



The Athletic Health Care Team

MAJOR CONCEPTS

The cornerstone of providing optimal care to those suffering from sports injuries is the athletic health care team, which is made up of a variety of highly trained medical and allied medical personnel, as well as nonmedical personnel such as coaches, parents, and administrators. This chapter provides an overview of the principal members of the team and reviews the evolution of the field of sports medicine. In addition, it describes specific services provided by the athletic health care team, giving special attention to the team physician and the BOC-certified athletic trainer. It also outlines educational requirements for BOC certification and employment options for certified athletic trainers.



The web site for this book offers many useful tools and is a great source for supplementary information for both students and instructors.

Visit the site at

[http://health.jbpub.com/
book/concepts/5e](http://health.jbpub.com/book/concepts/5e)

to link to the following organizations and sites:

- Board of Certification, Inc.
- The American College of Sports Medicine

24 CHAPTER 2 The Athletic Health Care Team

Effective delivery of health care to participants in sports and other physical activities is best achieved through a team approach that includes, at the least, the coach, a team physician, and a Board of Certification, Inc. (BOC)–certified athletic trainer. Known as the athletic health care team, these personnel must coordinate their activities to provide essential health care to young athletes. For example, in the vast majority of cases it is not practical for a physician to be on campus daily in the high school setting to provide medical services to the athletes. As such, an allied health practitioner such as a BOC-certified athletic trainer presents a cost-effective solution to the problem. An athletic trainer can be on campus on a daily basis and is in position to observe injuries as soon as they occur. In such cases, the athletic trainer can make decisions regarding injury severity, medical referral, and return to play. In cases where an athletic trainer is not present, coaches trained in first aid and cardiopulmonary resuscitation (CPR) can, and should, offer basic first aid and life-support services to the athletes in their charge.

The physician, athletic trainer, and coaching staff should coordinate their efforts regarding injury prevention through constant dialogue regarding conditioning programs; equipment inspection, purchases, and repair; and environmental conditions. The sports medicine team should provide services such as preparticipation health screening, development and implementation of an emergency plan, medical supervision of practice and games/contests, injury recognition and treatment (including rehabilitation), implementation of injury prevention strategies, adequate record keeping, and education programs for coaches, athletes, and where appropriate, parents. It is also critical that the athletic health care team communicate with the local emergency care providers, such as paramedics or emergency medical technicians (EMTs) to plan ahead of time regarding matters such as access to game and practice facilities, practice and game schedules, and specific procedures such as helmet removal in tackle football. This is discussed further in Chapter 7, “Emergency Plan and Initial Injury Evaluation.”

Sports Medicine

Sports medicine has been defined as “a field that uses a holistic, comprehensive, and multidisciplinary approach to health care for those engaged in a sporting or recreational activity” (Dirckx, 1997). Historically, those most often associated with the practice of sports medicine have included physicians who work directly with athletes, typically orthopedic surgeons and athletic trainers. As the field of sports medicine has evolved over the past several

decades, a number of related professionals have been added to the list of potential practitioners in the field of sports medicine. These include primary care physicians (family practice, internal medicine, OB-GYN, pediatrics), osteopathic physicians, chiropractic physicians, sports physical therapists, sport-massage practitioners, dentists, sports psychologists, sports nutritionists, exercise physiologists, strength and conditioning coaches, and, in school settings, school nurses.

At the professional level, today’s athletes may have access to a wide variety of sports medicine services. These often include comprehensive preseason physical examinations; proper instruction on sports skills; supervision of conditioning programs; psychological assessments; nutrition education and dietary counseling; help with preventive taping, strapping, and bracing; acute injury care with medical referral; and injury rehabilitation. Sports medicine services at the interscholastic level are typically much more limited, but at the very least they include some type of required preseason physical examination. Additionally, an increasing number of high schools employ a certified athletic trainer, certified by the Board of Certification, Inc. (BOC). In some instances, however, in the absence of an athletic trainer, athletic events may be supervised by a medical doctor or other health professional or left up to the discretion of the coaching staff. The National Athletic Trainers’ Association (NATA) has published a document entitled “Appropriate Medical Care for Secondary School Aged Athletes—Consensus Statement” that outlines the essential components and members of the athletic health care team. This document can be obtained by visiting the NATA web site at www.nata.org/publicinformation/position/htm.

