athletic Trainer Practice Analysis

Introduction

The Board of Certification, Inc. (BOC) was incorporated in 1989 to provide a certification program for entry-level Athletic Trainers (ATs). The BOC establishes and regularly reviews both the standards for the practice of athletic training and the continuing education requirements for BOC Certified ATs. The BOC has the only accredited certification program for ATs in the US. The BOC's mission is to *provide exceptional credentialing programs for health care professionals to assure protection of the public.*

Consistent with its mission to protect the public and to ensure the examination bears a close relationship to current practice, the BOC conducts periodic studies of the profession. Doing so maintains close alignment with best practices in certification. The BOC is currently conducting the seventh practice analysis study since its formation. You have been asked to complete a survey that is a critical part of the practice analysis study.

The survey is divided into two sections.

Section 1 Task Statement and Domain Evaluation: In this section, you will be asked to review 26 task statements, organized into five primary groups, or domains. The domains are as follows:

1. Injury and Illness Prevention and Wellness Promotion
2. Examination, Assessment, and Diagnosis
3. Immediate and Emergency Care
4. Therapeutic Intervention
5. Health Care Administration and Professional Responsibility

We ask that you provide ratings for each of the task statements, group-by-group. Then, after you have reviewed and provided ratings for the task statements in a domain, you will be asked to give summative ratings for the domain as a whole.

Section 2 Demographics: In this final section, you will be asked to provide brief background information about yourself.

If you experience technical problems, please contact the survey administrator at surveyadmin@castleworldwide.com

Athletic Trainer Practice Analysis

Definitions

Athletic Trainers (ATs) are health care professionals who collaborate with physicians. The services provided by ATs comprise prevention, emergency care, clinical diagnosis, therapeutic intervention and rehabilitation of injuries and medical conditions. Athletic training is recognized by the American Medical Association (AMA) as a health care profession. (This definition is approved by the NATA's nomenclature work group and the NATA Board of Directors, January 2013).

Students become eligible for BOC certification through an athletic training degree program (Bachelor's or entry-level Master's) accredited by the Commission on Accreditation of Athletic Training Education (CAATE). Students engage in rigorous classroom study and clinical education in a variety of practice settings such as high schools, colleges/universities, hospitals, emergency rooms, physician offices and health care clinics over the course of the degree program. Students enrolled in their final semester are eligible to apply for the BOC examination. In order to qualify as a candidate for the BOC certification examination, an individual must be confirmed by the recognized Program Director of the CAATE accredited education program.

Employers of Athletic Training Services:

- Professional and Collegiate Sports
- Secondary and Intermediate Schools
- Sports Medicine Clinics
- Hospital ER and Rehab Clinics
- Occupational Settings
- Physician Offices

Athletic Trainer Practice Analysis

Survey Instructions

When evaluating the domains and task statements, you will be asked to rate the performance expectation, consequence, and frequency. Please consider **newly certified Athletic Trainers** when evaluating the domains and tasks using the following scales.

Performance Expectation: At what point in time are newly certified Athletic Trainers first expected in most settings to perform the domain or task?

- Not at all
- Within the first six months after earning certification (includes exactly six months)
- Only after the first six months of certification (does not include exactly six months)

Example: Certified Public Accountants are expected to conduct financial audits in the first six months after certification, but client management would be performed later in the career.

Consequence: To what degree may the newly certified Athletic Trainer's lack of proficiency to perform duties in each domain or task be seen as causing harm to stakeholders? (Harm may be seen as physical, psychological, emotional, legal, financial, etc.)

- No harm
- Minimal harm
- Moderate harm
- Substantial harm
- Extreme harm

Example: It is critical that workers on high-rise buildings maintain a grip on their hammers. (Failure injures the public walking below and impacts other stakeholders such as employers, insurers, etc.)

Frequency: Frequency refers to how often newly certified Athletic Trainers perform duties in each of the domains or tasks, considering a one-year period. The following scale is used to record frequency:

- Never
- Rarely (once per year)
- Sometimes (once per month)
- Often (once per week)
- Repeatedly (daily)

Example: Flight attendants open soft drinks for passengers repeatedly, yet this job duty is neither important nor critical.

Demographics

You will be asked to provide background information about yourself. All responses are kept confidential, and your individual responses will not be released. All results will be reported as aggregates.

Athletic Trainer Practice Analysis

Individual responses will NOT be identified.

You will not need to complete the survey at one sitting, but can return multiple times. To exit the survey temporarily, click "Save | Continue" at the bottom of the page then "Exit Survey" at the top right corner. This will save your responses to that point and you can re-enter later to finish.

We estimate it will take 30 minutes or less for most people to complete the survey. Please complete this survey by **April 20, 2015**.

If you experience technical problems, please contact the survey administrator at surveyadmin@castleworldwide.com

Athletic Trainer Practice Analysis

Domain 1: INJURY AND ILLNESS PREVENTION AND WELLNESS PROMOTION

Promoting healthy lifestyle behaviors with effective education and communication to enhance wellness and minimize the risk of injury and illness

Using the scales below, please consider newly certified Athletic Trainers when evaluating the 6 task statements in this domain.

Performance Expectation:
At what point in time are newly certified Athletic Trainers first expected in most settings to perform the domain or task?

- Not at all
- Within the first six months after certification (includes exactly six months)
- Only after the first six months of certification (does not include exactly six months)

Example: *Certified Public Accountants are expected to conduct financial audits in the first six months after certification, but client management would be performed later in the career.*

Consequence:
To what degree may the newly certified Athletic Trainer's lack of proficiency to perform duties in each domain or task be seen as causing harm to stakeholders? (Harm may be seen as physical, psychological, emotional, legal, financial, etc.)

- No harm
- Minimal harm
- Moderate harm
- Substantial harm
- Extreme harm

Example: *It is critical that workers on high-rise buildings maintain a grip on their hammers. (Failure injures the public walking below and impacts other stakeholders such as employers, insurers, etc.)*

Frequency:
Frequency refers to how often newly certified Athletic Trainers perform duties in each of the domains, subdomains, or tasks, considering a one-year period.

- Never
- Rarely (once per year)
- Sometimes (once per month)
- Often (once per week)
- Repeatedly (daily)

Example: *Flight attendants open soft drinks for passengers repeatedly, yet this job duty is neither important nor critical.*

Athletic Trainer Practice Analysis

Task Statements

	Performance Expectation	Consequence	Frequency
1. Identify risk factors by administering assessment, pre-participation examination, and other screening instruments and reviewing individual and group history and injury surveillance data.			
2. Implement plans to aid in risk reduction using currently accepted and applicable guidelines.			
3. Educate individuals and stakeholders about the appropriate use of personal equipment.			
4. Minimize the risk of injury and illness by monitoring and implementing plans to comply with regulatory requirements and standard operating procedures for physical environments and equipment.			
5. Facilitate personal and group safety by monitoring and responding to environmental conditions (e.g., weather, surfaces, client work setting).			
6. Optimize wellness (e.g., social, emotional, spiritual, environmental, occupational, intellectual, physical) for individuals and groups.			

Now that you have reviewed and rated the task statements included under *Injury and Illness Prevention and Wellness Promotion*, please provide overall ratings for *Injury and Illness Prevention and Wellness Promotion* as a whole.

	Performance Expectation	Consequence	Frequency
Injury and Illness Prevention and Wellness Promotion			

Athletic Trainer Practice Analysis

In the space below, please indicate any additional tasks required of newly certified Athletic Trainers that may have been omitted or any other comments about the tasks for this domain.

Athletic Trainer Practice Analysis

Domain 2: EXAMINATION, ASSESSMENT, AND DIAGNOSIS

Implementing systematic, evidence-based examinations and assessments to formulate valid clinical diagnoses and determine patients' plan of care.

Using the scales below, please consider newly certified Athletic Trainers when evaluating the 5 task statements in this domain.

