



Practice Analysis, 8th Edition

EFFECTIVE:

ATHLETIC TRAINER EXAM - MARCH 2023

RE-CERTIFICATION ACTIVITIES - JANUARY 2024

Report of Findings from the 2021 Practice Analysis Study for Athletic Trainers

Document prepared by:
James P. Henderson, PhD,
Psychometrician
Scantron
1313 Lone Oak Road
Eagan, MN 55121
SCANTRON.com

Copyright © 2021 Board of Certification (BOC) for the Athletic Trainer

All rights reserved. This document may not be used, reproduced, or disseminated to any third party without written permission from the BOC.

Non-profit education programs have permission to use or reproduce all or parts of this document for educational purposes only.

Use or reproduction of this document for commercial or for-profit use is strictly prohibited.

Any authorized reproduction of this document shall display the notice: “Copyright by the Board of Certification, Inc. All rights reserved.” Or, if a portion of the document is reproduced or incorporated in other materials, such written materials shall include the following credit: “Portions copyrighted by the Board of Certification, Inc. All rights reserved.”

Address inquiries in writing to Board of Certification, 1415 Harney St. Suite 200, Omaha, NE 68102

Table of Contents

Executive Summary	4
Weighting of Domains	7
Introduction	8
Early Steps in the Practice Analysis.....	9
Validation Study	12
Validation of the Domains and Tasks	19
Domain I: Risk Reduction, Wellness and Health Literacy.....	20
Domain II: Assessment, Evaluation and Diagnosis	30
Domain III: Critical Incident Management	38
Domain IV: Therapeutic Intervention	44
Domain V: Healthcare Administration and Professional Responsibility	58
Domain Ratings	68
Reliability Analysis for Domains	70
Conclusion	71
Appendix A: Instruction Booklet.....	73
Appendix B: Summary of the BOC Pilot Survey	83
Appendix C: Survey Notices.....	85
Appendix D: Final Survey	93
Appendix E: Residency Programs Provided by Respondents for the Demographic Question on highest level of education.....	115
Appendix F: Responses for Other Healthcare Credential Specified by respondents...	116
Appendix G: Content Outline for Practice Analysis, 8 th Edition.....	117

Executive Summary

The Board of Certification (BOC) for the Athletic Trainer 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 health care professionals to assure protection of the public.

Consistent with its mission and to ensure the exam bears a close relationship to current practice, the BOC conducts periodic studies of the athletic training profession. Doing so maintains close alignment with best practices in certification. The BOC identified a qualified group of certified Athletic Trainers to meet in a series of online meetings during the period of October 22 to 25, 2020, to define performance domains, tasks, and the knowledge and skill required for the competent performance of the tasks. The group delineated these aspects of the work that Athletic Trainers do through intense discussion of the practice of newly certified Athletic Trainers, with particular attention to the divergent ways that it applies in different settings and 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 exam serves regulatory purposes in nearly all jurisdictions of the United States. It is essential that the exam have practice-related validity. Accordingly, the practice 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 potential harm that an inability to perform the tasks competently might bring about (Importance), and how often newly certified Athletic Trainers perform the tasks (Frequency). Ratings addressing these issues and provided by new certificants play a pivotal role in determining the content of the exam.

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). The BOC 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, Scantron conducted preliminary activities to update its understanding of the role and major responsibilities of newly certified Athletic Trainers. Scantron 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. Scantron 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, Scantron developed a validation survey.
- II. **Pilot Study**. A sample of 208 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 phase of the project was used to identify changes in the survey and data collection strategy.
- III. **Validation Study**. A large sample of newly certified Athletic Trainers (n = 7000) 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.
- IV. **Evaluation of Findings**. Using the findings from the survey, the Task Force determined that the domains and tasks were an appropriate accounting of the practice-related responsibilities of newly certified Athletic Trainers.

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
Josh Lundgaard, MS, ATC	Risk Reduction, Wellness and Health Literacy
Rachel Geoghegan, DAT, ATC	Assessment, Evaluation and Diagnosis
Carlos Gual, MS, LAT, ATC	Assessment, Evaluation and Diagnosis
Susan McGowen, PhD, ATC, EMT	Critical Incident Management
Brian Hartz, PhD, ATC	Healthcare Administration and Professional Responsibility
Sayers John Miller, III, PhD, PT, ATC	Therapeutic Intervention
Jason McWilliams, MS, LAT, ATC, CES	Therapeutic Intervention
Jill Dale, MS, ATC	Healthcare Administration and Professional Responsibility

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	Setting	Location
Matthew Brewer, MS, LAT, ATC	Medical	Colorado
Helen Bulford, MS, ATC	Traditional	Ohio
Jasmine DeBose, MS, LAT, ATC	Traditional	Texas
Whitley Figge, MS, ATC	Medical	Maine
Ronaldo Green, MS, LAT, ATC, CES	Traditional	Florida
Alysia Henderson, MS, ATC	Traditional	Maryland
Katie Johnson, MAT, LAT, ATC	Action/Extreme Sports	Washington
Denise Marshall, MA, ATC	Traditional	Nebraska
Zachary (Tré) Mitsui, BS, ATC, LAT	Tactical Athletes	Texas
Jamie Potter, MS, ATC	Traditional	California
Benjamin Schuler, MS, LAT, ATC	Traditional	New Hampshire
Ian Stites, LAT, ATC	Occupational Health	Florida
Ben Tate, MS, ATC	Traditional	Ohio
Zenobia Turk, MS, ATC	Traditional	Florida
Chris Welch, MS, ATC, OTC	Medical	Georgia

BOC Staff
Anne Minton, MBA, Chief Executive Officer
Shannon Fleming, MA, AT Ret., Vice President of Credentialing
Nathan Burns, ATC, Exam Development Manager

Scantron Representative
James P. Henderson, PhD, Psychometrician

After survey data had been collected and the analysis of findings about the validity of tasks and domains had been completed, Scantron met with the Task Force to consider implications of the findings for the content outline for the certification exam. Survey data supported the validity of all domains and tasks; however, Scantron highlighted four tasks in particular for Task Force consideration. The Task Force found the data to be reasonable for these and all other tasks and recommended they form the basis for the certification exam's content and decisions to be made about its design.

Weighting of Domains

The Practice Analysis, 8th 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.

Domain	Percent	N Items
Risk Reduction, Wellness and Health Literacy	20.0%	25
Assessment, Evaluation and Diagnosis	25.6%	32
Critical Incident Management	20.8%	26
Therapeutic Intervention	25.6%	32
Health Administration and Professional Responsibility	8.0%	10

Introduction

Consistent with its mission, the BOC requires that candidates for the ATC® credential pass a standardized assessment of professional knowledge. As part of the many quality assurance measures that the BOC employs to ensure fairness and appropriate rigor, it conducted its eighth practice analysis study (PA8) over the past year as a means of maintaining alignment with current practice. The primary purpose of the study was to determine the knowledge and skill that newly certified Athletic Trainers must have in order to provide proficient service. The study focused on relevant elements of responsibility in the variety of settings in which newly certified Athletic Trainers are employed. Of particular interest was the degree to which they are expected to be proficient in the domains and tasks within the first six months of certification.

PA8 began with a preliminary review of documents and preparatory discussions in early Spring 2020. Scantron consulted with the PA8 Task Force to develop the composition framework for the PA8 panel, and to advise on the BOC's recruitment and selection efforts. The panel met in a series of online meetings held in October 22 through 25, 2020. Assisted by Scantron, the panel outlined domains, tasks, and knowledge and skill statements that it believed are essential to the proficient performance of newly certified Athletic Trainers. The validation survey resulting from this meeting included a pilot phase after which changes were incorporated as approved by the Practice Analysis Task Force. A large-scale validation study conducted February 16 through March 16, 2021, provided information that was used to assess the appropriateness of the domains and tasks as delineated by the panel of experts.

Athletic Trainers are healthcare providers who collaborate with physicians and other healthcare professionals. Athletic Trainers work as members of interdisciplinary healthcare teams to provide evidence-based care that encompasses risk reduction, critical incident management, clinical diagnosis, therapeutic intervention and rehabilitation of injuries and medical conditions. Athletic training is recognized by the U.S. Bureau of Labor Statistics, the U.S. Department of Health and Human Services, and other organizations as a healthcare profession. Individuals become eligible for BOC certification through a professional athletic training program 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 (but not limited to) high schools, colleges/universities, hospitals, physician offices and healthcare clinics over the course of their degree program. Students enrolled in their final semester become 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 Trainers include the following:

- Professional settings
- Professional and collegiate sports
- Secondary and intermediate schools
- Sports medicine clinics
- Hospital emergency departments and rehabilitation clinics
- Occupational settings
- Military/government/law enforcement
- Physician offices
- Dance/fine art

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 BOC staff 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 degree to which changes had occurred in the last five years in 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 four-day series of online meetings held to analyze practice. The materials also helped Scantron to convey essential explanations. The objective of the meeting was to define the current domains of practice, tasks, knowledge, and skill required for each task at a level commensurate with entry to practice.

Preliminary Analysis

Scantron engaged in a number of preliminary activities. First, discussions with Shannon Fleming, BOC Vice President of Credentialing; Nathan Burns, BOC Exam Development Manager; and Christine Odell, chair of the Practice Analysis Task Force, helped in determining what documents Scantron should review as part of its preparation. Scantron then reviewed the practice analysis published by the BOC in 2015 as well as the “Athletic Training Education Competencies” (5th Edition, 2011) published by the National Athletic Trainers’ Association. Next, Scantron met in an online meeting with the Practice Analysis Task Force for a high-level discussion about the current state of athletic training, and members of the committee provided their thoughts about changes they believe had affected practice or were on the horizon. These activities were helpful in re-acquainting Scantron staff with the basic activities and terminology of the discipline and ensuring that the current study was appropriate to its purpose. With this information, Scantron prepared instructional materials that the Practice Analysis Task Force reviewed and helped to refine.

Practice Analysis Panel

The practice analysis panel had the important responsibility of developing the content framework of domains, tasks, and knowledge and skill. Accordingly, it was essential that the panel include qualified individuals who are proficient providers of athletic training services in the variety of settings and patient types that Athletic Trainers work with. Though a panel of 15 people can never reasonably be said to be representative of the profession in a scientific sense, creating a panel that is diverse along critical dimensions as well as important demographics helps to ensure that the content framework resulting from the panel’s work addresses the breadth of the field at entry-level. To this end, the PA8 Task Force defined a plan for panel composition. The Task Force determined that the most important differences in practice would derive from practice setting, and it reached consensus on the following guidance through thoughtful discussion:

Table 1. Plan for Panel Composition	
Setting	Number of Panelists
Traditional (e.g., high school, college/university, professional)	8
Tactical athletes (firefighters, military, law enforcement, first responders)	1
Action/extreme sport, performance enhancement	1
Rehabilitation settings	1
Medical settings	3
Occupational health	1

The Task Force also desired diversity in the individual characteristics of the panel along the lines of gender, ethnicity/race, region, years of experience, level of education or training in athletic training, and credentials in other healthcare professions. While the selected panel should be diverse along these lines, the Task Force did not assign a desired number for these characteristics. Additionally, all panel members would have to document a clear understanding of entry-level practice in any of several ways: teaching candidates for certification, supervision of newly certified Athletic Trainers, or some other way.

After the Task Force had developed this panel composition plan, the BOC solicited nominations for the PA8 panel from the BOC Board of Directors, Exam Development Committee, and Task Force members. Altogether, the Task Force received 43 nominations and 41 applications. Applications were designed to include all of the panel composition criteria, and on August 3, 2020, the Task Force met online and reached consensus on the selection of individuals who would best satisfy the criteria they had defined. BOC staff issued invitations to the individuals who had been selected, and all accepted their appointment. For each practice setting, at least one alternate was identified. Alternates were to be used in the event a panelist ultimately was unable to participate in the panel meeting.

Scantron used several methods of computing weights for Task Force consideration as it prepared its recommendation to the BOC about the emphasis to be given the domains and tasks in the exam. The computations included the use of addition and multiplication in combining the Importance and Frequency ratings for domains and tasks as well as the use of top-down and bottom-up weighting strategies. Scantron presented the results of these computations to the Task Force during its virtual meeting on April 23, 2021, with the advice that the computations provide the starting point for its deliberations about weighting the domains and tasks.

The Task Force discussed the results and generally favored the computational approach using multiplication of the validation ratings with a top-down assignment. This information is provided here:

Domain	Percent	N Items
Risk Reduction, Wellness and Health Literacy	18.2%	23
Assessment, Evaluation and Diagnosis	24.7%	31
Critical Incident Management	18.4%	23
Therapeutic Intervention	20.9%	26
Health Administration and Professional Responsibility	17.8%	22

Using these results as a starting point, Scantron explained that the questions making up any version of the certification exam are a sample from the universe of knowledge that entry-level Athletic Trainers may be expected to possess and that their recommendation for the plan for this sample should represent their best understanding of the knowledge base and make the best use of opportunities to assess it. The Task Force decided that the computation based on ratings overemphasized Health Administration and Professional Responsibility and recommends reducing it to 8% and distributing 9.8% among the other domains as follows:

Domain	Percent	N Items
Risk Reduction, Wellness and Health Literacy	20.0%	25
Assessment, Evaluation and Diagnosis	25.6%	32
Critical Incident Management	20.8%	26
Therapeutic Intervention	25.6%	32
Health Administration and Professional Responsibility	8.0%	10

The BOC should consider the Task Force recommendation as it makes the decision about the optimal weighting structure of the certification exam based on the eighth practice analysis study.

Practice Analysis Panel Meeting

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 then-current target audience for BOC certification, essential definitions, and examples of domains, tasks, and knowledge and skill statements drawn from the BOC's previous practice analysis. 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. The instructional materials were used during the panel meeting as a means of building understanding among participants about key concepts and terms and orienting them to the essential thought processes and activities of the meeting.

The PA8 panel reviewed and reached consensus on several modifications to 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, it does not imply complete mastery. The panel then focused on the existing content outline, in place since 2017, and the updates that would ensure its currency and adequacy for the upcoming five-year period. Through facilitated discussion, panelists reached consensus on five domains appropriately expected of the newly certified Athletic Trainer. The domains are as follows:

- I. Risk Reduction, Wellness and Health Literacy
- II. Assessment, Evaluation and Diagnosis
- III. Critical Incident Management
- IV. Therapeutic Intervention
- V. Healthcare Administration and Professional Responsibility

After negotiating the domains, panelists worked in several focus groups to draft tasks, which the whole group then reviewed and refined. The panelists' diversity led to discussions that challenged terminology, phrasing, and all aspects of the draft statements, with the resulting consensus on revisions representing a collection of tasks that all members of the panel believed to be valid. After tasks had been decided, the panel worked in small groups again to develop a set of knowledge and skill statements for each task, and then as a committee of the whole to make refinements and reach consensus.

Validation Study

Questionnaire Design and Pilot Survey

Based on the work of the PA8 panel and in consultation with the Task Force and BOC staff, Scantron developed an online questionnaire to be completed by a sample of BOC Certified Athletic Trainers. The purpose of the questionnaire was to collect data on the tasks that had been developed by the PA8 panel. The questionnaire phase of the practice analysis study was important because the greater population of newly certified Athletic Trainers should have input into the delineation of their practice. Such input is critical because the panel, although highly qualified, knowledgeable about entry-level practice, and diverse in many ways, constituted only a small sample of the certified population. Evaluation by the larger newly certified community is essential in order to validate the practice analysis. The questionnaire also was designed to solicit demographic information to ensure that the respondents were adequately representative of the population.

The process for reviewing the survey with the Task Force and staff resulted in revisions and led to the pilot study that involved a sample of 200 recently certified Athletic Trainers. Scantron collected data from this group from January 20 through February 8, 2021, with sufficient responses for tasks and domains from 15 participants. Scantron summarized the ratings and other data (Appendix B: Summary of the BOC Pilot Survey). One change was made to the demographic survey (adding Olympics to one of the response choices (Professional Sports/Olympics/Performing Arts) for the best description of the organization respondents work for. The small level of participation led the BOC to increase the sample size for the full survey by 2,000 and adjust the incentives offered to encourage participation. The BOC and Scantron implemented these changes and then Scantron prepared to conduct the full-scale national validation survey.

Full Scale Survey

The sampling plan was quite simple—individuals who had been certified in the years 2014 through 2017 were selected at random if they were not part of the sample for the pilot of the survey ($n = 7,000$) were included in the sample and invited to participate in the study. Scantron survey administration staff sent an invitation letter (Appendix C) by email to this group on February 16, 2021, and data were collected through early morning, March 16, with reminders sent periodically (Appendix C). Thirty-two emails bounced back to Scantron because of incorrect or out-of-date addresses, and 101 people opted out of the survey. Scantron monitored responses and sent email follow-up correspondence (Appendix C) as appropriate. Additionally, the BOC sent an alert to the sample prior to the launch of the survey and a reminder one day prior to the close of the survey.

The survey (Appendix D) was long and complex—some 15 minutes were required to complete it. A number of individuals opened the survey and answered a few questions, but Scantron 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, Scantron received 866 qualified, usable responses for most tasks. The 12.6% 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 practice analysis surveys conducted in the past several years. 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 generalizations from respondents to the newly certified population. To assess these objectives, the survey included 16 demographic questions, consistent with previous BOC surveys. Given that the demographic portion of the survey was presented at the end rather than at the beginning, the finding reflect attrition that occurred through the task ratings portion. 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 2. What is your gender?		
Gender	Count	Percent
Male	288	36.6%
Female	494	62.8%
Other	2	0.3%
Prefer not to answer	2	0.3%
Total	786	100.0%

Given that the sampling plan targeted the newly certified, the finding that almost 85% of the respondents indicated that they were in the age range of 25 to 30 is not surprising.

Table 3. What is your age?		
Age	Count	Percent
Under 25	3	0.4%
25 to 30	661	84.4%
31 to 40	100	12.8%
41 to 45	12	1.5%
46 to 55	5	0.6%
More than 55	2	0.3%

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

The plurality of respondents practice in the Midwest region, and the next largest group practices in the South.

Table 4. In which state do you practice athletic training?		
Region	Count	Percent
Northeast	133	17.1%
South	203	26.1%
Midwest	301	38.6%
West	139	17.8%
U.S. Territories	0	0.0%
Canada	3	0.4%
Total	779	100.0%

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

Table 5. What is your ethnicity?		
Ethnicity	Count	Percent
African American	32	4.1%
Caucasian	655	83.5%
Asian American	17	2.2%
Hispanic	49	6.2%
Native American or Alaska Native	3	0.4%
Hawaiian or Other Pacific Islander	3	0.4%
Multi-Ethnic	25	3.2%
Total	784	100.0%

Given a selection of degree fields and levels, respondents provided information about the highest level of education that they have achieved. Over half of the respondents have a master's degree, with their major being in athletic training or a different field. The 27.5% having a bachelor's degree with athletic training as their major is lower than in the 2015 practice analysis, which was about one-third. About 9% have doctoral degrees.

Survey participants were offered the opportunity to provide information about their residency if it applied. Fourteen responses were received, three of which indicated training as a Doctor of Physical Therapy and one as a Doctor of Athletic Training. Eight responses indicated information about residencies completed, and the remainder did not add readily understandable information. These responses are provided in Appendix E.

Table 6. What is your highest level of education?		
Education	Count	Percent
Bachelor's degree - AT major	215	27.5%
Bachelor's degree - other major	1	0.1%
Some graduate study	18	2.3%
Entry-level master's degree in athletic training	20	2.5%
Master's degree - AT major	187	23.9%
Master's degree - other major	257	32.8%
Doctoral degree - AT major	17	2.2%
Doctoral degree - other major	54	6.9%
AT residency (please specify)	14	1.8
Total	783	100.0%

Given the sampling strategy, it is not surprising that about 66% of the respondents have been certified for five years or less.

Table 7. How many years have you been a CERTIFIED Athletic Trainer?		
Number of Years	Count	Percent
3 years or less	54	7.0%
4 to 5 years	455	58.7%
6 to 10 years	266	34.3%
Total	775	100.0%

About 70% of the respondents have been in practice for five years or less.

Table 8. How many years have you <u>practiced</u> as a CERTIFIED Athletic Trainer?		
Number of Years	Count	Percent
3 years or less	135	17.3%
4 to 5 years	411	52.8%
6 to 10 years	233	29.9%
Total	779	100.0%

Respondents hold credentials (n = 150) in a substantial number of other fields in healthcare. When respondents hold credentials in other fields, the largest number are in physical therapy and emergency medical technology. There were 72 other responses, 22 of which were in strength and conditioning coaching.

Table 9. Besides the BOC certification, which of the following healthcare professional credentials do you hold?	
Credential	Count
Chiropractor	5
Dietitian	1
Emergency Medical Technician (any level)	28
Massage Therapist	4
Medical Doctor, Doctor of Osteopathics	2
Nurse (any level)	8
Occupational Therapy Professional	1
Orthopedic Technologist	25
Orthotist	2
Physical Therapy Professional (any level)	61
Physician Assistant	10
Surgical Technologist	3
Other	72

Next, respondents were asked to indicate the type of organization in which they are employed. The most frequent work settings are clinic/hospital, secondary school, and university, college, and junior college. See Table 10 (next page). The finding that clinic/hospital is the most frequently reported setting differs from the 2015 practice analysis, in which secondary school was the modal response. Other responses for work setting are reported in Appendix F.

Table 10. Using the list provided please select the best description for the organization you work for.

Description	Count	Percent
Clinic/Hospital	255	32.4%
Health/Fitness Industry	14	1.8%
Industrial/Corporate	26	3.3%
Military/Government/Law Enforcement	16	2.0%
Professional Sports/Olympics/Performing Arts	27	3.4%
Sales/Marketing	0	0.0%
Secondary School	202	25.7%
Student	13	1.7%
Univ/College/JC	173	22.0%
Youth Sports	10	1.3%
Not Currently Practicing	39	5.0%
Other	11	1.4%
Total	786	100.0%

Table 11. What is your primary responsibility in the organization where you work?

Primary Responsibility	Count	Percent
Administrator	8	1.0%
Head Athletic Trainer/Director of Sports Medicine	97	12.3%
Athletic Trainer	491	62.5%
Physician extender	52	6.6%
Program director	1	0.1%
Educator	22	2.8%
Not practicing	47	6.0%
Other	68	8.7%
Total	786	100.0%

The next question asked if respondents were the first Athletic Trainer to work in their current workplace. Most indicated that they were not.

Table 12. Are you the first CERTIFIED Athletic Trainer to be employed where you currently work?

Response	Count	Percent
Yes	114	14.6%
No	666	85.4%
Total	780	100.0%

Respondents were asked the number of Athletic Trainers who are employed in their current work setting. About one third of the respondents' work settings employ from two to five Athletic Trainers, as may be seen in Table 13.

Table 13. How many CERTIFIED Athletic Trainers are employed where you work?

Number of Athletic Trainers	Count	Percent
1	138	17.8
2	94	12.1
3-5	178	23.0
6-10	124	16.0
11-15	69	8.9
16-20	42	5.4
21-30	30	3.9
More than 30	100	12.9
Total	775	100.0%

The largest group of respondents reports that 91% to 100% of their work time is related to their role as Athletic Trainers.

Table 14. What percentage of your work time is related to your role as an Athletic Trainer?		
Percentage of Work Time	Count	Percent
0%	53	6.7%
1% to 10%	35	4.5%
11% to 20%	28	3.6%
21% to 30%	21	2.7%
31% to 40%	15	1.9%
41% to 50%	25	3.2%
51% to 60%	25	3.2%
61% to 70%	46	5.9%
71% to 80%	79	10.1%
81% to 90%	95	12.1%
91% to 100%	361	46.1%
Total	783	100.0%

The next question was related but asked what the portion of respondents' work time is related to the delivery of patient care (Table 15). As above, it is clear that the vast majority of work time is devoted to responsibilities that fall into patient care.

Table 15. What percentage of your work time is related specifically to the delivery of patient care?		
Percentage of Work Time	Count	Percent
0%	30	3.8%
1% to 10%	21	2.7%
11% to 20%	15	1.9%
21% to 30%	31	4.0%
31% to 40%	26	3.3%
41% to 50%	49	6.3%
51% to 60%	61	7.8%
61% to 70%	76	9.7%
71% to 80%	141	18.0%
81% to 90%	130	16.6%
91% to 100%	203	25.9%
Total	783	100.0%

The substantial majority of respondents do not supervise others at this time. The findings should be interpreted in light of the status of the survey sample as having certified by the BOC in the years 2014 to 2017.

Table 16. How many employees, Athletic Trainers, or other healthcare professionals engaged in direct patient care do you supervise?		
Employees Supervised	Count	Percent
None	561	71.7%
1 to 5	178	22.8%
6 to 10	17	2.2%
More than 10	26	3.3%
Total	782	100.0%

Finally, the survey asked respondents to provide information about their annual earnings from their work in athletic training. About 70% of the respondents indicated their athletic training income to be between \$30,000 and \$60,000 annually.

Table 17. What is your annual gross earnings from employment as an Athletic Trainer?		
Annual Gross Earnings	Count	Percent
Less than \$20,000	83	10.8%
\$20,000-\$29,999	30	3.9%
\$30,000-\$39,999	128	16.7%
\$40,000-\$49,999	294	38.2%
\$50,000-\$59,999	153	19.9%
\$60,000-\$69,999	40	5.2%
\$70,000-\$79,999	30	3.9%
\$80,000-\$89,999	7	0.9%
\$90,000-\$100,000	3	0.4%
More than \$100,000	1	0.1%
Total	769	100.0%

Validation of the Domains and Tasks

Validation Scales

Respondents were asked to evaluate each task using scales for Importance and Frequency. The Importance scale employed four units (1 to 4), with a “4” 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:

Importance: What level of harm would result (if any) if newly certified Athletic Trainers were not proficient in the task or domain? (Harm may be seen as physical, psychological, emotional, legal, financial, etc.)

- 1 = No harm at all
- 2 = Minimal harm
- 3 = Moderate harm
- 4 = Extreme harm

Frequency: How frequently do newly certified Athletic Trainers perform the task or domain?

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

Scantron determined the number and percentage of respondents who selected the various options for the Importance and Frequency scales, but 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 averages of the scale values given by the respondents. The standard error of the mean describes the theoretical range within which the means of other samples drawn from this population would lie above and below the mean. The standard deviation describes the spread of the response distributions, with small estimates indicating tight groupings and agreement among the respondents.

Domain I: Risk Reduction, Wellness and Health Literacy

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

The first domain, Risk Reduction, Wellness and Health Literacy, comprises five tasks that address the responsibilities that newly certified Athletic Trainers have in this area of practice. In this domain, certified Athletic Trainers promote healthy lifestyle behaviors with effective education on health literacy to enhance wellness and minimize the risk. The tasks in the domain, which are abbreviated with key words in following tables, are presented in full below:

1. Identify risk factors by administering assessment, pre-participation exam and other screening instruments, and reviewing individual and group history and surveillance data.
2. Implement plans to aid in risk-reduction in accordance with evidence-based practice and applicable guidelines.
3. Promote health literacy by educating patients and other stakeholders in order to improve their capacity to obtain, process, and understand basic health information needed to make appropriate health decisions.
4. Optimize wellness (e.g., social, emotional, spiritual, environmental, occupational, intellectual, physical) for individuals and groups.
5. Facilitate individual and group safety by monitoring and responding to environmental conditions (e.g., weather, surfaces, work setting).

As may be seen below, there is support for the hypothesis that tasks in this domain must be performed proficiently. However, less harm is associated with promoting health literacy and optimizing wellness than the other tasks, for which the overwhelming majority of respondents indicate that moderate to substantial harm would result from poor performance. More than 50% of the respondents provided an Importance rating of 3 or 4 for the other four tasks.

Table 18. Counts and Percentages for Importance of Tasks in Risk Reduction, Wellness and Health Literacy

Task (Key Words)	N	1	% 1	2	% 2	3	% 3	4	% 4
Identify risk factors.	866	30	3.5	144	16.6	423	48.8	269	31.1
Implement plans for risk reduction.	865	46	5.3	193	22.3	452	52.3	174	20.1
Promote health literacy.	865	148	17.1	431	49.8	246	28.5	40	4.6
Optimize wellness.	862	72	8.3	286	33.2	381	44.2	123	14.3
Facilitate safety.	865	28	3.2	64	7.4	311	36.0	462	53.4

Importance: 1 = No harm at all, 2 = Minimal harm, 3 = Moderate harm, 4 = Extreme Harm

Except for the task on health literacy, the below table means for all tasks in the domain are above the scale midpoint of 2.5, most remarkably so, and the mean for health literacy is not far below the midpoint.