With few exceptions, the health care of professional and college athletes was traditionally the domain of the **orthopedic surgeon**. This was logical because many of the serious injuries involved bones and joints. However, with the increased popularity of sports across all age groups and a subsequent rise in demand for services, many different medical specialists are now providing sports medicine services.

It is generally acknowledged that more sports medicine services in the future will be offered to the athletic community by primary care physicians. Because medical schools typically don’t provide specialized training in the care of sport- and activity-related injury, a wide array of specialized fellowships are available today in the area of sports medicine. Sports medicine fellowships lasting 1 to 2 years are now available that can lead to an additional credential, the Certificate of Added Qualifications in Sports Medicine (CAQ). The CAQ is available to any primary care practitioner and is awarded on successful completion of an

examination as well as completion of either a sports medicine fellowship or 5 years of practice, 20% of which must have involved sports medicine (Rich, 1993).

Key Members of the Team

Although each member of the athletic health care team is important, three are essential: the coach, the team physician, and the BOC-certified athletic trainer. Although typically not recognized as experts in sports injury, coaches are critical in the process of injury prevention and, in many cases, also function as a “first responder” when an athlete is injured. Regardless of their academic backgrounds, coaches in the public schools should receive training in basic conditioning procedures, maintenance and fitting of protective equipment, first aid and CPR, operation of an automatic external defibrillator (AED), and recognition and management of common sports injuries. In addition, coaches should teach correct technique of sports skills to their athletes.

Although it would be ideal if all public schools sports programs had a team physician and a BOC-certified athletic trainer, the reality is that in the majority of cases, the coach must provide basic sports medicine services to his or her athletes. Even when a school does employ an athletic trainer, it is impossible for one athletic trainer to be physically present at all practices and games at the same time. As such, when an injury occurs, the coach is often the first person on the scene of the injury and, further, must make the initial decisions regarding the status of the athlete and administer appropriate first aid procedures. Coaches must be good communicators and be willing to follow the recommendations of the athletic trainer and team physician when making decisions about an injured athlete’s recovery plan and return-to-play schedule. At the same time, the athletic trainer and team physician need to include the coach in matters such as development of the conditioning programs and the emergency plan.

Team physicians are medical doctors (allopathic or osteopathic) who agree to provide (either voluntarily or for pay) at least limited medical care to a particular sports program or institution. These services range in scope from a pediatrician who volunteers to be present for home football games at the local high school to the team orthopedic surgeon who is under contract with a professional football program.

The team physician must be willing to commit the necessary time and effort to provide care to the athlete and team. In addition, the team physician must develop and maintain a current, appropriate knowledge base of the sport(s) for which he or she is accepting responsibility. The duties for which the team physician has ultimate responsibility include the following (ACSM, 2001):

Medical management of the athlete

- Coordinate preparticipation screening, examination, and evaluation
- Manage injuries on the field
- Provide for medical management of injury and illness
- Coordinate rehabilitation and return to participation
- Provide for proper preparation for safe return to participation after an illness or injury
- Integrate medical expertise with other health care providers, including medical specialists, athletic trainers, and allied health professionals
- Provide for appropriate education and counseling regarding nutrition, strength and conditioning, ergogenic aids, substance abuse, and other medical problems that could affect the athlete
- Provide for proper documentation and medical record keeping

Administrative and logistical duties

- Establish and define the relationships of all involved parties
- Educate athletes, parents, administrators, coaches, and other necessary parties regarding concerns pertaining to the athletes
- Develop a chain of command
- Plan and train for emergencies during competition and practice
- Address equipment and supply issues
- Provide for proper event coverage
- Assess environmental concerns and playing conditions

A qualified team physician has an understanding of sports injuries that most other doctors simply do not possess. Furthermore, a team physician generally knows the common risk factors regarding sports injuries, is familiar with the athletes, and should have a genuine interest in the welfare of each participant. These attributes

sports medicine Branch of medicine concerned with the medical aspects of sports participation.

orthopedic surgeon Physician who corrects deformities of the musculoskeletal system.

team physician A medical doctor who agrees to provide at least limited medical coverage to a particular sports program or institution.

