Legislative Funding of Athletic Training Positions in Public Secondary Schools

Barton P. Buxton, EdD, ATC; Eric M. Okasaki, MEd, ATC; Kwok W. Ho, PhD;Michael R. McCarthy, EdD, ATC, PT

ABSTRACT: In 1991, approximately 21 000 student athletes were actively participating in organized athletics in Hawaii's 61 (38 public and 23 private) secondary schools. Of the 61 schools, only 5 (all private) employed full-time, NATABOC-certified athletic trainers (ATCs) to facilitate the sports health care of their respective student athletes. In an attempt to convince the state legislature that providing funding to hire ATCs was a primary health and safety issue in the state, a community-based educational platform was established and a twofold needs-assessment study was implemented statewide. The educational platform was aimed at parents, coaches, athletic directors, and school administrators. The needs-assessment studies consisted of a 30-question survey on the current practices of sports health care and a year-long injury surveillance survey within the 38 public secondary schools. There were significant differences between the public and private schools with respect to the practice of sports health care. The public school student athletes demonstrated a normative incidence of injury rate. These findings definitively quantified and qualified the need to hire ATCs in the public secondary schools. In July of 1993, the State of Hawaii funded a 2-year athletic training pilot program for approximately $1.2 million, following an extensive lobbying effort and media campaign.

In attempting to facilitate health care reform in Hawaii and to convince the state legislature that providing appropriate sports health care was a major educational health and safety issue, a plan was developed to educate athletes, coaches, parents, athletic directors, school administrators, and state legislators on the importance of appropriate health care for secondary school students participating in high-risk activities (organized interscholastic sports). To support our belief that the need existed to hire allied health care professionals (NATABOC-certified athletic trainers or ATCs) to address the prevention, treatment, and rehabilitation of the estimated 21 000 students participating in the state's high school interscholastic athletic programs, two needs-assessment studies were developed. The first surveyed the state's 61 (38 public and 23 private) secondary schools regarding the current sports health care practices (statewide) and the second assessed injury rates for public school student athletes.

The purpose of this article is to detail the process undertaken by the state of Hawaii to generate change in the status of sports health care on a state level and to convince the legislature to fund that change. We also demonstrate the effectiveness of purposeful, qualitative, and descriptive needs-assessment studies to gather pertinent information for legislative and public presentation. Finally, we present the findings of our surveys and how they enabled the state legislature and the Department of Education in the state of Hawaii to convince the governor to fund a 2-year athletic training pilot program for $1 167 750 (15 salaries, fringe benefits, and supplies) in a mandated, zero-growth state budget.

Barton P. Buxton is an assistant professor in the Department of Health, Physical Education and Recreation and the Athletic Training Education Program Director at the University of Hawaii at Manoa. He is also an associate professor at the John A. Burns School of Medicine Department of Family Practice and Community Health University of Hawaii at Manoa in Honolulu, HI 96822.

Eric M. Okasaki is Head Athletic Trainer for Men and a clinical instructor in the Athletic Training Education Program at the University of Hawaii at Manoa.

Kwok W. Ho is an associate professor and Chairman of the Department of Health, Physical Education and Recreation in the College of Education at the University of Hawaii at Manoa.

Michael R. McCarthy is associated with McCarthy Orthopedic Rehabilitation and Sports Medicine at Kailua, HI.

METHODS

We thought that the most productive way to influence change in the standard of sports health care was to initiate an education program for the consumers of sports health care. Therefore, a series of coaching education classes/workshops was proposed and subsequently funded by the state's Department of Education. These classes/workshops, in addition to a parent and coaching education series by the Hawaii Youth Sports and Fitness Program (previously funded by the state legislature), presented a succession of educational courses in sports medicine and the inherent risks of participation in organized athletics. Concomitantly, these lectures developed an educational platform on the importance of risk management in sports. The role delineation of the certified athletic trainer was presented, along with detailed information of sports liability, injury prevention, recognition of athletic-related injuries and illnesses, acute and long-term care of athletic-related injuries and illnesses, and the principles of athletic injury rehabilitation. The lecture series was presented by certified athletic trainers, physical therapists, exercise physiologists, and attorneys. All classes/workshops were presented free of charge and, upon completion, the participants received continuing education units and/or a certificate of completion. During these presentations to parents, coaches, athletic directors, and school administrators, the focus was always maintained on the accepted standard of care for student athletes in terms of supervision, equipment, warning of risk, provision of a safe

environment, proper instruction, appropriate matching of competitors, proper record keeping, adequate evaluation of injury and/or incapacity, and overall risk management.