Table 19. Descriptive Statistics for Importance of Tasks in Risk Reduction, Wellness and Health Literacy

Task (Key Words)	N	Median	Mean	SE Mean	Std Dev
Identify risk factors.	866	3	3.1	0.8	0.0
Implement plans for risk reduction.	865	3	2.9	0.8	0.0
Promote health literacy.	865	2	2.2	0.8	0.0
Optimize wellness.	862	3	2.6	0.8	0.0
Facilitate safety.	865	4	3.4	0.8	0.0

Importance: 1 = No harm at all, 2 = Minimal harm, 3 = Moderate harm, 4 = Extreme Harm

Frequency ratings for tasks on identifying risk factors and promoting health literacy are distributed widely across the scale. However, the majority of respondents gave ratings of 4 or 5 for the other tasks.

Task (Key Words)	N	1	% 1	2	% 2	3	% 3	4	% 4	5	% 5
Identify risk factors.	866	5	0.6	307	35.4	290	33.5	142	16.4	122	14.1
Implement plans for risk reduction.	866	9	1.0	164	18.9	307	35.5	212	24.5	174	20.1
Promote health literacy.	863	54	6.2	237	27.5	257	29.8	160	18.5	155	18.0
Optimize wellness.	863	15	1.7	69	8.0	186	21.6	222	25.7	371	43.0
Facilitate safety.	864	4	0.5	23	2.7	148	17.1	235	27.2	454	52.5

Frequency: 1 = Never, 2 = Rarely, 3 = Sometimes, 4 = Often, 5 = Repeatedly

The means on the table below for all tasks in the domain exceed 3.0, two of them most remarkably so.

Task (Key Words)	N	Median	Mean	SE Mean	Std Dev
Identify risk factors.	866	3	3.1	0.0	1.0
Implement plans for risk reduction.	866	3	3.4	0.0	1.0
Promote health literacy.	863	3	3.1	0.0	1.2
Optimize wellness.	863	4	4.0	0.0	1.1
Facilitate safety.	864	5	4.3	0.0	0.9

Frequency: 1 = Never, 2 = Rarely, 3 = Sometimes, 4 = Often, 5 = Repeatedly

DOMAIN SUMMARY

The Practice Analysis Task Force reviewed published literature pertaining to the Risk Reduction, Wellness and Health Literacy domain. The summary of this literature follows.

Risk reduction, often synonymous with risk management, is one of the most important domains of the athletic training profession. It can be defined as “activities to prevent, ameliorate, treat, and/or reduce injury-related disability and death.”¹ Reducing risk of injury reduces morbidity and cost, and increases the quality of life. It requires general subject knowledge (e.g., anatomy, exercise physiology, biomechanics, health) and specific workplace knowledge (e.g., sport requirements, equipment fitting, OSHA regulations, environmental considerations). In the risk reduction process risks are identified, interventions or plans are implemented, results are reviewed, and the plan is further revised.⁶⁷

Athletic Trainers are able to identify and understand intrinsic (i.e., patient history, demographics, education level) and extrinsic (i.e., environmental, social, sport specific) factors that are relevant to the client, patient, or population. While some risk factors are static or unchangeable, other factors may be within the patient’s or client’s ability to change, such as diet or exercise. Athletic Trainers use knowledge of the intrinsic and extrinsic factors to reduce risk.

Using evidence-based medicine, metrics, and research is important to all domains of athletic training practice; especially Risk Reduction, Wellness and Health Literacy. Athletic Trainers use epidemiological studies to identify the prevalence of an injury or disease within a population or group, and clinical outcome studies to identify effective and safe interventions that address identified deficiencies. Athletic Trainers must be proficient in using national and local information and data sources in order to better serve their patients and the public. Athletic Trainers also utilize questionnaires, pre-participation exams,

and databases to help identify risk factors and identify trends and use research and position/consensus statements to guide development of plans for intervention.

In addition to risk reduction, this domain includes concepts related to wellness promotion and health literacy. While there may be many definitions of wellness, one that is relevant 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 Athletic Trainers 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. Additionally, Athletic Trainers must recognize associated risks and morbidity factors in order to provide correct and effective interventions or referral to higher echelon/specialized care.

Health literacy involves the education of and advocacy for patients, with the goal of empowering patients to take an active role in their own health and wellness. Athletic Trainers educate and advise on health and wellness measures, using their position and knowledge to influence the population in making health-conscious choices and discourage unhealthy behaviors.

Athletic Trainers do not limit the sphere of their influence to an individual, patient, or team; rather, many fill the role of a community advocate involved with promoting public health initiatives. For example, Athletic Trainers have been instrumental in educating the public about the consequences of traumatic brain injury beyond the initial injury; Athletic Trainers have led efforts to prevent this injury and others like it by extending their knowledge to school personnel, patients, 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 surveillance data.

Athletic Trainers must select examination tools, surveys, and other instruments that help identify risks to the patient or population. Health questionnaires, screenings, and initial testing are effective tools in gathering information and identifying risks prior to competition or participation in activity.³ Athletic Trainers must also use functional exams and analyze movement patterns to help identify risks such as muscle imbalances or weakness.⁸⁻¹¹ A comprehensive screening will also include reviewing patient medications, allergies, and medical history.^{4,5,10,11}

Athletic Trainers use electronic health records and injury surveillance databases in addition to other tools and resources to identify injury and illness trends. Athletic Trainers are also familiar with data published by several national agencies including but not limited to the National Collegiate Athletic Association Injury Surveillance System (NCAA SFIA), Centers for Disease Control and Prevention (CDC), and National Electronic Injury Surveillance System (NEISS).¹²⁻¹³ Athletic Trainers should consider implementing an injury surveillance system if one is not available.¹⁴

KNOWLEDGE OF:

1. Disqualifying health-related factors
2. General health conditions
3. Risk factors within activities, wellness, and environment
4. Policies, procedures, and guidelines
5. Behavioral risks (e.g., nutritional, sexual, substance abuse, sedentary lifestyle, overtraining)
6. Catastrophic risks (e.g., cardiorespiratory, neurological, thermoregulatory, immunological)
7. Biomechanical risks
8. Indications for referral
9. Physiological adaptation to exercise
10. Ergonomic, epidemiological, and etiological factors
11. Evidence-based principles and practices
12. Implications of culture for practice
13. Injury surveillance data and trends
14. Systematic approach
15. Applicable screening instruments
16. Federal, state, and local laws, regulations, rules, and requirements, and professional standards
17. Mental health risks (e.g., personality, psychosocial, depression, suicide, anxiety, grief, eating disorder)
18. Age-related and lifespans considerations that pertain to conditioning, wellness, and baseline measurement

SKILL IN:

1. Communicating with appropriate chain of command
2. Interpreting injury surveillance data
3. Analyzing examination/screening data
4. Identifying conditions that may affect participation
5. Communicating available health resources to patients and/or stakeholders
6. Administering screenings and examinations
7. Identifying clinical indications for referral
8. Communicating with appropriate stakeholders and other healthcare providers
9. Reviewing information systematically
10. Exercising clinical judgment consistent with evidence-based principles and practices

TASK STATEMENT 2

Implement plans to aid in risk reduction in accordance with evidence-based practice and applicable guidelines.

Once a risk or potentially problematic trend has been identified, the Athletic Trainer must act and execute interventions to reduce the rate or prevalence of injury and illness. The interventions may range from implementation of emergency action plans¹⁵ to prophylactic ankle bracing.^{16,17} Position and consensus statements are reliable resources that offer measures and recommendations for implementation. The Athletic Trainer should review the current professional position statements on environmental and health conditions such as lightning safety,¹⁸ heat illness,¹⁹⁻²² cold illness,²³ head-down contact,²⁹ hydration,^{22,24} nutrition,²⁵ diabetes,²⁶ anterior cruciate ligament injuries,²⁷ concussion²⁸⁻³⁰ and immune health.³¹ Since protocols, plans, or regulations may not be universal in patient care settings, populations, or environments, the Athletic Trainer must be able to select the appropriate plan and modify it to fit the needs of the setting or patient population.

KNOWLEDGE OF:

1. Policies, procedures, and guidelines
2. Principles of strength development, cardiovascular fitness, and functional movement
3. Health conditions
4. Proper hygiene practices
5. Facility cleaning and maintenance
6. Evidence-based principles and practices
7. Ergonomics and preventive measures
8. Risk factors within activities, wellness, and environment
9. Federal, state, and local laws, regulations, rules, and requirements, and professional standards

SKILL IN:

1. Communicating inherent risks
2. Identifying health conditions
3. Managing health conditions
4. Interpreting and applying policies and procedures, position statements, and consensus statements
5. Applying federal, state, and local laws, regulations, rules, and requirements, and professional standards
6. Educating patients and/or stakeholders on available health resources
7. Applying preventive measures (e.g., safety rules, accepted biomechanical techniques, ergonomics, nutrition guidelines, injury and disease prevention equipment)
8. Implementing risk-reduction plans

TASK STATEMENT 3

Promote health literacy by educating patients and other stakeholders in order to improve their capacity to obtain, process, and understand basic health information needed to make appropriate health decisions.

Education is a primary method through which Athletic Trainers and other healthcare providers can effectively reduce risk of injury and illness.³²⁻³⁴ By educating clients, patients, and associated stakeholders, an Athletic Trainer increases the agency of their patients, thereby increasing the chance of successful resolution of issues related to injury, illness, lifestyle and regulations.

KNOWLEDGE OF:

1. Policies, procedures, and guidelines
2. Federal, state, and local laws, regulations, rules, and requirements, and professional standards
3. Operation of healthcare systems
4. Indications for referral
5. Available resources
6. Social determinants of health
7. Cultural diversity and implications for health literacy

SKILL IN:

1. Communicating effectively
2. Educating stakeholders on available resources and healthcare procedures
3. Identifying barriers to optimal health and wellness
4. Coordinating inter-professional communication
5. Teaching stakeholders to communicate and advocate effectively with healthcare providers

TASK STATEMENT 4

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

Athletic Trainers are expected to address the comprehensive wellness of an individual when developing injury prevention programs. The mental and psychological health of patients and clients is a critical component of wellness.^{60, 61} Patients and clients may have multiple and competing responsibilities for sport, academics, family, work, and personal interests, and each of these areas present risk factors that can lead to injury and illness.⁶² In team sports, there are also complicated cultural and social dynamics at all levels of competition.⁶¹ The Athletic Trainer has an understanding of these dynamics and can anticipate potential problems as they impact patients' overall wellness. For example, body image, culture, and sport weight requirements may have significant impacts on an individual's mental and physical health.^{7, 32, 33, 60, 63, 65} Even non-competitive clients or athletes may find it necessary to gain or lose weight through diet modification and exercise in order to enhance wellness. The appropriate presentation of nutrition guidance and prescription of exercise will reduce the risk of adverse health outcomes such as disordered eating or physical injury.⁵³⁻⁵⁹ Additionally, injury, healing, and the rehabilitative process can have negative effects on an individual's mental health.⁶³ Athletic Trainers must be able to recognize the signs of depression and related phenomena and have the resources available to refer a patient to appropriate mental health care providers. Athletic Trainers have the ability to influence an individual's or group's health and wellness due to the typical frequent contact and interaction with their population.

KNOWLEDGE OF:

1. Risk factors associated with activities, wellness, and environment
2. Policies, procedures, and guidelines
3. Principles of strength development, cardiovascular fitness, and functional movement
4. Screening and baseline assessment tools and their use
5. Professional resources for stress management, behavior modification, comorbidities, and nutritional conditions
6. Nutrition and supplements
7. Human physiology
8. Considerations for referral
9. Wellness examinations
10. Signs and symptoms of social, emotional, mental, and stress-related conditions
11. Federal, state, and local laws, regulations, rules, and requirements, and professional standards
12. Pharmacology
13. Substance use and abuse
14. Social determinants of health
15. Cultural diversity and implications for wellness

SKILL IN:

1. Developing a comprehensive program for optimizing function
2. Assessing appropriateness of participation in conditioning programs
3. Correcting or modifying inappropriate, unsafe, or dangerous activities
4. Accessing information concerning accepted guidelines
5. Educating individuals and groups on the concepts of wellness
6. Addressing signs and symptoms of social, emotional, mental, and stress-related conditions
7. Educating individuals and groups on available wellness resources
8. Administering and interpreting baseline screening tools
9. Communicating effectively
10. Making appropriate referrals

TASK STATEMENT 5

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

Risk reduction involves not only a person – it involves the environment, equipment, and surfaces with which people interact, as well as the rules, regulations, and culture that influence actions.⁶⁶ Some individuals work in dynamic environments, such as a military setting, where surfaces, weather, or obstacles may change instantly.⁴⁴⁻⁵⁰ Athletic Trainers should systematically observe and respond to all aspects of diverse environments in order to ensure patient safety. Athletic Trainers must also have an understanding that ergonomics, indoor workplace environments, posture, repetitive motions, and activities of daily life (ADLs) may have a severe impact on an individual's health and productivity.⁵¹ Specific risks within a healthcare environment warrant particular attention; for example, exposure to communicable diseases can be limited in a workplace environment by proper application of relevant safety procedures such as those outlined by The Joint Commission (formerly Joint Commission on Accreditation of Healthcare Organizations, or JCAHO),⁴⁵ the Occupational Health and Safety Administration (OSHA),⁴¹ and the Centers for Disease Control and Prevention (CDC).^{1, 12}

KNOWLEDGE OF:

1. Health conditions
2. Environmental conditions that create risk
3. Signs and symptoms of health conditions that result from exposure to environmental conditions
4. Risk factors associated with activities, wellness, and environments
5. Methods for reducing risk pertaining to environmental conditions (e.g., activity scheduling, clothing selection, fluid replacement)
6. Policies and procedures for removing participants from environmental risk situations (e.g., heat index, lightning, activity scheduling)
7. Federal, state, and local laws, regulations, rules, and requirements, and professional standards
8. Ergonomic assessments
9. Pharmacology
10. Biomechanics

SKILL IN:

1. Conducting inspections and recognizing hazards
2. Using monitoring techniques (e.g., weight charts, fluid intake, body composition)
3. Utilizing weather/environmental monitoring devices
4. Managing predisposing factors (e.g., environmental conditions, health conditions, ergonomic risks, biomechanical risks)
5. Responding to signs and symptoms of health conditions that result from exposure to environmental conditions
6. Recommending and implementing appropriate methods for addressing hazards
7. Communicating risk mitigation procedures and guidelines effectively

DOMAIN I REFERENCES

1. Hemenway D, Aglipay GS, Helsing KL, Raskob GE. Injury Prevention And Control Research And Training In Accredited Schools of Public Health: A CDC/ASPH Assessment. *Public Health Rep.* 2006;121(3):349-351
2. *Toward a uniform definition of wellness – a commentary.* Washington, D.C.: President's Council on Physical Fitness and Sports; 2001
3. Helmerhorst HJ, Brage S, Warren J, Besson H, Ekelund U. A systematic review of reliability and objective criterion-related validity of physical activity questionnaires. *Int. J. Behavior. Nutr. Phys. Act.* 2012;9:103
4. Casa DJ. *Preventing Sudden Death in Sport and Physical Activity.* Jones & Bartlett Publishers; 2011
5. Chang, A.C. Primary Prevention of Sudden Cardiac Death of the Young Athlete: the controversy about the screening electrocardiogram and its innovative artificial intelligence solution. *Pediatr. Cardiol.* 2012;33(3):428-433
6. Brumitt, J. *Core Assessment and Training.* Human Kinetics; 2010
7. Anderson, MK, Hall SJ, Martin, M. *Foundations of Athletic Training: Prevention, Assessment, and Management.* Lippincott Williams & Wilkins; 2004
8. Rich, BS. ACSM's Health-Related Physical Fitness Assessment Manual. *Med. Sci. Sports Exerc.* 2004;36(9):1657
9. Cook G., Burton L., Hoogenboom, B. Pre-participation Screening: The Use of Fundamental Movements as an Assessment of Function – Part 1. *North American Journal of Sports Physical Therapy.* 2006;1(2):62-72
10. Corrado D, Pelliccia A, Bjornstad HH, et al. *Cardiovascular Pre-Participation Screening of Young Competitive Athletes for Prevention of Sudden Death: Proposal for a Common European Protocol.* Vol 262005
11. Corrado D, Basso C, Pavei A, Michieli P, Schiavon M, Thiene G. Trends in Sudden Cardiovascular Death in Young Competitive Athletes After Implementation of a Preparticipation Screening Program. *J. Am. Med. Assoc.* 2006;296(13):1593-1601
12. DatalysCenter Sports Injury Research and Prevention. <http://datalyscenter.org/>. Accessed 01/04/21,2015
13. Commission USCPs. National Electronic Injury Surveillance System (NEISS). <http://www.cpsc.gov/en/Research--Statistics/NEISS-Injury-Data/>.
14. Ekegren C, Donaldson A, Gabbe B, Finch C. Implementing injury surveillance systems alongside injury prevention programs: evaluation of an online surveillance system in a community setting. *Injury Epidemiology.* 2014;1(1):19
15. Anderson JC, Courson RW, Kleiner DM, McLoda TA. National Athletic Trainer's Association Position Statement: Emergency Planning in Athletics. *Journal of Athletic Training.* 2002;37(1):99-104
16. Thacker SB, Stroup DF, Branche CM, Gilchrist J, Goodman RA, Weitman, EA. The prevention of ankle sprains in sports. A systematic review of the literature. *Am. J. Sports Med.* 1999;27(6):753-760
17. Dizon JMR, Reyes JJB. A systematic review on the effectiveness of external ankle supports in the prevention of inversion ankle sprains among elite and recreational players. *J. Sci. Med. Sport.* 2010;13(3):309-317
18. Walsh KM, Bennet B, Cooper MA, Holle RL, Kithil R, Lopez RE. National Athletic Trainer's Association Position Statement: Lightning Safety for Athletics and Recreation. *Journal of Athletic Training.* 2000;35(4):471-477
19. Binkley HM, Beckett J, Casa DJ, Kleiner DM, Plummer PE. National Athletic Trainer's Association Position Statement: Exertional Heat Illnesses. *Journal of Athletic Training.* 2002;37(3):329-343
20. Broman D, Fearn R, Wittenberg M. The implementation of a protocol for the prevention and management of exertional heat illness in sport. *Br. J. Sports Med.* 2014;48(7):573

21. Kerr ZY, Marshall SW, Comstock RD, Casa DJ. Implementing exertional heat illness prevention strategies in US high School football. *Med. Sci. Sports Exerc.* 2014;46(1):124-130
22. Casa DJ, Guskiewicz KM, Anderson SA, et al. National Athletic Trainer's Association Position Statement: Preventing Sudden Death in Sports. *Journal of Athletic Training.* 2015;47(1):96-118
23. Cappaert TA, Stone JA, Castellani JW, Krause BA, Smith D, Stephens BA. National Athletic Trainer's Association Position Statement: Environmental Cold Injuries. *Journal of Athletic Training.* 2008;43(6):640-658
24. Casa DJ, Armstrong LE, Hillman SK, et al. National Athletic Trainer's Association Position Statement: Fluid replacement for Athletes. *Journal of Athletic Training.* 2000;35(2):212-224
25. Joint Position Statement: nutrition and Athletic Performance. American College of Sports Medicine, American Dietetic Association, and Dieticians of Canada. *Med Sci. Sports Exerc.* 2000;32(12):2130-2145
26. Colberg SR, Sigal RJ, Fernhall B, et al. Exercise and type 2 diabetes: the American College of Sports Medicine and the American Diabetes Association: joint position statement. *Diabetes Care.* 2010;33(12):e147-167
27. Gagnier JJ, Morgenstern H, Chess L. Interventions designed to prevent anterior cruciate ligament injuries in adolescents and adults: a systematic review and meta-analysis. *Am. J. Sports Med.* 2013;41(8):1952-1962
28. Guskiewicz KM, Bruce SL, Cantu RC, et al. National Athletic Trainer's Association Position Statement: Management of Sport-Related Concussion. *Journal of Athletic Training.* 2004;39(3):280-297
29. McCrory P, Meeuwisse WH, Aubry M, et al. Consensus Statement on Concussion in Sport: The 4th International Conference on Concussion in Sport, Zurich, November 2012. *Journal of Athletic Training.* 2014;49(2):554-575
30. Broglio SP, Cantu RC, Gioia GA, et al. National Athletic trainer's Association Position Statement: Management of Sport Concussion. *Journal of Athletic Training.* 2014;49(2):245-265
31. Walsh NP, Glesson M, Pyne DB, et al. Position Statement part two: Maintaining Immune Health. 2011
32. Pfeiffer RP. *Sports First Aid and Injury Prevention.* Jones & Bartlett Publishers; 2009.
33. Cartwright L, Shingles RR. *Cultural Competence in Sports Medicine.* Human Kinetics; 2011.
34. Cohen LR, Runyan CW, Downs SM, Bowling JM. Pediatric injury prevention counseling priorities. *Pediatrics.* 1997;99(5):704-710
35. Braham RA, Finch CF, McIntosh A, McCrory P. Community football player's attitudes toward protective equipment – a pre-season measure. *Br. J. Sports Med.* 2004;38(4):426-430
36. Hootman JM, Dick R, Agel J. Epidemiology of collegiate injuries for 15 sports: Summary and recommendations for injury prevention initiatives. *Journal of Athletic Training.* 2007;42(2):311-319
37. Mascarenas AK. Mouthguards reduce orofacial injury during sport activities, but may not reduce concussion. *J. Evid. Based Dent. Prac.* 2012;12(2):90-91
38. Bahr R, Engebretsen L. *Handbook of Sports Medicine and Science, Sports Injury Prevention.* Vol 17: John Wiley & Sons; 2011
39. Knapik JJ, Marshall SW, Lee RB, et al. Mouthguards in sport activities history, physical properties and injury prevention effectiveness. *Sports Med.* 2007;37(2):117-144
40. Haviland A, Burns R, Gray W, Ruder T, Mendeloff J. What kind of injuries do OSHA inspections prevent? *J Safety Res.* 2010;41(4):339-345
41. Jung J, Makowsky MD. The determinants of Federal and State enforcement of workplace safety regulations: OSHA inspections 1990-2010. *J Regul Econ.* 2014;45(1):1-33
42. Benson BW, Hamilton GM, Meeuwisse WH, McCrory P, Dvorak J. Is protective equipment useful in preventing concussion? A systematic review of the literature. *Br J Sports Med.* 2009;43(Suppl 1):i56-i67
43. Miller H, Needle AR, Swanik CB, Gustaven GA, Kaminski TW. Role of external prophylactic support in restricting accessory ankle motion after exercise. *Foot Ankle Int.* 2012;33(10):862-869
44. Collins CJ, O'Connell B. Infectious disease outbreaks in competitive sports, 2005-2010. *Journal of Athletic Training.* 2012;47(5):516-518
45. Dukic VM, Lauderdale DS, Wilder J, Daum RS, David MZ. Epidemics of community-associated methicillin-resistant *Staphylococcus aureus* in the United States: a meta-analysis. *PLoS One.* 2013;8(1):e52722
46. Coello R, Glynn J, Gaspar C, Picazzo JJ, Fereres J. Risk factors for developing clinical infection with methicillin-resistant *staphylococcus aureus* (MRSA) amongst hospital patients initially only colonized with MRSA. *J Hosp Infect.* 1997;37(1):39-46
47. Kaufman ZA, Spencer TS, Ross DA. Effectiveness of sport-based HIV prevention interventions: a systematic review of the evidence. *AIDS Behav.* 2013;17(3):987-1001
48. Hamstra-Wright KL, Huxel Bliven KC, Bay C. Risk factors for medial tibial stress syndrome in physically active individuals such as runners and military personnel: a systematic review and meta-analysis. *Br J Sports Med.* 2014

49. Jensen AE, Laird M, Jameson JT, Kelly KR. Prevalence of musculoskeletal injuries sustained during Marine Corps recruit training. *Military Medicine*. 2019;184(3):511-520
50. O'Connor FG, Bergeron MF, Cantrell J, et al. ACSM and CHAMP summit on sickle cell trait: mitigating risks for warfighters and athletes. *Med Sci Sports Exerc*. 2012;44(11):2045-2056
51. Hoe VC, Urquhart DM, Kelsall HL, Sim MR. Ergonomic design and training for work-related musculoskeletal disorders of the upper limb and neck in adults. *Cochrane Database Syst Rev*. 2012;8:Cd008570
52. Taber CW, Venes D. *Taber's Cyclopedic Medical Dictionary*. Philadelphia: F.A. Davis Co; 2005
53. Black LJ, Seamans KM, Cashman KD, Kiely M. An updated systematic review and meta-analysis of the efficacy of vitamin D food fortification. *J Nutr*. 2012;142(6):1102-1108
54. Costa NF, Schtscherbyna A, Soares EA, Ribiero BG. Disordered eating among adolescent female swimmers: dietary, biochemical, and body composition factors. *Nutrition*. 2013;29(1):172-177
55. Purvis DL, Lentino CV, Jackson TK, Murphy KJ, Deuster PA. Nutrition as a component of the performance triad: how healthy eating behaviors contribute to soldier performance and military readiness. *US Army Med Dep J*. 2013:66-78
56. Austin K, Seebohar B. Performance nutrition: applying the science of nutrient timing. *Human Kinetics*; 2011
57. Campbell B, Spano M. NSCA's guide to sport and exercise nutrition. *Human Kinetics*; 2011
58. Davies CA, Spence JC, Vandelanotte C, Caperchione CM, Mummery WK. Meta-analysis of internet-delivered interventions to increase physical activity levels. *Int J Behav Nutr Phy Act*. 2012;9:52
59. Hoon MW, Johnson NA, Chapman PG, Burke LM. The effect of nitrate supplementation on exercise performance in healthy individuals: a systematic review and meta-analysis. *Int J Sports Nutr Exerc Metab*. 2013;23(5):522-532
60. Hincapie CA, Cassidy JD. Disordered eating, menstrual disturbances, and low bone mineral density in dancers: a systematic review. *Arch Phys Med Rehab*. 2010;91(11):1777-1789
61. Jankauskiene R, Pajaujiene S. Disordered eating attitudes and body shame among athletes, exercisers, and sedentary female college students. *J Sport Med Phy Fitness* 2012;52(1):92-101
62. Mencias T, Noon M, Hoch AZ. Female athlete triad screening in National Collegiate Athletic Association Division I athletes: is the preparticipation evaluation form effective? *Clin J Sports Med*. 2012;22(2):122-125
63. Brehm B. *Psychology of Health and Fitness*. F.A. Davis; 2014
64. Regehr C, Glancy D, Pitts A. Interventions to reduce stress in university students: a review and meta-analysis. *J Affect Disor*. 2013;148(1):1-11
65. Brunet M. *Unique considerations of the Female Athlete*. Cengage Learning; 2009
66. Christoffel T, Gallagher SS. *Injury Prevention and Public Health*. Aspen Publishers; 1999
67. Fuller, CW. Managing the Risk of Injury in Sport. *Clin J of Sport Med*. 2007;17(3):182-187

Domain II: Assessment, Evaluation and Diagnosis

Implementing systematic, evidence-based assessments and evaluations to formulate valid clinical diagnoses and differential diagnoses to determine a patient's plan of care

Five tasks account for the practice of newly certified Athletic Trainers in the area of Assessment, Evaluation and Diagnosis. In this domain, certified Athletic Trainers gather information about patient conditions, formulate a clinical diagnosis, and plan care, providing education to patients about these matters. The tasks are presented in full below but abbreviated with key words in Tables 22 to 25:

1. Obtain a thorough and individualized history using observation and appropriate interview techniques to identify information relevant to the patient's current condition.
2. Perform a physical examination using diagnostic techniques.
3. Formulate a clinical diagnosis by interpreting the information obtained during the history and physical examination.
4. Establish a plan of care based on the clinical diagnosis and evidence-based practice.
5. Educate the patient and stakeholders on the clinical diagnosis, prognosis, and plan of care.

Importance ratings indicate that moderate to severe harm would result if newly certified Athletic Trainers lacked proficiency in performing all five tasks. The very large majority provided ratings of 3 and 4.

Table 22. Counts and Percentages for Importance of Tasks in Assessment, Evaluation and Diagnosis

Task (Key Words)	N	1	% 1	2	% 2	3	% 3	4	% 4
Obtain history.	822	26	3.2	90	10.9	355	43.2	351	42.7
Perform examination.	823	17	2.0	96	11.7	370	45.0	340	41.3
Formulate clinical diagnosis.	823	17	2.0	73	8.9	389	47.3	344	41.8
Establish a plan of care.	822	23	2.8	87	10.6	379	46.1	333	40.5
Educate the patient, stakeholders.	821	37	4.5	190	23.1	404	49.3	190	23.1

Importance: 1 = No harm at all, 2 = Minimal harm, 3 = Moderate harm, 4 = Extreme Harm

On the table below, the means for all tasks in the domain are close to or above 3.0. Moderate to extreme harm is associated with a lack of proficiency.