26 CHAPTER 2 The Athletic Health Care Team

are a great advantage to both coaches and athletes. Acquiring the services of a team physician may not be an easy task, especially in rural communities and in situations where little or no money is available. However, team physicians report that the major reason they become involved with sports is because of a strong personal interest (Rogers, 1985). Thus, it may be possible to obtain a team physician on a volunteer basis, at least for the purposes of providing medical care at athletic events. To expect more will, in all likelihood, require that some sort of contractual payment plan be arranged. Contacting your state medical association may provide information on how to locate interested physicians. Also, if a college or university is nearby, its team physician may be willing to provide services to your program as well. If not, he or she may know of other physicians in the area who would be willing to do so.

A variety of continuing education programs are currently available to team physicians through workshops, seminars, and postgraduate courses offered by hospitals, medical schools, and professional groups. In addition, numerous medical organizations exist that promote the study of sports medicine through membership. Some of these include the American Medical Society for Sports Medicine, the American Orthopedic Society for Sports Medicine, the American College of Sports Medicine, the American Osteopathic Academy of Sports Medicine, and the Canadian Academy of Sports Medicine (Rich, 1993).

The best way to provide comprehensive medical care for student athletes (during both practice and games) is to hire a BOC-certified athletic trainer who works in conjunction with the team physician. Athletic trainers are recognized allied health care professionals who complete a bachelor's or master's degree with extensive academic and clinical training in the broad area of the care



FIGURE 2.1 An athletic trainer evaluates an athlete with an acute injury.

and prevention of sports injuries. The BOC (2006) defines certified athletic trainers as “medical professionals who are experts in injury prevention, assessment, treatment and rehabilitation, particularly in the orthopedic and musculoskeletal disciplines.” Including a BOC-certified athletic trainer on the high school staff can greatly enhance the overall quality of sports medicine services (Figure 2.1).

The latest BOC role delineation study, 5th edition, determined that BOC-certified trainers provide the following services in a wide array of professional settings (BOC, 2006):

- Prevention
- Clinical evaluation and diagnosis
- Immediate care
- Treatment, rehabilitation, and reconditioning
- Organization and administration
- Professional responsibility

The NATA is the national governing body for the profession of athletic training in the United States. Becoming a BOC-certified athletic trainer requires qualifying to sit for, and then passing, the BOC certification examination, which, beginning in the spring of 2007, will be offered via a national network of computerized testing centers. To qualify to sit for the examination, you must have completed an educational program accredited as an entry-level program by the Commission on Accreditation of Athletic Training Education (CAATE). Applicants must have an endorsement on the examination application from their CAATE program director. In addition, applicants must have proof of current certification in emergency cardiac care. A document titled *BOC Exam Candidate Handbook* is available for review and download at the BOC web site (www.bocatc.org/becomeatc/CANDIDATE/).

Guidelines for the development and implementation of entry-level education programs in athletic training have been developed and are published by CAATE in the document titled *Standards and Guidelines for an Accredited Educational Program for the Athletic Trainer*. Educational programs in athletic training must be intensively reviewed for initial accreditation and continued accreditation by both on-site visits and annual reports. The program review process is conducted by the Commission on Accreditation of Athletic Training Education (CAATE).

The CAATE-accredited curriculum offers specific courses designed to prepare students in essential cognitive, affective, and psychomotor domains. More than 500 specific skills have been identified and must be included in the educational program by way of classroom instruction as well as clinical education. Clinical

education involves students acquiring skills under the direct supervision of clinical instructors in settings that are typical in the athletic training facilities located on the campus of the institution sponsoring the educational program. In addition, through formal affiliations, students may gain clinical experience off campus in settings such as high schools, other colleges and universities, or professional sports organizations that are located in the immediate geographic vicinity of the institution sponsoring the educational program. Entry-level athletic training education programs must incorporate competency-based classroom and clinical education experiences. Accredited programs must include formal instruction in the following subject matter areas:

Foundational Courses

- Human anatomy
- Human physiology
- Exercise physiology
- Kinesiology/biomechanics
- Nutrition
- Statistics and research design
- Strength training and reconditioning
- Acute care of injury and illness