Performance Expectation:
At what point in time are newly certified Athletic Trainers first expected in most settings to perform the domain or task?

- Not at all
- Within the first six months after certification (includes exactly six months)
- Only after the first six months of certification (does not include exactly six months)

Example: *Certified Public Accountants are expected to conduct financial audits in the first six months after certification, but client management would be performed later in the career.*

Consequence:
To what degree may the newly certified Athletic Trainer's lack of proficiency to perform duties in each domain or task be seen as causing harm to stakeholders? (Harm may be seen as physical, psychological, emotional, legal, financial, etc.)

- No harm
- Minimal harm
- Moderate harm
- Substantial harm
- Extreme harm

Example: *It is critical that workers on high-rise buildings maintain a grip on their hammers. (Failure injures the public walking below and impacts other stakeholders such as employers, insurers, etc.)*

Frequency:
Frequency refers to how often newly certified Athletic Trainers perform duties in each of the domains, subdomains, or tasks, considering a one-year period.

- Never
- Rarely (once per year)
- Sometimes (once per month)
- Often (once per week)
- Repeatedly (daily)

Example: *Flight attendants open soft drinks for passengers repeatedly, yet this job duty is neither important nor critical.*

Athletic Trainer Practice Analysis

Task Statements

	Performance Expectation	Consequence	Frequency
1. Obtain an individual's history through observation, interview, and/or review of relevant records to assess injuries, illnesses, and identify comorbidities.			
2. Perform a physical examination that includes diagnostic testing to formulate differential diagnoses.			
3. Formulate a clinical diagnosis by interpreting the history and physical examination to determine the appropriate course of action.			
4. Interpret signs and symptoms of injuries, illnesses, or other health-related conditions that require referral using medical history and physical examination to ensure appropriate care.			
5. Educate patients and appropriate stakeholders about clinical findings, prognosis, and plan of care to optimize outcomes and encourage compliance.			

Now that you have reviewed and rated the task statements included under *Examination, Assessment, and Diagnosis*, please provide overall ratings for *Examination, Assessment, and Diagnosis* as a whole.

	Performance Expectation	Consequence	Frequency
Examination, Assessment, and Diagnosis			

Athletic Trainer Practice Analysis

In the space below, please indicate any additional tasks required of newly certified Athletic Trainers that may have been omitted or any other comments about the tasks for this domain.

Athletic Trainer Practice Analysis

Domain 3: IMMEDIATE AND EMERGENCY RESPONSE

Integrating best practices in immediate and emergency care for optimal outcomes.

Using the scales below, please consider newly certified Athletic Trainers when evaluating the 4 task statements in this domain.

Performance Expectation:
At what point in time are newly certified Athletic Trainers first expected in most settings to perform the domain or task?

- Not at all
- Within the first six months after certification (includes exactly six months)
- Only after the first six months of certification (does not include exactly six months)

Example: *Certified Public Accountants are expected to conduct financial audits in the first six months after certification, but client management would be performed later in the career.*

Consequence:
To what degree may the newly certified Athletic Trainer's lack of proficiency to perform duties in each domain or task be seen as causing harm to stakeholders? (Harm may be seen as physical, psychological, emotional, legal, financial, etc.)

- No harm
- Minimal harm
- Moderate harm
- Substantial harm
- Extreme harm

Example: *It is critical that workers on high-rise buildings maintain a grip on their hammers. (Failure injures the public walking below and impacts other stakeholders such as employers, insurers, etc.)*

Frequency:
Frequency refers to how often newly certified Athletic Trainers perform duties in each of the domains, subdomains, or tasks, considering a one-year period.

- Never
- Rarely (once per year)
- Sometimes (once per month)
- Often (once per week)
- Repeatedly (daily)

Example: *Flight attendants open soft drinks for passengers repeatedly, yet this job duty is neither important nor critical.*

Athletic Trainer Practice Analysis

Task Statements

	Performance Expectation	Consequence	Frequency
1. Establish, review, and/or revise emergency action plans to guide appropriate and unified response to events and optimize outcomes.			
2. Triage to determine whether conditions, injuries, or illnesses are life threatening.			
3. Implement appropriate emergency and immediate care procedures to reduce the risk of morbidity and mortality.			
4. Implement referral strategies to facilitate the timely transfer of care.			

Now that you have reviewed and rated the task statements included under *Immediate and Emergency Response* , please provide overall ratings for *Immediate and Emergency Response* as a whole.

	Performance Expectation	Consequence	Frequency
Immediate and Emergency Response			

Athletic Trainer Practice Analysis

In the space below, please indicate any additional tasks required of newly certified Athletic Trainers that may have been omitted or any other comments about the tasks for this domain.

Athletic Trainer Practice Analysis

Domain 4: THERAPEUTIC INTERVENTION

Rehabilitating and reconditioning injuries, illnesses, and general medical conditions to promote optimal activity level based on core concepts (i.e., knowledge and skillsets fundamental to all aspects of therapeutic interventions) using the applications of therapeutic exercise, modality devices, pharmacology, and manual therapy techniques.

Using the scales below, please consider newly certified Athletic Trainers when evaluating the 7 task statements in this domain.

Performance Expectation:
At what point in time are newly certified Athletic Trainers first expected in most settings to perform the domain or task?

- Not at all
- Within the first six months after certification (includes exactly six months)
- Only after the first six months of certification (does not include exactly six months)

Example: *Certified Public Accountants are expected to conduct financial audits in the first six months after certification, but client management would be performed later in the career.*

Consequence:
To what degree may the newly certified Athletic Trainer's lack of proficiency to perform duties in each domain or task be seen as causing harm to stakeholders? (Harm may be seen as physical, psychological, emotional, legal, financial, etc.)

- No harm
- Minimal harm
- Moderate harm
- Substantial harm
- Extreme harm

Example: *It is critical that workers on high-rise buildings maintain a grip on their hammers. (Failure injures the public walking below and impacts other stakeholders such as employers, insurers, etc.)*

Athletic Trainer Practice Analysis

Frequency:

Frequency refers to how often newly certified Athletic Trainers perform duties in each of the domains, subdomains, or tasks, considering a one-year period.

- Never
- Rarely (once per year)
- Sometimes (once per month)
- Often (once per week)
- Repeatedly (daily)

Example: *Flight attendants open soft drinks for passengers repeatedly, yet this job duty is neither important nor critical.*

Task Statements

	Performance Expectation	Consequence	Frequency
1. Optimize patient outcomes by developing, evaluating, and updating the plan of care.			
2. Educate patients and appropriate stakeholders using pertinent information to optimize treatment and rehabilitation outcomes.			
3. Administer therapeutic exercises to patients using appropriate techniques and procedures to aid recovery to optimal function.			
4. Administer therapeutic devices to patients using appropriate techniques and procedures to aid recovery to optimal function.			
5. Administer manual techniques to patients using appropriate methods and procedures to aid recovery to optimal function.			
6. Administer therapeutic interventions for general medical conditions to aid recovery to optimal function.			
7. Determine patients' functional status using appropriate techniques and standards to return to optimal activity level.			

Athletic Trainer Practice Analysis

Now that you have reviewed and rated the task statements included under *Therapeutic Intervention*, please provide overall ratings for *Therapeutic Intervention* as a whole.

	Performance Expectation	Consequence	Frequency
Therapeutic Intervention			

In the space below, please indicate any additional tasks required of newly certified Athletic Trainers that may have been omitted or any other comments about the tasks for this domain.

Athletic Trainer Practice Analysis

Domain 5: HEALTH CARE ADMINISTRATION AND PROFESSIONAL RESPONSIBILITY

Integrating best practices in policy construction and implementation, documentation, and basic business practices to promote optimal patient care and employee well-being.

Using the scales below, please consider newly certified Athletic Trainers when evaluating the 4 task statements in this domain.

Performance Expectation:
At what point in time are newly certified Athletic Trainers first expected in most settings to perform the domain or task?