Table 23. Descriptive Statistics for Importance of Tasks in Assessment, Evaluation and Diagnosis

Task (Key Words)	N	Median	Mean	SE Mean	Std Dev
Obtain history.	822	3	3.3	0.0	0.8
Perform examination.	823	3	3.3	0.0	0.7
Formulate clinical diagnosis.	823	3	3.3	0.0	0.7
Establish a plan of care.	822	3	3.2	0.0	0.8
Educate the patient, stakeholders.	821	3	2.9	0.0	0.8

Importance: 1 = No harm at all, 2 = Minimal harm, 3 = Moderate harm, 4 = Extreme Harm

The findings for Frequency ratings are consistent with those for Importance in this domain. Ratings indicate the tasks are performed on a daily basis by the vast majority of respondents. See Table 24 on the next page.

Task (Key Words)	N	1	% 1	2	% 2	3	% 3	4	% 4	5	% 5
Obtain history.	820	2	0.2	18	2.2	27	3.3	102	12.5	671	81.8
Perform examination.	819	9	1.1	25	3.0	35	4.3	108	13.2	642	78.4
Formulate clinical diagnosis.	821	2	0.2	5	0.6	22	2.7	104	12.7	688	83.8
Establish a plan of care.	822	5	0.6	6	0.7	18	2.2	132	16.1	661	80.4
Educate the patient, stakeholders.	815	2	0.3	15	1.8	37	4.5	166	20.4	595	73.0

Frequency: 1 = Never, 2 = Rarely, 3 = Sometimes, 4 = Often, 5 = Repeatedly

All tasks in this domain achieved a median rating of 5, the highest on the scale, and the means all exceed 4.5 on the five-point scale.

Task (Key Words)	N	Median	Mean	SE Mean	Std Dev
Obtain history.	820	5	4.7	0.0	0.7
Perform examination.	819	5	4.6	0.0	0.8
Formulate clinical diagnosis.	821	5	4.8	0.0	0.5
Establish a plan of care.	822	5	4.7	0.0	0.6
Educate the patient, stakeholders.	815	5	4.6	0.0	0.7

Frequency: 1 = Never, 2 = Rarely, 3 = Sometimes, 4 = Often, 5 = Repeatedly

DOMAIN SUMMARY

The Practice Analysis Task Force reviewed published literature pertaining to the Assessment, Evaluation and Diagnosis domain. The summary of this literature follows.

In order to establish an appropriate plan of care, Athletic Trainers must first understand the nature of a patient's health condition and a patient's personal goals and preferences according to an evidence-based model of healthcare. In order to determine the nature of a patient's health condition, Athletic Trainers conduct assessments and evaluations using clinical expertise that integrates the best available evidence, clinical experience, and the patient's values. These assessments and evaluations are used to establish a likely diagnosis as well as a differential diagnosis. As part of the assessment, evaluation, and diagnostic process, Athletic Trainers use clinical acumen to obtain a thorough and personalized patient history, appraise confounding data, recognize varied presentations of health conditions, and evaluate and prioritize relevant examination, assessment, and diagnostic techniques.

TASK STATEMENT 1

Obtain a thorough and individualized history using observation and appropriate interview techniques to identify information relevant to the patient's current condition.

Athletic Trainers collect and organize clinical data using astute observation and knowledge of normal human anatomy, postures, and movement patterns to recognize abnormalities in a patient's condition prior to any interpersonal interaction. Athletic Trainers also possess knowledge of standard patient-centered medical questions and an ability to formulate and prioritize relevant follow-up questions. Athletic Trainers must have a broad knowledge of the clinical trajectories of health conditions, including comorbidities, prior health history, emotional intelligence, cultural influences, and social predictors of health, so they can focus their questions and obtain accurate information that leads to a reasonable differential diagnosis. While focusing questions, Athletic Trainers also recognize red and yellow flags that would warrant referral to another healthcare provider.¹⁻⁷

KNOWLEDGE OF:

1. Psychosocial factors
2. Evidence-based medicine
3. Human anatomy and physiology
4. Neuroscience
5. Mechanisms of injury and nature of illness
6. Pathophysiology and pathological conditions
7. Biomechanical and postural factors and abnormalities
8. Environmental risk factors
9. Verbal and non-verbal communication techniques
10. Epidemiology and etiology of health conditions
11. Nutrition
12. Pharmacology
13. Standard medical terminology
14. Visual inspection techniques
15. Health conditions
16. Health factors (e.g., age and lifespan, sex and gender, race and ethnicity)
17. Cultural diversity and implications for health and assessment
18. Disablement models
19. Patient-reported outcome measures

SKILL IN:

1. Communicating effectively
2. Asking open-ended questions
3. Interpreting/using prior medical history and medical records
4. Documenting observations and history
5. Identifying anatomical structures
6. Reviewing and evaluating test results
7. Recognizing signs and symptoms of health conditions
8. Recognizing effects of substances
9. Interpreting results of patient-reported outcome measure
10. Identifying severity of health condition
11. Interpreting critical information gathered

TASK STATEMENT 2

Perform a physical examination using appropriate diagnostic techniques.

As a continuation of the process of collecting clinical data, the Athletic Trainer performs a valid and reliable evidence-based physical examination based on knowledge of human anatomy and physiology as well as clinical diagnostic tests and their expected outcomes. The Athletic Trainer groups and classifies signs and symptoms to exclude and confirm differential diagnoses and incorporates diagnostic testing to determine a likely and precise diagnosis. Furthermore, the Athletic Trainer prioritizes diagnostic testing according to an evidence-based value system that includes patient and societal values, clinical circumstances, and knowledge of the validity, reliability, sensitivity, specificity, and predictive value of each clinical and diagnostic test.^{1-5,7-10}

KNOWLEDGE OF:

1. Normal and abnormal human anatomy and physiology
2. Mechanics, principles, and techniques of special, specific, and selective tissue tests (e.g., ROM, MMT, orthopedic, neurocognitive, neurological)
3. Normal and pathological clinical findings and physiological measurements
4. Human biometrics
5. Palpation techniques and related principles
6. Mechanism of injury and nature of illness
7. Immediate and delayed functional and physiological response to health conditions
8. Signs and symptoms
9. Standard medical terminology and nomenclature
10. Clinical trajectories of concussion and traumatic brain injuries
11. Testing techniques and diagnostic imaging
12. Exercise physiology and its effects on the healing process
13. Characteristics of pain
14. Evidence-based principles and practices
15. Vital signs
16. Cultural diversity and implications for health and assessment
17. General health conditions
18. Validity and reliability of diagnostic testing and assessment techniques

SKILL IN:

1. Assessing neurocognitive function
2. Assessing neurological function and response
3. Assessing neuromuscular control (e.g., postural control and balance)
4. Identifying anatomical structures
5. Understanding the severity of signs of health conditions
6. Palpating appropriate structures to assess the integrity of human anatomical and physiological systems
7. Interpreting the relationships among signs of pathological health conditions
8. Assessing range of motion (e.g., AROM, PROM, RROM)
9. Assessing functional movement (e.g., biomechanics, gait analysis)
10. Assessing immediate and delayed physiological responses health conditions
11. Interpreting the relationships between pre-existing functional/structural abnormalities and health conditions.
12. Identifying appropriate selective tissue tests
13. Performing visual inspections
14. Performing selective tissue tests
15. Interpreting results of selective tissue tests
16. Exercising clinical judgement consistent with evidence-based principles and practices
17. Interpreting diagnostic imaging and testing
18. Performing manual muscle testing
19. Obtaining informed consent
20. Assessing general medical conditions

TASK STATEMENT 3

Formulate a clinical diagnosis by interpreting the information obtained during the history and physical examination.

The Athletic Trainer uses clinical reasoning to synthesize data gathered from observing the patient, asking directed questions, conducting a physical exam, and interpreting diagnostic testing results in order to formulate valid clinical diagnoses. The Athletic Trainer continually assesses and reassesses clinical findings to confirm or exclude health conditions within the initial differential diagnoses in order to determine if further diagnostic testing is indicated, to establish a targeted treatment plan, and to refer to other healthcare providers as necessary.¹⁻¹¹

KNOWLEDGE OF:

1. Health conditions
2. Clinical indications for referral
3. Pharmacology
4. Standard medical terminology and nomenclature
5. Psychosocial dysfunction and implications associated with health conditions
6. Evidence-based principles and practices
7. Normal and abnormal neurocognitive and neurological function
8. Differential diagnoses

SKILL IN:

1. Interpreting and integrating evaluation findings
2. Formulating differential diagnoses
3. Synthesizing applicable information from the examination and assessment
4. Using valid and reliable information to assist in decision-making

TASK STATEMENT 4

Establish a plan of care based on the clinical diagnosis and evidence-based practice.

Once the assessment/evaluation is completed and a clinical diagnosis is formed, the Athletic Trainer must determine the appropriate plan of care. Appropriate clinical decision making must consider scope of practice, best practices, recognizing medical emergencies, and referral to the appropriate healthcare provider.^{1-3, 12-13}

KNOWLEDGE OF:

1. Health conditions and prognosis
2. Scope of practice of healthcare providers
3. Guidelines for return to activity or participation
4. Pharmacology
5. Therapeutic intervention
6. Standard medical terminology and nomenclature
7. Psychosocial factors
8. Human anatomy and physiology
9. Cultural diversity and implications for health and assessment
10. Concepts of healing
11. Verbal and non-verbal communication
12. Diagnoses and differential diagnoses
13. Policies, procedures, and guidelines
14. Federal, state, and local laws, regulations, rules, and requirements, and professional standards
15. Clinical trajectories of concussion and traumatic brain injuries
16. Standard medical documentation procedures

SKILL IN:

1. Synthesizing information
2. Identifying appropriate courses of action
3. Incorporating federal, state, and local laws, regulations, rules, and requirements, and professional standards
4. Setting appropriate goals
5. Considering factors that influence level of activity
6. Collaborating with interdisciplinary healthcare providers
7. Directing referrals to the appropriate professionals
8. Using standard medical terminology and nomenclature
9. Using standard medical documentation procedures

TASK STATEMENT 5

Educate the patient and stakeholders on the clinical diagnosis, prognosis, and plan of care.

Athletic Trainers must communicate effectively throughout the evaluation process to obtain essential information for developing a clinical diagnosis and plan of care. In addition to listening, effective communication includes thoroughly explaining the clinical findings and therapeutic interventions in a manner that the patient fully understands the prognosis of their health condition(s). Additionally, Athletic Trainers must consider the patients' personal characteristics (e.g.: culture, ethnicity, sex, gender identity, socioeconomic factors) to ensure communication is appropriate and maximally effective. Lastly, Athletic Trainers must educate and communicate with other health professionals and appropriate stakeholders while adhering to patient confidentiality guidelines, laws, and regulations.^{2,12-13}

KNOWLEDGE OF:

1. Best practices regarding the care and treatment of health conditions
2. Effective verbal and non-verbal communication techniques
3. Patient confidentiality guidelines, laws, and regulations
4. Health conditions prognosis and complications
5. Standard medical terminology and nomenclature
6. Motivational techniques
7. Concepts of healing progression
8. Psychosocial factors
9. Cultural diversity and implications for health and assessment

SKILL IN:

1. Communicating effectively
2. Maintaining patient confidentiality
3. Motivating to promote optimal outcomes
4. Using standard medical terminology and nomenclature
5. Differentiating between normal and abnormal recovery progression
6. Using appropriate counseling techniques

DOMAIN II REFERENCES

1. Prentice W. *Principles Of Athletic Training: A Competency-Based Approach*. 15th ed. New York, New York: McGraw-Hill; 2014.
2. Magee D. *Orthopedic Physical Assessment*. 6th ed. St. Louis: Elsevier Saunders; 2013.
3. Starkey C, Brown S. *Examination Of Orthopedic And Athletic Injuries*. 4th ed. Philadelphia: F.A. Davis Company; 2015.
4. Hazelbaker C. Perceived skills and abilities required by athletic trainers in hospital and clinical management positions: a Delphi study. *J Athl Train*. 2013;48(1):87-91.
5. Carr W, Thomas S, Paulsen J, Chiu J. Characteristics of athletic training students that preceptors find desirable. *Athl Train Educ J*. 2016;11(1):27-31.
6. Braveman P, Gottlieb L. The social determinants of health: it's time to consider the causes of the causes. *Public Health Rep*. 2014;129(1_suppl2):19-31.
7. Nynas S. The assessment of athletic training students' knowledge and behavior to provide culturally competent care. *Athl Train Educ J*. 2015;10(1):82-90.
8. Hankemeier D, Kirby J. Integrating clinical prediction rules throughout the curriculum. *Athl Train Educ J*. 2018;13(1):49-56.
9. Cowley L, Farewell D, Maguire S, Kemp A. Methodological standards for the development and evaluation of clinical prediction rules: a review of the literature. *Diagn Progn Res*. 2019;3(1).
10. Schilling J. Instructional strategy: administration of injury scripts. *Athl Train Educ J*. 2016;11(3):152-157.
11. Kicklighter T, Geisler P, Barnum M, Heinerichs S, Martin M. Exploration of factors perceived to influence development of diagnostic reasoning in athletic trainers and athletic training students. *Athl Train Educ J*. 2018;13(2):120-130.
12. Flanagan KW, Cuppett M. *Medical Conditions in the Athlete*. 3rd ed. Champaign, IL: Human Kinetics; 2017
13. Shultz SJ, Houglum PA, Perrin DH. *Examination of Musculoskeletal Injuries*. 4th ed. Champaign, IL; 2016

Domain III: Critical Incident Management

Integrating best practices in immediate and emergency care for optimal outcomes

Critical Incident Management includes four tasks that define how newly certified Athletic Trainers respond when events require their immediate attention. The tasks are listed in full here, with key words in the tables.

1. Implement Emergency Action (Response) Plans for all venues and events to guide appropriate and unified response in order to optimize outcomes.
2. Triage the severity of health conditions.
3. Implement appropriate evidence-based emergent care procedures to reduce the risk of morbidity and mortality (e.g., c-spine, airway management, heat illness, pandemics, suicides, other emergent conditions).
4. Assess the scene to identify appropriate courses of action.

It is the overwhelming opinion of respondents that extreme harm would result if newly certified Athletic Trainers were not proficient in these tasks. More than 90% of the respondents endorsed the Importance of each of these tasks with ratings of 3 or 4.

Table 26. Counts and Percentages for Importance of Tasks in Critical Incident Management

Task (Key Words)	N	1	% 1	2	% 2	3	% 3	4	% 4
Implement EAP.	808	13	1.6	24	3.0	122	15.1	649	80.3
Triage severity.	806	9	1.1	28	3.5	160	19.8	609	75.6
Implement emergent care.	809	11	1.4	14	1.7	61	7.5	723	89.4
Assess the scene.	810	15	1.9	40	4.9	259	32.0	496	61.2

Importance: 1 = No harm at all, 2 = Minimal harm, 3 = Moderate harm, 4 = Extreme Harm

Descriptive statistics (Table 27) for the four tasks indicate median ratings of 4, and the means for all tasks in the domain are close to it.

Table 27. Descriptive Statistics for Importance of Tasks in Critical Incident Management

Task (Key Words)	N	Median	Mean	SE Mean	Std Dev
Implement EAP.	808	4	3.7	0.0	0.6
Triage severity.	806	4	3.7	0.0	0.6
Implement emergent care.	809	4	3.8	0.0	0.5
Assess the scene.	810	4	3.5	0.0	0.7

Importance: 1 = No harm at all, 2 = Minimal harm, 3 = Moderate harm, 4 = Extreme Harm

While the Importance ratings make it clear that newly certified Athletic Trainers have to be proficient in performing Critical Incident Management tasks, Frequency ratings indicate that they implement EAPs and provide emergent care rarely, about once per year (rating of 2) or sometimes, about once per month (rating of 3). Ratings for triage severity and assess the scene are spread rather broadly across the Frequency scale.

Table 28. Counts and Percentages for Frequency of Tasks in Critical Incident Management

Task (Key Words)	N	1	% 1	2	% 2	3	% 3	4	% 4	5	% 5
Implement EAP.	809	4	0.5	356	44.0	305	37.7	84	10.4	60	7.4
Triage severity.	810	4	0.5	181	22.4	270	33.3	176	21.7	179	22.1
Implement emergent care.	810	5	0.6	347	42.8	283	34.9	105	13.0	70	8.7
Assess the scene.	808	6	0.7	186	23.0	257	31.8	164	20.3	195	24.1

Frequency: 1 = Never, 2 = Rarely, 3 = Sometimes, 4 = Often, 5 = Repeatedly

The median response for all tasks in this domain was 3, which corresponds to about once per month, but the standard deviations indicate diversity among the respondents.

Table 29. Descriptive Statistics for Frequency of Tasks in Critical Incident Management

Task (Key Words)	N	Median	Mean	SE Mean	Std Dev
Implement EAP.	809	3	2.8	0.0	0.9
Triage severity.	810	3	3.4	0.0	1.1
Implement emergent care.	810	3	2.9	0.0	1.0
Assess the scene.	808	3	3.4	0.0	1.1

Frequency: 1 = Never, 2 = Rarely, 3 = Sometimes, 4 = Often, 5 = Repeatedly

DOMAIN SUMMARY

The Practice Analysis Task Force reviewed published literature pertaining to the Critical Incident Management domain. The summary of this literature follows.

Athletic Trainers manage many injuries that are considered relatively minor;¹ however, Athletic Trainers 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 for and management of emergency situations.^{3,4} Athletic Trainers have a responsibility to identify and use evidence-based standards of care in preparation for 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, communication and steps to follow during emergent situations.¹⁻⁴ When an EAP is implemented, an Athletic Trainers 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 healthcare providers in a continuously evolving profession, Athletic Trainers 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.

TASK STATEMENT 1

Implement Emergency Action (Response) Plans for all venues and events to guide appropriate and unified response in order to optimize outcomes.

For Athletic Trainers to successfully prepare to treat 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 events for which the Athletic Trainer 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} Athletic Trainers should annually review, and revise if needed, all aspects of the EAP with all involved parties (e.g., administrators, legal counsel, staff members) to ensure coordinated actions and a unified response.^{1-3,5-7} Athletic Trainers 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:

1. Components of emergency action (response) plans
2. Effective communication techniques (e.g., multimedia videos, pamphlets, posters, models, handouts, and oral communication)
3. Roles of individual incident response personnel and appropriate stakeholders
4. National and state occupational, safety, and health guidelines
5. Protective equipment, removal devices, and procedures
6. Standard and emergency medical equipment
7. Pharmacological agents and interventions for emergent conditions
8. Personal protective equipment
9. Organizational and institutional policies and procedures
10. Legal risks and ramifications

SKILL IN:

1. Communicating effectively
2. Educating individuals (e.g., facilities, health care professionals, patients, guardians, organizational personnel) regarding standard emergency care procedures
3. Developing, documenting, organizing, and rehearsing/revising emergency action plans
4. Identifying hazards in order to reduce risks

TASK STATEMENT 2

Triage the severity of health conditions.

Recognizing the signs and symptoms of life-threatening conditions is the cornerstone of effective management of these conditions. Athletic Trainers must have a comprehensive 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 health conditions caused by 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 Athletic Trainers 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. Athletic Trainers must make appropriate clinical decisions and determinations of the seriousness of the injury or illness.

KNOWLEDGE OF:

1. Epidemiology and etiology of catastrophic conditions
2. Emergent medical situations (e.g., respiratory, central nervous, and cardiovascular)
3. Human anatomy and physiology
4. National and state occupational, safety, and health guidelines
5. Pharmacological and therapeutic intervention for emergent conditions
6. Roles and scopes of practice of relevant incident response personnel
7. Standard and emergency medical equipment
8. Triage systems

SKILL IN:

1. Implementing emergency action plans
2. Implementing national and state occupational, safety, and health guidelines
3. Using standard and emergency medical equipment
4. Measuring, interpreting, and monitoring vital signs
5. Applying clinical reasoning
6. Conducting primary, secondary, and ongoing assessments for emergent medical situations
7. Applying pharmacological and therapeutic interventions for emergent conditions
8. Managing patients in triage systems
9. Identifying resources at the scene

TASK STATEMENT 3

Implement appropriate evidence-based emergent care procedures to reduce the risk of morbidity and mortality (e.g., c-spine, airway management, heat illness, pandemics, suicides, other emergent conditions).

Athletic Trainers must be knowledgeable in appropriate management techniques, such as spine immobilization and airway management, and have the skills to implement these techniques. They must maintain current knowledge of the types and varieties of equipment used by patients (e.g., helmets, pads) and in the emergency equipment and therapeutic interventions that may be used in emergency situations.

Once an emergent condition is identified, the Athletic Trainer must be proficient in using a variety of medical equipment, such as automated external defibrillators (AEDs), splints, rectal thermometers, oral and nasal airway devices (e.g., oropharyngeal airway, nasopharyngeal airway), suction, supplemental oxygen, sphygmomanometers, stethoscopes, and spine immobilization equipment (e.g., spine board, cervical immobilization). The Athletic Trainer must continue medical treatment until additional medical personnel and treatment becomes available. All Athletic Trainers 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:

1. Appropriate management techniques for emergent conditions
2. Appropriate use of emergency equipment and techniques (e.g., automated external defibrillator, airway management devices, suction, oxygen)
3. Human anatomy and physiology
4. Therapeutic intervention for emergent conditions
5. Federal, state, and local laws and regulations and professional standards
6. Roles and scopes of practice of relevant incident response personnel

SKILL IN:

1. Treating patients with emergent conditions
2. Managing critical incidents
3. Implementing emergency action plans (emergency response plan)
4. Implementing federal, state, and local laws and regulations and professional standards
5. Implementing immobilization and transfer techniques
6. Implementing appropriate extrication techniques
7. Measuring, interpreting, and monitoring vital signs and patient status
8. Removing protective equipment using appropriate removal devices and/or manual techniques
9. Using standard and emergency medical equipment

TASK STATEMENT 4

Assess the scene to identify appropriate courses of action.

Certain health conditions may require referral for advanced evaluation and care in order to prevent exacerbation of the condition. In addition to recognizing these conditions, the Athletic Trainer 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 Athletic Trainer must possess knowledge of and proficiency with various pieces of emergency equipment and immobilization and transfer techniques, even when working in atypical locations and/or needing to manipulate or remove complicated athletic equipment.⁶⁻⁸

KNOWLEDGE OF:

1. Environmental risk factors (e.g., lightning, temperature)
2. Ergonomic risk factors (e.g., trip hazards, fall hazards, lighting, noise, concussive)
3. Violence risk factors
4. Ingress and egress routes
5. Applicable rules and regulations
6. Equipment hazards (e.g., chemical, mechanical)
7. Structural hazards (e.g., electrical, fencing, surface)
8. Hazard mitigation

SKILL IN:

1. Performing a scene size-up
2. Identifying resources at the scene
3. Utilizing applicable equipment (e.g., fire extinguisher, eye-wash station, utility cut-off methods)
4. Identifying on-going risks
5. Communicating with outside agencies

DOMAIN III REFERENCES

1. Casa DJ & Stearns RL. *Emergency Management for Sport and Physical Activity*. 1st ed. Burlington, MA: Jones & Bartlett Learning; 2015.
2. Casa DJ, Guskiewicz KM, Anderson SA, Courson RW, et al. National Athletic Trainers' Association Position Statement: Preventing Sudden Death in Sports. *Journal of Athletic Training*. 2012; 47(1): 96-118.
3. Casa DJ, Almquist J, Anderson SA, Baker L, et al. The Inter-Association Task Force for Preventing Sudden Death in Secondary School Athletics Programs: Best-Practices Recommendations. *Journal of Athletic Training*. 2013; 48(4): 546-553.
4. Drezner JA, Courson RW, Roberts WO, Mosesso VN, Link MS, & Maron BJ. Inter-Association Task Force Recommendations on Emergency Preparedness and Management of Sudden Cardiac Arrest in High School and College Athletic Programs: A Consensus Statement. *Journal of Athletic Training*. 2007; 41(1): 143-158.
5. Walsh KM, Cooper MA, Holle R, Rakov VA, Roeder WP, & Ryan M. National Athletic Trainers' Association Position Statement: Lightning Safety for Athletics and Recreation. *Journal of Athletic Training*. 2013; 48(2): 258-270.
6. Gorse K, Blanc R, Feld F, & Radelet M. *Emergency Care in Athletic Training*. 1st ed. Philadelphia, PA: FA Davis; 2010.
7. Rehberg RS. *Sports Emergency Care: A Team Approach*. 2nd ed. Thorofare, NJ: Slack; 2013.
8. Swartz EE, Boden BP, Courson RW, et al. National Athletic Trainers' Association Position Statement: Acute Management of the Cervical Spine-Injured Athlete. *Journal of Athletic Training*. 2009; 44(3): 306-331.
9. National Athletic Trainers' Association Official Statement on Athletic Healthcare Provider "Time Outs" Before Athletic Events. August 2012. Accessed on January 19, 2015 from <http://www.nata.org/sites/default/files/TimeOut.pdf>.

Domain IV: Therapeutic Intervention

Rehabilitating individuals with a health condition (i.e., injury, illness, general medical condition) with the goal of achieving optimal activity and participation levels based on core concepts (i.e., fundamental knowledge and skillsets) using the applications of therapeutic exercise, modality devices, and manual techniques

Tasks in Therapeutic Intervention detail the work that newly certified Athletic Trainers perform in developing and implementing plans of care and managing patient conditions. The tasks are presented in full here but abbreviated in Tables 30 through 33:

1. Optimize patient outcomes by developing, evaluating, and updating the plan of care.
2. Educate patients and appropriate stakeholders using pertinent information to optimize patient-centered care and patient engagement throughout the therapeutic intervention process.
3. Prescribe therapeutic exercises following evidence-based practices to address impairments and enhance activity and participation levels.
4. Administer therapeutic modalities and devices using evidence-based procedures and parameters to address impairments and enhance activity and participation levels.
5. Administer manual therapy techniques using evidence-based methods to address impairments and enhance activity and participation levels.
6. Determine patients' functional status using appropriate techniques and standards to inform decisions about the return to optimal activity and participation levels.
7. Manage general medical conditions to optimize activity and participation levels.

The lack of proficiency in performing tasks would result in at least minimal harm or moderate harm, with the majority of respondents providing ratings of 2 or 3. Less harm is associated with educating patients and stakeholders than other tasks in the domain, and the greatest Importance ratings are found in determining functional status.

Table 30. Counts and Percentages for Importance of Tasks in Therapeutic Intervention

Task (Key Words)	N	1	% 1	2	% 2	3	% 3	4	% 4
Develop, update plan of care.	791	25	3.2	267	33.8	404	51.0	95	12.0
Educate patients, stakeholders.	792	48	6.1	369	46.6	309	39.0	66	8.3
Prescribe therapeutic exercises.	790	13	1.7	219	27.7	425	53.8	133	16.8
Administer therapeutic modalities.	789	14	1.8	191	24.2	366	46.4	218	27.6
Administer manual therapy.	789	15	1.9	232	29.4	382	48.4	160	20.3
Determine functional status.	789	12	1.5	103	13.1	411	52.1	263	33.3
Manage general medical conds.	790	14	1.8	134	17.0	426	53.9	216	27.3

Importance: 1 = No harm at all, 2 = Minimal harm, 3 = Moderate harm, 4 = Extreme Harm

The median rating for educate patients and stakeholders was 2, but it was 3 for all other tasks in Therapeutic Intervention. The means were highest for determine functional status and manage general medical conditions.

Table 31. Descriptive Statistics for Importance of Tasks in Therapeutic Intervention

Task (Key Words)	N	Median	Mean	SE Mean	Std Dev
Develop, update plan of care.	791	3	2.7	0.0	0.7
Educate patients, stakeholders.	792	2	2.5	0.0	0.7
Prescribe therapeutic exercises.	790	3	2.9	0.0	0.7
Administer therapeutic modalities.	789	3	3.0	0.0	0.8
Administer manual therapy.	789	3	2.9	0.0	0.7
Determine functional status.	789	3	3.2	0.0	0.7
Manage general medical conds.	790	3	3.1	0.0	0.7

Importance: 1 = No harm at all, 2 = Minimal harm, 3 = Moderate harm, 4 = Extreme Harm

All tasks are performed routinely, with the substantial majority of respondents rating them with 4 or 5 on the Frequency scale.

