

Editorial

Sports Medicine for Professional Teams

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Professional sport is now a multimillion dollar industry and is growing every year. Budgets for the leading North American teams in the major sports are approaching U.S.\$50–100 million p.a. In Australia, budgets are much smaller but still significant, being up to AU\$5 million p.a. for teams in the major football competitions. Professional sport is a large subsection of the entertainment industry, with live coverage of major events among the highest rated television programs around the world.

Sports medicine is becoming an increasingly important part of the professional sport industry. Most competitions have structures in place, such as draft laws and salary caps, which ensure that player talent is spread evenly among teams. The number and severity of injuries to key players are widely recognized as major determinants of team performance. In addition, injuries suffered during a player's career often have long-term sequelae, particularly in the football codes: In American football, 46% of players are forced to end their career because of injury (1).

THE SPORTS MEDICINE TEAM

The scope of sports medicine is so great that no single practitioner can totally serve the needs of athletes. A team approach to injury management is now used by almost all major sporting teams and at most sports medicine clinics in Australia. This approach is certain to be continued as the preferred method for managing sports injuries into the twenty-first century.

The size and structure of the medical team vary depending on the demands of the sport and the level of professionalism. The roles of the various team members also differ from country to country. At the highest level, administrative staff are required just

for the sports medicine division of a team. The budget for sports medicine services varies widely, but a realistic estimate is 10–15% of the budget for player salaries.

As seen in Table 1, it is a complicated task to define roles for members of the sports medicine team. Multiskilling (proficiency of team members in the specialties of others) is important, particularly for staff traveling on road trips, where backup support is less than usual. However, if multiskilling is practiced too frequently by some team members, there is a danger of "treading on the toes" of colleagues, which has a damaging effect on team unity.

ROLE OF THE SPORTS PHYSICIAN

The sports physician is a medical subspecialist whose role has evolved to meet a new demand that has emerged over the last 20 years in sports medicine. A 6-year full-time postgraduate training in sports medicine is now available in Australia under the auspices of the Australian College of Sports Physicians. In North America, there are now over 40 sports medicine fellowships offered yearly. Both the Canadian Academy of Sport Medicine and the American Medical Society for Sports Medicine are endeavoring to increase the quality and quantity of sports medicine training and qualifications.

Primary care sports physicians are able to work in a number of different environments:

1. Private practice/clinic, in a consultant or primary care role, specializing in the diagnosis and management of sporting injuries and exercise prescription. Working within a multidisciplinary team structure is optimal.
2. Academic, as researchers into injury management and prevention and teachers of sports medicine to other professionals and the general public.
3. Team physician, combining the skills of primary care general medicine with specialist skills particularly in the management of musculoskeletal injuries.

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TABLE 1. Roles of sports medicine team members

Team member	Importance in following areas		
	Injury treatment	Injury prevention	Performance enhancement
Salaried positions			
Primary care sports physicians	+++	+++	++
Sports physical therapists	+++	+++	++
Athletic trainers/masseurs	+++	+++	++
Consultant or salaried positions			
Fitness advisers/physiologists	+	++	+++
Sports nutritionists	+	++	+++
Sports psychologists	+	++	+++
Orthopedic surgeons	+++	+	+
Podiatrists	+++	+++	+
Other medical specialists (e.g., dentist, internist, radiologist)	+++	+	+
Other paramedical staff (e.g., nurse, statistician, biomechanist)	++	++	++

The role of sports physicians as team physicians is particularly important and worth outlining in detail. It will continue to evolve to meet the demands of sport into the twenty-first century. The specific training and broad knowledge base of the sports physician make him/her the most appropriate leader of the medical team. While other doctors still act as team physicians, they are often unable to provide as comprehensive a level of care to the athletes.

INJURY TREATMENT

The sports physician is the team member with the major responsibility for diagnosis of injuries and the outline of a management plan. In fully professional teams, sports physicians should be present at all team matches (both at home and on the road), training sessions, injury clinics, and fitness assessments. They act as a central liaison between the coach, the players, and all members of the sports medicine team. They are responsible for the ordering of medical equipment, drugs, and first-aid supplies.

Possibly the most difficult task of sports physicians is to balance the needs of the team against the needs of the individual. It is taken for granted, by both players and teams, that professional athletes risk their physical health during sporting participation to a greater extent than members of the general public. While trying to maximize team performance, which is expected by the team management as the physician's employer/contractor, the physician must at all times act in the interests of the player and not expose him/her to unjustifiable risks.

This is most relevant in the areas of spinal, head, knee, and hip injuries and with reference to transmission of infectious diseases.