- Not at all
- Within the first six months after certification (includes exactly six months)
- Only after the first six months of certification (does not include exactly six months)

Example: *Certified Public Accountants are expected to conduct financial audits in the first six months after certification, but client management would be performed later in the career.*

Consequence:
To what degree may the newly certified Athletic Trainer's lack of proficiency to perform duties in each domain or task be seen as causing harm to stakeholders? (Harm may be seen as physical, psychological, emotional, legal, financial, etc.)

- No harm
- Minimal harm
- Moderate harm
- Substantial harm
- Extreme harm

Example: *It is critical that workers on high-rise buildings maintain a grip on their hammers. (Failure injures the public walking below and impacts other stakeholders such as employers, insurers, etc.)*

Frequency:
Frequency refers to how often newly certified Athletic Trainers perform duties in each of the domains, subdomains, or tasks, considering a one-year period.

- Never
- Rarely (once per year)
- Sometimes (once per month)
- Often (once per week)
- Repeatedly (daily)

Example: *Flight attendants open soft drinks for passengers repeatedly, yet this job duty is neither important nor critical.*

Athletic Trainer Practice Analysis

Task Statements

	Performance Expectation	Consequence	Frequency
1. Evaluate organizational, individual, and stakeholder goals and outcomes.			
2. Develop, review, and/or revise policies, procedures, and strategies to address risks and organizational needs.			
3. Practice within local, state, and national regulations, guidelines, recommendations, and professional standards.			
4. Use established documentation procedures to ensure best practice.			

Now that you have reviewed and rated the task statements included under *Health Care Administration and Professional Responsibility*, please provide overall ratings for *Health Care Administration and Professional Responsibility* as a whole.

	Performance Expectation	Consequence	Frequency
Health Care Administration and Professional Responsibility			

Athletic Trainer Practice Analysis

In the space below, please indicate any additional tasks required of newly certified Athletic Trainers that may have been omitted or any other comments about the tasks for this domain.

Athletic Trainer Practice Analysis

Demographics

In this section you will be asked to provide some background information about yourself. Please answer all questions. No individual responses will be released.

1. What is your gender?

- ◯ Male
- ◯ Female

2. What is your age?

- ◯ Under 25
- ◯ 25 to 30
- ◯ 31 to 40
- ◯ 41 to 45
- ◯ 46 to 55
- ◯ More than 55

3. Please indicate which U.S. state or territory you live in.

[ ]

Athletic Trainer Practice Analysis

4. What is your ethnicity?

- ◯ African American
- ◯ Caucasian
- ◯ Asian American
- ◯ Hispanic
- ◯ Native American or Alaska Native
- ◯ Hawaiian or Other Pacific Islander
- ◯ Multi-ethnic

5. What is your highest level of education?

- ◯ Bachelor's degree – AT major
- ◯ Bachelor's degree – other major
- ◯ Some graduate program
- ◯ Master's degree – AT major
- ◯ Master's degree – other major
- ◯ Doctoral degree – AT major
- ◯ Doctoral degree – other major
- ◯ Other (please specify)

Athletic Trainer Practice Analysis

6. How many years have you been a CERTIFIED Athletic Trainer?

- ◯ 3 years or less
- ◯ 4 to 5 years
- ◯ 6 to 10 years
- ◯ 11 to 15 years
- ◯ 15 years or more

7. How many years have you PRACTICED as a CERTIFIED Athletic Trainer?

- ◯ 3 years or less
- ◯ 4 to 5 years
- ◯ 6 to 10 years
- ◯ 11 to 15 years
- ◯ 15 or more years

Athletic Trainer Practice Analysis

8. Besides the BOC certification, which of the following health care professional credentials do you hold? ***(Select all that apply.)***

- [ ] Chiropractor
- [ ] Dietitian
- [ ] Emergency Medical Technician (any level)
- [ ] Massage Therapist
- [ ] Medical Doctor, Doctor of Osteopathics
- [ ] Nurse
- [ ] Occupational Therapy Professional
- [ ] Orthopedic Technologist
- [ ] Orthotist
- [ ] Physical Therapy Professional (any level)
- [ ] Physician Assistant
- [ ] Surgical Technologist

Athletic Trainer Practice Analysis

9. Please select the best description for the organization you work for from the list provided. ***(Select all that apply.)***

- [ ] Clinic/Hospital – Administrative
- [ ] Clinic/Hospital – AT
- [ ] Health/Fitness Industry
- [ ] Industrial/Corporate
- [ ] Military/Government/Law Enforcement
- [ ] Professional Sports & Performing Arts
- [ ] Sales/Marketing
- [ ] Secondary School - Administrative
- [ ] Secondary School - AT
- [ ] Student
- [ ] Univ/College/JC - Administrative
- [ ] Univ/College/JC - AT
- [ ] Univ/College/JC - Educator
- [ ] Youth Sports
- [ ] Not Currently Practicing
- [ ] Other (please specify)

10. Are you the first CERTIFIED Athletic Trainer to be employed where you currently work?

- ◯ Yes
- ◯ No

Athletic Trainer Practice Analysis

11. How many CERTIFIED Athletic Trainers are employed where you work?

12. What is your job title/responsibility?

- ◯ Administrator
- ◯ Head Athletic Trainer
- ◯ Staff Athletic Trainer
- ◯ Athletic Trainer
- ◯ Physician extender
- ◯ Not practicing
- ◯ Program director
- ◯ Educator
- ◯ Other (please specify)

13. When you were first employed in your CURRENT job, was there an established Emergency Action Plan already in place?

- ◯ Yes
- ◯ No

Athletic Trainer Practice Analysis

14. What percentage of your work time is related to your role as an Athletic Trainer?

- ◯ 0%
- ◯ 1% to 10%
- ◯ 11% to 20%
- ◯ 21% to 30%
- ◯ 31% to 40%
- ◯ 41% to 50%
- ◯ 51% to 60%
- ◯ 61% to 70%
- ◯ 71% to 80%
- ◯ 81% to 90%
- ◯ 91% to 100%

Athletic Trainer Practice Analysis

15. What percentage of your work time is related specifically to the delivery of patient care?

- ◯ 0%
- ◯ 1% to 10%
- ◯ 11% to 20%
- ◯ 21% to 30%
- ◯ 31% to 40%
- ◯ 41% to 50%
- ◯ 51% to 60%
- ◯ 61% to 70%
- ◯ 71% to 80%
- ◯ 81% to 90%
- ◯ 91% to 100%

16. How many employees, Athletic Trainers or other health care professionals engaged in direct patient care do you supervise?

- ◯ None
- ◯ 1 to 5
- ◯ 6 to 10
- ◯ More than 10

Athletic Trainer Practice Analysis

17. What is your annual gross earnings from employment as an Athletic Trainer?

- ◯ Less than $20,000
- ◯ $20,000-$29,999
- ◯ $30,000-$39,999
- ◯ $40,000-$49,999
- ◯ $50,000-$59,999
- ◯ $60,000-$69,999
- ◯ $70,000-$79,999
- ◯ $80,000-$89,999
- ◯ $90,000-$100,000
- ◯ More than $100,000

Athletic Trainer Practice Analysis

Thank You

Thank you for participating in this survey.

Clicking "Done" will record your responses and redirect you to the BOC website.