Table 32. Counts and Percentages for Frequency of Tasks in Therapeutic Intervention

Task (Key Words)	N	1	% 1	2	% 2	3	% 3	4	% 4	5	% 5
Develop, update plan of care.	787	3	0.4	11	1.4	58	7.3	298	37.9	417	53.0
Educate patients, stakeholders.	790	5	0.7	20	2.5	98	12.4	309	39.1	358	45.3
Prescribe therapeutic exercises.	789	2	0.3	8	1.0	37	4.7	192	24.3	550	69.7
Administer therapeutic modalities.	784	3	0.4	16	2.0	68	8.7	174	22.2	523	66.7
Administer manual therapy.	787	1	0.1	9	1.2	68	8.6	234	29.7	475	60.4
Determine functional status.	783	1	0.1	6	0.8	61	7.8	284	36.3	431	55.0
Manage general medical conds.	783	3	0.4	24	3.1	167	21.3	274	35.0	315	40.2

Frequency: 1 = Never, 2 = Rarely, 3 = Sometimes, 4 = Often, 5 = Repeatedly

Descriptive statistics bear out the routine nature of the tasks in Therapeutic Intervention, with all means above 4 and most above 4.5, and with medians of 5 for five tasks.

Table 33. Descriptive Statistics for Frequency of Tasks in Therapeutic Intervention

Task (Key Words)	N	Median	Mean	SE Mean	Std Dev
Develop, update plan of care.	787	5	4.4	0.0	0.7
Educate patients, stakeholders.	790	4	4.3	0.0	0.8
Prescribe therapeutic exercises.	789	5	4.6	0.0	0.6
Administer therapeutic modalities.	784	5	4.5	0.0	0.8
Administer manual therapy.	787	5	4.5	0.0	0.7
Determine functional status.	783	5	4.5	0.0	0.7
Manage general medical conds.	783	4	4.1	0.0	0.9

Frequency: 1 = Never, 2 = Rarely, 3 = Sometimes, 4 = Often, 5 = Repeatedly

DOMAIN SUMMARY

The Practice Analysis Task Force reviewed published literature pertaining to the Therapeutic Intervention domain. The summary of this literature follows.

The World Health Organization's International Classification of Health Interventions defines a health intervention as "an act performed for, with or on behalf of a person or a population whose purpose is to assess, improve, maintain, promote or modify health, functioning or health conditions."²⁵ Purposeful interactions between the Athletic Trainer and patients, based upon the findings of an evaluation and designed to positively alter the patient's health condition, are considered therapeutic interventions.^{24,29,45} Athletic Trainers provide therapeutic interventions (e.g., therapeutic exercise, therapeutic modalities and devices, manual therapy, education) to treat and rehabilitate health conditions with the goal of achieving optimal levels of function, health, fitness and wellness for their patients.^{12,24,51,52,53,55}

Selection of specific treatment techniques, practices and procedures are made by the Athletic Trainer using evidence-based principles in collaboration with a physician and in compliance with legal and ethical standards.^{12,24} Specific parameters for each intervention are chosen and modified based upon current assessment findings, response to treatment, progress toward identified goals and contextual factors (e.g., age, gender, culture, psychosocial issues).^{3,8,12,24,52} Athletic Trainers communicate relevant aspects of the rehabilitation process to patients and stakeholders. All examination procedures, tests and treatment techniques used to develop and carry out the plan of care are selected using evidence-based practice principles and along with the plan of care, are recorded through legally defensible documentation.^{7,12,24,29,45}

TASK STATEMENT 1

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

Optimizing patient outcomes requires clinical expertise built on a foundation of evidence-based practice principles, proper planning and an engaged patient.^{12,20,24,52} The application of any therapeutic intervention begins with an initial evaluation that leads to the Athletic Trainer developing an initial plan of care that will evolve appropriately based on patient response to treatment(s) and any new pertinent information collected. This plan of care is based upon critical analysis of the data from the examination process, the diagnosis and prognosis and furthermore outlines the goals of the patient's treatment program and the methods used to achieve them.^{12,20,24,52} Long-term goals reflect the desired final outcomes of the patient's treatment and rehabilitation program, while short-term goals identify the progressive steps required to achieve them. Final goals and desired outcomes are patient-centered and developed in collaboration with the patient and consultation of the physician prior to beginning the treatment and rehabilitation program.^{12,20,24,52}

Each treatment technique or method applied throughout the rehabilitation program is selected to facilitate healing, remediate impairments, address activity limitations and participation restrictions identified in the initial evaluation and subsequent re-evaluations, with a focus on achievement of the established goals of the program.^{12,15,20,24,52} As the patient achieves short-term goals, re-evaluation of the patient's new status necessitates new short-term goals be developed.^{20,36,43} The Athletic Trainer continues to reassess each phase of the treatment program including all treatment techniques and methods used to facilitate goal achievement.^{20,36,43} The plan of care must evolve in a progressive manner through the process of continual evaluation of patient status and their response to all treatments to reach the final goal of restoration of optimal patient function in all parameters (e.g., clinical, functional, psychological).^{12,15,20,24}

Clinical tests and measures, functional tests, self-report surveys, cost and return to participation are some of the variables used by the Athletic Trainer to determine the final outcomes of the treatment and rehabilitation program.^{16,31,60} To assure positive patient-centered outcomes, the Athletic Trainer works together with the patient and the physician, with additional health-care professionals being invited to assist in the patient's care as needed. In such cases, the Athletic Trainer often serves as the manager of the plan of care and liaison among the providers, facilitating communication regarding all aspects of the plan with all stakeholders.^{12,21,51}

KNOWLEDGE OF:

1. Evidence-based principles and practices
2. Inflammation and healing process
3. Health conditions
4. Theories of pain and motor system adaptation (e.g., biopsychosocial model, endogenous descending pain inhibition)
5. Roles and scopes of practice of relevant health care providers
6. Rehabilitation and/or treatment plan modification
7. Rehabilitation methods (e.g., therapeutic exercise, manual therapies, modalities and devices)
8. Health factors (e.g., age and lifespan, sex and gender, race and ethnicity, co-morbidities)
9. Indications, contraindications, and precautions
10. Safety (e.g., patient, environment, equipment, clinician)
11. Pharmacology
12. Cultural diversity and responses to treatment and rehabilitation
13. Surgical procedures and precautions
14. Legal risks and ramifications
15. Psychosocial implications associated with injuries, illnesses, and conditions
16. Outcome measurement tools (e.g., patient-centered, clinician-centered)
17. Evaluation findings (e.g., diagnosis, impairments, activity limitations, participation restrictions)
18. Referral sources and procedures
19. Implications and limitations of provider referrals and standing orders
20. Periodization

SKILL IN:

1. Interpreting examinations and assessments
2. Clinical reasoning
3. Assessing outcomes
4. Managing patient care
5. Communicating effectively
6. Establishing patient goals
7. Examining and re-examining health conditions
8. Assessing and reassessing patient response to therapeutic interventions
9. Preparing patients for therapeutic intervention
10. Modifying treatment plans

TASK STATEMENT 2

Educate patients and appropriate stakeholders using pertinent information to optimize patient-centered care and patient engagement throughout the therapeutic intervention process.

Effective communication between the Athletic Trainer and stakeholders regarding the patient's recovery optimizes outcomes. Additionally, compliance with the treatment plan is facilitated when the nature of the health condition, rationale for treatments and restrictions, importance of proper exercise execution, and the benefits of completing home exercises are clearly communicated to the patient and stakeholders.^{4,12,24,27,42,48,58}

The Athletic Trainer understands motor learning theories and provides effective patient instruction through visual, verbal and/or tactile communication to assure correct patient performance.¹⁹ Use of instructional videos, pamphlets, posters, and models can help clarify complex aspects of important information.^{12,24,27} Following verbal and visual instructions with written, diagrammed or video-based instructions reinforces patient recall on important points for home self-care.^{12,24,27} Home care instructions also address environmental safety issues such as loose rugs and stairs. All communications with the patient and stakeholders are presented in a manner that is age-, maturity-, cognitive level- and psychologically appropriate with pertinent modifications for contextual factors such as culture and gender.^{8,20,24,51,68} Education provided to the patient and relevant stakeholders is documented in the medical record.^{7,12,29,45}

KNOWLEDGE OF:

1. Evidence-based principles and practices
2. Appropriate referral considerations
3. Anatomy, physiology and kinesiology (e.g., vestibular, pulmonary, visual, cardiovascular, musculoskeletal)
4. Health factors (e.g., age and lifespan, sex and gender, race and ethnicity, co-morbidities)
5. Indications, contraindications, and precautions
6. Safety (e.g., patient, environment, equipment, clinician)
7. Cultural diversity and responses to treatment and rehabilitation
8. Surgical procedures and precautions
9. Legal risks and ramifications (e.g., Scope of practice)
10. Nutrition
11. Homecare program components
12. Educational material and methods
13. Supplemental resources (e.g., psychosocial, community, family, and health care)
14. Psychological aspects related to the therapeutic intervention process
15. Health conditions
16. Inflammation and healing processes
17. Theories of pain, pain control, and motor system adaptation
18. Principles of rehabilitation process and modification
19. Pharmacology

SKILL IN:

1. Communicating effectively (e.g., recovery timeline, expectations, outcomes)
2. Providing guidance for the stakeholders throughout the therapeutic intervention process
3. Developing homecare programs
4. Providing appropriate referral
5. Applying clinical reasoning

TASK STATEMENT 3

Prescribe therapeutic exercises following evidence-based practices to address impairments and enhance activity and participation levels.

Therapeutic exercises are prescribed physical movements or functional activities that are implemented to prevent or remediate impairments of body structures and functions, enhance activities, facilitate participation, reduce risk, and maximize physical capacity, health, and wellness.^{5,20,22,24,27,39,52} Athletic Trainers, collaborating with physicians, prescribe therapeutic exercises to improve a wide range of

neuromusculoskeletal, cardiorespiratory system and psychological functions and qualities such as flexibility; range of motion; muscular strength, endurance, power; postural control, balance, coordination, and agility; bone density and connective tissue strength; aerobic capacity and endurance; relaxation; pain, swelling and edema; activity-specific movement and activity tolerance.^{5,15,20,21,22,24,27,39,51,52,56,67}

The Athletic Trainer prescribes and selects specific therapeutic exercises for the patient based on evidence-based practice principles, thorough evaluations, a plan of care, established goals, available resources, and patient response to treatment.^{20,22,24,52} Athletic Trainers use various modes of therapeutic exercise to target all dimensions of physical fitness.^{4,5,15,20,21,22,24,26,27,30,33,35,39,40,46,47,51,52,56,58,67,69,71} The Athletic Trainer is qualified to use and instruct the use of a plethora of different equipment to facilitate therapeutic exercise.^{20,22,24,27,33,39,52,71} The Athletic Trainer facilitates a safe exercise environment and manages equipment maintenance.^{24,51}

KNOWLEDGE OF:

1. Evidence-based principles and practices
2. Inflammation and healing processes
3. Health conditions
4. Theories of pain and motor system adaptation (e.g., biopsychosocial model, endogenous descending pain inhibition)
5. Anatomy, physiology and kinesiology (e.g., vestibular, pulmonary, visual, cardiovascular, musculoskeletal)
6. Health factors (e.g., age and lifespan, sex and gender, race and ethnicity, comorbidities)
7. Indications, contraindications, and precautions
8. Safety (e.g., patient, environment, equipment, clinician)
9. Pharmacology
10. Cultural diversity and responses to treatment and rehabilitation
11. Surgical procedures and precautions
12. Legal risks and ramifications (e.g., Scope of practice)
13. Equipment and tools
14. Exercise prescription and modification (e.g., Progression and Regression)
15. Neurological factors
16. Tissue responses to stimulus
17. Local and systemic physiologic responses
18. Principles of resistance training
19. Principles of functional training
20. Principles of cardiovascular training
21. Principles of postural control
22. Principles of dynamic joint stability
23. Principles of mobility
24. Principles of pain control
25. Principles of swelling management
26. Principles of return to activity programs
27. Principles of motor learning
28. Psychosocial influences
29. Structure, growth, development, and regeneration of tissue
30. Physiologic responses to exercise-related modalities and devices
31. Gait training techniques
32. Periodization

SKILL IN:

1. Interpreting examination results
2. Applying clinical reasoning
3. Assessing outcomes
4. Managing patient care (e.g., progressions, regressions, discontinuation)
5. Communicating effectively
6. Establishing patient goals
7. Examining and re-examining health conditions
8. Assessing and reassessing patient's response to therapeutic interventions
9. Developing therapeutic exercise programs
10. Implementing therapeutic exercise programs
11. Progressing patients through therapeutic exercise programs
12. Educating patients on proper biomechanics

TASK STATEMENT 4

Administer therapeutic modalities and devices using evidence-based procedures and parameters to address impairments and enhance activity and participation levels.

Therapeutic modalities and devices use various forms of energy to relieve pain, reduce swelling and edema, limit inflammation, enhance muscle activation, improve circulation, promote tissue perfusion, promote connective tissue extensibility, optimize healing, and improve functional capabilities.^{12,14,21,51,53,61,63} Athletic Trainers choose therapeutic modalities and devices based on evidence-based principles and apply them when evaluation of the patient's health condition indicates that a therapeutic modality or device may assist in reducing the sequelae of the pathology, preventing or remediating impairments in body function and structures, reducing activity limitations, eliminating participation restrictions, and enhancing physical capacities.^{12,14,21,51,53,61,63,68}

Athletic Trainers use various mechanical, thermal, electrical, acoustic and electromagnetic modalities and devices to treat health conditions.^{12,13,14,23,26,53,61,63} Moreover, Athletic Trainers utilize therapeutic devices such as tape, wraps and orthotics to promote improved musculoskeletal function and to reduce pain, swelling and edema.^{4,21,32,49,51,65}

Athletic Trainers employ therapeutic modalities and devices in accordance with state practice acts and refer patients to other healthcare providers when indicated.

KNOWLEDGE OF:

1. Evidence-based principles and practices
2. Inflammation and healing processes
3. Health conditions
4. Theories of pain, pain control, and motor system adaptation
5. Scope of practice and appropriate referral
6. Principles of rehabilitation process and modification
7. Health factors (e.g., age and lifespan, sex and gender, race and ethnicity, co-morbidities)
8. Indications, contraindications, and precautions
9. Safety (e.g., patient, environment, equipment, clinician)
10. Pharmacology
11. Cultural diversity and responses to treatment and rehabilitation
12. Surgical procedures and precautions
13. Legal risks and ramifications
14. Equipment and tool maintenance
15. Physiologic responses
16. Principles of electromagnetic, mechanical, thermal, and acoustical energy
17. Anatomy, physiology and kinesiology (e.g., vestibular, pulmonary, visual, cardiovascular, musculoskeletal)
18. Principles of taping, bracing and orthotics
19. Psychosocial influences

SKILL IN:

1. Interpreting examinations
2. Applying clinical reasoning
3. Assessing outcomes
4. Managing patient care
5. Communicating effectively
6. Establishing patient goals
7. Applying therapeutic devices and modalities
8. Fabricating orthotic devices appropriately
9. Using taping techniques and orthotic devices appropriately
10. Assessing and reassessing patient's response to therapeutic devices and modalities
11. Assessing physiological responses related to the application of therapeutic devices and modalities

TASK STATEMENT 5

Administer manual therapy techniques using evidence-based methods to address impairments and enhance activity and participation levels.

Manual therapy techniques include any treatment where mechanical force is applied through skilled hand movements that produce passive movement of joints and/or soft tissues.^{12,24,70} Athletic Trainers use their knowledge of anatomy, physiology, pathophysiology, and pain theory when administering manual therapy techniques to address the rehabilitation goals of their patients. These techniques include using varied techniques and any tools required for effective application of the technique.^{2,3,10,12,15,18,20,24,26,27,30,40,44,50,56,57,59,66,70}

Athletic Trainers employ evidence-based practice principles and thorough evaluations as the basis to select and apply appropriate manual therapy techniques to achieve rehabilitation plan goals such as

reduction of pain, swelling, spasm; prevention or remediation of impaired body functions and structures; and, overall enhancement of functional capabilities.^{12,15,24,56,68,70} Athletic Trainers continually re-evaluate and document the patient's response to manual therapy when determining to continue, discontinue, or alter the treatment.^{7,29,45,51}

KNOWLEDGE OF:

1. Evidence-based principles and practices
2. Inflammation and healing processes
3. Health conditions
4. Theories of pain, pain control, and motor system adaptation
5. Scope of practice and appropriate referral
6. Principles of rehabilitation process and modification
7. Health factors (e.g., age and lifespan, sex and gender, race and ethnicity, co-morbidities)
8. Indications, contraindications, and precautions
9. Safety (e.g., patient, environment, equipment, clinician)
10. Pharmacology
11. Cultural diversity and responses to treatment and rehabilitation
12. Surgical procedures and precautions
13. Legal risks and ramifications
14. Adaptations of the cutaneous, nervous, and musculoskeletal systems related to manual techniques
15. Psychosocial influences
16. Manual therapy techniques (e.g., joint mobilization, neural mobilization, soft tissue mobilization, positional release)
17. Physiologic responses
18. Anatomy, physiology and kinesiology (e.g., vestibular, visual, cardiorespiratory, musculoskeletal)

SKILL IN:

1. Interpreting examinations and assessments
2. Applying clinical reasoning
3. Assessing outcomes
4. Managing patient care
5. Communicating effectively
6. Establishing patient goals
7. Examining and re-examining health conditions
8. Assessing and reassessing patient's response to therapeutic interventions
9. Performing manual therapy techniques appropriately

TASK STATEMENT 6

Determine patients' functional status using appropriate techniques and standards to inform decisions about returning to optimal activity and participation levels.

Quantitative and/or qualitative assessment of an individual's functional status either prior to beginning an activity or throughout a rehabilitation program is a key determinant of readiness to perform at optimal activity and participation levels.^{22,24,33,52} Athletic Trainers use evidence-based practice principles to select and implement measures of functional status including, but not limited to, functional performance tests, activity-specific assessments, interval sport or work hardening program completion, patient self-report outcome surveys, patient-report activity-level surveys assessing functional status and

readiness to optimal activity and participation levels.^{6,22,24,26,40,50} Athletic Trainers understand the relationship between clinical measures of physical capacity and functional level measures using both to determine overall functional status.^{6,15,22,24,27,33,62} Athletic Trainers work with physicians and other healthcare providers to determine the specific functional level required for a patient to withstand the stresses which may be incurred during their desired activity. Further, Athletic Trainers utilize this measure as a criterion of readiness to return to the individual to full participation.^{22,24,43}

KNOWLEDGE OF:

1. Evidence-based principles and practices
2. Inflammation and healing processes
3. Health conditions
4. Scope of practice and appropriate referral
5. Principles of rehabilitation process and plan modification
6. Health factors (e.g., age and lifespan, sex and gender, race and ethnicity, co-morbidities, nutrition)
7. Indications, contraindications, and precautions
8. Safety (e.g., patient, environment, equipment, clinician)
9. Cultural diversity and responses to treatment and rehabilitation
10. Surgical procedures and precautions
11. Legal risks and ramifications
12. Anatomy, physiology and kinesiology (e.g., vestibular, pulmonary, visual, cardiovascular, musculoskeletal)
13. Principles of and criteria for functional progression
14. Gait analysis
15. Biomechanical and functional assessments
16. Theories of pain, pain control, and motor system adaptation
17. Pharmacology
18. Outcome measurement tools (e.g., patient-centered, clinician-centered)
19. Psychosocial influences
20. Activity and participation requirements

SKILL IN:

1. Interpreting examination results
2. Applying clinical reasoning
3. Assessing outcomes
4. Managing patient care
5. Communicating effectively
6. Establishing patient goals
7. Examining and re-examining health conditions
8. Assessing and reassessing patient's response to therapeutic interventions
9. Performing biomechanical and functional analyses
10. Interpreting biomechanical and functional analyses
11. Making decisions about functional progressions
12. Making decisions about return to optimal activity and participation level

TASK STATEMENT 7

Manage general medical conditions to optimize activity and participation levels.

General medical conditions and illnesses are health conditions that can reduce physical and mental capacities of an individual leading to impairments of body structure and function, activity limitations and participation restrictions.^{17,51,68 17,37} In collaboration with a physician, the Athletic Trainer administers treatment and monitors the status of health conditions. As well, they administer a variety of therapeutic interventions to prevent or remediate associated impairments of body structure and function, activity limitations and participation restrictions or to enhance health, fitness and wellness.^{1,17,34,37,38,42,64,68} Adhering to all federal, state, and local laws, regulations, rules, requirements and professional standards, the Athletic Trainer selects and implements specific therapeutic interventions, using evidence-based practice principles, based upon the patient's evaluation, physician consultation, and knowledge of other concurrent treatments.^{9,17,28,37,42,64}

KNOWLEDGE OF:

1. Evidence-based principles and practices
2. Anatomy, physiology and kinesiology (e.g., vestibular, pulmonary, visual, cardiovascular, musculoskeletal)
3. Health conditions
4. Inflammation and healing processes
5. Theories of pain, pain control, and motor system adaptation
6. Scope of practice and appropriate referral
7. Principles of rehabilitation process and plan modification
8. Health factors (e.g., age and lifespan, sex and gender, race and ethnicity, co-morbidities)
9. Indications, contraindications, and precautions
10. Safety (e.g., patient, environment, equipment, clinician)
11. Pharmacology
12. Cultural diversity and responses to treatment and rehabilitation
13. Surgical procedures and precautions
14. Legal risks and ramifications
15. Equipment and tools
16. Neurological factors
17. Psychosocial influences
18. Concussion and other traumatic brain injuries
19. Wound (e.g., chronic, open) management
20. Pathophysiology of systemic illnesses, communicable diseases, and infections

SKILL IN:

1. Interpreting examination results
2. Applying clinical reasoning
3. Assessing outcomes
4. Managing patient care
5. Communicating effectively
6. Establishing patient goals
7. Examining and re-examining health conditions
8. Assessing and reassessing patient's response to therapeutic interventions
9. Performing neurocognitive assessments
10. Incorporating neurocognitive assessments in plans of care
11. Using personal protective equipment appropriately

DOMAIN IV REFERENCES

1. Beam JW, Buckley B, Holcomb WR, Ciocca M. National Athletic Trainers' Association Position Statement: Management of Acute Skin Trauma. *J Athl Train*. 2016;51(12):1053-1070.
2. Bialosky JE, Beneciuk JM, Bishop MD, Coronado RA, Penza CW, Simon CB, George SZ. Unraveling the Mechanisms of Manual Therapy: Modeling an Approach. *J Orthop Sports Phys Ther*. 2018;48(1):8-18.
3. Bishop MD, Torres-Cueco R, Gay CW, Lluch-Girbes E, Beneciuk JM, Bialosky JE. What Effect Can Manual Therapy Have on a Patient's Pain Experience? *Pain Manag*. 2015;5(6):455-464.
4. Bolgla LA et al. National Athletic Trainers' Association Position Statement: Management of Individuals with Patellofemoral Pain. *J Athl Train*. 2018;53(9):820-836.
5. Brody LT, Hall CM. *Therapeutic Exercise: Moving Toward Function*, 4th Ed. Philadelphia, PA: Wolters Kluwer; 2017. ISBN: 9781496302342
6. Broglio SP et al. National Athletic Trainers' Association Position Statement: Management of Sport Concussion. *J Athl Train*. 2014;49(2):245-265.
7. Cartwright LA, Peer Ks. *Fundamental of Athletic Training*, 4th Ed. Champaign, IL: Human Kinetics; 2019.
8. Cartwright LA, Revis Shingles R. *Cultural Competence in Sports Medicine*. Champaign, IL: Human Kinetics; 2011.
9. Chang CJ et al. Inter-Association Consensus Statement: The Management of Medications by the Sports Medicine Team. *J Athl Train*. 2018;53(11):1103-1112.
10. Chimenti RL, Frey-Law LA, Sluka KA. A Mechanism-Based Approach to Physical Therapist Management of Pain. *Phys Ther*. 2018;98:302-314.
11. Chinn L, Hertel J. Rehabilitation of Ankle and Foot Injuries in Athletes. *Clin Sports Med*. 2010;29(11):157-167.
12. Denegar CR, Saliba E, Saliba S. *Therapeutic Modalities for Musculoskeletal Injuries*, 4th Ed. Champaign, IL: Human Kinetics; 2016.
13. Dommerholt J, Fernandez-de-las-Penas C, Petersen SM. Needling: Is There a Point? *J Man Manip Ther*. 2019;27(3):125-127.
14. Draper DO, Jutte LS, Knight KL,. *Therapeutic Modalities: The Art and the Science*. 2nd Ed. Baltimore: Lippincott Williams & Wilkins; 2020.
15. Dutton M. *Dutton's Orthopaedic Examination, Evaluation and Intervention*, 5th Ed. McGraw Hill Education; 2020 ISBN 978-1-260-14387-4
16. Fisher R et al. Outcomes of Embedded Athletic Training Services Within United States Air Force Basic Military Training. *J Athl Train*. 2021;56(2):
17. Flanagan KW, Cuppett M. *Medical Conditions in the Athlete*, 3rd Ed. Champaign, IL: Human Kinetics; 2017.
18. Fryer G. Somatic Dysfunction An Osteopathic Conundrum. *Int J Osteopath Med*. 2016;22:52-63
19. Gokeler A, Neuhaus D, Benjaminse A, Grooms DR, Baumeister J. Principles of Motor Learning to Support Neuroplasticity After ACL Injury: Implications for Optimizing Performance and Reducing Risk of Secondary ACL Injury. *Sports Med*. 2019;49:853-865.
20. Higgins M. *Therapeutic Exercise: From Theory to Practice*. Philadelphia, PA: F.A. Davis Company; 2011.
21. Hillman SK, ed *Core Concepts in Athletic Training and Therapy*. Champaign, IL: Human Kinetics; 2012.
22. Hoogenboom BJ, Voight ML, Prentice WE. *Musculoskeletal Interventions: Techniques for Therapeutic Exercise*, 3rd Ed. New York, NY: McGraw-Hill Education/Medical; 2014.
23. Hortz, BV, Falsone S, Tulimieri D. Current Athletic Training Educational Preparation for Dry Needling. *The Journal of Sports Medicine and Allied Health Sciences (JMAHS)*. 2019;4(3):Article 5.
24. Houglum PA. *Therapeutic Exercise for Musculoskeletal Injuries*, 4th Ed. Champaign, IL: Human Kinetics; 2016.
25. International Classification of Health Interventions—ICHI Beta 2017. [(accessed on 28 January 2021)]; Available online: <https://mitel.dimi.uniud.it/ichi/>.
26. Kaminski TW et al. National Athletic Trainers' Association Position Statement: Conservative Management and Prevention of Ankle Sprains in Athletes. *J Athl Train*. 2013;48(4):528-545.
27. Kisner C, Colby LA, Borstad J. *Therapeutic Exercise: Foundations and Techniques*, 7th Ed. Philadelphia: F.A. Davis; 2018.
28. Koester MC. *Therapeutic Medications in Athletic Training*, 2nd Ed. Champaign, IL: Human Kinetics; 2007.
29. Konin JG, Thompson MF. *Documentation for Athletic Training*, 3rd Ed. Thorofare, NJ :Slack Incorporated; 2017.
30. Kontos AP, Deitrick JM, Collins MW, Mucha A. Review of Vestibular and Oculomotor Screening and Concussion Rehabilitation. *J Athl Train*. 2017;52(3):256-261.