After the educational platform was developed, we modified a questionnaire used in a previous sports health care study[16] into a 30-question survey. The questions were designed to gather information concerning numbers of participants, practices of sports health care, qualifications of health care providers, and emergency policies and procedures currently being provided for the estimated 21 000 student athletes actively participating in organized high school athletic programs within the state (Table 1). We mailed surveys to the athletic directors throughout the state. The names and addresses (along with approval for the study) were obtained from the Hawaii High School Athletic Association. A cover letter explaining the purpose of the project and request for participation was attached. Each athletic director was asked to complete the survey and return it in an enclosed self-addressed, stamped envelope. After 6 weeks, we followed up with a mailing in an attempt to increase the response rate. After 3 weeks, we phoned nonresponding schools and gathered information through a phone interview.

Means (± SD) and percentages of the responses were calculated from the collected data. We compared responses between the public and private schools with a chi-square ("goodness-of-fit test") contingency table analysis. The difference between observed and expected frequencies were considered significant if the chi-squared value was equal to or less than the .05 level of probability.

In addition, we developed a 10-question injury surveillance form and distributed it to the athletic directors of all public high schools within the state. The form assessed gender, age, level (varsity or junior varsity), sport, injury location (body part), injury side (left or right), injury status (old or new), injury occurrence (practice or game), days of participation missed, and the initial treatment of the injured student athlete. The athletic directors made copies of the forms and distributed them to their coaching staffs. The coaches did all injury reporting. When an athlete reported an injury to a coach or missed more than 1 day of practice, the coach recorded the injury on a form. When a form was completed (athlete returned to practice or was out for the season), it was returned for analysis. A research assistant entered all data into a database and the means (± SD) and percentages of the responses were calculated by gender, age, sport, injury location, injury status, occurrence, estimated days missed, and how the injuries were treated. For purposes of media presentation and legislative testimony, we also classified the injuries by severity, in

Table 1. Athletic Directors' Responses to Specific Questions on Practices of Sports Health Care

Question	Response				
Medical or allied medical supervision provided at organized practices	None 85% (52)	ATC 8% (5)	EMT 7% (4)		
Sports where physicians are in attendance	Football 67% (38)	Combination† 19% (11)	Wresting 2% (1)	None 12% (7)	
Physician coverage at road games	Always 39% (22)	>50% 33% (19)	<50% 18% (10)	Never 10% (6)	
Are JV athletes provided with the same physician coverage at games?	Yes 67% (37)	No 33% (18)			
Serves as the school athletic trainer	Coach 64% (39)	ATC 8% (5)	Other* 28% (17)		
Provides immediate care for injured athletes	Coach 84% (51)	ATC 8% (5)	Other* 8% (5)		
Responsible for prevention, care, and rehabilitation of athletic injuries	Coach 82% (50)	ATC 8% (5)	Other* 10% (6)		
Provides follow-up evaluation for injured athletes	MD 48% (29)	MD/Coach 14% (9)	Coach 23% (14)	ATC 5% (3)	Other* 10% (6)
Determines return to participation following athletic injuries	Coach 18% (11)	ATC 8% (5)	MD 74% (45)		
Type of training for noncertified athletic trainer	None 29% (16)	First Aid CPR 45% (25)	Coaching Education Class 27% (15)		
Are athletic injures recorded?	Yes 52% (32)	No 48% (29)			

* Other denotes noncertified AT, EMT, or PT.

† Combination denotes football plus one other sport, ie, basketball, baseball, soccer, or softball.

accordance to the classification reported by Whieldon and Cerny.[28] Mild injuries were classified as the student athlete having missed 1 to 7 days; minor injuries, 8 to 21 days; and major injuries, more than 21 days to the end of the season. Injuries resulting in death or catastrophic outcomes were recorded separately.

In order to make a comparison between the situation in Hawaii and other states in the nation, we performed an extensive literature review on the status of medical coverage, sports medicine care, and changes in overall sports health care for secondary school student athletes in other states.[1–3,9,12–16,20–25,27] In addition, we reviewed literature on injury rates[4,6,10,11,17–19,22,26] and the impact of having qualified athletic trainers and athletic training facilities for secondary school student athletes.[7,8,14,28]

The state's athletic director's association initiated an extensive lobbying effort, including recruitment of parents, coaches, school administrators, athletic trainers, physical therapists, lawyers, and physicians to meet with state legislators and eventually testify at legislative hearings. Because this process was targeted as an educational health and safety issue, the chairs of the respective house and senate education committees backed the project and introduced a series of bills to fund the hiring of 38 certified athletic trainers, one for each public secondary school in the state. Following introduction of the bills, a media campaign was launched on television and in newsprint. Sportscasters and newswriters were contacted and solicited to report the results of the needs-assessment studies, the national injury surveillance statistics, projected cost savings in health care and litigation due to reduction of potential liability and proper risk management, and the continuing status of the bills as they made their way through the legislative sessions.