APPENDIX E: OTHER RESPONSES FOR EMPLOYER ORGANIZATION DESCRIPTION

D9 - Other (please specify)
wny ddso-nys physical therapist
hospital based outpatient as PTA
per diem for local hospital
hospital PT
Secondary School - Educator
University Research Intern
Resident
I have my own chiropractic practice
Private practice physical therapy
University PT/ATC
Secondary School Teacher
physical therapy student
Chiropractic Center
Clinic/Hospital - PT
Employed by a company, I volunteer as an Athletic Trainer at a high school.
Physical Therapy Student
Graduate Assistant for Recreational Sports
Action sports camp
PRN-Secondary school coverage
Contract work for different outreach clinics
Clinic/ Physical therapy clinic
Teaching Assistant at University
Private practice clinic-PT
Physical Therapist at an Orthopedic Physician's Office
Durable Medical Equipment (CFo)
Inpatient Rehabilitation Hospital
Graduate Intern
College of Performing Arts AT
Sports Performance Lab & Hospital Researcher
PT
Self-employed/independent contractor
PT Aide
Hospital Clinic / Head Physical Therapy
Bracing and Support @ Brace and Device Company
Durable Medical Equipment Coordinator at an Orthopaedic Office
Physical Therapy Clinic Director

D9 - Other (please specify)
Clinic/Hospital - AT-Physician Extender
Educator
Pool Athletic Trainer
USA Team Handball National Team
Major Junior Hockey
clinic pedorthist
PT in clinic, Outreach to local high school
K-12
independent contractor
Clinic Self Employed
Own my own Athletic Training business
Physician Owned Clinic (Orthopaedics)- Orthopaedic Tech (certification is in progress)
Contract Athletic Training Business Owner/ Freelance AT
Clinic/Hospital - Orthopedic - Physician Extender
Contracted through Select Physical Therapy...
functional rehab specialist - chiropractic office
I worked all last year in the above to areas. Am answering below on that job.
Secondary School-Educator AND per diem certified athletic trainer
National Governing Body
OUTPATIENT CLINIC AS A PT ATC
Per diem AT for tournaments and games
Medical Coordinator for athletic events
Physical Therapy Student
Physicians Practice
Hospital/Clinical Outreach- Secondary School
Club Sports at University
Chiropractor
Clinic Outreach
Orthopaedic Office Privet Practice
sports medicine instructor
sports outreach department covers collegiate, high school, middle school, and community events
Clinic - Chiropractic

D12 - Other (please specify)
Graduate Assistant Athletic Trainer
Physical Therapy Extender
physical therapy assistant
Graduate Assistant Athletic Trainer
Firefighter/Paramedic
per diem Athletic Trainer
athletic trainer/medical assistant
Pharmacy Technician
Assistant Athletic Trainer
Graduate Student
Medical Management Professional - Athletic Trainer
Graduate Assistant Athletic Trainer
Graduate Assistant
Soccer coach and athletic trainer
physician assistant
University Research Intern
Resident
Staff Physical Therapist
Sports PT resident
Graduate Assistant Athletic Trainer
PT student
Athletic Training Fellow
DME Coordinator
Durable Medical Equipment Coordinator
Graduate Assistant Athletic Trainer
Graduate Assistant Athletic Trainer
Associate Athletic Trainer
Chiropractor assistant
Physical therapist
Part time (on call) Athletic Trainer
Graduate Assistant
Assistant Athletic Trainer
Safety Coordinator
Volunteer Athletic Trainer
Currently a graduate student in a DPT program.
outreach athletic trainer
Injury Prevention Specialist
PA-C, neurology, concussions
PT Technician
Certified Athletic Training Intern
physician... I am a practicing DC, head of my department

D12 - Other (please specify)
Student Physical Therapist, Athletic Trainer
Both physician extender and head athletic trainer
Graduate Assistant Athletic Trainer
Graduate Assistant Athletic Trainer
Intern Athletic Trainer
graduate assistant
Outreach Athletic Trainer
Athletic Trainer and Strength Coach
Athletic Trainer/Center Coordinator for Clinical Education
Athletic trainer/Physical therapy assistant
Physical therapist
Physical Therapist
Hourly- athletic trainer
Graduate Assistant
Athletic trainer at local HS, help run work rehab program, cradiac rehab, and oncology rehab program at clinic associated with hospital. Also developing a physician extender position with the orthopedics office at this time.
Graduate Assistant Athletic Trainer
graduate assistant athletic trainer
Graduate Assistant Athletic Trainer
Graduate Assistant Athletic Trainer
Graduate Assistant Athletic Trainer
Graduate Assistant Athletic Trainer
Physical Therapist
Assistant Athletic Trainer/Internship Coordinator
Head Athletic Trainer/Adjunct Faculty
Graduate Assistant Athletic Trainer
Assistant Professor/Athletic Trainer
Graduate Research Assistant
Graduate Assistant Athletic Trainer
Intern Athletic Trainer
PT
Owner
Physical Therapist; Volunteer ATC
Site Supervisor for Onsite Industrial Clinic
Product Specialist, Not practicing AT directly but using knowledge
Athletic Training Coordinator
Currently in PA school

APPENDIX F: OTHER RESPONSES FOR WORK SETTING

D12 - Other (please specify)
Durable Medical Equipment Coordinator
Assistant Athletic Trainer
Clinical and Outreach Coordinator
mix of roles depending on setting- admin, sales, athletic trainer
Physical Therapy Clinic Director & Community Outreach and Athletic Trainer
Associate Director of Sports Medicine
Associate Athletic Trainer
Athletic Trainer and Educator
Pool AT
Massage Therapist
half athletic trainer and half administrator
Clinical Education Coordinator/Athletic Trainer
Graduate Assistant
Head Athletic Therapist
Athletic Trainer & Wellness Center Supervisor
pedorthist
Lead AT
Outreach Therapist
I am a head AT at a secondary school and a Clinical Coordinator and Educator at the Univ. level
Assistant Athletic Trainer
Assistant Athletic Trainer
Graduate Assistant Athletic Trainer
Injury Prevention Coordinator
Owner/Operator
Assistant Athletic Trainer
Owner/Athletic Trainer/CSCS
Orthopaedic Tech

D12 - Other (please specify)
Head athletic trainer and teacher (sports medicine)
Orthopedic Technician
Research Assistant
Physical Therapy Student
currently a student
Assistant Program Manager
PTA, AT
STAFF PHYSICAL THERAPIST
I work as a Physician extender in Clinic and Head Athletic Trainer at our outreach school
Graduate Assistant Athletic Trainer
PT, ATC - Owner
Athletic Training Services Coordinator
Sports Medicine Coordinator
Administrator and athletic trainer
Athletic Trainer Intern
Head Athletic Trainer/ PT Clinic
Head Athletic Trainer and Special Education Teacher
Assistant Athletic Trainer
Sales Rep
Registered massage therapist
Graduate Assistant Athletic Trainer
Assistant Athletic Trainer
Clinical Assistant
Physician extender in clinic // Head ATC at secondary school
Student
Strength and conditioning coach
Medical Assistant
sports medicine coordinator

Board of Certification

Practice Analysis Study for the Athletic Trainer

October 3-5, 2014
Omaha, Nebraska

Athletic Trainers (ATs) are health care professionals who collaborate with physicians. The services provided by ATs comprise prevention, emergency care, clinical diagnosis, therapeutic intervention, and rehabilitation of injuries and medical conditions. Athletic training is recognized by the American Medical Association (AMA) as a health care profession.

Students become eligible for BOC certification through an athletic training program (Bachelor's or entry-level Master's) accredited by the Commission on Accreditation of Athletic Training Education (CAATE). Students engage in rigorous classroom study and clinical education in a variety of practice settings such as high schools, colleges/universities, hospitals, emergency rooms, physician offices, and health care clinics over the course of the degree program. Students enrolled in their final semester are eligible to apply for the BOC examination. In order to qualify as a candidate for the BOC certification examination, an individual must be confirmed by the recognized program director of the CAATE-accredited program.

Employers of Athletic Training Services

- Professional and Collegiate Sports
- Secondary and Intermediate Schools
- Sports Medicine Clinics
- Hospital Emergency Department and Rehabilitation Clinics
- Occupational Settings
- Physician Offices
- Performing Arts
- Law Enforcement and Military

Domains

Injury and Illness Prevention and Wellness Promotion
Examination, Assessment, and Diagnosis
Immediate and Emergency Care
Therapeutic Intervention
Health Care Administration and Professional Responsibility

Injury and Illness Prevention and Wellness Promotion: Promoting healthy lifestyle behaviors with effective education and communication to enhance wellness and minimize the risk of injury and illness

1. Identify risk factors by administering assessment, pre-participation examination, and other screening instruments and reviewing individual and group history and injury surveillance data.