31. Lam KC, Marshall AN, Snyder Valier AR. Patient-Reported Outcome Measures in Sports Medicine: A Concise Resource for Clinicians and Researchers. *J Athl Train.* 2020;55(4):390-408.
32. Lam KC, Snyder Valier AR, Anderson BE, Valovich McLeod TC. Athletic Training Services During Daily Patient Encounters: A Report from the Athletic Training Practice-Based Research Network. *J Athl Train.* 2016;51(6):435-441.
33. Liebensohn C. *Functional Training Handbook.* Philadelphia, PA: Wolter Kluwer Health; 2014.
34. Lopez RM, Tanner P, Irani S, Mularoni PP. A Functional Return-to-Play Progression After Exertional Heat Stroke in a High School Football Player. *J Athl Train.* 2018;53(3):230-239.
35. Lorenz D et al. Current Clinical Concepts: Blood Flow Restriction Training. *J Athl Train.* 2021; <https://doi.org/10.4085/418-20>.
36. Lynch AD, Cummer K, Joreitz R. Criterion-Based Approach for Rehabilitation After ACL Reconstruction. In: Controversies in the Technical Aspects of ACL Reconstruction: An Evidence-Based Medicine Approach (Nakamura N, Zaffagnini S, Marx RG, Musahl V, Editors) Berlin: Springer-Verlag; 2017. ISBN: 978-3-662-52740-5
37. Magee DJ, Manske RC, Zachazewski JE, Quillen WS. *Athletic and Sport Issues in Musculoskeletal Rehabilitation.* Maryland Heights, MO: Saunders Elsevier; 2011.
38. Magee DJ, Zachazewski JE, Quillen WS. *Scientific Foundations and Principles in Musculoskeletal Rehabilitation.* Maryland Heights, MO: Saunders Elsevier; 2007.
39. Magee DJ, Zachazewski JE, Quillen WS, Manske RC. *Pathology and Intervention in Musculoskeletal Rehabilitation,* 2nd Ed. Maryland Heights, MO: Saunders Elsevier; 2016.
40. Michener LA et al. National Athletic Trainers' Association Position Statement: Evaluation, Management, and Outcomes of and Return-to-Play Criteria for Overhead Athletes with Superior Labral Anterior-Posterior Injuries. *J Athl Train.* 2018;53(3):209-229
41. McKenney K, Elder AS, Elder C, Hutchins A. Myofascial Release as a Treatment for Orthopaedic Conditions: A Systematic Review. *J Athl Train.* 2013;48(4):522-527.
42. Miller MG, Weiler JM, Baker R, Collins J, D'Alonzo GD. National Athletic Trainers' Association Position Statement: Management of Asthma in Athletes. *J Athl Train.* 2005;40(3):224-245.
43. Myer GD, Paterno MV, Ford KR, Quatman CE, Hewett TE. Rehabilitation After Anterior Cruciate Ligament Reconstruction: Criteria-Based Progression Through the Return-to-Sport Phase. *J Orthop Sport Phys Ther.* 2006;36(6):385-402.
44. Neumann DA. *Kinesiology of the Musculoskeletal System,* 3rd Ed. St. Louis, MO: Elsevier; 2017.
45. Nottingham SL et al. Documentation Practices of Athletic Trainers Employed in the Clinic, Physician Practice, and Emerging Clinical Settings. *J Athl Train.* 2021;56(3):
46. Nyland J et al. Anterior Cruciate Ligament Reconstruction, Rehabilitation, and Return to Play: 2015 Update. *Open Access J Sports Med.* 2016;7:21-32.
47. Nyland J, Brand E, Fisher B. Update of Rehabilitation Following ACL Reconstruction. *Open Access J Sports Med.* 2010;1:151-166.
48. Palmieri-Smith et al. The Role of Athletic Trainers in Preventing and Managing Posttraumatic Osteoarthritis in Physically Active Populations: A Consensus Statement of the Athletic Trainers' Osteoarthritis Consortium. *J Athl Train.* 2017;52(6):610-623.
49. Perrin DH, McLeod IA. *Athletic Taping, Bracing, and Casting,* 4th Ed. Champaign, IL: Human Kinetics; 2019.
50. Powden CJ, Hoch JM, Jamali BE, Hoch MC. A 4-Week Multimodal Intervention for Individuals With Chronic Ankle Instability: Examination of Disease-Oriented and Patient-Oriented Outcomes. *J Athl Train.* 2019;54(4):384-396.
51. Prentice WE. *Principles of Athletic Training: A Guide to Evidence-Based Clinical Practice,* 17th Ed. Boston, MA: McGraw-Hill Education ;2020.
52. Prentice WE Ed. *Rehabilitation Techniques for Sports Medicine and Athletic Training,* 7th Ed. Thorofare, NJ: Slack Inc.;2020.
53. Prentice WE. *Therapeutic Modalities in Rehabilitation.* New York, NY: McGraw-Hill Education/Medical. 2017
54. Qaseem A, Wilt TJ, McLean RM, Forciea MA. Noninvasive Treatments for Acute, Subacute, and Chronic Low Back Pain: A Clinical Practice Guideline from the American College of Physicians. *Ann Intern Med.* 2017;166:524-530.
55. Sampsell E. Rehabilitation of the Spine Following Sports Injury. *Clin Sports Med.* 2010;29:127-156.
56. Schneider KJ et al. Rest and Treatment/Rehabilitation Following Sport-Related Concussion: A Systematic Review. *Br J Sports Med.* 2017;51:930-934.
57. Seffrin CB, Cattano NM, Reed MA, Gardiner-Shires AM. Instrument-Assisted Soft Tissue Mobilization: A Systematic Review and Effect-Size Analysis. *J Athl Train.* 2019;54(7):808-821.

58. Silbernagel KG, Hanlon S, Sprague A. Current Clinical Concepts: Conservative Management of Achilles Tendinopathy. *J Athl Train*. 2020;55(5):438-447.
59. Sluka KA ed. Mechanisms and Management of Pain for the Physical Therapist, 2nd Ed. Wolters Kluwer; 2016.
60. Snyder AR, Parsons JT, Valovich McLeod TC, Bay RC, Michener LA, Sauers EL. Using Disablement Models and Clinical Outcomes Assessment to Enable Evidence-Based Athletic Training Practice, Part I: Disablement Models. *J Athl Train*. 2008;43(4):428-436.
61. Starkey C. *Therapeutic Modalities*, 4th Ed. Philadelphia, PA: F.A. Davis Company; 2013.
62. Starkey C, Brown SD. *Examination of Orthopaedic & Athletic Injuries*, 4th Ed. Philadelphia, PA: F.A. Davis Company; 2015.
63. Statuta S, Pugh K. Training Room Procedures and Use of Therapeutic Modalities in Athletes. *Clin Sports Med*. 2019; 38:619-638.
64. Torres-McGehee et al. Energy Availability with or without Eating Disorder Risk in Collegiate Female Athletes and Performing Artists. *J Athl Train*. 2020; <https://doi.org/10.4085/JAT0502-20>
65. Trofa DP et al. The Evidence for Common Nonsurgical Modalities in Sports Medicine, Part 1: Kinesio Tape, Sports Massage Therapy, and Acupuncture. *JAAOS Glob Res Rev*. 2020;4:e19.00104
66. Trofa DP et al. The Evidence for Common Nonsurgical Modalities in Sports Medicine, Part 2: Cupping and Blood Flow Restriction. *JAAOS Glob Res Rev*. 2020;4:e19.00105
67. VanGelder LH, Hoogenboom BJ, Vaughn DW. A Phased Rehabilitation Protocol for Athletes with Lumbar Intervertebral Disc Herniation. *Int J Sports Phys Ther*. 2013;8(4):482-516.
68. World Health Organization. How to use the ICF: A practical manual for using the International Classification of Functioning, Disability and Health (ICF). Exposure draft for comment. WHO. Geneva, Switzerland: 2013.
69. Wilk KE, Arrigo CA, Hooks TR, Andrews JR. Rehabilitation of the Overhead Throwing Athlete: There Is More To It Than Just External Rotation/Internal Rotation Strengthening. *PMR*. 2016;8:578-590.
70. Wise, CH. *Orthopaedic Manual Physical Therapy: From Art to Science*. Philadelphia, PA: F.A. Davis Company; 2015.
71. Wortman RJ et al. Blood Flow Resistance Training for Athletes: A Systematic Review. *Am J Sports Med*. 2020; 1-7. DOI: 10.1177/0363546520964454

Domain V: 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

There are four tasks in Healthcare Administration and Professional Responsibility. They address quality improvement, policy development, legal compliance, and documentation. The tasks in the domain, which are abbreviated with key words in Tables 34 to 37, are presented in full below:

1. Assess organizational and individual outcomes using quality improvement analyses.
2. Develop policies, procedures, and plans to address organizational needs.
3. Practice within federal, state, and local laws, regulations, rules, and requirements, and professional standards.
4. Use standardized documentation procedures to ensure best practices.

As may be seen in Table 34, the first two tasks are viewed as resulting in minimal harm when entry-level Athletic Trainers lack proficiency in their performance. The potential for harm is perceived as greatest for the task on legal compliance, with documentation seen as resulting in moderate harm if done incorrectly.

Table 34. Counts and Percentages for Importance of Tasks in Healthcare Administration and Professional Responsibility									
Task (Key Words)	N	1	% 1	2	% 2	3	% 3	4	% 4
Assess outcomes.	783	144	18.5	449	57.3	167	21.3	23	2.9
Develop policies, procedures.	783	99	12.6	360	46.0	238	30.4	86	11.0
Practice within law, etc.	784	38	4.8	95	12.1	199	25.4	452	57.7
Use documentation procedures.	783	46	5.9	206	26.3	295	37.7	236	30.1

Importance: 1 = No harm at all, 2 = Minimal harm, 3 = Moderate harm, 4 = Extreme Harm

The descriptive statistics for tasks in this domain indicate the legal compliance has the greatest potential for harm, with the average at 3.4 on the four-point scale. The median for the first two tasks is 2, and the means for those tasks are a little higher.

Table 35. Descriptive Statistics for Importance of Tasks in Healthcare Administration and Professional Responsibility					
Task (Key Words)	N	Median	Mean	SE Mean	Std Dev
Assess outcomes.	783	2	2.1	0.0	0.7
Develop policies, procedures.	783	2	2.4	0.0	0.8
Practice within law, etc.	784	4	3.4	0.0	0.9
Use documentation procedures.	783	3	2.9	0.0	0.9

Importance: 1 = No harm at all, 2 = Minimal harm, 3 = Moderate harm, 4 = Extreme Harm

Frequency findings suggest that newly certified Athletic Trainer assess outcomes for quality improvement purposes about once per month and that they work on policy and procedure development less often. The vast majority of respondents comply with legal requirements and document their work routinely.

Table 36. Counts and Percentages for Frequency of Tasks in Healthcare Administration and Professional Responsibility

Task (Key Words)	N	1	% 1	2	% 2	3	% 3	4	% 4	5	% 5
Assess outcomes.	782	24	3.1	193	24.7	332	42.5	156	19.9	77	9.8
Develop policies, procedures.	781	15	1.9	372	47.6	304	38.9	59	7.6	31	4.0
Practice within law, etc.	783	3	0.4	84	10.7	60	7.7	34	4.3	602	76.9
Use documentation procedures.	779	0	0.0	23	3.0	39	5.0	63	8.0	654	84.0

Frequency: 1 = Never, 2 = Rarely, 3 = Sometimes, 4 = Often, 5 = Repeatedly

Respondents' ratings for Frequency indicate they perform documentation repeated and that legal compliance is a matter of continuous interest, as the medians for these tasks are both 5, and the means only slightly lower. The first two tasks are performed less often, on average.

Table 37. Descriptive Statistics for Frequency of Tasks in Healthcare Administration and Professional Responsibility

Task (Key Words)	N	Median	Mean	SE Mean	Std Dev
Assess outcomes.	782	3	3.1	0.0	1.0
Develop policies, procedures.	781	3	2.6	0.0	0.8
Practice within law, etc.	783	5	4.5	0.0	1.0
Use documentation procedures.	779	5	4.7	0.0	0.7

Frequency: 1 = Never, 2 = Rarely, 3 = Sometimes, 4 = Often, 5 = Repeatedly

DOMAIN SUMMARY

The Practice Analysis Task Force reviewed published literature pertaining to the Healthcare Administration and Professional Responsibility domain. The summary of this literature follows.

The delivery of quality medical care requires a team working together.^{1,24,25} As healthcare providers, Athletic Trainers play an integral role within an interdisciplinary team collaborating with physicians and other professionals to provide evidence-based care that encompasses risk reduction, critical incident management, clinical diagnosis, therapeutic intervention, and rehabilitation of injuries and medical conditions. This teamwork requires knowledge of each healthcare professional's role and responsibilities to ensure patient-centered medical care.^{13,27–31,14} The Athletic Trainer's knowledge of, respect for, and nurturing of relationships with various other healthcare providers improves the clinical decision-making process and patient care.^{1,24,25,29,31–33} These relationships also foster interdisciplinary learning and the development of new approaches to care based on evidence.^{31,32,34} While an integral part of the medical team, Athletic Trainers also need to manage their jobs in light of their own personal wellbeing.^{35–38} This ongoing approach to team healthcare delivery allows Athletic Trainers to have a leadership role in delivering quality health care.^{22,23,39}

In order to provide high quality healthcare in their varied workplaces, Athletic Trainers must assume administrative roles to accomplish effective and efficient delivery of healthcare services. These roles span disparate workplaces including, but not limited to, clinical, industrial, interscholastic, intercollegiate, and professional sport settings.¹ Regardless of the setting, Athletic Trainers must practice within federal, state, and local laws, regulations, rules, requirements, and professional standards.^{2–5}

Furthermore, Athletic Trainers must use data to make informed decision's based upon stakeholder needs.^{1,6–9} This data drives the decisions made and the development of policies, procedures, and plans to address organizational needs.^{1,7,9–16} Making evidence-based decisions requires detailed and consistent documentation procedures to ensure alignment with best practices.^{12,17,18}

TASK STATEMENT 1

Assess organizational and individual outcomes using quality improvement analyses.

Athletic Trainers across the various professional settings must collect relevant and reliable outcomes data for the purpose of guiding decision-making and improving quality. Data may be collected from a wide range of sources. These data allow for monitoring of key performance indicators for the Athletic Trainer's organization, including injury trends, patient outcomes, and organizational/business-related outcomes.^{12,18,23} For example, as part of the injury tracking process, data sources include injury documentation, outcomes of injury surveillance, and health-related outcome measures.^{12,17–22} It is this collection and synthesis of multiple comprehensive sources of data that allow the Athletic Trainer, in any professional setting, the ability to manage various aspects of professional practice and improve quality.

KNOWLEDGE OF:

1. Methods of gathering, analyzing, and interpreting qualitative and quantitative data
2. Benchmarking
3. Project and program management
4. Resources available for adapting policies and procedure
5. Job expectations, personal goals, and priorities (e.g., work-life balance, job satisfaction)
6. Organizational resources available for professional development and personal support
7. Role of professional collaboration
8. Leadership and management styles and theories
9. Evidence-based principles and practices
10. Post-event assessment techniques
11. Goal-setting principles and practices
12. Appropriate software and technologies available

SKILL IN:

1. Gathering, analyzing, and interpreting data
2. Conducting a post-event assessment
3. Formatting and presenting data
4. Providing data to support the advancement of organizational or personal goals
5. Synthesizing study results to implement change
6. Implementing quality improvement (e.g., needs assessment, PDSA cycle, SWOT analysis)
7. Collaborating with stakeholders and other healthcare providers
8. Educating stakeholders
9. Applying concepts of evidence-based medicine
10. Communicating effectively
11. Providing leadership appropriate to situations and people
12. Educating the public and stakeholders on the profession of athletic training to ensure patient protection and care across all job settings

TASK STATEMENT 2

Develop policies, procedures, and plans to address organizational needs.

In delivering quality health care, Athletic Trainers assume many administrative roles.²² This aspect of practice requires Athletic Trainers to bring their knowledge and skills to the workplace for the daily delivery of patient care.^{23,24} The Athletic Trainer must be knowledgeable of and able to apply pertinent

laws, regulations, and standards to develop and enforce policies and procedures that maintain a high standard of healthcare delivery.^{3,10,11,22,40} Consequently, the Athletic Trainer must have skill in emergency medical planning, drug testing, administering preparticipation examinations, concussion management, and policy development needed for medical facilities' daily operations.^{10,41–47} Applying these regulations helps Athletic Trainers determine appropriate facility, scheduling, staffing, and risk management practices.

Depending on the setting, Athletic Trainers are often responsible for the supervision of other employees and must possess knowledge of the various federal, state, and administrative regulations to manage these employees.^{22,23,48–50} Athletic Trainers use knowledge of supervision to develop and manage these employees and protect their employers by following appropriate human resource laws.^{22,23,51,52}

KNOWLEDGE OF:

1. Components of emergency action (response) plans
2. Human resources
3. Federal, state, and local laws, regulations, rules, and requirements, and professional standards
4. Organizational and management styles
5. Scheduling systems and techniques
6. Drug testing
7. Inventory and purchasing
8. Applicable resource allocation
9. Legislative and regulatory updates and changes
10. Basic business principles
11. Pre-participation examination
12. Policies, procedures, and guidelines
13. Budgeting
14. Equipment and supplies
15. Insurance and reimbursement
16. Standard operating procedures
17. Risk management
18. Best practices (e.g., position statements)
19. Facility management
20. Organizational mission and goals

SKILL IN:

1. Formulating policies and procedures
2. Collaborating with stakeholders and local first responders
3. Incorporating technology where appropriate (e.g., computer software, weather monitoring)
4. Implementing human resources policies
5. Communicating with stakeholders
6. Implementing policies and procedures
7. Developing a budget
8. Interpreting regulatory documents
9. Understanding job descriptions
10. Tracking inventory and purchasing
11. Interpreting applicable and appropriate data (e.g., injury surveillance, usages trends, and risks)

TASK STATEMENT 3

Practice within federal, state, and local laws, regulations, rules, requirements, and professional standards.

Many national, state, and local organizations influence the practice of athletic training.^{22,53–58} These organizations and their guidelines establish many of the requirements, standards and recommendations that impact Athletic Trainers' practice. Athletic Trainers' scope of practice is determined by state and national legislation, various professional organization's recommendations, and the NATA and BOC code of professional ethics and standards of professional practice.^{2,22,23,57,59} Athletic Trainers in every setting require knowledge of the state and national regulations that impact their practice. Athletic Trainers need to monitor and apply other professional organizations' position statements regarding various medical care delivery topics that impact their practice.^{60–63}

Athletic Trainers are required to be knowledgeable of professional standards of practice and ethical standards.^{2,22,59} Athletic Trainers are also required to meet job setting and state requirements for all aspects of medical documentation.^{12,17,18,64} Appropriate knowledge of medical terminology and its use in the documentation of care is essential in meeting these professional obligations.^{12,18,22,65–67} Athletic Trainers must stay knowledgeable of current changes in healthcare delivery methods and apply them to their practice.^{68–70}

KNOWLEDGE OF:

1. Standards of professional practice for Athletic Trainers and other healthcare professionals
2. Professional organization position and consensus statements (NATA, Centers for Disease Control and Prevention)
3. Documentation requirements and procedures
4. Consent-to-treat requirements and documentation
5. Standard medical terminology and nomenclature
6. Federal, state, and local laws, regulations, rules, and requirements, and professional standards
7. Professional codes of ethics
8. Process for reporting violations of professional standards and practice acts
9. Policies, procedures, and guidelines
10. Requirements for third-party reimbursement
11. Telehealth and electronic communication restrictions

SKILL IN:

1. Creating and completing medical documentation
2. Making ethical decisions that are consistent with professional practice and guidelines
3. Implementing current position statements, regulatory changes, and legislated requirements
4. Using standard medical terminology and nomenclature
5. Accessing professional practice acts and requirements
6. Communicating effectively
7. Understanding procedural and diagnostic coding
8. Protecting the public through the safe and ethical practice of athletic training
9. Understanding administrative reporting pathways for ethical violations
10. Applying telehealth and electronic technology

TASK STATEMENT 4

Use standardized documentation procedures to ensure best practices.

Documentation of the care and education provided to patients is critical to ensure the delivery of high-quality healthcare. Athletic Trainers require knowledge of various forms of written and electronic patient care documentation processes to accomplish this task, and furthermore,^{12,17,67} the use of consistent medical nomenclature helps to guarantee the passage of essential information from one healthcare team member to the next.^{12,65,66} Athletic Trainers require knowledge of electronic health records (EHR) systems and their use in facilitating communication, as well as documentation to limit liability and bill for service effectively.^{12,17,18,22,67,71} The consistent and adequate use of appropriate documentation allows the Athletic Trainer to meet state, professional, legal, and ethical standards of practice and demonstrate their value in the healthcare system.^{2,5,12,17,18,59}

KNOWLEDGE OF:

1. Documentation procedures (e.g., SOAP, progress notes, screenings, assessments, examinations)
2. Standard medical terminology and nomenclature
3. Appropriate documentation requirements (e.g., electronic health record, Centers for Medicare and Medicaid Services, consent)
4. Documentation systems (e.g., software, paper)
5. Appropriate computer software applications
6. Healthcare coding
7. Legal considerations and ramifications
8. Telehealth and electronic communication restrictions

SKILL IN:

1. Reviewing prescreening participation guidelines
2. Creating and completing the documentation process
3. Obtaining, interpreting, evaluating, and applying relevant data
4. Using computer software applications (e.g., word processing, database spreadsheet, and Internet applications)
5. Reviewing documentation
6. Interpreting documentation
7. Updating documentation
8. Applying telehealth and electronic technology
9. Communicating effectively

DOMAIN V REFERENCES

1. Prentice WE. *Principles of Athletic Training. [Electronic Resource]*. 17th ed. McGraw-Hill US Higher Ed USE; 2020. Accessed February 17, 2021. <http://search.ebscohost.com/login.aspx?direct=true&AuthType=shib&db=cat02627a&AN=atmo.b4489366&site=eds-live&custid=s4165981>
2. BOC - Athletic Trainers. Accessed February 17, 2021. <https://www.bocatc.org/athletic-trainers/maintain-certification/standards-of-professional-practice/standards-of-professional-practice>
3. Ciccolella ME, Hoenig JR, Thornton JL, DeRollo J. Language and Licensing: A Brief Review of Legal Issues Relevant to the Licensed Athletic Trainer. Winterstein AP, ed. *Athletic Training & Sports Health Care*. 2015;7(4):133-138. doi:10.3928/19425864-20150707-02
4. Pozgar GD. *Legal and Ethical Issues for Health Professionals*. Fourth edition. Jones & Bartlett Learning; 2016. Accessed February 17, 2021.

<http://search.ebscohost.com/login.aspx?direct=true&AuthType=shib&db=cat02627a&AN=atsmo.b3881780&site=eds-live&custid=s4165981>

5. Schlabach GA, Peer KS. *Professional Ethics in Athletic Training : Practicing and Leading with Integrity*. Second edition. SLACK Incorporated; 2020. Accessed February 17, 2021.
<http://search.ebscohost.com/login.aspx?direct=true&AuthType=shib&db=cat02627a&AN=atsmo.b4464659&site=eds-live&custid=s4165981>
6. Wilkerson GB, Denegar CR. Cohort study design: an underutilized approach for advancement of evidence-based and patient-centered practice in athletic training. *Journal of athletic training*. 2014;49(4):561-567. doi:10.4085/1062-6050-49.3.43
7. Welch CE, Hankemeier DA, Wyant AL, Hays DG, Pitney WA, Van Lunen BL. Future Directions of Evidence-Based Practice in Athletic Training: Perceived Strategies to Enhance the Use of Evidence-Based Practice. *Journal of Athletic Training*. 2014;49(2):234-244. doi:10.4085/1062-6050-49.2.15
8. Eberman LE, Walker SE, Floyd RT, et al. The Prioritized Research Agenda for the Athletic Training Profession: A Report From the Strategic Alliance Research Agenda Task Force. *Journal of athletic training*. 2019;54(3):237-244. doi:10.4085/1062-6050-374-18
9. Cooper L, Harper R, Wham Jr GS, et al. Appropriate Medical Care Standards for Organizations Sponsoring Athletic Activity for the Secondary School-Aged Athlete: A Summary Statement. *Journal of Athletic Training (Allen Press)*. 2019;54(7):741-748. doi:10.4085/1062-6050-544-18
10. Scarneo SE, DiStefano LJ, Stearns RL, Register-Mihalik JK, Denegar CR, Casa DJ. Emergency Action Planning in Secondary School Athletics: A Comprehensive Evaluation of Current Adoption of Best Practice Standards. *Journal of Athletic Training (Allen Press)*. 2019;54(1):99-105. doi:10.4085/1062-6050-82-18
11. Scarneo-Miller SE, Kerr ZY, Adams WM, Belval LN, Casa DJ. Influence of State-Level Emergency Planning Policy Requirements on Secondary School Adoption. *Journal of Athletic Training (Allen Press)*. 2020;55(10):1062-1069. doi:10.4085/1062-6050-118-19
12. Konin JG, Kaupuni M. *Documentation For Athletic Training*. McGraw-Hill.; 2005. Accessed February 17, 2021.
<http://search.ebscohost.com/login.aspx?direct=true&AuthType=shib&db=cat02627a&AN=atsmo.b3249227&site=eds-live&custid=s4165981>
13. Mazerolle S, Pagnotta K, Applegate K, Casa D, Maresh C. The Athletic Trainer's Role in Providing Emergency Care in Conjunction With the Emergency Medical Services. *International Journal of Athletic Therapy & Training*. 2012;17(2):39-44.
14. Goodman A, Mazerolle SM, Eason CM. Organizational Infrastructure in the Collegiate Athletic Training Setting, Part II: Benefits of and Barriers in the Athletics Model. *Journal of athletic training*. 2017;52(1):23-34. doi:10.4085/1062-6050-51.12.24
15. Eason CM, Mazerolle SM, Goodman A. Organizational Infrastructure in the Collegiate Athletic Training Setting, Part III: Benefits of and Barriers in the Medical and Academic Models. *Journal of athletic training*. 2017;52(1):35-44. doi:10.4085/1062-6050-51.12.25
16. Wham Jr. GS, Saunders R, Mensch J. Key Factors for Providing Appropriate Medical Care in Secondary School Athletics: Athletic Training Services and Budget. *Journal of Athletic Training (National Athletic Trainers' Association)*. 2010;45(1):75-86.
17. Bacon CEW, Kasamatsu TM, Lam KC, Nottingham SL. Future Strategies to Enhance Patient Care Documentation Among Athletic Trainers: A Report From the Athletic Training Practice-Based Research Network. *Journal of Athletic Training*. 2018;53(6):619-626. doi:10.4085/1062-6050-298-17
18. Nottingham SL, Lam KC, Kasamatsu TM, Eppelheimer BL, Bacon CEW. Athletic Trainers' Reasons for and Mechanics of Documenting Patient Care: A Report From the Athletic Training Practice-Based Research Network. *Journal of Athletic Training*. 2017;52(7):656-666. doi:10.4085/1062-6050-52.3.14
19. Valier AR, Lam KC. Beyond the Basics of Clinical Outcomes Assessment: Selecting Appropriate Patient-Rated Outcomes Instruments for Patient Care. *Athletic Training Education Journal (Allen Press Publishing Services Inc)*. 2015;10(1):91-100.
20. Lam KC, Marshall AN, Valier ARS. Patient-Reported Outcome Measures in Sports Medicine: A Concise Resource for Clinicians and Researchers. *Journal of Athletic Training (Allen Press)*. 2020;55(4):390-408.
21. Briggs MS, Rethman KK, Crookes J, et al. Implementing Patient-Reported Outcome Measures in Outpatient Rehabilitation Settings: A Systematic Review of Facilitators and Barriers Using the Consolidated Framework for Implementation Research. *Archives of Physical Medicine and Rehabilitation*. 2020;101(10):1796-1812. doi:10.1016/j.apmr.2020.04.007