RESULTS

The educational platform was very effective in creating a heightened awareness of the role of ATCs. We were able to establish that, although injuries were a standard part of participation, they could be reduced in incidence and severity if an overall sports health care program was implemented and if qualified athletic health care specialists were employed. In many ways, we were able to expand the breadth of knowledge for athletic health care among parents, coaches, athletic directors, and school administrators who participated in the educational classes/workshops. This resulted in the self-realization among participants that they were not properly trained to manage the scope of trauma and potential litigious situations that they were facing and would continue to face. In essence, we convinced the consumers that the current levels of sports health care fell far below the accepted standard of care for students participating in high-risk activities.

The results of the needs-assessment studies continued to strengthen our position that improvement of the current practices of sports health care was essential. The survey on practices of sports health care had an overall response rate of 61/61(100%). The findings indicated that a total of 19 703 (11 678 boys and 8025 girls) student athletes were actively participating in organized athletic programs. The Hawaii High School Athletic Association is composed of 23 private schools and 38 public schools. Private school athletes accounted for 6993 (35%), while public schools accounted for 12 710 (65%) participants. Responses to specific questions concerning sports health care currently provided for high school student athletes within the state are presented in Table 1. There were significant differences ($p<.05$) on five questions between the public and private schools about sports health care for their respective student athletes (Table 2).

The results of the year-long injury surveillance study indicated that 38 public schools reported 2718 injuries. Since the purpose of the study was to persuade legislative funding, the study included only public schools. More than half (1538) of the injuries (57%) occurred in practice, and 1180 (43%) occurred during games. Male student athletes suffered 1766 injuries (65%) and female student athletes suffered 952 (35%). Varsity level players accounted for 2072 injuries (76%) and junior varsity players accounted for 646 (24%). Fewer than two injuries (1%) occurred to 13-year-old, 389 (14%) to 14-year-old, 840 (31%) to 15-year-old, 817 (30%) to 16-year-old, 633 (23%) to 17-year-old, and 37 (1%) to 18-year-old student athletes. In terms of injuries by sports, football and soccer had the highest incidence of injury rates at 1067 (39%) and 825 (30%), respectively. The ankle and the knee had the highest rates at 907 (33%) and 299 (11%), respectively.

Regarding injury severity, 2157 of the injuries (79%) could be classified as mild, 277 (10%) as moderate, and 284 (11%) as major. Of the 2157 mild injuries, 868 (40%) were treated with ice, 214 (10%) with first aid, 875 (41%) with tape, 28 (1%) with heat, and 172 (8%) received no treatment at all. For moderate injuries, 196 (70%) received ice treatment, 42 (15%) received first aid, 16 (6%) were taped, 2 (1%) received heat, and 21 (8%) got no treatment at all. For the major injuries, 197 (69%) were treated with ice, 61 (21%) received first aid, 10 (4%) were taped, one athlete received heat treatment, and 15 (5%) received no treatment at all. During the injury surveillance study, one athlete died because of a cardiac aneurysm, and one player suffered a nondisplaced fracture in his cervical spine.

The results of the newspaper and television media campaign were effective in maintaining the level of awareness of the sports health care issue throughout the year. Articles appeared in the sports section of the newspaper approximately every 3 weeks. At the beginning of the legislative session, the three major TV news channels ran features on the two needs-assessment studies during the sportscast. Both the news and television media interviewed lawmakers, parents, coaches, and school officials about their perceptions of the importance of improved sports health care for high school student athletes. The public response continued to advocate and elicit endorsements for this project at the state legislative level. The overall results of this project culminated in legislative funding for the 1993–1995 biennium budget.