INJURY PREVENTION

The sports physician should be responsible for the upkeep of medical records and the maintenance of a database recording player injuries. In the most professional teams, this database should include measurements of all possible injury risk factors for all players, which will periodically be statistically analyzed, enabling a thorough and powerful system of recognizing injury predictors and implementing preventive strategies.

The sports physician should also regularly examine and screen players for injury risk factors, particularly in the preseason phase. Reversible factors can be corrected and fitness and training programs can be individually tailored to maximize performance while minimizing injury risk. The sports physician should also have an input into designing the team training regimens with reference to injury prevention.

PERFORMANCE ENHANCEMENT

The sports physician is responsible for maintaining the delicate balance between performance enhancement in the short term (having the maximum number of players available to play at any given moment) and the long term (preventing future injury). If a player develops a moderately severe injury, there will often be a conflict between the two. Resolving it requires a good working relationship with other members of the sports medicine team and the coaches. A team physician who is both intimately aware of the requirements of the sport and is prepared to act in the best interests of his/her players will contribute most positively to team performance in both the short and the long term.

Another aspect of performance enhancement is for the sports physician to conduct screening and prepare reports on potential draft selections and recruits. Professional teams have elaborate talent scout networks, which select players with the best performance potential for the team. As injuries are such an important factor in performance, medical assessment of potential recruits is crucial. Past history of injury and evidence of joint degeneration or instability are important. In some sports, prediction of adult height or aerobic capacity may be relevant. In these capacities, the physician enhances future team performance by helping to select a squad of players that will have maximum longevity in professional sport.

PROFESSIONAL DEVELOPMENT

To ensure continuing quality of service, a sports physician needs to have ongoing professional devel-

opment. This should include conference attendance and presentations, research, and active membership in the relevant sport or league medical officers association. It may be considered beneficial for a full-time team physician to undertake some work at a general sports medicine clinic to maintain involvement with mainstream practice. International exchanges between sports physicians may provide an opportunity for further education and development.

In addition to their own professional development, sports physicians should contribute to the education of other members of the sports medicine team, trainees, coaches, and players. The broad knowledge base of sports physicians gives them an ideal opportunity to be leaders and role models at their clubs. This should include knowledge, and active discouragement, of the use of performance-enhancing drugs.

OTHER TEAM MEMBERS

Definition of the exact role of other team members depends on the sport, the level of professionalism, and the country. Electrotherapy, manual therapy, and exercise therapy are the major forms of conservative treatment and should be performed by the most suitably trained professional. In Australia and Canada, physiotherapists have an extremely important function in the areas of conservative treatment of injury, rehabilitation, and injury prevention. They are also usually present at all official team activities and work in conjunction with sports physicians at initial assessment and diagnosis. Currently, the physical therapists working with elite sports teams are generally of a high quality and have self-specialized in sports physiotherapy. The training opportunities and postgraduate qualifications are not as well established as those for sports physicians. It is expected that over the next few years they will be developed further.

In the United States, athletic trainers have a greater role within the team structure and fulfill many of the roles just outlined. Massage (soft tissue therapy) is a very important modality for both injury treatment and prevention. This is usually provided by the athletic trainer or similarly qualified professional.

Traditionally, within the club structure, many of

the jobs mentioned have been honorary and amateur. It is now recognized that education and formal qualifications in areas such as first aid, fitness management, strength and conditioning, and soft tissue therapy are essential for these practitioners to contribute maximally to the team. Appropriate payment for services also helps to ensure a high standard of professionalism.

Sports medicine teams can contribute most to the team performance with the additional involvement of skilled sports psychologists and sports nutritionists. Psychologists should have a close relationship with the coaches and can work with the team and/or individuals at motivation and maintaining consistency. Dietitians offer individuals nutritional advice, help players maintain body fat at optimal levels, contribute to fitness assessment, and can organize team plans for hydration, postmatch carbohydrate intake for recovery, and meals on road trips.

Obviously, orthopedic and other specialist surgeons still have a very important role in the medical team, by providing the highest standard of operative management for injuries where indicated.

CONCLUDING REMARKS

The role and function of the sports medicine team are constantly evolving, as are other areas within sport, such as coaching and administration. As a important determinant of team performance, the sports medicine team should be subject to both internal and external review. A professional team cannot afford to employ only physicians whose primary concern is their hospital, surgery, or clinic practice and who will attend to athletes when time allows. Athletes are too valuable to be treated as a secondary concern. Fortunately, the development of primary care sports physicians is occurring to keep pace with the professionalism of modern sport.

REFERENCE

1. Pitts BJ, Popovich MN. Aftermath of an NFL career: injuries. National Football League Players Association 1992 survey, distributed at American College of Sports Medicine annual meeting, Seattle, WA, U.S.A., 1993.