22. Konin J, Ray R. *Management Strategies in Athletic Training, 5E*. Human Kinetics; 2019.
23. Winterstein AP, Garder G, Harrelson GL. *Administrative Topics in Athletic Training. Concepts to Practice. [Electronic Resource]*: Slack, Inc.; 2009. Accessed February 17, 2021.
<http://search.ebscohost.com/login.aspx?direct=true&AuthType=shib&db=cat02627a&AN=atmo.b3254527&site=eds-live&custid=s4165981>
24. Rehberg RS, Konin JG. *Sports Emergency Care: A Team Approach, Third Edition*. Vol Third edition. SLACK Incorporated; 2018. Accessed February 17, 2021.
<http://search.ebscohost.com/login.aspx?direct=true&AuthType=shib&db=nlebk&AN=1853776&site=eds-live&custid=s4165981>
25. Chang CJ, Young CC, Weston T, et al. Inter-Association Consensus Statement: The Management of Medications by the Sports Medicine Team. *Journal of Athletic Training (Allen Press)*. 2018;53(11):1103-1112. doi:10.4085/1062-6050-53-11
26. Breitbach AP, Muchow JA, Gallegos DF. Athletic trainers' unique clinical and teamwork skills contribute on the frontlines during the COVID-19 pandemic: A discussion paper. *Journal of Interprofessional Care*. 2020;34(5):607-613. doi:10.1080/13561820.2020.1792426
27. Rizzo CS, Breitbach AP, Richardson R. Athletic trainers have a place in interprofessional education and practice. *Journal of interprofessional care*. 2015;29(3):256-257. doi:10.3109/13561820.2014.942778
28. Turner HS. Athletic training services and student health services on campus: working together. *Journal of American college health: J of ACH*. 2003;51(5):217-220. doi:10.1080/07448480309596354
29. Todaro BA, Nikander JL, Powden CJ, Eberman LE. Understanding the role of secondary school nurses and their collaboration with athletic trainers. Published online 2018:7.
30. Morrell BLM, Nichols AM, Voll CA, et al. Care Across Campus: Athletic Training, Nursing, and Occupational Therapy Student Experiences in an Interprofessional Simulation. *Athletic Training Education Journal (Allen Press Publishing Services Inc)*. 2018;13(4):332-339.
31. Hankemeier D, Manspeaker SA. Perceptions of Interprofessional and Collaborative Practice in Collegiate Athletic Trainers. *Journal of Athletic Training*. 2018;53(7):703-708. doi:10.4085/1062-6050-308-17
32. Lopes Sauers AD, Sauers EL, Snyder Valier AR. Quality Improvement in Athletic Health Care. *Journal of Athletic Training (Allen Press)*. 2017;52(11):1070-1078.
33. Hirschhorn RM, Holland C, Hand AF, Mensch JM. Physicians' Perceptions of Athletic Trainers. *International Journal of Athletic Therapy & Training*. 2019;24(5):202-206. doi:10.1123/ijatt.2018-0098
34. Boin A, Kofman-Bos C, Overdijk W. Crisis Simulations: Exploring Tomorrow's Vulnerabilities and Threats. *Simulation & Gaming*. 2004;35(3):378-393. doi:10.1177/1046878104266220
35. Mazerolle SM, Eason C. Professional Workplace Issues Experienced by the Athletic Trainer and Their Connection to Health and Well-Being. *Athletic Training & Sports Health Care*. 2017;9(6):284-292. doi:10.3928/19425864-20171010-04
36. Oglesby LW, Gallucci AR, Wynveen CJ. Athletic Trainer Burnout: A Systematic Review of the Literature. *Journal of athletic training*. 2020;55(4):416-430. doi:10.4085/1062-6050-43-19
37. Mazerolle SM, Pitney WA, Goodman A, et al. National Athletic Trainers' Association Position Statement: Facilitating Work-Life Balance in Athletic Training Practice Settings. *Journal of Athletic Training (Allen Press)*. 2018;53(8):796-811.
38. DeFreese JD, Mihalik JP. Work-Based Social Interactions, Perceived Stress, and Workload Incongruence as Antecedents of Athletic Trainer Burnout. *Journal of Athletic Training (Allen Press)*. 2016;51(1):28-34.
39. Kutz MR. Teaching Leadership in Athletic Training. *Athletic Therapy Today*. 2005;10(2):3-3.
40. Yeargin S, Lopez RM, Valier ARS, DiStefano LJ, McKeon PO, McKeon JMM. Navigating Athletic Training Position Statements: The Strength of Recommendation Taxonomy System. *Journal of Athletic Training (Allen Press)*. 2020;55(8):863-868.
41. Broglio SP, Cantu RC, Gioia GA, et al. National Athletic Trainers' Association Position Statement: Management of Sport Concussion. *Journal of Athletic Training (Allen Press)*. 2014;49(2):245-265. doi:10.4085/1062-6050-49.1.07
42. Casa DJ, DeMartini JK, Bergeron MF, et al. National Athletic Trainers' Association Position Statement: Exertional Heat Illnesses. *Journal of Athletic Training (Allen Press)*. 2015;50(9):986-1000. doi:10.4085/1062-6050-50.9.07
43. Buell JL, Franks R, Ransone J, Powers ME, Laquale KM, Carlson-Phillips A. National Athletic Trainers' Association Position Statement: Evaluation of Dietary Supplements for Performance Nutrition. *Journal of Athletic Training (Allen Press)*. 2013;48(1):124-136. doi:10.4085/1062-6050-48.1.16

44. Kersey RD, Elliot DL, Goldberg L, et al. National Athletic Trainers' Association Position Statement: Anabolic-Androgenic Steroids. *Journal of Athletic Training* (Allen Press). 2012;47(5):567-588.
45. Conley KM, Bolin DJ, Carek PJ, Konin JG, Neal TL, Violette D. National Athletic Trainers' Association Position Statement: Preparticipation Physical Examinations and Disqualifying Conditions. *Journal of Athletic Training* (Allen Press). 2014;49(1):102-120. doi:10.4085/1062-6050-48.6.05
46. Kahanov L, Furst D, Johnson S, Roberts J. Adherence to drug-dispensation and drug-administration laws and guidelines in collegiate athletic training rooms. *Journal of Athletic Training*. 2003;38(3):252-258.
47. Nickell R. Eight principles for managing prescription medications in the athletic training room. *Athletic Therapy Today*. 2005;10(1):6-64. doi:10.1123/att.10.1.6
48. Unlu C, Serarslan MZ, Yamaner F, Sahin S. Comparing of Human Resources Management Sports Enterprises and the Other Service Enterprises. *Procedia - Social and Behavioral Sciences*. 2012;46:4808-4812. doi:10.1016/j.sbspro.2012.06.339
49. Baugh CM, Kerr ZY, Kroshus E, Lanser BL, Lindley TR, Meehan III WP. Sports Medicine Staffing Patterns and Incidence of Injury in Collegiate Men's Ice Hockey. *Journal of Athletic Training* (Allen Press). 2020;55(6):587-593. doi:10.4085/1062-6050-0464.19
50. Baugh CM, Meehan III WP, McGuire TG, Hatfield LA. Staffing, Financial, and Administrative Oversight Models and Rates of Injury in Collegiate Athletes. *Journal of Athletic Training* (Allen Press). 2020;55(6):580-586. doi:10.4085/1062-6050-0517.19
51. Robinson RK, Franklin GM, Tinney CH, Crow SM, Hartman SJ. Sexual harassment in the workplace: guidelines for educating healthcare managers. *J Health Hum Serv Adm*. 2005;27(4):501-530.
52. Velasquez BJ. Sexual Harassment: A Concern for the Athletic Trainer. *J Athl Train*. 1998;33(2):171-176.
53. Rello MN. The Importance of State Regulation to the Promulgation of the Athletic Training Profession. *Journal of Athletic Training*. 1996;31(2):160-164.
54. Learn the Latest in Lead Management & Osha Compliance. In: *SHOT Business*. Vol 24. ; 2016:19-19. Accessed February 18, 2021. <http://search.ebscohost.com/login.aspx?direct=true&AuthType=shib&db=buh&AN=114319073&site=eds-live&custid=s4165981>
55. OSH Act of 1970 | Occupational Safety and Health Administration. Accessed February 18, 2021. <https://www.osha.gov/laws-regs/oshact/toc>
56. Mickle A. The Legal Parameters Defining the Role of the Certified Athletic Trainer. *Athletic Therapy Today*. 2007;12(1):10.
57. Hartz, Brian. "Scope of Practice: Factors to Consider." Scope of Practice: Factors to Consider, 2016. <https://www.nata.org/sites/default/files/scope-of-practice.pdf>.
58. Arnold BL. A Review of Selected Blood-Borne Pathogen Position Statements and Federal Regulations. *J Athl Train*. 1995;30(2):171-176.
59. Code of Ethics. NATA. Published August 11, 2015. Accessed February 18, 2021. <https://www.nata.org/membership/about-membership/member-resources/code-of-ethics>
60. Position. NATA. Published March 23, 2015. Accessed February 18, 2021. <https://www.nata.org/news-publications/pressroom/statements/position>
61. ACSM Position Stands | American College of Sports Medicine. Accessed February 18, 2021. <https://www.acsm.org/acsm-positions-policy/official-positions/ACSM-position-stands>
62. Drezner JA, Heinz WM, Asif IM, et al. Cardiopulmonary Considerations for High School Student-Athletes During the COVID-19 Pandemic: NFHS-AMSSM Guidance Statement. *Sports Health*. 2020;12(5):459-461. doi:10.1177/1941738120941490
63. AMSSM Sexual Violence in Sport Task Force, Koontz JS, Mountjoy M, et al. Sexual Violence in Sport: American Medical Society for Sports Medicine Position Statement. *Sports Health*. 2020;12(4):352-354. doi:10.1177/1941738120929946
64. Eberman LE, Neil ER, Nottingham SL, Kasamatsu TM, Welch Bacon CE. Athletic Trainers' Practice Patterns Regarding Medical Documentation. *Journal of Athletic Training* (Allen Press). 2019;54(7):822-830.
65. Willis MC. *Medical Terminology : A Programmed Learning Approach to the Language of Health Care*. 2nd ed. Lippincott Williams & Wilkins; 2008. Accessed February 18, 2021. <http://search.ebscohost.com/login.aspx?direct=true&AuthType=shib&db=cat02627a&AN=atmo.b1984926&site=eds-live&custid=s4165981>

66. Černý K. *Guide to Basic Medical Terminology*. First edition. Charles University in Prague, Karolinum Press; 2015. Accessed February 18, 2021. <http://search.ebscohost.com/login.aspx?direct=true&AuthType=shib&db=cat02627a&AN=atsmo.b2508176&site=eds-live&custid=s4165981>
67. Garrison SE, American Medical Association. *Fundamentals of Coding, Payment, and Documentation : Understanding Their Role and Impact in Health Care*. American Medical Association; 2012. Accessed February 18, 2021. <http://search.ebscohost.com/login.aspx?direct=true&AuthType=shib&db=e900xww&AN=544050&site=eds-live&custid=s4165981>
68. Winkelman ZK, Eberman LE, Games KE. Telemedicine Experiences of Athletic Trainers and Orthopaedic Physicians for Patients With Musculoskeletal Conditions. *Journal of Athletic Training (Allen Press)*. 2020;55(8):768-779.
69. Malliaras P, Merolli M, Williams CM, Caneiro JP, Haines T, Barton C. 'It's not hands-on therapy, so it's very limited': Telehealth use and views among allied health clinicians during the coronavirus pandemic. *Musculoskeletal Science and Practice*. 2021;52:102340. doi:10.1016/j.msksp.2021.102340
70. Gustin TS, Kott K, Rutledge C. Telehealth Etiquette Training: A Guideline for Preparing Interprofessional Teams for Successful Encounters. *Nurse Educator*. 2020;45(2):88-92. doi:10.1097/NNE.0000000000000680
71. Aalseth PT. *Medical Coding : What It Is and How It Works*. Jones and Bartlett Publishers; 2006. Accessed February 17, 2021. <http://search.ebscohost.com/login.aspx?direct=true&AuthType=shib&db=cat02627a&AN=atsmo.b3319036&site=eds-live&custid=s4165981>

Domain Ratings

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

- I. Risk Reduction, Wellness and Health Literacy
- II. Assessment, Evaluation and Diagnosis
- III. Critical Incident Management
- 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 is very strong, with the majority of respondents rating Importance with either a 3 or 4, particularly for Assessment, Evaluation and Diagnosis and Critical Incident Management. Critical Incident Management is viewed overwhelmingly as having high potential for harm if done poorly.

Table 38. Counts and Percentages for Importance of the Domains

Task (Key Words)	N	1	% 1	2	% 2	3	% 3	4	% 4
Risk Reduction, Wellness and Health Literacy	862	28	3.2	122	14.2	495	57.4	217	25.2
Assessment, Evaluation and Diagnosis	820	15	1.8	56	6.8	317	38.7	432	52.7
Critical Incident Management	807	12	1.5	17	2.1	113	14.0	665	82.4
Therapeutic Intervention	786	7	0.9	142	18.1	457	58.1	180	22.9
Healthcare Administration and Professional Responsibility	782	31	4.0	253	32.3	376	48.1	122	15.6

Importance: 1 = No harm at all, 2 = Minimal harm, 3 = Moderate harm, 4 = Extreme Harm

The means are all close to or above 3, corresponding to at least moderate harm, with the potential for extreme harm associated with Critical Incident Management.

Table 39. Descriptive Statistics for Importance of the Domains

Task (Key Words)	N	Median	Mean	SE Mean	Std Dev
Risk Reduction, Wellness and Health Literacy	862	3	3.0	0.0	0.7
Assessment, Evaluation and Diagnosis	820	4	3.4	0.0	0.7
Critical Incident Management	807	4	3.8	0.0	0.6
Therapeutic Intervention	786	3	3.0	0.0	0.7
Healthcare Administration and Professional Responsibility	782	3	2.8	0.0	0.8

Importance: 1 = No harm at all, 2 = Minimal harm, 3 = Moderate harm, 4 = Extreme Harm

Assessment, Evaluation and Diagnosis is the domain that newly certified Athletic Trainers perform most frequently, followed by Therapeutic Intervention. Management of critical incidents is performed monthly by the largest group of respondents or slightly less often.

Table 40. Counts and Percentages for Frequency of the Domains											
Task (Key Words)	N	1	% 1	2	% 2	3	% 3	4	% 4	5	% 5
Risk Reduction, Wellness and Health Literacy	860	3	0.3	46	5.3	221	25.7	311	36.2	279	32.4
Assessment, Evaluation and Diagnosis	816	1	0.1	6	0.7	18	2.2	96	11.8	695	85.2
Critical Incident Management	804	4	0.5	212	26.4	317	39.4	160	19.9	111	13.8
Therapeutic Intervention	779	0	0.0	8	1.0	41	5.3	243	31.2	487	62.5
Healthcare Administration and Professional Responsibility	776	3	0.4	37	4.8	143	18.4	203	26.2	390	50.3

Frequency: 1 = Never, 2 = Rarely, 3 = Sometimes, 4 = Often, 5 = Repeatedly

The median response suggestions that three of the domains are performed on an everyday basis, and that Critical Incident Management is performed about once per month.

Table 41. Descriptive Statistics for Frequency of the Domains					
Task (Key Words)	N	Median	Mean	SE Mean	Std Dev
Risk Reduction, Wellness and Health Literacy	860	4	4.0	0.0	0.9
Assessment, Evaluation and Diagnosis	816	5	4.8	0.0	0.5
Critical Incident Management	804	3	3.2	0.0	1.0
Therapeutic Intervention	779	5	4.6	0.0	0.6
Healthcare Administration and Professional Responsibility	776	5	4.2	0.0	0.9

Frequency: 1 = Never, 2 = Rarely, 3 = Sometimes, 4 = Often, 5 = Repeatedly

Reliability Analysis for Domains

The reliability of the Importance and Frequency scales was assessed in order to determine how consistently the tasks performed as measures within the domains. Reliability refers to the degree to which tests or surveys are free from measurement error. If the ratings are inconsistent (i.e., unreliable), it would be difficult to interpret the results of the study. Reliability analysis expresses the adequacy of data reported for the Importance 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 was measured as internal consistency (Cronbach’s alpha) using the respondents’ ratings for Importance and Frequency for the tasks in each domain. This statistic assesses 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 for general purposes. Except for the Frequency of two domains, the reliability coefficients obtained for this study were strong. They are especially strong for Therapeutic Intervention and Assessment, Evaluation and Diagnosis. The coefficients obtained for Risk Reduction, Wellness and Health Literacy (0.62) and Healthcare Administration and Professional Responsibility (0.60) indicate less consistency in the task ratings. By way of explanation, Table 20 above indicates that respondents perform the first three tasks in Risk Reduction, Wellness and Health Literacy with differing rates of Frequency, and Table 36 above indicates that tasks 1 and 2 are performed less frequently than the third and fourth tasks.

Table 42. Reliability		
Reliability	Importance	Frequency
Risk Reduction, Wellness and Health Literacy	0.76	0.62
Assessment, Evaluation and Diagnosis	0.87	0.86
Critical Incident Management	0.81	0.78
Therapeutic Intervention	0.87	0.85
Healthcare Administration and Professional Responsibility	0.78	0.60

Conclusion

The BOC conducted the practice analysis for the purpose of ensuring that the content of its certification exam for Athletic Trainers is aligned to current practice. Methods used to conduct the practice analysis conform to procedures that are widely employed in licensure and certification testing in the United States. The project was overseen by a Task Force of experts whose familiarity with work performed by newly certified Athletic Trainers was documented as part of the selection process. Likewise, all members of the practice analysis panel have deep knowledge of athletic training and the sciences it draws on. 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.

With very few exceptions, validation ratings for tasks support the conclusion that they are consequential and performed frequently. However, the findings for the following four tasks suggest the need for review by the Practice Analysis Task Force:

- Promote health literacy by educating stakeholders. (low Importance, widespread Frequency)
- Educate patients and appropriate stakeholders using pertinent information to optimize patient-centered care. (low Importance)
- Assess organizational and individual outcomes using quality improvement analyses. (low Importance, widespread Frequency)
- Develop policies, procedures, and plans to address organizational needs. (low Importance, widespread Frequency)

The Practice Analysis Task Force met virtually to consider the findings for these tasks. The promotion of health literacy is becoming an important component of practice, and to make it clearer to practitioners in the field, the Task Force modified it as follows: Promote health literacy by educating *patients and other* stakeholders in order to improve their capacity to obtain, process, and understand basic health information needed to make appropriate health decisions. Likewise, regarding the patient education task, the Task Force added language to make the importance of the task clear to practitioners: Educate patients and appropriate stakeholders using pertinent information to optimize patient-centered care *and patient engagement throughout the therapeutic intervention process*. Even though the tasks on assessing outcomes and developing policies, procedures, and plans received low ratings for importance, the Task Force notes they are central to the work of Athletic Trainers and that no change was necessary.

Ratings given for the five domains indicate their validity to the current practice of newly certified Athletic Trainers. Given the above, the practice analysis provides a current outline of domains, tasks, and knowledge and skill (refer to Appendix G for the final, validated outline) that bear a demonstrable and validated relationship to the practice of newly certified Athletic Trainers. There is every reason to think that the outline is useful as the content framework for the BOC's Certification Exam for Athletic Trainers.

WEIGHTING STRUCTURE

Scantron used several methods of computing weights for Task Force consideration as it prepared its recommendation to the BOC about the emphasis to be given the domains and tasks in the exam. The computations included the use of addition and multiplication in combining the Importance and Frequency ratings for domains and tasks as well as the use of top-down and bottom-up weighting strategies. Scantron presented the results of these computations to the Task Force during its virtual meeting on April 23, 2021, with the advice that the computations provide the starting point for its deliberations about weighting the domains and tasks.

The Task Force discussed the results and generally favored the computational approach using multiplication of the validation ratings with a top-down assignment. This information is provided here:

Domain	Percent	N Items
Risk Reduction, Wellness and Health Literacy	18.2%	23
Assessment, Evaluation and Diagnosis	24.7%	31
Critical Incident Management	18.4%	23
Therapeutic Intervention	20.9%	26
Health Administration and Professional Responsibility	17.8%	22

Using these results as a starting point, Scantron explained that the questions making up any version of the certification exam are a sample from the universe of knowledge that entry-level Athletic Trainers may be expected to possess and that their recommendation for the plan for this sample should represent their best understanding of the knowledge base and make the best use of opportunities to assess it. The Task Force decided that the computation based on ratings overemphasized Health Administration and Professional Responsibility and recommends reducing it to 8% and distributing 9.8% among the other domains as follows:

Domain	Percent	N Items
Risk Reduction, Wellness and Health Literacy	20.0%	25
Assessment, Evaluation and Diagnosis	25.6%	32
Critical Incident Management	20.8%	26
Therapeutic Intervention	25.6%	32
Health Administration and Professional Responsibility	8.0%	10

The BOC approved the Task Force recommendation about the optimal weighting structure of the certification exam based on the eighth practice analysis study.

Appendix A: Instruction Booklet

Practice Analysis Study		Omaha, Neb. Oct. 22 – 25, 2020
Facilitator: James P. Henderson, Ph.D.		ALL TIMES ARE CENTRAL TIME ZONE
Agenda		
Thursday, Oct. 22		
9:00 a.m.	Meeting begins ○ Introduce participants ○ Review practice analysis processes and objectives ○ Discuss the target audience ○ Review current domains	
11:00 p.m.	Break	
12:00 p.m.	Meeting resumes ○ Reach consensus on domains ○ Review procedures and considerations for evaluating and modifying task statements ○ Review and suggest revisions to task statements, working in small groups	
1:30 p.m.	Break	
2:00 p.m.	Meeting resumes ○ Review and suggest revisions to task statements, working in small groups [groups take a short break at a logical stopping point]	
5:00 p.m.	Adjournment for the day	
Friday, Oct. 23		
9:00 a.m.	Meeting resumes ○ Continue reviewing and suggesting revisions to task statements in small groups	
10:30 a.m.	Morning break	
11:00 a.m.	Meeting resumes ○ Review task statements and suggested revisions as a whole group	
12:30 p.m.	Break	
1:30 p.m.	Meeting resumes ○ Continue reviewing task statements and suggested revisions as a whole group	
3:00 p.m.	Afternoon break	
3:30 p.m.	Meeting resumes ○ Review and suggest revisions to task statements, working in small groups	
5:00 p.m.	Adjourn for the day	
Saturday, Oct. 24		
9:00 p.m.	Meeting resumes ○ Review procedures and considerations for evaluating and modifying knowledge statements ○ Review and suggest revisions to knowledge statements, working in small groups	
10:45 a.m.	Morning break	

Athletic Trainer Practice Analysis Eight

Copyright ©2020 by Scantron. All rights reserved. This publication is protected by copyright. No part of it may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without written permission from Scantron.

11:00 a.m.	Meeting resumes ○ Review knowledge statements and suggested revisions, working in small groups
12:30 p.m.	Lunch
1:00 p.m.	Meeting resumes ○ Review knowledge statements and suggested revisions as a whole group
2:30 p.m.	Break
3:00 p.m.	Meeting resumes ○ Continue reviewing knowledge statements and suggested revisions as a whole group
5:00 p.m.	Adjourn for the day
Sunday, October 25	
9:00 a.m.	Meeting resumes ○ Continue reviewing knowledge statements and suggested revisions as a whole group
10:45 a.m.	Break
11:15 a.m.	Meeting resumes ○ Continue reviewing knowledge statements and suggested revisions as a whole group
11:45 a.m.	Meeting wrap-up
12:00 p.m.	Meeting adjournment

Athletic Trainer Practice Analysis Eight

Copyright ©2020 by Scantron. All rights reserved. This publication is protected by copyright. No part of it may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without written permission from Scantron.

TABLE OF CONTENTS

Overview of Meeting Activities	4
Definition of Terms	
Target Audience Statement	4
Domains	5
Task Statements	6
Knowledge and Skill Statements.....	7
Validation Rating Scales	8
Worksheet for Domains.....	9

Athletic Trainer Practice Analysis Eight

Copyright ©2020 by Scantron. All rights reserved. This publication is protected by copyright. No part of it may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without written permission from Scantron.

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 United States. The BOC's mission is to *provide exceptional credentialing programs for health care 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 athletic training 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 ATs as a unique professional specialty.

Target Audience

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. 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 health care 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
- Law enforcement and military

Athletic Trainer Practice Analysis Eight

Copyright ©2020 by Scantron. All rights reserved. This publication is protected by copyright. No part of it may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without written permission from Scantron.

Domains

Domains are the major responsibilities or duties that characterize the practice of a profession 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 June 2017:

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

Athletic Trainer Practice Analysis Eight

Copyright ©2020 by Scantron. All rights reserved. This publication is protected by copyright. No part of it may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without written permission from Scantron.

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

1. Practice within local, state and national regulations, guidelines, recommendations and professional standards.
2. Administer therapeutic exercises to patients using appropriate techniques and procedures to aid recovery to optimal function.
3. Determine patient's functional status using appropriate techniques and standards to return to optimal activity level.
4. Implement appropriate emergency and immediate care procedures to reduce the risk of morbidity and mortality.
5. Obtain an individual's history through observation, interview and review of relevant records to assess injuries and illnesses and to identify comorbidities.
6. Formulate a clinical diagnosis by interpreting the history and the physical examination to determine appropriate course of action.

How to Write Task Statements

1. Make sure 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 five to 12 task statements for each domain.

Athletic Trainer Practice Analysis Eight

Copyright ©2020 by Scantron. All rights reserved. This publication is protected by copyright. No part of it may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without written permission from Scantron.

Knowledge and Skill Statements

For each domain, it is valuable to understand what knowledge and skills are required for proficient performance. Knowledge is an organized body of factual or procedural information and skill is the proficient physical, verbal or mental manipulation of data, people or objects. The set of knowledge and skill statements clarifies what is expected of the AT and should be critical and testable at entry to practice. 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. Physiological adaptation to exercise
2. Considerations for referral
3. Mental, social, psychological and cultural barriers
4. Acute and chronic injuries and illnesses and their healing processes
5. Standards of professional practice for ATs and other healthcare professionals
6. Wound (e.g., chronic, open) concerns related to general medical conditions

Selected Skill Statements from the Current Content Outline

1. Examining and re-examining injury and illness
2. Fabricating taping techniques and orthotic devices appropriately
3. Synthesizing applicable information from examinations and assessments
4. Identifying nutrition as a factor related to injuries, illnesses and conditions
5. Exercising clinical judgment consistent with evidence-based principles and practices
6. Recommending and implementing appropriate methods for addressing hazards
7. Positioning and preparing patients for therapeutic interventions

Athletic Trainer Practice Analysis Eight

Copyright ©2020 by Scantron. All rights reserved. This publication is protected by copyright. No part of it may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without written permission from Scantron.

VALIDATION RATING SCALES

The following scales were used in the 2017 practice analysis study:

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)

Athletic Trainer Practice Analysis Eight

Copyright ©2020 by Scantron. All rights reserved. This publication is protected by copyright. No part of it may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without written permission from Scantron.

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

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

Athletic Trainer Practice Analysis Eight

Copyright ©2020 by Scantron. All rights reserved. This publication is protected by copyright. No part of it may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without written permission from Scantron.



6001 Hospitality Court, Suite 100; Morrisville, North Carolina 27560

Appendix B: Summary of the BOC Pilot Survey

Scantron February 10, 2021

Scantron sent survey invitation emails to 200 Athletic Trainers on January 20, 2021, informing those individuals of their selection into the sample for the pilot survey, offering a gift card raffle incentive and requesting their participation by February 5. To boost response, the BOC sent an email to the sample from its domain on January 27 asking recipients to mark Scantron as a safe sender and adding a 30% discount on a certificate package as an incentive. Scantron sent two reminders, one on January 28 and one on February 5, the second of which extended the deadline to February 8. When the pilot survey closed at midnight on February 8, a total of 18 members of the sample had opened the survey and 15 had provided some amount of data. Totally complete responses were received from 14 individuals.

Pilot participants were asked at the beginning of the survey if there was anything unclear in the opening pages, and when reviewing the target audience statement, three respondents commented on the term Professional Settings, each offering different ideas. One observed that the list included various school levels but no club sports, and that amateur sports, including Olympic athletes, was missing. A second respondent thought that Olympic athletes should stand as its own category. The third advised being clearer about what Professional Settings means, suggesting the introductory language for the list be “Employers of Athletic Trainers include but are not limited to...” since a specific list can become dated.

Domain I: Risk Reduction, Wellness and Health Literacy

Tasks in this domain were seen as having Importance comfortably above the scale midpoint, with an average of 2.85; higher still, the average rating for the domain was 3.07. Task frequency ratings averaged 3.76, indicating the tasks are performed often, even though the average frequency rating for the domain was higher at 4.33.

Domain II: Assessment, Evaluation and Diagnosis

The tasks have more than moderate Importance (average rating was 3.14), with an average overall criticality rating of 3.64. Tasks in the domain are performed frequently, on a daily basis, with an average rating of 4.90, about the same the average frequency rating for the domain at 4.86.

Domain III: Critical Incident Management

The tasks in Critical Incident Management are seen as having high potential for harm in the event the newly certified Athletic Trainer lacks proficiency (Importance), with an average of 3.67 for the tasks and 3.71 for the domain. These tasks are performed with substantial frequency at an average task rating of 2.95 and 3.00 for the domain.

Domain IV: Therapeutic Intervention

Tasks in Therapeutic Intervention demonstrated with an average Importance rating of 2.89 and 3.14 for the domain, and they are performed very often (average task rating of 4.56 and average domain rating of 4.71).

Domain V: Healthcare Administration and Professional Responsibility

There was a noticeable difference in average task ratings for Importance in that tasks three and four have higher potential for harm than the first two (averages of 3.43 and 3.14 in comparison to 2.00 and 2.57). The average task rating altogether was 2.79. The average domain rating for Importance was 2.86. The pattern of findings for Frequency paralleled those for Criticality. Tasks 3 and 4 are performed more often (4.93 and 5.00) and tasks 1 and 2 less often (2.93 and 2.43). Frequency ratings for the tasks taken together was 3.82 and for the domain as a whole the average was 4.57.

Several questions at the end of the survey were intended for use only in the pilot survey. The first asked how much time the respondent required to complete the survey, and about three fifths of the group replied with 11 to 20 minutes. One respondent indicated 31 to 40 minutes. The second question asked if the instructions were clear, and all answered that they were. Respondents were unanimous in answering No to the third question, which addressed if there were technical difficulties in the survey. Finally, all but one of the respondents indicated they understood how to apply the rating scales to the tasks and domains; the one exception indicated that some of the statements could be subjective in response to situational analysis.

Scantron did not find 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.

Appendix C: Survey Notices

Sent by BOC on 2/11/2021

Subject: Look for the BOC Practice Analysis Survey

Dear [[FName]]:

You have been selected as part of a stratified random sample of current Athletic Trainers to participate in the Board of Certification's (BOC) "Practice Analysis, 8th Edition" survey. On Tuesday of next week, you will be emailed a survey designed to gather feedback to be used in development of the athletic training certification exam. Your participation in this effort is an invaluable part of ensuring the practice of Athletic Trainers is kept up to date with what is actually happening in the field.