Professional Courses

- Risk management and injury/illness prevention
- Pathology of injury/illness
- Assessment of injury/illness
- General medical conditions and disabilities
- Therapeutic modalities
- Therapeutic exercise and rehabilitation
- Health care administration
- Weight management and body composition
- Psychosocial intervention and referral
- Medical ethics and legal issues
- Pharmacology
- Professional development and responsibilities

In addition to the formal instruction, students must also complete Clinical Education over the course of a minimum of 2 years and must include a component of working with patients with general medical conditions. Students are evaluated by either approved clinical instructors or physicians across the following settings (NATA, 2005):

- Colleges/universities
- Secondary schools
- Professional sports
- Clinic
- Industrial settings
- Hospitals
- Olympic sports



WHAT IF?

A high school senior asks you for information on the academic requirements and certification process to be an athletic trainer.

CAATE recommends additional classes in other subjects, including chemistry, physics, pharmacology, statistics, and research design.

To remain certified, an athletic trainer is required to earn continuing education units (CEUs) and report these activities to the BOC every 3 years by participating in activities such as attending or participating in professional meetings, writing articles for journals, making presentations, and enrolling in college classes that pertain to sports medicine. In addition, CPR certification must be maintained during each 3-year CEU cycle. For more information regarding the BOC certification examination as well as continuing education requirements, contact the BOC at www.bocatc.org.

Professional Settings for the Practice of Athletic Training

Historically the practice of athletic training was confined to the collegiate sports setting, with an emphasis on caring for injuries in tackle football. It was not until the 1970s that this situation changed significantly, as the services of athletic trainers began to be recognized as extremely valuable in the high school sports setting. The high school setting is discussed later in this chapter.

The major expansion in professional settings for athletic trainers has occurred since 1980 with the growth in the field of sports medicine and sports medicine clinics. Since 1980, there has been a 300% increase in the number of registered sports medicine clinics in the United States (Figure 2.2). A broad range of services is provided by these centers, including fitness evaluation and exercise prescription, lifestyle counseling, evaluation and treatment of injuries, and even sports medicine research (Weidner, 1988). This exponential growth in sports medicine clinics has not gone unnoticed by the nation's hospitals. As such, there has been recent growth in hospital-based sports medicine outpatient services. Because BOC-certified athletic trainers possess expertise in the care of those injured in sports and recreational activities, they have found employment opportunities in these new settings. A major source of employment for newly certified athletic trainers continues to be the sports medicine clinic and hospital-based outpatient sports medicine services.

28 CHAPTER 2 The Athletic Health Care Team



FIGURE 2.2 Since 1980 there has been a 300% increase in the number of sports medicine centers in the United States.

Another relatively recent addition to the professional settings available to athletic trainers is the corporate setting. Major corporations have found it beneficial and profitable to employ athletic trainers to provide direct services to their employees involved in on-site health and fitness programs or in the area of ergonomics. In the most recent NATA salary survey, the average annual salary of athletic trainers employed in the corporate setting, providing health/wellness/fitness services, was \$49,012 (NATA, 2005). Although the corporate setting still represents a small percentage of all employment of athletic trainers, it is anticipated that placement in this venue will increase in the future.

To practice in the professional sports setting is often considered to be the dream job for many entering the profession of athletic training. Although the thrill of working with highly paid, marquee athletes may be attractive to some, there are some less-attractive aspects to working in this setting. These include the tremendous pressure to win that is placed on the coaching staff that can, and often does, affect the sports medicine staff and the lack of job security associated with changes in coaching staffs that occur frequently at the professional level. It is not anticipated that there will be any significant growth in employment in this setting in the near future.

The Secondary School Setting

“Why doesn’t your school employ an athletic trainer?” When asked this question, most administrators respond that they cannot afford to hire such a person. This argument is no longer as valid as it once may have been. Today, schools have a variety of options available to them if they want to hire a BOC-certified athletic trainer. The most

cost-effective approach appears to be employing one individual as both teacher and athletic trainer. This person is typically hired as a teacher and in addition provides athletic training after school. Ideally, classroom loads can be adjusted to give the teacher/athletic trainer time in the afternoons or mornings to see athletes before practice. This allows an opportunity for rehabilitation, evaluation of injury recovery, counseling, and any other tasks that cannot be effectively completed otherwise. Administrators find this option to be very affordable because the teacher/athletic trainer can be given a standard teaching contract and can provide educational services to the general student population. Additional monetary stipends, often similar to those given a head coach in the same school or district, are sometimes negotiated to pay for the athletic training services provided. A recent study found that the national average annual salary for high school athletic trainers was \$43,884 (NATA, 2005).