DISCUSSION

Organized high school athletic programs offer an opportunity for participants to experience cooperative learning, interactive

Table 2. The Results of the Chi-Squared Contingency Tests for Provisions of Sports Health Care Provided by Public and Private Schools (observed responses reported with expected values in parentheses)

Question	Response: Public	Response: Private	DF	χ^2	p
Medical or allied medical supervision provided at organized practices:					
None	34 (32.4)	18 (19.6)			
ATC	0 (3.1)	5 (1.9)	2	10.89	.004
EMT	4 (2.5)	0 (1.5)			
Serves as the school athletic trainer:					
Coach	27 (24.3)	12 (14.7)			
ATC	0 (3.1)	5 (1.9)	2	9.10	.01
Other†	11 (10.6)	6 (6.4)			
Provides immediate care for injured athletes:					
Coach	34 (30.5)	15 (18.5)			
ATC	0 (4.4)	7 (2.6)	2	13.28	.001
Other†	4 (3.1)	1 (1.9)			
Responsible for prevention, care, and rehabilitation of athletic injuries:					
Coach	36 (30.5)	13 (18.5)			
ATC	0 (3.1)	5 (1.9)	2	14.26	.0008
Other†	2 (4.4)	5 (2.6)			
Provides follow-up evaluation for injured athletes:					
Coach	9 (9.3)	6 (5.7)			
ATC	0 (3.1)	5 (1.9)			
MD	19 (17.4)	9 (10.6)	4	14.56	.006
Coach/MD	8 (5.0)	0 (3.0)			
Other†	2 (3.1)	3 (1.9)			

† Other denotes noncertified AT, EMT, or PT.

learning, quality adult mentoring, and fun. However, participation in organized athletics can also be accompanied by the risk of both minor and catastrophic injuries.[4,6–8,10,11,17–19,22,26,28] Therefore, the benefits of organized athletic programs can outweigh the potential risks only if high standards of overall health and safety (ie, sports health care) for the participants are considered. Furthermore, with approximately 1.3 million injuries occurring in organized high school athletics annually, and in consideration of the current litigious climate, there was a clear need to address this issue.[12,22] In an attempt to address the issue of sports health care, many schools employ physicians and/or other qualified health care professionals to provide immediate care for injuries during games. However, it has been observed that injuries occur more often during practice than in games.[8,19,22] These findings raise relevant questions about the need for qualified health care professionals to address the daily injury prevention, care, and rehabilitation of secondary school student athletes. In fact, many authors[7,8,14,28] suggest that when high school athletes have access to qualified athletic trainers and athletic training facilities, injury recovery time is rapid and unremarkable. These studies leave little doubt about the need for adequate medical care for the high school student athlete.

In the state of Hawaii, we examined the paradox described in the preceding paragraph and developed and implemented a plan to convince the state legislature that funding for athletic training services was a crucial part of the overall health and safety of public secondary school youths. In fact, our needs-assessment studies indicated that in 52 of the 61 schools, there was no medical or allied medical supervision during periods of state-sanctioned, organized, supervised, high-risk activity (sports practice). Of the 38 public schools, 4 had an EMT present for practice and the remaining schools had no medical or allied medical supervision on site for these high-risk activities (Table 2). This represented a major health and safety concern, since 57% of our injuries (and approximately 66% of all injuries nationally[22]) occur during practice.

Clearly, the quality of sports health care was unacceptable in 16 schools; those providing care for injured athletes had no educational training at all. Most acute injuries were treated improperly; 901 of the reported injuries (33%) were treated with tape, 31 were treated with heat, and 208 received no treatment at all. Even more astonishing is the fact that 15/208 (7%) of the injuries that received no immediate treatment were classified as major (ie, athlete missed $>$ 21 days of participation). These figures provided strong evidence to convince state lawmakers, because they indicated that state employees were providing a service that they were not trained to provide and, in at least 1140 instances, student athletes had been treated in a contraindicated manner. Concurrently, the legislators were surprised that ATCs were recognized by the American Medical Association as allied health care professionals and that their

educational preparation was accredited by the same organization.

Our study further indicated that when those who served as athletic trainers (primarily coaches) did have educational training, it was limited to first aid, CPR, and/or 3 hours of a coaching education workshop (Table 1). In 1986, a national study had examined the knowledge of care and prevention of athletic injuries of individuals who were designated as the schools' athletic trainers.[24] In that study, the authors stated that "Professional incompetence is a phenomenon in today's society."[24] Their results further indicated that in the area of injury care " . . . possibly hundreds of incorrect decisions are made on a daily basis."[24] Our findings confirmed that this was also happening within the state of Hawaii and these facts became an integral part of the overall presentation to the state legislators.