The survey will be sent to you by Scantron from the following address: research@scantron.com. Be sure to check your inbox next week and your spam and junk files if you do not see it in your email inbox.

Thank you,
BOC

P.S. All respondents will be entered into a drawing for a chance to win a \$150 Visa gift card or one of two \$50 Visa gift cards. In addition, as a token of appreciation, all respondents who complete the survey will receive a 30% off coupon toward a custom designed BOC certificate.

Sent by Scantron on 2/16/2021

Subject: The BOC needs just 15 minutes of your time

Headline: Help Shape the Practice of Athletic Training

Dear [[FName]] [[LName]],

You have been selected to participate in a very important practice analysis survey that the Board of Certification, Inc. (BOC) is conducting. This practice analysis defines the roles and responsibilities of a newly certified Athletic Trainer (AT) and serves as the blueprint for the certification exam and continuing education programs. The purpose of the survey is to solicit feedback from practicing Certified Athletic Trainers like you regarding the revised domains and new task statements. This process is a requirement of the criteria and policies for competency assessment established in the exam development standards that the BOC follows.

The substantial majority of respondents will need only 15 minutes to complete the survey. You do not need to finish the survey at one sitting and you can return multiple times.

Your participation in this effort is invaluable in defining the practice of newly certified Athletic Trainers. All respondents will be entered into a drawing for a chance to win a \$150 Visa gift card or one of two \$50 Visa gift cards. In addition, as a token of appreciation, all respondents who complete the survey will receive a 30% off coupon toward a custom designed BOC certificate. (Only completed surveys will be eligible, and your identifying information will NOT be tied to your responses.)

Please complete the survey by **March 12, 2021**. To be entered in the drawing the survey must be completed by the deadline.

This survey is being administered with the assistance of Scantron, a company that the BOC works with in the development and validation of its exams. If you encounter any issues with this survey, please contact the survey administrator at research@scantron.com.

Please note that the URL and code provided 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.

Anne Minton, MA, MBA
Chief Executive Officer
Board of Certification

Please copy and enter this code where indicated on the survey Log-In page:

XXXXX

(Begin Survey)

Sent by Scantron on 2/25/2021

Subject: Reminder: The BOC needs just 15 minutes of your time

Headline: Help Shape the Practice of Athletic Training

Dear [[FName]] [[LName]],

Last week I invited you to participate in a very important practice analysis survey that the Board of Certification, Inc. (BOC) is conducting, but we haven't received your completed response yet.

This BOC survey is an opportunity for you to make a huge contribution to the athletic training profession. The practice analysis, created through results of this survey, defines the roles and responsibilities of a newly certified Athletic Trainer (AT) and serves as the blueprint for the certification exam and continuing education programs. The survey goal is to solicit feedback from practicing Certified Athletic Trainers like you regarding the revised domains and new task statements. This process is a requirement of the criteria and policies for competency assessment established in the exam development standards that the BOC follows.

Respondents will need approximately 15 minutes to complete the survey. You do not need to finish the survey at one sitting and you can return multiple times.

Your participation in this effort is invaluable in defining the practice of newly certified Athletic Trainers. All respondents will be entered into a drawing for a chance to win a \$150 Visa gift card or one of two \$50 Visa gift cards. In addition, as a token of appreciation, all respondents who complete the survey will receive a 30% off coupon toward a custom designed BOC certificate. (Only completed surveys will be eligible, and your identifying information will NOT be tied to your responses.)

Please complete the survey by **March 12, 2021**. To be entered in the drawing the survey must be completed by the deadline.

This survey is being administered with the assistance of Scantron, a company that the BOC works with in the development and validation of its exams. If you encounter any issues with this survey, please contact the survey administrator at research@scantron.com.

Please note that the URL and code provided 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.

Anne Minton, MA, MBA
Chief Executive Officer
Board of Certification

Please copy and enter this code where indicated on the survey Log-In page:

XXXXXX

(Begin Survey)

Sent by Scantron on 3/4/2021

Subject: Reminder: Your Voice Matters in the Future of Athletic Training

Headline: Help Shape the Practice of Athletic Training

Dear [[FName]] [[LName]],

Two weeks ago, I invited you to participate in a very important practice analysis survey that the Board of Certification, Inc. (BOC) is conducting. However, we have not received your completed response. I hope you will take advantage of this opportunity to make a contribution to our profession. The practice analysis defines the roles and responsibilities of a newly certified Athletic Trainer (AT) and serves as the blueprint for the certification exam and continuing education programs. The purpose of the survey is to solicit feedback from practicing Certified Athletic Trainers like you regarding the revised domains and new task statements. This process is a requirement of the criteria and policies for competency assessment established in the exam development standards that the BOC follows.

Respondents will need approximately 15 minutes to complete the survey. You do not need to finish the survey at one sitting, and you can return multiple times.

Your participation in this effort is invaluable in defining the practice of newly certified Athletic Trainers. All respondents will be entered into a drawing for a chance to win a \$150 Visa gift card or one of two \$50 Visa gift cards. In addition, as a token of appreciation, all respondents who complete the survey will receive a 30% off coupon toward a custom designed BOC certificate. Only completed surveys will be eligible, and your identifying information will NOT be tied to your responses.

Please complete the survey by **March 12, 2021**. To be entered in the drawing the survey must be completed by the deadline.

This survey is being administered with the assistance of Scantron, a company that the BOC works with in the development and validation of its exams. If you encounter any issues with this survey, please contact the survey administrator at research@scantron.com.

Please note that the URL and code provided 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.

Anne Minton, MA, MBA
Chief Executive Officer
Board of Certification

Sent out by Scantron on 3/9/2021

Subject Line: Time is Running Out

Headline: Help Shape the Practice of Athletic Training

Dear [[FName]] [[LName]],

Three weeks ago, I invited you to participate in a very important practice analysis survey that the Board of Certification, Inc. (BOC) is conducting. The deadline is Friday just 3 days away - and we have not yet received your completed response. The practice analysis defines the roles and responsibilities of a newly certified Athletic Trainer (AT) and serves as the blueprint for the certification exam and continuing education programs. We need your input.

Respondents will need approximately 15 minutes to complete the survey. You do not need to finish the survey at one sitting, and you can return multiple times.

Your participation in this effort is invaluable in defining the practice of newly certified Athletic Trainers. All respondents will be entered into a drawing for a chance to win a \$150 Visa gift card or one of two \$50 Visa gift cards. In addition, as a token of appreciation, all respondents who complete the survey will receive a 30% off coupon toward a custom designed BOC certificate. (Only completed surveys will be eligible, and your identifying information will NOT be tied to your responses.)

Please complete the survey by March 12, 2021. To be entered in the drawing the survey must be completed by the deadline.

This survey is being administered with the assistance of Scantron, a company that the BOC works with in the development and validation of its exams. If you encounter any issues with this survey, please contact the survey administrator at research@scantron.com.

Please note that the URL and code provided 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.

Anne Minton, MA, MBA
Chief Executive Officer
Board of Certification

Please copy and enter this code where indicated on the survey Log-In page:
XXXXX

(Begin Survey)

Sent by Scantron on 3/12/2021

Subject Line: Good news... BOC Deadline Extended

Headline: Help Shape the Practice of Athletic Training

Dear [[FName]] [[LName]],

We really need you to participate in the practice analysis survey that the Board of Certification, Inc. (BOC) is conducting. The new deadline is Tuesday, March 16 - just 4 days away. I hope this extension will give you time to submit a completed survey and earn a chance to win one of our drawing's gift cards and get the discount coupon.

The practice analysis defines the roles and responsibilities of a newly certified Athletic Trainer (AT) and serves as the blueprint for the certification exam and continuing education programs. We need your opinion.

Respondents will need approximately 15 minutes to complete the survey. You do not need to finish the survey at one sitting, and you can return multiple times.

Your participation in this effort is invaluable in defining the practice of newly certified Athletic Trainers. All respondents will be entered into a drawing for a chance to win a \$150 Visa gift card or one of two \$50 Visa gift cards. In addition, as a token of appreciation, all respondents who complete the survey will receive a 30% off coupon toward a custom designed BOC certificate. (Only completed surveys will be eligible, and your identifying information will NOT be tied to your responses.)

Please complete the survey by March 16, 2021. To be entered in the drawing the survey must be completed by the deadline.

This survey is being administered with the assistance of Scantron, a company that the BOC works with in the development and validation of its exams. If you encounter any issues with this survey, please contact the survey administrator at research@scantron.com.

Please note that the URL and code provided 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.

Anne Minton, MA, MBA Chief Executive Officer Board of Certification

Please copy and enter this code where indicated on the survey Log-In page:

XXXXX

(Begin Survey)

Sent by BOC on 3/16/2021

Subject: Last Chance for the BOC Practice Analysis Survey

Hi [[FName]]!

The Board of Certification's (BOC) "Practice Analysis, 8th Edition" survey closes tomorrow night, March 16. Our records show that we haven't yet received your important feedback.

The survey is designed to gather feedback that will be used in developing the athletic training certification exam. Your participation in this effort is an invaluable part of ensuring the exam's content is up to date and reflects what is actually happening in the practice.

The survey email and several reminders were sent to you by Scantron from the following address: research@scantron.com. If you have not seen it in your inbox, be sure to check your spam and junk folders for that address.
Thank you,

BOC

P.S. All respondents will be entered into a drawing for a chance to win \$150 Visa gift card or one of two \$50 Visa gift cards. In addition, as a token of our appreciation, all respondents who complete the survey will receive a 30% off coupon toward designed BOC certificate.

Sent by Scantron on 3/16/2021

Subject Line: Just a few more hours for the BOC survey

Headline: Help Shape the Practice of Athletic Training

Dear [[FName]] [[LName]],

The Board of Certification, Inc. (BOC) practice analysis survey closes TONIGHT. You have just a few more hours to submit your completed survey. The practice analysis defines the roles and responsibilities of a newly certified Athletic Trainer (AT) and serves as the blueprint for the certification exam and continuing education programs. We really want to hear from you.

Respondents will need approximately 15 minutes to complete the survey.

Your participation in this effort is invaluable in defining the practice of newly certified Athletic Trainers. All respondents will be entered into a drawing for a chance to win a \$150 Visa gift card or one of two \$50 Visa gift cards. In addition, as a token of appreciation, all respondents who complete the survey will receive a 30% off coupon toward a custom designed BOC certificate. (Only completed surveys will be eligible, and your identifying information will NOT be tied to your responses.)

Please complete the survey by TONIGHT. To be entered in the drawing the survey must be completed by the deadline.

This survey is being administered with the assistance of Scantron, a company that the BOC works with in the development and validation of its exams. If you encounter any issues with this survey, please contact the survey administrator at research@scantron.com.

Please note that the URL and code provided 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.

Anne Minton, MA, MBA Chief Executive Officer Board of Certification

Appendix D: Final Survey



BOC Certified Athletic Trainer Practice Analysis

Introduction

The Board of Certification, Inc. (BOC) was incorporated in 1989 as a not-for-profit credentialing agency to provide a certification program for the entry-level athletic training profession. The BOC establishes both the standards for the practice of athletic training and the continuing education requirements for BOC Certified Athletic Trainers (ATs). The BOC works with state regulatory agencies to provide credential information, professional conduct guidelines and regulatory standards on certification issues. The BOC also has the only accredited certification program for ATs in the United States and has a mutual recognition agreement with Ireland. The BOC exists so that health care professionals worldwide have access to globally recognized standards of competence and exceptional credentialing programs that support them in the protection of the public and the provision of excellent patient care. The BOC's mission is to provide exceptional credentialing programs for health care professionals to assure protection of the public.

Consistent with its mission, the BOC is conducting a practice analysis survey to assess the content framework that has been proposed for next generation of the AT certification examination. The BOC conducts the study approximately every five years. The practice analysis began in October 2020 with a meeting of expert ATs who reached consensus on the proposed content framework. The group identified the significant responsibilities that ATs have in their work, and what knowledge and skills are necessary to perform their work in a proficient manner. The practice analysis study will work to ensure that the program bears a close relationship to current practice. Doing so maintains close alignment with standards for certification examinations.

We ask you now to participate in the study by completing this very important survey.

You are not required to complete the survey in one sitting. You can save your results and return to complete the survey. To save your completed responses, click "Next" at the bottom of the page and "Exit" at the top right corner. With your emailed access link, you can re-enter the survey at any time, prior to the survey close date.

Please only use the survey navigation buttons at the bottom of each page. DO NOT use your browser navigation buttons to advance or return to a previous survey question because your responses will not be saved.

If you experience technical problems, please contact the survey administrator at research@scantron.com.

BOC Certified Athletic Trainer Practice Analysis

Introduction

The practice analysis survey is divided into two sections.

Section 1 Task Statement and Domain Evaluation: In this section, you will be asked to review 25 task statements, organized into five primary groups, or domains. The domains are as follows:

1. Risk Reduction, Wellness and Health Literacy
2. Assessment, Evaluation and Diagnosis
3. Critical Incident Management
4. Therapeutic Intervention
5. Health Care Administration and Professional Responsibility

We ask that you provide ratings for each task statement, domain by domain. Then, after you have reviewed and provided ratings for the task statements within a domain, we will ask you 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 research@scantron.com.

BOC Certified Athletic Trainer Practice Analysis

Definitions

Athletic Trainers: Athletic Trainers (AT) are health care providers who collaborate with physicians and other health care professionals. ATs work as members of interdisciplinary health care teams to provide evidence-based care that encompasses risk reduction, critical incident management, clinical diagnosis, therapeutic intervention and rehabilitation of injuries and medical conditions. Athletic training is recognized by the U.S. Bureau of Labor Statistics, U.S. Department of Health and Human Services and other organizations as a health care profession. Individuals become eligible for BOC certification through a professional athletic training program 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 (but not limited to) high schools, colleges/universities, hospitals, physician offices and health care clinics over the course of their degree program. Students enrolled in their final semester become 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 Trainers include the following:

- Professional Settings
- Professional and Collegiate Sports
- Secondary and Intermediate Schools
- Sports Medicine Clinics
- Hospital Emergency Departments and Rehabilitation Clinics
- Occupational Settings
- Military/Government/Law Enforcement
- Physician Offices
- Dance/Fine Arts

If you experience technical problems, please contact the survey administrator at research@scantron.com.

BOC Certified Athletic Trainer Practice Analysis

Instructions for Completing the Survey

Please consider only newly certified ATs when evaluating the domains and tasks, using the scales described below.

Throughout the survey we ask that you rate the various items using scales for Importance and Frequency, using the pull-down selectors beside them. The scale definitions as seen here will appear at the top of each page for your reference in completing the survey.

Importance

What level of harm would result (if any) if newly certified ATs were not proficient in the task or domain? (Harm may be physical, psychological, emotional, legal, financial, etc.)

- No harm at all
- Minimal harm
- Moderate harm
- Extreme harm

Frequency

How frequently do newly certified ATs perform the task or domain?

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

If you experience technical problems, please contact the survey administrator at research@scantron.com.

BOC Certified Athletic Trainer Practice Analysis

Domain 1 - Risk Reduction, Wellness and Health Literacy

Section 1 Task Statement and Domain Evaluation

The first group of tasks in the practice analysis is **Risk Reduction, Wellness and Health Literacy**. Please rate the Importance and Frequency of each of the task statements in this group.

Please consider only newly certified ATs when evaluating the domain and tasks, using the following scales.

- **Importance:** What level of harm would result (if any) if newly certified ATs were not proficient in the task or domain? (Harm may be physical, psychological, emotional, legal, financial, etc.)
- **Frequency:** How frequently newly certified ATs perform the task or domain?

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

Importance

Frequency

B. Implement plans to aid in risk reduction in accordance with evidence-based practice and applicable guidelines.

Importance

Frequency

C. Promote health literacy by educating stakeholders.

Importance

Frequency

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

Importance

Frequency

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

Importance

Frequency

Now that you have reviewed and rated the task statements included under **Risk Reduction, Wellness and Health Literacy**, please provide ratings for **Risk Reduction, Wellness and Health Literacy** overall.

Risk Reduction, Wellness and Health Literacy

Importance

Frequency

If you believe there are additional tasks that should be included in **Risk Reduction, Wellness and Health Literacy**, please note them in the box below.

BOC Certified Athletic Trainer Practice Analysis

Domain 2 - Assessment, Evaluation and Diagnosis

The second group of tasks in the practice analysis is **Assessment, Evaluation and Diagnosis**. Please rate the Importance and Frequency of each of the task statements in this group.

Please consider only newly certified ATs when evaluating the domain and tasks, using the following scales.

- **Importance:** What level of harm would result (if any) if newly certified ATs were not proficient in the task or domain? (Harm may be physical, psychological, emotional, legal, financial, etc.)
- **Frequency:** How frequently newly certified ATs perform the task or domain?

A. Obtain a thorough and individualized history using observation and appropriate interview techniques to identify information relevant to the patient's current condition.

Importance

Frequency

B. Perform a physical examination using diagnostic techniques.

Importance

Frequency

C. Formulate a clinical diagnosis by interpreting the information obtained during the history and physical examination.

Importance

Frequency

D. Establish a plan of care based on the clinical diagnosis and evidence-based practice.

Importance

Frequency

E. Educate the patient and stakeholders on the clinical diagnosis, prognosis and plan of care.

Importance

Frequency

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

Assessment, Evaluation and Diagnosis

Importance

Frequency

If you believe there are additional tasks that should be included in **Assessment, Evaluation and Diagnosis**, please note them in the box below.

BOC Certified Athletic Trainer Practice Analysis

Domain 3 - Critical Incident Management and Response

The third group of tasks in the practice analysis is **Critical Incident Management and Response**. Please rate the Importance and Frequency of each of the task statements in this group.

Please consider only newly certified ATs when evaluating the domain and tasks, using the following scales.

- **Importance:** What level of harm would result (if any) if newly certified ATs were not proficient in the task or domain? (Harm may be physical, psychological, emotional, legal, financial, etc.)
- **Frequency:** How frequently newly certified ATs perform the task or domain?

A. Implement Emergency Action (Response) Plans for all venues and events to guide appropriate and unified response in order to optimize outcomes.

Importance

Frequency

B. Triage the severity of health conditions.

Importance

Frequency

C. Implement appropriate evidence-based emergent care procedures to reduce the risk of morbidity and mortality (e.g., c-spine, airway management, heat illness, pandemics, suicides, other emergent conditions).

Importance

Frequency

D. Assess the scene to identify appropriate courses of action.

Importance

Frequency

Now that you have reviewed and rated the task statements included under **Critical Incident Management and Response**, please provide ratings for **Critical Incident Management and Response** overall.

Critical Incident Management and Response

Importance

Frequency

If you believe there are additional tasks that should be included in **Critical Incident Management and Response**, please note them in the box below.

BOC Certified Athletic Trainer Practice Analysis

Domain 4 - Therapeutic Intervention

The fourth group of tasks in the practice analysis is **Therapeutic Intervention**. Please rate the Importance and Frequency of each of the task statements in this group.

Please consider only newly certified ATs when evaluating the domain and tasks, using the following scales.

- **Importance:** What level of harm would result (if any) if newly certified ATs were not proficient in the task or domain? (Harm may be physical, psychological, emotional, legal, financial, etc.)
- **Frequency:** How frequently newly certified ATs perform the task or domain?

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

Importance

Frequency

B. Educate patients and appropriate stakeholders using pertinent information to optimize patient-centered care.

Importance

Frequency

C. Prescribe therapeutic exercises following evidence-based practices to address impairments and enhance activity and participation levels.

Importance

Frequency

D. Administer therapeutic modalities and devices using evidence-based procedures and parameters to address impairments and enhance activity and participation levels.

Importance

Frequency

E. Administer manual therapy techniques using evidence-based methods to address impairments and enhance activity and participation levels.

Importance

Frequency

F. Determine patients' functional status using appropriate techniques and standards to inform decisions about the return to optimal activity and participation levels.

Importance

Frequency

G. Manage general medical conditions to optimize activity and participation levels.

Importance

Frequency

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

Therapeutic Intervention

Importance

Frequency

If you believe there are additional tasks that should be included in **Therapeutic Intervention**, please note them in the box below.

BOC Certified Athletic Trainer Practice Analysis

Domain 5 - Health Care Administration and Professional Responsibility

The last group of tasks in the practice analysis is **Health Care Administration and Professional Responsibility**. Please rate the Importance and Frequency of each of the task statements in this group.

Please consider only newly certified ATs when evaluating the domain and tasks, using the following scales.

- **Importance:** What level of harm would result (if any) if newly certified ATs were not proficient in the task or domain? (Harm may be physical, psychological, emotional, legal, financial, etc.)
- **Frequency:** How frequently newly certified ATs perform the task or domain?

A. Assess organizational and individual outcomes using quality improvement analyses.

Importance

Frequency

B. Develop policies, procedures, and plans to address organizational needs.

Importance

Frequency

C. Practice within federal, state, and local laws, regulations, rules and requirements and professional standards.

Importance

Frequency

D. Use standardized documentation procedures to ensure best practices.

Importance

Frequency

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

Health Care Administration and Professional Responsibility

Importance

Frequency

If you believe there are additional tasks that should be included in **Health Care Administration and Professional Responsibility**, please note them in the box below.

BOC Certified Athletic Trainer Practice Analysis

Demographics

Section 2 Demographics

Please answer all questions according to the instructions given.

1. What is your gender?

- ☐ Male
- ☐ Female
- ☐ Other
- ☐ Prefer not to answer

2. What is your age?

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

3. In which state, territory, or province do you practice athletic training?

4. What is your race or 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 study
- ☐ Entry-level master's degree in athletic training
- ☐ Master's degree - AT major
- ☐ Master's degree - Other major
- ☐ Doctoral degree - AT major
- ☐ Doctoral degree - Other major
- ☐ AT residency (please specify)

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

- ☐ 3 years or less
- ☐ 4 to 5 years
- ☐ 6 to 10 years

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

- ☐ 3 years or less
- ☐ 4 to 5 years
- ☐ 6 to 10 years

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

- | | |
|---|--|
| ☐ Chiropractor | ☐ Occupational Therapy Professional |
| ☐ Dietitian | ☐ Orthopedic Technologist |
| ☐ Emergency Medical Technician (any level) | ☐ Orthotist |
| ☐ Massage Therapist | ☐ Physical Therapy Professional (any level) |
| ☐ Medical Doctor, Doctor of Osteopathics | ☐ Physician Assistant |
| ☐ Nurse (any level) | ☐ Surgical Technologist |
| ☐ Other (please specify) | |

9. Using the list provided please select the best description for the organization you work for.

- | | |
|--|--|
| ☐ Clinic/Hospital | ☐ Secondary School |
| ☐ Health/Fitness Industry | ☐ Student |
| ☐ Industrial/Corporate | ☐ Univ/College/JC |
| ☐ Military/Government/Law Enforcement | ☐ Youth Sports |
| ☐ Professional Sports/Olympics/Performing Arts | ☐ Not Currently Practicing |
| ☐ Sales/Marketing | ☐ Other |

10. What is your primary responsibility in the organization where you work?

- ☐ Administrator
- ☐ Head Athletic Trainer/Director of Sports Medicine
- ☐ Athletic Trainer
- ☐ Physician extender
- ☐ Program director
- ☐ Educator
- ☐ Not practicing
- ☐ Other

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

- ☐ Yes
- ☐ No

12. How many CERTIFIED Athletic Trainers are employed in total in the organization where you work?

- ☐ 1
- ☐ 2
- ☐ 3-5
- ☐ 6-10
- ☐ 11-15
- ☐ 16-20
- ☐ 21-30
- ☐ More than 30

13. 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%

14. 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%

15. 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

16. 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

BOC Certified 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: Residency Programs Provided by Respondents for the Demographic Question on Highest Level of Education

D9 - Residency (please specify)
Boston University Orthopedic and Diagnosis AT Residency. I also completed a Doctorate in Athletic Training. Unsure which ranks as highest level of education
CAATE Accredited - SLUHN (PA)
CAATE Accredited Athletic Training Residency
Certified Residency
Houston Methodist Sugar Land Hospital Athletic Training Residency
Neurotrauma and Spine
Rehabilitation and Manual Therapy (Houston Methodist)
St. Luke's
Orthopedic clinic and surgical residency

Appendix F: Responses for Other Healthcare Credential Specified by Respondents

Other credentials in healthcare - Other (please specify)
ARDMS registered Musculoskeletal Sonographer
Athletic therapist
CES (held by 3 respondents)
PES
CSCS (held by 23 respondents)
Cast tech
Certified Ergonomic Intervention Specialist (held by 2 respondents)
Certified Orthotic Fitter (CFo)
Corrective Exercise Specialist (held by 4 respondents)
Counseling and Sport Psychology
EMR (held by 2 respondents)
EMT
Educator, Coach
Health Education
K-12 PE Teaching/Sports Medicine Teacher
Licensed Athletic Trainer (held by 3 three respondents)
Licensed Esthetician
Mental Health First Aider
OEC - Ski Patrol
Orthopedic Physician Extender (held by 3 respondents)
PA-C in Aug 2021
Performance Enhancement Specialist
Personal trainer (held by 2 respondents)
Physician extender and others
Prosthetics
Sports nutritionist

Appendix G: Content Outline for Practice Analysis, 8th Edition



Content Outline for Practice Analysis, 8th Edition

EFFECTIVE:

ATHLETIC TRAINER EXAM - APRIL 2023

RECERTIFICATION ACTIVITIES - JANUARY 2024

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 are healthcare providers who collaborate with physicians and other health care professionals. Athletic Trainers work as members of interdisciplinary health care teams to provide evidence-based care that encompasses prevention, critical incident management, clinical diagnosis, therapeutic intervention and rehabilitation of injuries and medical conditions. Athletic training is recognized by the U.S. Bureau of Labor Statistics, U.S. Department of Health and Human Services, and other organizations as a health care profession. Individuals become eligible for BOC certification through a professional athletic training program 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 (but not limited to) high schools, colleges/universities, hospitals, physician offices and health care clinics over the course of the degree program. Students enrolled in their final semester become 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 Trainers include the following:

1. Professional Settings
2. Professional and Collegiate Sports
3. Secondary and Intermediate Schools
4. Sports Medicine Clinics
5. Hospital Emergency Departments and Rehabilitation Clinics
6. Occupational Settings
7. Military/Government/Law Enforcement
8. Physician Offices
9. Dance/Fine Arts

Domains

Domains are the major responsibilities or duties that characterize the practice of a profession like athletic training. The panel reached consensus on the following in its discussions on October 22, 2020.

1. Risk Reduction, Wellness and Health Literacy
2. Assessment, Evaluation and Diagnosis
3. Critical Incident Management
4. Therapeutic Intervention
5. Healthcare Administration and Professional Responsibility.

Domain 1: Risk Reduction, Wellness and Health Literacy

TASK STATEMENT 1

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

KNOWLEDGE OF:

1. Disqualifying health-related factors
2. General health conditions
3. Risk factors within activities, wellness, and environment
4. Policies, procedures, and guidelines
5. Behavioral risks (e.g., nutritional, sexual, substance abuse, sedentary lifestyle, overtraining)
6. Catastrophic risks (e.g., cardiorespiratory, neurological, thermoregulatory, immunological)
7. Biomechanical risks
8. Indications for referral
9. Physiological adaptation to exercise
10. Ergonomic, epidemiological, and etiological factors
11. Evidence-based principles and practices
12. Implications of culture for practice
13. Injury surveillance data and trends
14. Systematic approach
15. Applicable screening instruments
16. Federal, state, and local laws, regulations, rules, and requirements, and professional standards
17. Mental health risks (e.g., personality, psychosocial, depression, suicide, anxiety, grief, eating disorder)
18. Age-related and lifespans considerations that pertain to conditioning, wellness, and baseline measurement

SKILL IN:

1. Communicating with appropriate chain of command
2. Interpreting injury surveillance data
3. Analyzing examination/screening data
4. Identifying conditions that may affect participation
5. Communicating available health resources to patients and/or stakeholders
6. Administering screenings and examinations
7. Identifying clinical indications for referral
8. Communicating with appropriate stakeholders and other healthcare providers
9. Reviewing information systematically
10. Exercising clinical judgment consistent with evidence-based principles and practices

TASK STATEMENT 2

Implement plans to aid in risk reduction in accordance with evidence-based practice and applicable guidelines.