   Knowledge of:
   a. Disqualifying health-related factors
   b. Age-related and lifespan considerations that pertain to conditioning, wellness, and baseline measurement
   c. Risk factors within activities, wellness, and environment
   d. Policies, procedures, guidelines, and regulations
   e. Behavioral risks (e.g., nutritional, sexual, substance abuse, personality, sedentary lifestyle, overtraining, psychosocial)
   f. Catastrophic risks (e.g., cardiorespiratory, neurological, thermoregulatory, immunological, endocrinological)
   g. Common risks (e.g., medical, musculoskeletal, respiratory, vestibular)
   h. Indications for referral
   i. Physiological adaptation to exercise
   j. Ergonomic and epidemiological factors
   k. Evidence-based principles and practices
   l. Implications of culture for practice
   m. Injury surveillance data

   Skill in:
   n. Providing educational resources
   o. Performing baseline screening for concussions
   p. Administering screening tools
   q. Reviewing information systematically
   r. Analyzing data based upon collected outcomes
   s. Performing physical examinations
   t. Identifying conditions that may limit participation
   u. Interpreting injury surveillance data
   v. Exercising clinical judgment consistent with evidence-based principles and practices

2. Implement plans to aid in risk reduction using currently accepted and applicable guidelines.

   Knowledge of:
   a. Policies, procedures, guidelines, and regulations
   b. Principles of weight training, cardiovascular fitness, and performance enhancement
   c. Pathological conditions
   d. Proper hygiene practices
   e. Facility cleaning and maintenance
   f. Evidence-based principles and practices
   g. Ergonomics and preventive measures
   h. Risk factors within activities, wellness, and environment

Skill in:

i. Communicating inherent risks
j. Identifying pathologies
k. Managing pathologies
l. Interpreting and applying policies and procedures, position statements, and consensus statements
m. Recognizing safety and sanitation standards
n. Providing educational resources
o. Applying preventive measures (e.g., safety rules, accepted biomechanical techniques, ergonomics, nutrition guidelines)
p. Communicating effectively

3. Educate all stakeholders about the appropriate use of personal equipment.

Knowledge of:

a. Interpersonal communication techniques
b. Policies, procedures, guidelines, and regulations
c. Application of equipment
d. Fitting of equipment
e. Maintenance of equipment
f. Industry standards for equipment
g. Physical properties (e.g., absorption, dissipation, transmission of energy) of materials used in protective equipment
h. Manufacturer recommendations
i. Prophylactic (e.g., protective, supportive) and orthotic devices and their use

Skill in:

j. Communicating effectively
k. Educating all stakeholders on standard equipment
l. Interpreting rules regarding protective equipment
m. Identifying injuries, illnesses, and related conditions that warrant the application of devices
n. Complying with manufacturer recommendations for equipment and devices

4. Minimize the risk of injury and illness by monitoring and implementing plans to comply with regulatory requirements and standard operating procedures for physical environments and equipment.

Knowledge of:

a. Policies, procedures, guidelines, and regulations
b. Wellness examinations
c. Environmental conditions that pose risk (e.g., heat, cold, altitude, sunburn, insects, visibility, lighting, lightning, jet lag)
d. Mechanisms of common and catastrophic injury
e. Preventive measures (e.g., safety rules, accepted biomechanical techniques, ergonomics, nutrition guidelines)

f. Conditions that may limit or compromise participation
g. Manufacturer guidelines regarding selection, inspection, and maintenance of equipment
h. Physical properties (e.g., absorption, dissipation, transmission of energy) of materials used in protective equipment
i. Methods for reducing risk from environmental conditions (e.g., activity scheduling, clothing selection, fluid replacement)

Skill in:
a. Providing educational resources
b. Maintaining a safe and sanitary environment in compliance with established standards
c. Recognizing malfunction of therapeutic and rehabilitation equipment or furnishings in clinical and treatment areas
d. Selecting and teaching appropriate exercises
e. Communicating effectively
f. Identifying appropriate resources
g. Identifying and characterizing risks
h. Identifying conditions that may limit or compromise participation

5. Facilitate personal and group safety by monitoring and responding to environmental conditions (e.g., weather, surfaces, client work setting).

Knowledge of:
a. Predisposing factors (e.g., environmental conditions, underlying medical conditions)
b. Environmental conditions that create risk (e.g., heat, cold, altitude, sunburn, insects, visibility, lighting, lightning, jet lag)
c. Signs and symptoms of illnesses and injuries that result from exposure to environmental conditions
d. Risk factors associated with activities, wellness, and environments
e. Methods for reducing risk pertaining to environmental conditions (e.g., activity scheduling, clothing selection, fluid replacement)
f. Policies and procedures for removing participants from environmental risk situations (e.g., heat index, lightning, activity scheduling)
g. Policies, procedures, guidelines, and regulations
h. Ergonomic assessments

Skill in:
i. Conducting inspections and recognizing hazards
j. Using monitoring techniques (e.g., weight charts, fluid intake, body composition)
k. Recognizing environmental conditions and ergonomic risks
l. Recognizing predisposing factors (e.g., environmental conditions, underlying medical conditions)
m. Recognizing characteristics in participants that would predispose them to environmental and ergonomic risks
n. Recognizing signs and symptoms of illnesses and injuries that result from exposure to environmental conditions
o. Recommending and implementing appropriate methods for addressing hazards
p. Communicating effectively

6. Optimize wellness (e.g., social, emotional, spiritual, environmental, occupational, intellectual, physical) for individuals and groups.

   Knowledge of:
   a. Risk factors associated with activities, wellness, and environment
   b. Policies, procedures, guidelines, and regulations
   c. Principles of weight training, cardiovascular fitness, and performance enhancement
   d. Screening and baseline assessment tools and their use
   e. Professional resources for stress management, behavior modification, comorbidities, and nutritional disorders (e.g., tobacco, alcohol, narcotics, anger management, HIV, other STIs, overtraining, stress-related disorders)
   f. Nutrition and supplements
   g. Human physiology
   h. Considerations for referral
   i. Wellness examinations

   Skill in:
   j. Developing a comprehensive conditioning program
   k. Assessing appropriateness of participation in conditioning programs
   l. Correcting or modifying inappropriate, unsafe, or dangerous activities
   m. Accessing information concerning accepted guidelines
   n. Educating individuals on nutrition guidelines, nutritional disorders, maladaptation, substance abuse, and overtraining
   o. Recognizing signs and symptoms of social, emotional, mental, and stress-related disorders
   p. Providing educational resources
   q. Administering and interpreting baseline screening tools
   r. Communicating effectively

Examination, Assessment, and Diagnosis: Implementing systematic, evidence-based examinations and assessments to formulate valid clinical diagnoses and determine patients' plan of care

1. Obtain an individual's history through observation, interview, and review of relevant records to assess injuries and illnesses and to identify comorbidities.