A less-affordable but more effective option is for the school to hire a full-time athletic trainer. This individual has no formal teaching responsibilities at the school, but is responsible for implementing a comprehensive sports medicine program. This can include follow-up care and rehabilitation of injured athletes during the morning hours prior to practice (during study hall, for example). In addition, the full-time athletic trainer may be able to arrange a schedule so that it more closely approximates the normal number of hours per week provided by other personnel at the school. Though this option often results in the best health care for student athletes, school districts are generally reluctant to commit to the initial financial outlay necessary to develop such a position. Given the financial realities of many school districts around the country, this option may not see significant growth in the foreseeable future.

Other options are available to schools; however, they all offer fewer services to both the school and the athletes. Some alternatives include hiring a part-time athletic trainer or a graduate student/athletic trainer if a university is located nearby, contracting to provide in-service training on various aspects of services with a local sports medicine clinic, or using a substitute teacher/athletic trainer. Though all of these options may save the school money in the short term, they obviously short-change the student athletes with respect to the availability of sports medicine services.

Having a BOC-certified athletic trainer on staff provides many indirect benefits to the school. From a legal standpoint, the school is less vulnerable to tort claims related to sports injuries. This is because such claims are often based on the premise that the school failed to provide adequate medical care to athletes. By hiring a BOC-certified athletic trainer, the school had demonstrated a

Athletic Trainers SPEAK Out



As student athletic trainers, not many of us had one specific goal or vision of the athletic training setting in which we would want to work. Getting broad experiences by working with high school athletes, world-class athletes, male and female athletes, diverse ethnic populations, different age groups, and by exposing yourself to various geographical areas will truly help in your professional growth.

Work ethics and professionalism play a big part in our success. One often forgets to maintain a professional attitude toward what we do and the people we encounter each day. All the small things, such as treating patients and co-workers with respect, maintaining cleanliness at the work site, using respectful language and attire, continuing to educate ourselves, and keeping our skills and knowledge updated, demonstrate our professionalism. The true keys to success are to enjoy what you are doing and being passionate for your profession.

—Ariko Iso, MA, ATC

Ariko Iso is Assistant Athletic Trainer for the Pittsburgh Steelers.

commitment to providing the best possible care for student athletes (Stopka & Kaiser, 1988). A qualified athletic trainer also offers many unique educational opportunities for the school. For example, such a professional can teach classes in basic sports injury care, first aid and CPR, nutrition, and physical conditioning. The athletic trainer can also implement a student athletic trainer program at the school to provide educational opportunities for high school students interested in a career in sports medicine. High school student athletic trainers wishing to continue their education at the university level may qualify for scholarships or other types of financial aid. Such funds are typically made available through the sports medicine program at the sponsoring institutions. Finally, the athletic trainer can provide in-service training on various aspects of sports-injury management for the coaching staff. Obviously, the school can realize many returns on its investment when it hires a BOC-certified athletic trainer (see Time Out 2.1).

BOC-certified athletic trainers signify a marked improvement in the health care services provided to athletes, regardless of level of competition. This is partly because of the fact that even under the best of circumstances team physicians are typically available to athletes only on a part-time basis. The BOC-certified athletic trainer can provide a direct link between the injured athlete and the appropriate medical services. In this way, the coach is relieved of much of the responsibility of providing care for the injured participants.

Sports Medicine Delivery

Once the decision is made to hire a certified athletic trainer, potential applicants can be located by listing the position with the NATA's placement service. This can be accomplished by visiting the NATA web site (www.nata.org) and following the links to the placement service. Another option is to contact universities that offer CAATE-approved curriculums in athletic training for a listing of their recent graduates. A listing of all universities with NATA-approved curriculums is available at the NATA web site or by contacting the NATA national office at 214-637-6282.