KNOWLEDGE OF:

1. Policies, procedures, and guidelines
2. Principles of strength development, cardiovascular fitness, and functional movement
3. Health conditions
4. Proper hygiene practices
5. Facility cleaning and maintenance
6. Evidence-based principles and practices
7. Ergonomics and preventive measures
8. Risk factors within activities, wellness, and environment
9. Federal, state, and local laws, regulations, rules, and requirements, and professional standards

SKILL IN:

1. Communicating inherent risks
2. Identifying health conditions
3. Managing health conditions
4. Interpreting and applying policies and procedures, position statements, and consensus statements
5. Applying federal, state, and local laws, regulations, rules, and requirements, and professional standards
6. Educating patients and/or stakeholders on available health resources
7. Applying preventive measures (e.g., safety rules, accepted biomechanical techniques, ergonomics, nutrition guidelines, injury and disease prevention equipment)
8. Implementing risk-reduction plans

TASK STATEMENT 3

Promote health literacy by educating patients and other stakeholders in order to improve their capacity to obtain, process, and understand basic health information needed to make appropriate health decisions.

KNOWLEDGE OF:

1. Policies, procedures, and guidelines
2. Federal, state, and local laws, regulations, rules, and requirements, and professional standards
3. Operation of healthcare systems
4. Indications for referral
5. Available resources
6. Social determinants of health
7. Cultural diversity and implications for health literacy

SKILL IN:

1. Communicating effectively
2. Educating stakeholders on available resources and healthcare procedures
3. Identifying barriers to optimal health and wellness
4. Coordinating inter-professional communication
5. Teaching stakeholders to communicate and advocate effectively with healthcare providers

TASK STATEMENT 4

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

KNOWLEDGE OF:

1. Risk factors associated with activities, wellness, and environment
2. Policies, procedures, and guidelines
3. Principles of strength development, cardiovascular fitness, and functional movement
4. Screening and baseline assessment tools and their use
5. Professional resources for stress management, behavior modification, comorbidities, and nutritional conditions
6. Nutrition and supplements
7. Human physiology
8. Considerations for referral
9. Wellness examinations
10. Signs and symptoms of social, emotional, mental, and stress-related conditions
11. Federal, state, and local laws, regulations, rules, and requirements, and professional standards
12. Pharmacology
13. Substance use and abuse
14. Social determinants of health
15. Cultural diversity and implications for wellness

SKILL IN:

1. Developing a comprehensive program for optimizing function
2. Assessing appropriateness of participation in conditioning programs
3. Correcting or modifying inappropriate, unsafe, or dangerous activities
4. Accessing information concerning accepted guidelines
5. Educating individuals and groups on the concepts of wellness
6. Addressing signs and symptoms of social, emotional, mental, and stress-related conditions
7. Educating individuals and groups on available wellness resources
8. Administering and interpreting baseline screening tools
9. Communicating effectively
10. Making appropriate referrals

TASK STATEMENT 5

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

KNOWLEDGE OF:

1. Health conditions
2. Environmental conditions that create risk
3. Signs and symptoms of health conditions that result from exposure to environmental conditions
4. Risk factors associated with activities, wellness, and environments
5. Methods for reducing risk pertaining to environmental conditions (e.g., activity scheduling, clothing selection, fluid replacement)
6. Policies and procedures for removing participants from environmental risk situations (e.g., heat index, lightning, activity scheduling)
7. Federal, state, and local laws, regulations, rules, and requirements, and professional standards
8. Ergonomic assessments
9. Pharmacology
10. Biomechanics

SKILL IN:

1. Conducting inspections and recognizing hazards
2. Using monitoring techniques (e.g., weight charts, fluid intake, body composition)
3. Utilizing weather/environmental monitoring devices
4. Managing predisposing factors (e.g., environmental conditions, health conditions, ergonomic risks, biomechanical risks)
5. Responding to signs and symptoms of health conditions that result from exposure to environmental conditions
6. Recommending and implementing appropriate methods for addressing hazards
7. Communicating risk mitigation procedures and guidelines effectively

Domain II: Assessment, Evaluation and Diagnosis

TASK STATEMENT 1

Obtain a thorough and individualized history using observation and appropriate interview techniques to identify information relevant to the patient's current condition.

KNOWLEDGE OF:

1. Psychosocial factors
2. Evidence-based medicine
3. Human anatomy and physiology
4. Neuroscience
5. Mechanisms of injury and nature of illness
6. Pathophysiology and pathological conditions
7. Biomechanical and postural factors and abnormalities
8. Environmental risk factors
9. Verbal and non-verbal communication techniques
10. Epidemiology and etiology of health conditions
11. Nutrition
12. Pharmacology
13. Standard medical terminology
14. Visual inspection techniques
15. Health conditions
16. Health factors (e.g., age and lifespan, sex and gender, race and ethnicity)
17. Cultural diversity and implications for health and assessment
18. Disablement models
19. Patient-reported outcome measures

SKILL IN:

1. Communicating effectively
2. Asking open-ended questions
3. Interpreting/using prior medical history and medical records
4. Documenting observations and history
5. Identifying anatomical structures
6. Reviewing and evaluating test results
7. Recognizing signs and symptoms of health conditions
8. Recognizing effects of substances
9. Interpreting results of patient-reported outcome measure
10. Identifying severity of health condition
11. Interpreting critical information gathered

TASK STATEMENT 2

Perform a physical examination using appropriate diagnostic techniques.

KNOWLEDGE OF:

1. Normal and abnormal human anatomy and physiology
2. Mechanics, principles, and techniques of special, specific, and selective tissue tests (e.g., ROM, MMT, orthopedic, neurocognitive, neurological)
3. Normal and pathological clinical findings and physiological measurements
4. Human biometrics
5. Palpation techniques and related principles
6. Mechanism of injury and nature of illness
7. Immediate and delayed functional and physiological response to health conditions
8. Signs and symptoms
9. Standard medical terminology and nomenclature
10. Clinical trajectories of concussion and traumatic brain injuries
11. Testing techniques and diagnostic imaging
12. Exercise physiology and its effects on the healing process
13. Characteristics of pain
14. Evidence-based principles and practices
15. Vital signs
16. Cultural diversity and implications for health and assessment
17. General health conditions
18. Validity and reliability of diagnostic testing and assessment techniques

SKILL IN:

1. Assessing neurocognitive function
2. Assessing neurological function and response
3. Assessing neuromuscular control (e.g., postural control and balance)
4. Identifying anatomical structures
5. Understanding the severity of signs of health conditions
6. Palpating appropriate structures to assess the integrity of human anatomical and physiological systems
7. Interpreting the relationships among signs of pathological health conditions
8. Assessing range of motion (e.g., AROM, PROM, RROM)
9. Assessing functional movement (e.g., biomechanics, gait analysis)
10. Assessing immediate and delayed physiological responses health conditions
11. Interpreting the relationships between pre-existing functional/structural abnormalities and health conditions.
12. Identifying appropriate selective tissue tests
13. Performing visual inspections
14. Performing selective tissue tests
15. Interpreting results of selective tissue tests
16. Exercising clinical judgement consistent with evidence-based principles and practices
17. Interpreting diagnostic imaging and testing
18. Performing manual muscle testing
19. Obtaining informed consent
20. Assessing general medical conditions

TASK STATEMENT 3

Formulate a clinical diagnosis by interpreting the information obtained during the history and physical examination.

KNOWLEDGE OF:

1. Health conditions
2. Clinical indications for referral
3. Pharmacology
4. Standard medical terminology and nomenclature
5. Psychosocial dysfunction and implications associated with health conditions
6. Evidence-based principles and practices
7. Normal and abnormal neurocognitive and neurological function
8. Differential diagnoses

SKILL IN:

1. Interpreting and integrating evaluation findings
2. Formulating differential diagnoses
3. Synthesizing applicable information from the examination and assessment
4. Using valid and reliable information to assist in decision-making

TASK STATEMENT 4

Establish a plan of care based on the clinical diagnosis and evidence-based practice.

KNOWLEDGE OF:

1. Health conditions and prognosis
2. Scope of practice of healthcare providers
3. Guidelines for return to activity or participation
4. Pharmacology
5. Therapeutic intervention
6. Standard medical terminology and nomenclature
7. Psychosocial factors
8. Human anatomy and physiology
9. Cultural diversity and implications for health and assessment
10. Concepts of healing
11. Verbal and non-verbal communication
12. Diagnoses and differential diagnoses
13. Policies, procedures, and guidelines
14. Federal, state, and local laws, regulations, rules, and requirements, and professional standards
15. Clinical trajectories of concussion and traumatic brain injuries
16. Standard medical documentation procedures

SKILL IN:

1. Synthesizing information
2. Identifying appropriate courses of action
3. Incorporating federal, state, and local laws, regulations, rules, and requirements, and professional standards
4. Setting appropriate goals
5. Considering factors that influence level of activity
6. Collaborating with interdisciplinary healthcare providers
7. Directing referrals to the appropriate professionals
8. Using standard medical terminology and nomenclature
9. Using standard medical documentation procedures

TASK STATEMENT 5

Educate the patient and stakeholders on the clinical diagnosis, prognosis, and plan of care.

KNOWLEDGE OF:

1. Best practices regarding the care and treatment of health conditions
2. Effective verbal and non-verbal communication techniques
3. Patient confidentiality guidelines, laws, and regulations
4. Health conditions prognosis and complications
5. Standard medical terminology and nomenclature
6. Motivational techniques
7. Concepts of healing progression
8. Psychosocial factors
9. Cultural diversity and implications for health and assessment

SKILL IN:

1. Communicating effectively
2. Maintaining patient confidentiality
3. Motivating to promote optimal outcomes
4. Using standard medical terminology and nomenclature
5. Differentiating between normal and abnormal recovery progression
6. Using appropriate counseling techniques

Domain III: Critical Incident Management

TASK STATEMENT 1

Implement Emergency Action (Response) Plans for all venues and events to guide appropriate and unified response in order to optimize outcomes.

KNOWLEDGE OF:

1. Components of emergency action plans
2. Effective communication techniques (e.g., multimedia videos, pamphlets, posters, models, handouts and oral communication)
3. Roles of individual members of the medical management team and appropriate stakeholders
4. National and state occupational, safety, and health guidelines
5. Standard protective equipment, removal devices, and procedures
6. Standard and emergency medical equipment
7. Pharmacological agents and interventions for immediate and emergent conditions
8. Personal protective equipment
9. Organizational and institutional policies and procedures
10. Legal considerations

SKILL IN:

1. Communicating effectively
2. Educating individuals (e.g., facilities, healthcare professionals, patients, guardians, organizational personnel) regarding standard emergency care procedures
3. Developing, documenting, organizing, and rehearsing emergency action plans

TASK STATEMENT 2

Triage the severity of health conditions.

KNOWLEDGE OF:

1. Epidemiology of catastrophic conditions
2. Life-threatening medical situations (e.g., respiratory, central nervous, and cardiovascular)
3. Human anatomy and physiology
4. National and state occupational, safety, and health guidelines
5. Pharmacological and therapeutic intervention for immediate and emergent conditions
6. Roles and scopes of practice of relevant healthcare providers
7. Standard and emergency medical equipment
8. Triage systems

SKILL IN:

1. Implementing emergency action plans
2. Implementing national and state occupational, safety and health guidelines
3. Using standard and emergency medical equipment
4. Measuring, interpreting, and monitoring vital signs
5. Using a primary survey for life-threatening medical situations (e.g., respiratory, central nervous, cardiovascular)
6. Applying pharmacological and therapeutic intervention usage for immediate and emergent conditions
7. Managing patients in triage systems

TASK STATEMENT 3

Implement appropriate evidence-based emergent care procedures to reduce the risk of morbidity and mortality (e.g., c-spine, airway management, heat illness, pandemics, suicides, other emergent conditions).

KNOWLEDGE OF:

1. Appropriate management techniques for life-threatening conditions and conditions that are not life-threatening
2. Appropriate use of emergency equipment and techniques (e.g., automated external defibrillator, airway management devices, suction, oxygen)
3. Human anatomy and physiology
4. Therapeutic intervention for immediate and emergent conditions
5. National and state occupational, safety, and health guidelines
6. Roles and scopes of practice of relevant healthcare providers

SKILL IN:

1. Performing cardiopulmonary resuscitation techniques and procedures
2. Implementing emergency action plans
3. Implementing national and state occupational, safety, and health guidelines
4. Implementing immobilization and transfer techniques
5. Measuring, interpreting, and monitoring vital signs and patient status
6. Managing emergency situations and life-threatening conditions
7. Managing non-life-threatening conditions
8. Removing protective equipment using appropriate removal devices and/or manual techniques
9. Using standard and emergency medical equipment
10. Applying therapeutic interventions for immediate and emergent conditions
11. Debriefing stakeholders

TASK STATEMENT 4

Assess the scene to identify appropriate courses of action.

KNOWLEDGE OF:

1. Components of emergency action plans
2. National and state occupational, safety, and health guidelines
3. Referral strategies for life-threatening conditions and conditions that are not life-threatening
4. Effective communication
5. Pertinent administrative practices
6. Roles and responsibilities of relevant healthcare providers
7. Triage systems

SKILL IN:

1. Implementing emergency action plan(s)
2. Measuring, interpreting, and monitoring vital signs and patient status
3. Documenting and communicating referrals
4. Directing referrals to appropriate stakeholders

Domain IV: Therapeutic Intervention

TASK STATEMENT 1

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

KNOWLEDGE OF:

1. Evidence-based principles and practices
2. Inflammation and healing process
3. Health conditions
4. Theories of pain and motor system adaptation (e.g., biopsychosocial model, endogenous descending pain inhibition)
5. Roles and scopes of practice of relevant health care providers
6. Rehabilitation and/or treatment plan modification
7. Rehabilitation methods (e.g., therapeutic exercise, manual therapies, modalities and devices)
8. Health factors (e.g., age and lifespan, sex and gender, race and ethnicity, co-morbidities)
9. Indications, contraindications, and precautions
10. Safety (e.g., patient, environment, equipment, clinician)
11. Pharmacology
12. Cultural diversity and responses to treatment and rehabilitation
13. Surgical procedures and precautions
14. Legal risks and ramifications
15. Psychosocial implications associated with injuries, illnesses, and conditions
16. Outcome measurement tools (e.g., patient-centered, clinician-centered)
17. Evaluation findings (e.g., diagnosis, impairments, activity limitations, participation restrictions)
18. Referral sources and procedures
19. Implications and limitations of provider referrals and standing orders
20. Periodization

SKILL IN:

1. Interpreting examinations and assessments
2. Clinical reasoning
3. Assessing outcomes
4. Managing patient care
5. Communicating effectively
6. Establishing patient goals
7. Examining and re-examining health conditions
8. Assessing and reassessing patient response to therapeutic interventions
9. Preparing patients for therapeutic intervention
10. Modifying treatment plans

TASK STATEMENT 2

Educate patients and appropriate stakeholders using pertinent information to optimize patient-centered care and patient engagement throughout the therapeutic intervention process.

KNOWLEDGE OF:

1. Evidence-based principles and practices
2. Appropriate referral considerations
3. Anatomy, physiology and kinesiology (e.g., vestibular, pulmonary, visual, cardiovascular, musculoskeletal)
4. Health factors (e.g., age and lifespan, sex and gender, race and ethnicity, co-morbidities)
5. Indications, contraindications, and precautions
6. Safety (e.g., patient, environment, equipment, clinician)
7. Cultural diversity and responses to treatment and rehabilitation
8. Surgical procedures and precautions
9. Legal risks and ramifications (e.g., Scope of practice)
10. Nutrition
11. Homecare program components
12. Educational material and methods
13. Supplemental resources (e.g., psychosocial, community, family, and health care)
14. Psychological aspects related to the therapeutic intervention process
15. Health conditions
16. Inflammation and healing processes
17. Theories of pain, pain control, and motor system adaptation
18. Principles of rehabilitation process and modification
19. Pharmacology

SKILL IN:

1. Communicating effectively (e.g., recovery timeline, expectations, outcomes)
2. Providing guidance for the stakeholders throughout the therapeutic intervention process
3. Developing homecare programs
4. Providing appropriate referral
5. Applying clinical reasoning

TASK STATEMENT 3

Prescribe therapeutic exercises following evidence-based practices to address impairments and enhance activity and participation levels.

KNOWLEDGE OF:

1. Evidence-based principles and practices
2. Inflammation and healing processes
3. Health conditions
4. Theories of pain and motor system adaptation (e.g., biopsychosocial model, endogenous descending pain inhibition)
5. Anatomy, physiology and kinesiology (e.g., vestibular, pulmonary, visual, cardiovascular, musculoskeletal)
6. Health factors (e.g., age and lifespan, sex and gender, race and ethnicity, comorbidities)
7. Indications, contraindications, and precautions
8. Safety (e.g., patient, environment, equipment, clinician)
9. Pharmacology
10. Cultural diversity and responses to treatment and rehabilitation
11. Surgical procedures and precautions
12. Legal risks and ramifications (e.g., Scope of practice)
13. Equipment and tools
14. Exercise prescription and modification (e.g., Progression and Regression)
15. Neurological factors
16. Tissue responses to stimulus
17. Local and systemic physiologic responses
18. Principles of resistance training
19. Principles of functional training
20. Principles of cardiovascular training
21. Principles of postural control
22. Principles of dynamic joint stability
23. Principles of mobility
24. Principles of pain control
25. Principles of swelling management
26. Principles of return to activity programs
27. Principles of motor learning
28. Psychosocial influences
29. Structure, growth, development, and regeneration of tissue
30. Physiologic responses to exercise-related modalities and devices
31. Gait training techniques
32. Periodization

SKILL IN:

1. Interpreting examination results
2. Applying clinical reasoning
3. Assessing outcomes
4. Managing patient care (e.g., progressions, regressions, discontinuation)
5. Communicating effectively
6. Establishing patient goals
7. Examining and re-examining health conditions
8. Assessing and reassessing patient's response to therapeutic interventions
9. Developing therapeutic exercise programs
10. Implementing therapeutic exercise programs
11. Progressing patients through therapeutic exercise programs
12. Educating patients on proper biomechanics

TASK STATEMENT 4

Administer therapeutic modalities and devices using evidence-based procedures and parameters to address impairments and enhance activity and participation levels.

KNOWLEDGE OF:

1. Evidence-based principles and practices
2. Inflammation and healing processes
3. Health conditions
4. Theories of pain, pain control, and motor system adaptation
5. Scope of practice and appropriate referral
6. Principles of rehabilitation process and modification
7. Health factors (e.g., age and lifespan, sex and gender, race and ethnicity, co-morbidities)
8. Indications, contraindications, and precautions
9. Safety (e.g., patient, environment, equipment, clinician)
10. Pharmacology
11. Cultural diversity and responses to treatment and rehabilitation
12. Surgical procedures and precautions
13. Legal risks and ramifications
14. Equipment and tool maintenance
15. Physiologic responses
16. Principles of electromagnetic, mechanical, thermal, and acoustical energy
17. Anatomy, physiology and kinesiology (e.g., vestibular, pulmonary, visual, cardiovascular, musculoskeletal)
18. Principles of taping, bracing and orthotics
19. Psychosocial influences

SKILL IN:

1. Interpreting examinations
2. Applying clinical reasoning
3. Assessing outcomes
4. Managing patient care
5. Communicating effectively
6. Establishing patient goals
7. Applying therapeutic devices and modalities
8. Fabricating orthotic devices appropriately
9. Using taping techniques and orthotic devices appropriately
10. Assessing and reassessing patient's response to therapeutic devices and modalities
11. Assessing physiological responses related to the application of therapeutic devices and modalities

TASK STATEMENT 5

Administer manual therapy techniques using evidence-based methods to address impairments and enhance activity and participation levels.

KNOWLEDGE OF:

1. Evidence-based principles and practices
2. Inflammation and healing processes
3. Health conditions
4. Theories of pain, pain control, and motor system adaptation
5. Scope of practice and appropriate referral
6. Principles of rehabilitation process and modification
7. Health factors (e.g., age and lifespan, sex and gender, race and ethnicity, co-morbidities)
8. Indications, contraindications, and precautions
9. Safety (e.g., patient, environment, equipment, clinician)
10. Pharmacology
11. Cultural diversity and responses to treatment and rehabilitation
12. Surgical procedures and precautions
13. Legal risks and ramifications
14. Adaptations of the cutaneous, nervous, and musculoskeletal systems related to manual techniques
15. Psychosocial influences
16. Manual therapy techniques (e.g., joint mobilization, neural mobilization, soft tissue mobilization, positional release)
17. Physiologic responses
18. Anatomy, physiology and kinesiology (e.g., vestibular, visual, cardiorespiratory, musculoskeletal)

SKILL IN:

1. Interpreting examinations and assessments
2. Applying clinical reasoning
3. Assessing outcomes
4. Managing patient care
5. Communicating effectively
6. Establishing patient goals
7. Examining and re-examining health conditions
8. Assessing and reassessing patient's response to therapeutic interventions
9. Performing manual therapy techniques appropriately

TASK STATEMENT 6

Determine patients' functional status using appropriate techniques and standards to inform decisions about returning to optimal activity and participation levels.

KNOWLEDGE OF:

1. Evidence-based principles and practices
2. Inflammation and healing processes
3. Health conditions
4. Scope of practice and appropriate referral
5. Principles of rehabilitation process and plan modification
6. Health factors (e.g., age and lifespan, sex and gender, race and ethnicity, co-morbidities, nutrition)
7. Indications, contraindications, and precautions
8. Safety (e.g., patient, environment, equipment, clinician)
9. Cultural diversity and responses to treatment and rehabilitation
10. Surgical procedures and precautions
11. Legal risks and ramifications
12. Anatomy, physiology and kinesiology (e.g., vestibular, pulmonary, visual, cardiovascular, musculoskeletal)
13. Principles of and criteria for functional progression
14. Gait analysis
15. Biomechanical and functional assessments
16. Theories of pain, pain control, and motor system adaptation
17. Pharmacology
18. Outcome measurement tools (e.g., patient-centered, clinician-centered)
19. Psychosocial influences
20. Activity and participation requirements

SKILL IN:

1. Interpreting examination results
2. Applying clinical reasoning
3. Assessing outcomes
4. Managing patient care
5. Communicating effectively
6. Establishing patient goals
7. Examining and re-examining health conditions
8. Assessing and reassessing patient's response to therapeutic interventions
9. Performing biomechanical and functional analyses
10. Interpreting biomechanical and functional analyses
11. Making decisions about functional progressions
12. Making decisions about return to optimal activity and participation level

TASK STATEMENT 7

Manage general medical conditions to optimize activity and participation levels.

KNOWLEDGE OF:

1. Evidence-based principles and practices
2. Anatomy, physiology and kinesiology (e.g., vestibular, pulmonary, visual, cardiovascular, musculoskeletal)
3. Health conditions
4. Inflammation and healing processes
5. Theories of pain, pain control, and motor system adaptation
6. Scope of practice and appropriate referral
7. Principles of rehabilitation process and plan modification
8. Health factors (e.g., age and lifespan, sex and gender, race and ethnicity, co-morbidities)
9. Indications, contraindications, and precautions
10. Safety (e.g., patient, environment, equipment, clinician)
11. Pharmacology
12. Cultural diversity and responses to treatment and rehabilitation
13. Surgical procedures and precautions
14. Legal risks and ramifications
15. Equipment and tools
16. Neurological factors
17. Psychosocial influences
18. Concussion and other traumatic brain injuries
19. Wound (e.g., chronic, open) management
20. Pathophysiology of systemic illnesses, communicable diseases, and infections

SKILL IN:

1. Interpreting examination results
2. Applying clinical reasoning
3. Assessing outcomes
4. Managing patient care
5. Communicating effectively
6. Establishing patient goals
7. Examining and re-examining health conditions
8. Assessing and reassessing patient's response to therapeutic interventions
9. Performing neurocognitive assessments
10. Incorporating neurocognitive assessments in plans of care
11. Using personal protective equipment appropriately

Domain V: Healthcare Administration and Professional Responsibility

TASK STATEMENT 1

Assess organizational and individual outcomes using quality improvement analyses.

KNOWLEDGE OF:

1. Methods of gathering, analyzing, and interpreting qualitative and quantitative data
2. Benchmarking
3. Project and program management
4. Resources available for adapting policies and procedure
5. Job expectations, personal goals, and priorities (e.g., work-life balance, job satisfaction)
6. Organizational resources available for professional development and personal support
7. Role of professional collaboration
8. Leadership and management styles and theories
9. Evidence-based principles and practices
10. Post-event assessment techniques
11. Goal-setting principles and practices
12. Appropriate software and technologies available

SKILL IN:

1. Gathering, analyzing, and interpreting data
2. Conducting a post-event assessment
3. Formatting and presenting data
4. Providing data to support the advancement of organizational or personal goals
5. Synthesizing study results to implement change
6. Implementing quality improvement (e.g., needs assessment, PDSA cycle, SWOT analysis)
7. Collaborating with stakeholders and other healthcare providers
8. Educating stakeholders
9. Applying concepts of evidence-based medicine
10. Communicating effectively
11. Providing leadership appropriate to situations and people
12. Educating the public and stakeholders on the profession of athletic training to ensure patient protection and care across all job settings

TASK STATEMENT 2

Develop policies, procedures, and plans to address organizational needs.

KNOWLEDGE OF:

1. Components of emergency action (response) plans
2. Human resources
3. Federal, state, and local laws, regulations, rules, and requirements, and professional standards
4. Organizational and management styles
5. Scheduling systems and techniques
6. Drug testing
7. Inventory and purchasing
8. Applicable resource allocation
9. Legislative and regulatory updates and changes
10. Basic business principles
11. Pre-participation examination
12. Policies, procedures, and guidelines
13. Budgeting
14. Equipment and supplies
15. Insurance and reimbursement
16. Standard operating procedures
17. Risk management
18. Best practices (e.g., position statements)
19. Facility management
20. Organizational mission and goals

SKILL IN:

1. Formulating policies and procedures
2. Collaborating with stakeholders and local first responders
3. Incorporating technology where appropriate (e.g., computer software, weather monitoring)
4. Implementing human resources policies
5. Communicating with stakeholders
6. Implementing policies and procedures
7. Developing a budget
8. Interpreting regulatory documents
9. Understanding job descriptions
10. Tracking inventory and purchasing
11. Interpreting applicable and appropriate data (e.g., injury surveillance, usages trends, and risks)

TASK STATEMENT 3

Practice within federal, state, and local laws, regulations, rules, requirements, and professional standards.

KNOWLEDGE OF:

1. Standards of professional practice for Athletic Trainers and other healthcare professionals
2. Professional organization position and consensus statements (NATA, Centers for Disease Control and Prevention)
3. Documentation requirements and procedures
4. Consent-to-treat requirements and documentation
5. Standard medical terminology and nomenclature
6. Federal, state, and local laws, regulations, rules, and requirements, and professional standards
7. Professional codes of ethics
8. Process for reporting violations of professional standards and practice acts
9. Policies, procedures, and guidelines
10. Requirements for third-party reimbursement
11. Telehealth and electronic communication restrictions

SKILL IN:

1. Creating and completing medical documentation
2. Making ethical decisions that are consistent with professional practice and guidelines
3. Implementing current position statements, regulatory changes, and legislated requirements
4. Using standard medical terminology and nomenclature
5. Accessing professional practice acts and requirements
6. Communicating effectively
7. Understanding procedural and diagnostic coding
8. Protecting the public through the safe and ethical practice of athletic training
9. Understanding administrative reporting pathways for ethical violations
10. Applying telehealth and electronic technology

TASK STATEMENT 4

Use standardized documentation procedures to ensure best practices.

KNOWLEDGE OF:

1. Documentation procedures (e.g., SOAP, progress notes, screenings, assessments, examinations)
2. Standard medical terminology and nomenclature
3. Appropriate documentation requirements (e.g., electronic health record, Centers for Medicare and Medicaid Services, consent)
4. Documentation systems (e.g., software, paper)
5. Appropriate computer software applications
6. Healthcare coding
7. Legal considerations and ramifications
8. Telehealth and electronic communication restrictions

SKILL IN:

1. Reviewing prescreening participation guidelines
2. Creating and completing the documentation process
3. Obtaining, interpreting, evaluating, and applying relevant data
4. Using computer software applications (e.g., word processing, database spreadsheet, and Internet applications)
5. Reviewing documentation
6. Interpreting documentation
7. Updating documentation
8. Applying telehealth and electronic technology
9. Communicating effectively

BOC VISION

The BOC exists so that health care professionals worldwide have access to globally recognized standards of competence and exceptional credentialing programs that support them in the protection of the public and the provision of excellent patient care.

BOC MISSION

To provide exceptional credentialing programs for healthcare professionals to assure protection of the public.

BOC VALUES

Integrity, Professionalism, Fairness, Transparency, Service

The BOC, a national credentialing agency, has been certifying Athletic Trainers and identifying, for the public, quality health care professionals with certainty since 1969.

BOARD OF CERTIFICATION
1415 Harney Street, Suite 200
Omaha, Nebraska 68102

O (402) 559-0091
F (402) 561-0598