   Knowledge of:
   a. Psychosocial factors affecting injury, illness, or other health-related conditions
   b. Evidence-based principles and practices
   c. Human anatomy and physiology
   d. Neuroscience
   e. Mechanism of injuries
   f. Pathological conditions and pathophysiology
   g. Biomechanical factors
   h. Risk factors associated with activities, wellness, and environment
   i. Communication techniques
   j. Epidemiology of injury, illness, and comorbidities
   k. Nutrition and supplements
   l. Basic pharmacology

m. Mental, social, psychological, and cultural barriers
n. Standard medical terminology and nomenclature
o. Use of medical records

Skill in:
p. Communicating effectively
q. Identifying signs and symptoms
r. Building patient rapport
s. Obtaining and recording information related to injuries, illnesses, and conditions
t. Identifying anatomical structures
u. Identifying nutrition as a factor related to injuries, illnesses, and conditions
v. Identifying psychosocial factors related to injuries, illnesses, and conditions
w. Identifying the extent and severity of injuries, illnesses, and conditions
x. Identifying the impact of prescription and non-prescription medications and supplements
y. Interpreting medical records and related reports
z. Recognizing predisposing factors
aa. Relating signs and symptoms to specific injuries, illnesses, and conditions
bb. Identifying valid and reliable information to assist in decision-making

2. Perform a physical examination that includes diagnostic testing to formulate differential diagnoses.

Knowledge of:
a. Normal and abnormal human anatomy and physiology
b. Neuroscience
c. Mechanics, principles, and techniques of special and specific tests (e.g., ROM, MMT, orthopedic, neurocognitive, neurological)
d. Normal and pathological clinical findings of special and specific tests
e. Mechanics, principles, and techniques of physiological measurements (e.g., blood pressure, height, weight, blood glucose)
f. Normal and pathological clinical findings of physiological measurements
g. Human biomechanics
h. Palpation techniques and related principles
i. Principles of visual inspection
j. Mechanism of injuries
k. Pathological conditions
l. Immediate and delayed physiological response to injuries, illnesses, and comorbidities
m. Signs and symptoms of injuries, illnesses, and health-related conditions
n. Standard medical terminology and nomenclature
o. Clinical trajectories of concussions
p. Exercise physiology and its effect on the healing process
q. Functional testing methods
r. Changes in pain intensity and pain distribution in response to mechanical loading
s. Range-of-motion response to mechanical loading
t. Functional changes due to injury, illness, and conditions
u. Evidence-based principles and practices

Skill in:

v. Analyzing biomechanics
w. Assessing neurocognitive function
x. Assessing neurological response
y. Assessing balance
z. Assessing immediate and delayed physiological responses to injuries, illnesses, and conditions
aa. Assessing pre-existing structural abnormalities and relating them to pathomechanics of injuries, illnesses, and conditions
bb. Identifying bony surface landmarks and soft tissue abnormalities of specific and special injuries, illnesses, and conditions
cc. Interpreting the relationships among and severity of pathological signs of injuries, illnesses, and conditions
dd. Palpating appropriate structures in order to assess the integrity of human anatomical and physiological systems
ee. Recognizing severity of pathological signs and symptoms of injuries, illnesses, and conditions
ff. Assessing muscle strength
gg. Assessing joint range of motion
hh. Identifying appropriate special tests
ii. Performing special tests
jj. Interpreting results of special tests
kk. Identifying location, type, function, and actions of joints
ll. Identifying structural and functional integrity of anatomical structures
mm. Exercising clinical judgment consistent with evidence-based principles and practices
nn. Using valid and reliable information to assist in decision-making

3. Formulate a clinical diagnosis by interpreting history and the physical examination to determine the appropriate course of action.

Knowledge of:

a. Pathological conditions
b. Indications for referral
c. Roles and responsibilities of associated health care providers
d. Guidelines for return to participation
e. Basic pharmacological considerations
f. Therapeutic intervention
g. Standard medical terminology and nomenclature
h. Psychosocial dysfunction and implications associated with injuries, illnesses, and conditions
i. Evidence-based principles and practices

Skill in:

j. Interpreting and integrating examination findings
k. Establishing differential diagnoses
l. Identifying appropriate courses of action
m. Interpreting the pertinent information from the examination and assessment
n. Synthesizing applicable information from the examination and assessment
o. Developing prognoses and plans of care

p. Implementing best practices
q. Using valid and reliable information to assist in decision-making

4. Interpret signs and symptoms of injuries, illnesses, or other conditions that require referral using medical history and physical examination to ensure appropriate care.

   Knowledge of:
   a. Roles and scopes of practice of relevant health care providers
   b. General medical conditions
   c. Psychosocial dysfunction and implications associated with injuries, illnesses, and conditions
   d. Human anatomy and physiology
   e. Clinical findings of special tests
   f. Clinical findings of physiological measurements
   g. Biomechanics
   h. Palpation techniques and related principles
   i. Principles of visual inspection
   j. Mechanism of injuries
   k. Pathological conditions
   l. Immediate and delayed physiological response to injuries, illnesses, and comorbidities
   m. Signs and symptoms of injuries, illnesses, and conditions
   n. Standard medical terminology and nomenclature
   o. Clinical trajectories of concussions
   p. Exercise physiology and how it affects the healing process
   q. Movement testing and examination
   r. Changes in pain intensity and pain distribution in response to mechanical loading
   s. Quality and changes in range of motion in response to mechanical loading
   t. Quality and changes in function due to injury, illness, and conditions
   u. Role and scope of practice for athletic training
   v. Evidence-based principles and practices

   Skill in:
   w. Collaborating with interdisciplinary health care providers
   x. Directing referrals to the appropriate professionals
   y. Formulating differential diagnoses
   z. Identifying appropriate courses of action
   aa. Interpreting the pertinent information from examinations and assessments
   bb. Synthesizing applicable information from examinations and assessments
   cc. Using standard medical terminology and nomenclature

5. Educate patients and appropriate stakeholders about clinical findings, prognosis, and plan of care to optimize outcomes and encourage compliance.

   Knowledge of:
   a. Commonly accepted practices regarding the care and treatment of injury, illness, and other conditions
   b. Effective communication techniques
   c. Patient confidentiality regulations
   d. Potential complications and expected outcomes

e. Roles and scopes of practice of relevant health care providers
f. Standard medical terminology and nomenclature
g. Motivational techniques

Skill in:
j. Building patient rapport
k. Communicating effectively
l. Collaborating appropriately with other health care providers
m. Using appropriate counseling techniques
n. Using standard medical terminology and nomenclature
o. Implementing best practices

Immediate and Emergency Response: Integrating best practices in immediate and emergency care for optimal outcomes

1. Establish, review, and/or revise emergency action plans to guide appropriate and unified response to events and optimize outcomes.

   Knowledge of:
   a. Components of emergency action plans
   b. Effective communication techniques (e.g., multimedia videos, pamphlets, posters, models, handouts, and oral communication)
   c. Roles of individual members of the medical management team and appropriate stakeholders
   d. National and state occupational, safety, and health guidelines
   e. Standard protective equipment, removal devices, and procedures
   f. Standard and emergency medical equipment
   g. Pharmacological agents and interventions for immediate and emergent conditions
   h. Personal protective equipment
   i. Organizational and institutional policies and procedures
   j. Legal considerations

   Skill in:
   k. Communicating effectively
   l. Educating individuals (e.g., facilities, health care professionals, patients, guardians, organizational personnel) regarding standard emergency care procedures
   m. Developing, documenting, organizing, and rehearsing emergency action plans

2. Triage to determine if conditions, injuries, or illnesses are life-threatening.

   Knowledge of:
   a. Epidemiology of catastrophic conditions
   b. Life-threatening medical situations (e.g., respiratory, central nervous, and cardiovascular)
   c. Human anatomy and physiology
   d. National and state occupational, safety, and health guidelines
   e. Pharmacological and therapeutic intervention for immediate and emergent conditions
   f. Roles and scopes of practice of relevant health care providers

g. Standard and emergency medical equipment
h. Triage systems

Skill in:
i. Implementing emergency action plans
j. Implementing national and state occupational, safety, and health guidelines
k. Using standard and emergency medical equipment
l. Measuring, interpreting, and monitoring vital signs
m. Using a primary survey for life-threatening medical situations (e.g., respiratory, central nervous, cardiovascular)
n. Applying pharmacological and therapeutic intervention usage for immediate and emergent conditions
o. Managing patients in triage systems