TIME OUT 2.1

Major support for the placement of BOC-certified athletic trainers in secondary schools was provided by the AMA's House of Delegates in June of 1998. The AMA House of Delegates adopted the following statements as policy:

1. The AMA believes that (a) the Board of Education and the Department of Health of the individual states should encourage that an adequate Athletic Medicine Unit be established in every school that mounts a sports program; (b) the Athletic Medicine Unit should be composed of an allopathic or osteopathic physician director with unlimited license to practice medicine, an athletic health coordinator (preferably a BOC-certified athletic trainer), and other necessary personnel; (c) the duties of the Athletic Medicine Unit should be prevention of injury, the provision of medical care with the cooperation of the family's physician and others of the health care team of the community, and the rehabilitation of the injured; (d) except in extreme emergencies, the selection of the treating physician is the choice of the parent or guardian and any directed referral therefore requires their consent; (e) Athletic Medicine Units should be required to submit complete reports of all injuries to a designated authority; and (f) medical schools, colleges, and universities should be urged to cooperate in establishing education programs for athletic health coordinators (BOC-certified athletic trainers) as well as continuing
- medical education and graduate programs in Sports Medicine.
2. The AMA urges high school administrators, athletic directors, and coaches to work with local physicians, medical societies, and medical specialty societies, as well as government officials and community groups, to undertake appropriate measures to ensure funding to provide the services of a certified athletic trainer to all high school athletes.
3. Recognizing that not all high schools have the resources to procure the services of a certified athletic trainer and further recognizing that athletic trainers cannot be present at all practices and competitions, the AMA encourages high school administrators and athletic directors to ensure that all coaches are appropriately trained in emergency first aid and basic life support.

Source: Lyznicki JM, Riggs JA, Champion HC. (1999). Certified athletic trainers in secondary schools: Report of the Council on Scientific Affairs, American Medical Association. *Journal of Athletic Training*. 34(3):272–276. Reprinted with permission.

REVIEW QUESTIONS

1. Define the term *sports medicine*.
2. What is the CAQ and how does it relate to the team physician?
3. List the specific services that should be provided to the athlete by the team physician.
4. What are the six areas that comprise the role of the BOC-certified athletic trainer?
5. List several professional medical organizations that promote the study of sports medicine.
6. What has been the largest employment market for athletic trainers in recent years?
7. Briefly describe six different employment options for a BOC-certified athletic trainer in the school setting. Elaborate on the advantages and disadvantages of each option.
8. *True or false*: It is generally acknowledged that sports medicine services in the future will be provided by medical specialists rather than primary care physicians.
9. List the 20 specific subject matter areas that are required by the CAATE for accredited curriculums in athletic training.

REFERENCES

- American College of Sports Medicine (ACSM). (2001). Team physician consensus statement. Available at www.acsm.org/pdf/teamphys.pdf. Reprinted with permission.
- Board of Certification, Inc. (BOC). (2006). Defining athletic training. Available at: <http://www.bocatc.org/athtrainer/DEFINE/>. Accessed 6/1/06.
- Dirckx JH (ed.). (1997). *Stedman's Concise Medical Dictionary for the Health Professions*. Baltimore: Williams & Wilkins.
- National Athletic Trainers' Association (NATA). (2005). Athletic training overview. Available at: http://www.nata.org/brochures/general/1015_Athletic%20Training%20Education%20Overview.pdf. Accessed 3/26/07.
- National Athletic Trainers' Association Board of Certification (NATABOC) (1999). *Role Delineation Study* (4th ed.). Omaha: National Athletic Trainers' Association Board of Certification, Inc.
- Rich BSE. (1993). "All physicians are not created equal": Understanding the educational background of the sports-medicine physician. *J Athletic Training*. 28(2): 177–179.
- Rogers CC. (1985). Does sports medicine fit in the new health-care market? *Phys Sports Med*. 13(1):116–127.
- Stopka C, Kaiser D. (1988). Certified athletic trainers in our secondary schools: The need and solution. *Athletic Training*. 23(4):322–324.
- Weidner TG. (1988). Sports-medicine centers: Aspects of their operation and approaches to sports-medicine care. *Athletic Training*. 23(1):22–26.