3. Implement appropriate emergency and immediate care procedures to reduce the risk of morbidity and mortality.

Knowledge of:
a. Appropriate management techniques for life-threatening conditions and conditions that are not life-threatening
b. Appropriate use of emergency equipment and techniques (e.g., automated external defibrillator, airway management devices, suction, oxygen)
c. Human anatomy
d. Human physiology
e. Therapeutic intervention for immediate and emergent conditions
f. National and state occupational, safety, and health guidelines
g. Roles and scopes of practice of relevant health care providers

Skill in:
h. Performing cardiopulmonary resuscitation techniques and procedures
i. Implementing emergency action plans
j. Implementing national and state occupational, safety, and health guidelines
k. Implementing immobilization and transfer techniques
l. Measuring, interpreting, and monitoring vital signs and patient status
m. Managing emergency situations and life-threatening conditions
n. Managing non-life-threatening conditions
o. Removing protective equipment using appropriate removal devices and/or manual techniques
p. Using standard and emergency medical equipment
q. Applying therapeutic interventions for immediate and emergent conditions
r. Debriefing stakeholders

4. Implement referral strategies to facilitate the timely transfer of care.

Knowledge of:
a. Components of emergency action plans
b. National and state occupational, safety, and health guidelines

c. Referral strategies for life-threatening conditions and conditions that are not life-threatening
d. Effective communication
e. Pertinent administrative practices
f. Roles and responsibilities of relevant health care providers
g. Triage systems

Skill in:
h. Implementing emergency action plan(s)
i. Measuring, interpreting, and monitoring vital signs and patient status
j. Documenting and communicating referrals
k. Directing referrals to appropriate stakeholders

Therapeutic Intervention: Rehabilitating and reconditioning injuries, illnesses, and general medical conditions to promote optimal activity level based on core concepts (i.e., knowledge and skillsets fundamental to all aspects of therapeutic interventions) using the applications of therapeutic exercise, modality devices, pharmacology and manual therapy techniques

1. Optimize patient outcomes by developing, evaluating, and updating the plan of care.

Knowledge of:
a. Evidence-based principles and practices
b. Inflammation and healing process
c. Acute and chronic injuries and illnesses and their healing processes
d. Theories of pain
e. Roles and scopes of practice of relevant health care providers and the implications of making a referral
f. Principles of reconditioning
g. Rehabilitation process and plan
h. Rehabilitation progression
i. Age-related and lifespan concerns
j. Gender-related concerns
k. Indications, contraindications, and precautions
l. Safety concerns
m. Pharmacological concerns
n. Cultural competence
o. Surgical knowledge and precautions
p. Legal risks and ramifications
q. Psychosocial dysfunction and implications associated with injuries, illnesses, and conditions

Skill in:
r. Interpreting examinations and assessments
s. Clinical reasoning
t. Assessing outcomes
u. Managing patient care
v. Communicating effectively
w. Establishing patient goals

x. Examining and re-examining injuries and illnesses
y. Assessing and reassessing therapeutic interventions
z. Positioning and preparing patients for therapeutic intervention

2. Educate patients and appropriate stakeholders using pertinent information to optimize treatment and rehabilitation outcomes.

Knowledge of:
a. Evidence-based principles and practices
b. Scope of practice and referral implications
c. Age-related and lifespan concerns
d. Gender-related concerns
e. Indications, contraindications, and precautions
f. Safety concerns
g. Cultural differences affecting attitudes and responses to treatment and rehabilitation
h. Surgical procedures and precautions
i. Legal risks and ramifications
j. Nutrition concerns
k. Homecare program concepts
l. Educational materials and methods
m. Potential resources (e.g., psychosocial, community, family, and health care) related to the therapeutic intervention process
n. Psychological aspects related to the therapeutic intervention process
o. Available and appropriate referral resources

Skill in:
p. Communicating effectively
q. Providing guidance for the patient during the therapeutic intervention process
r. Developing homecare programs
s. Providing appropriate referral
t. Clinical decision-making and reasoning

3. Administer therapeutic exercises to patients using appropriate techniques and procedures to aid recovery to optimal function.

Knowledge of:
a. Evidence-based principles and practices
b. Inflammation and healing process
c. Acute and chronic injuries and illnesses and their healing processes
d. Theories of pain
e. Roles and scopes of practice of relevant health care providers and the implications of making a referral
f. Principles of reconditioning
g. Rehabilitation process and plan

h. Rehabilitation progression
i. Age-related and lifespan concerns
j. Gender-related concerns
k. Indications, contraindications, and precautions
l. Safety concerns
m. Pharmacologic concerns
n. Cultural differences affecting attitudes and responses to treatment and rehabilitation
o. Surgical procedures and precautions
p. Legal risks and ramifications
q. Equipment and tools related to therapeutic exercise
r. Exercise prescription and progression
s. Inflammatory process related to therapeutic exercise
t. Neurological concerns related to therapeutic exercise
u. Principles of adaptation and overload of tissues
v. Principles of adaptation of body systems
w. Principles of strength, conditioning, and reconditioning of exercises (e.g., plyometrics, stabilizations, speed, agility, power)
x. Principles of exercise (e.g., musculoskeletal, neurological, cardiovascular)
y. Proprioception and kinesthesis related to therapeutic exercise
z. Psychology related to therapeutic exercise
aa. Structure, growth, development, and regeneration of tissue

Skill in:
bb. Interpreting examination results
cc. Clinical reasoning
dd. Assessing outcomes
ee. Managing patient care (e.g., progressions, regressions, discontinuation)
ff. Communicating effectively with appropriate professionals and individuals regarding referral and treatment
gg. Establishing patient goals
hh. Examining and re-examining injuries and illnesses
ii. Assessing and reassessing therapeutic interventions
jj. Developing therapeutic exercise programs
kk. Implementing therapeutic exercise programs
ll. Progressing patients through therapeutic exercise programs

4. Administer therapeutic devices to patients using appropriate techniques and procedures to aid recovery to optimal function.

Knowledge of:
a. Evidence-based principles and practices
b. Inflammation and healing processes
c. Acute and chronic injuries and illnesses and their healing processes
d. Theories of pain
e. Scope of practice and referral implications

f. Principles of rehabilitation process and progression
g. Age-related and lifespan concerns
h. Gender-related concerns
i. Indications, contraindications, and precautions
j. Safety concerns
k. Pharmacological concerns
l. Cultural differences affecting attitudes and responses to treatment and rehabilitation
m. Surgical knowledge and precautions
n. Legal risks and ramifications
o. Equipment and tools related to therapeutic devices
p. Inflammatory process related to therapeutic devices
q. Neurologic responses to therapeutic devices
r. Physiologic responses to therapeutic devices
s. Principles of electromagnetic, mechanical, thermal, and acoustical energy
t. Psychology related to therapeutic devices

Skill in:
u. Interpreting examination
v. Clinical reasoning
w. Assessing outcomes
x. Managing patient care
y. Communicating effectively
z. Establishing patient goals
aa. Examining and re-examining injury and illness
bb. Assessing and reassessing therapeutic interventions
cc. Applying electromagnetic, mechanical, thermal, and acoustical devices
dd. Recognizing the status of systemic response related to the application of therapeutic devices

5. Administer manual techniques to patients using appropriate methods and procedures to aid recovery to optimal function.

Knowledge of:
a. Evidence-based principles and practices
b. Inflammation and healing process
c. Acute and chronic injuries and illnesses and their healing processes
d. Theories of pain
e. Scope of practice and referral implications
f. Principles of rehabilitation process and progression
g. Age-related and lifespan concerns
h. Gender-related concerns
i. Indications, contraindications, and precautions
j. Safety concerns
k. Pharmacologic concerns
l. Cultural attitudes and responses to treatment and rehabilitation
m. Surgical procedures and precautions

n. Legal risks and ramifications
o. Orthotic devices and materials and methods for taping
p. Manual therapy tools and techniques
q. Functions of taping and orthoses
r. Adaptations of the cutaneous and musculoskeletal systems related to manual techniques
s. Inflammatory process related to manual techniques
t. Neurologic concerns related to manual techniques
u. Psychology related to manual techniques
v. Principles and theories of manual techniques (e.g., tissue adaptations, proprioception, kinesthesis)

Skill in:
w. Interpreting examinations and assessments
x. Clinical reasoning
y. Assessing outcomes
z. Managing patient care
aa. Communicating effectively with appropriate professionals and individuals regarding referral and treatment
bb. Establishing patient goals
cc. Examining and re-examining injuries and illnesses
dd. Assessing and reassessing therapeutic interventions
ee. Using manual techniques appropriately
ff. Fabricating taping techniques and orthotic devices appropriately
gg. Using taping techniques and orthotic devices appropriately

6. Administer therapeutic interventions for general medical conditions to aid recovery to optimal function.

Knowledge of:
a. Evidence-based principles and practices
b. Inflammation and healing process
c. Acute and chronic injuries and illnesses and their healing processes
d. Scope of practice and referral implications
e. Principles of reconditioning
f. Principles of rehabilitation process and progression
g. Age-related and lifespan concerns
h. Gender-related concerns
i. Indications, contraindications, and precautions
j. Safety concerns
k. Pharmacologic concerns
l. Cultural differences affecting attitudes and responses to treatment and rehabilitation
m. Surgical procedures and precautions
n. Legal risks and ramifications
o. Equipment and tools related to treating general medical conditions
p. Adaptations of body systems related to general medical conditions

q. Appropriate referral processes related to general medical conditions
r. Inflammatory process related to general medical conditions
s. Neurological concerns related to general medical conditions
t. Psychosocial concerns related to general medical conditions
u. Traumatic brain injury concerns related to general medical conditions
v. Wound (e.g., chronic, open) concerns related to general medical conditions
w. Pathophysiology of systemic illness, communicable diseases, and infections
x. Proprioception and kinesthesis related to general medical conditions
y. Psychological reactions related to general medical conditions
z. Structure, growth, development, and regeneration of tissue

Skill in:
aa. Interpreting examination results
bb. Clinical reasoning
cc. Assessing outcomes
dd. Managing patient care
ee. Communicating effectively with appropriate professionals and individuals regarding referral and treatment
ff. Establishing patient goals
gg. Examining and re-examining injury and illness
hh. Assessing and reassessing therapeutic interventions
ii. Performing cognitive assessments
jj. Basing interpretation and rehabilitation on cognitive assessments
kk. Advocating for cognitive and functional return to optimal activity level decisions
ll. Recognizing and managing systemic illnesses, communicable diseases, and infections

7. Determine patients' functional status using appropriate techniques and standards to return to optimal activity level.

Knowledge of:
a. Evidence-based principles and practices
b. Inflammation and healing process
c. Acute and chronic injuries and illnesses and their healing processes
d. Scope of practice and referral implications
e. Principles of rehabilitation process and progression
f. Age-related and lifespan concerns
g. Gender-related concerns
h. Indications, contraindications, and precautions
i. Safety concerns
j. Cultural differences affecting attitudes and responses to treatment and rehabilitation
k. Surgical knowledge and precautions
l. Legal risks and ramifications
m. Principles of reconditioning
n. Principles of functional progression
o. Gait analysis

p. Gait training techniques
q. Biomechanical and functional assessments
r. Functional criteria for return to optimal activity level
s. Psychosocial factors related to functional status
t. Nutrition
u. Pharmacology

Skill in:
v. Interpreting examination results
w. Clinical reasoning
x. Assessing outcomes
y. Managing patient care
z. Communicating effectively with appropriate professionals and individuals regarding referral and treatment
aa. Establishing patient goals
bb. Examining and re-examining injury and illness
cc. Assessing and reassessing therapeutic interventions
dd. Performing biomechanical, functional, and gait analyses
ee. Interpreting biomechanical, functional, and gait analyses
ff. Making decisions about functional progressions
gg. Making decisions about return to optimal activity level

Health Care Administration and Professional Responsibility: Integrating best practices in policy construction and implementation, documentation, and basic business practices to promote optimal patient care and employee well-being.

1. Evaluate organizational, individual, and stakeholder goals and outcomes.

Knowledge of:
a. Methods of gathering data
b. Sources of data for benchmarking
c. Methods and systems for comparing and analyzing data
d. Processes for providing data to support the advancement of organizational or personal goals
e. Budgeting principles and practices
f. Methods for researching information
g. Job expectations, personal goals, and priorities (e.g., work-life balance, job satisfaction)
h. Organizational resources available for professional development and personal support
i. Role of the mission, vision, and values of the organization
j. Role of professional collaboration
k. Leadership styles and theories
l. Evidence-based principles and practices (including epidemiological studies and clinical outcomes assessments)

Skill in:
m. Formulating and managing budgets
n. Using computers, various software, and various technologies

o. Formatting and presenting data
p. Applying various search methods for resource allocation
q. Communicating effectively
r. Collaborating with professionals (e.g., teamwork strategies)
s. Providing leadership appropriate to situations and people

2. Develop, review, and/or revise policies, procedures, and strategies to address risks and organizational needs.

Knowledge of:
a. Components of emergency action plans
b. Human resources (e.g., hiring, firing, coaching, disciplining, interviewing, insurance, job descriptions, FMLA, STD, annual review, maintaining employee files, PTO, federal-state-organizational labor practices, certification verification, compensation, staff development, Title IX, civil rights)
c. Legal expectations and requirements: licensure, DEA, OSHA, BOC, NATA, AMA
d. Organizational management styles and processes (e.g., LEAN, Six Sigma)
e. Scheduling systems and techniques
f. Drug testing policies and procedures
g. Inventory and supply management (e.g., bidding, budgeting, requests for proposals, inventory tracking)
h. Applicable resource allocation, facility, and patient flow
i. Legislative and regulatory updates and changes
j. Basic business principles

Skill in:
k. Developing, documenting, organizing, and rehearsing emergency action plans
l. Analyzing utilization rates and trends
m. Using computer software applications (e.g., Microsoft Office platform)
n. Implementing human resources policies
o. Interacting with appropriate administrative leadership
p. Writing policies and procedures
q. Identifying and characterizing risks
r. Identifying and characterizing organizational needs (e.g., SWOT)
s. Formulating budgets
t. Writing job descriptions

3. Practice within local, state, and national regulations, guidelines, recommendations, and professional standards.

Knowledge of:
a. Standards of professional practice for ATs and other health care professionals
b. NATA position statements
c. Professional position statements (e.g., Centers for Disease Control and Prevention, state department of health)
d. Documentation requirements and procedures

e. Consent-to-treat requirements and documentation
f. Standard medical terminology and nomenclature
g. Local, institutional, state, and national regulations, guidelines, recommendations, and professional standards (e.g., Title IX, Americans with Disabilities Act, practice acts)
h. Ethics requirements
i. Process for reporting violations of professional standards and practice acts

Skill in:
j. Creating and completing medical documentation
k. Making ethical decisions that are consistent with professional practice and guidelines
l. implementing current position statements, regulatory changes, and legislated requirements
m. Using standard medical terminology and nomenclature
n. Accessing professional practice acts and requirements
o. Communicating effectively

4. Use established documentation procedures to ensure best practice.

Knowledge of:
a. Documentation procedures (e.g., SOAP, progress notes, screenings, assessments, examinations)
b. Standard medical terminology and nomenclature
c. Appropriate documentation requirements (e.g., Electronic Health Record, Centers for Medicare and Medicaid Services, consent)
d. Documentation systems (e.g., software, paper)
e. Appropriate computer software applications
f. Health care coding
g. Legal considerations and ramifications

Skill in:
h. Prescreening participation guidelines
i. Creating and completing the documentation process
j. Obtaining, interpreting, evaluating, and applying relevant data
k. Using computer software applications (e.g., word processing, database spreadsheet, and Internet applications)
l. Reviewing documentation
m. Interpreting documentation
n. Updating documentation