In developing our strategy for convincing the state's lawmakers to fund positions for ATCs into the public schools, we again drew on comparisons with other states and school districts. In 1992, Lindaman[15] indicated that the availability of certified athletic trainers at the secondary level in the state of Michigan was increasing, as compared with numbers from earlier studies. However, he also indicated that, although there had been an improvement, the level of quality and quantity of athletic trainers at the high school level was still inadequate. Lindaman[15] further stated that schools with larger populations had the greatest percentage of athletic trainers. In contrast, our study indicated that the schools with certified athletic trainers (all private) represented only 19% of the total population, although two of the five schools did have a combined total of 2509 (39%) athletes participating in interscholastic sports. In essence, our findings indicated that the most prestigious private schools (which are not impacted by state funds) were addressing the needs of health care for their students by hiring ATCs on a full-time basis, whereas the public school students who depended on state-supported programs were exposed to grossly inadequate health care. This finding was presented to the state legislators as a clear case of discrimination and negligence, since a standard of care had been established for the private school students within the state (Table 2; $p<.05$).

Most interestingly, our request for the state legislature to appropriate funding to hire ATCs for all public secondary schools came at a time of severe fiscal restraint and a gubernatorial-mandated zero-growth state budget. Although it may have appeared reasonable to question this appropriation of funding, the sheer numbers of participants in organized high school athletics, combined with the potential risk of injury, mandated that the risk-to-benefit ratio be evaluated. In lieu of a 1986 $6.3 million court decision (*Thompson v Seattle Public Schools District*) and the concern for cost-efficient health care,[5] the major question that we addressed was how our state can afford to not provide quality sports health care for our secondary school students. In fact, during the development of our project, we discovered that a Hawaii public school student athlete had been rendered quadriplegic during football practice in 1989. The young man was currently in the process of suing the state for damages.

The needs-assessment studies (qualitative and purposeful descriptive research) that we performed allowed us to present a clear case for funding athletic training positions in the state's 38 public secondary schools. These facts alone were important, but of equal importance was the planned presentation of findings to the legislators. Before the 1993–94 legislative session, the state's athletic directors had become convinced that hiring ATCs was a health and safety issue and that this would be their number one priority. In consideration of their powerful lobbying unit, the athletic directors approached the legislature and urged that Senate Bill 336, which asked for the appropriation for funding to hire athletic trainers in all of the state's public secondary schools, be introduced and supported. Therefore, what was happening in the state of Hawaii was not an issue of athletic trainers promoting their own profession and appearing "self-serving." It was an illustration of the athletic directors (consumers) expressing needs for their programs and demanding that the state's public secondary school student athletes have the same standard of care that the private school athletes were receiving. The overall cost of the program was estimated at more than $1.4 million. In a clear show of support, the athletic directors were asked (during a legislative hearing) how they would spend a blank check for $1.5 million; they replied in unison, "Hire certified athletic trainers!"

Although support was strong and the facts were clear, the state's severely depressed fiscal outlook still required consideration. Therefore, an alternative plan was developed to fund a 2-year pilot program to continue to show the need and the effect of hiring ATCs. The pilot program was developed to fund ATCs for 10 schools the first year and 5 schools the second year. A weighting system was developed on the basis of number of athletes, location to the nearest medical facility, existing facilities, number of sports, and geographic location (Hawaii has public schools on six different islands). The legislative intent was to objectively evaluate the effect of hiring ATCs in the public secondary schools and to expand the program as the state's budget increased. The project has been evaluated by the Department of Education evaluation branch. To date, this project has had a major impact on the health and safety of secondary school students. Following an evaluational presentation to the Board of Education (elected officials) in November 1994, the board unanimously voted to make placing an ATC in every public secondary school part of the governor's 1995 educational legislative package. In fact, when the 1995 governor's legislative package was released, only two educational issues were supported and addressed: school community-based management, and the need to have certified athletic trainers in all public schools.

In conclusion, the concerted efforts and teamwork of school principals, athletic directors, coaches, certified athletic trainers, physical therapists, physicians, lawyers, parents, and athletes persuaded the 1993–95 legislative session of Hawaii to fund $1 167 000 over a 2-year period for an athletic training pilot program. Although many authors[2,3,9,13,14,21] have expressed concerns similar to those of Dr. Lindaman, who stated: "I am appalled that the field of sports medicine has exploded over the last 15 years, but has left the medical care of the athletes participating in high school interscholastic sports truly lagging behind,"[15] we believed that change could be facilitated in Hawaii. We used a multifaceted plan that included: 1) public

education, 2) state needs-assessment research, 3) national and state comparison information, 4) media coverage, 5) a well-planned lobbying effort, and 6) the good fortune to permit Hawaii to take a positive step forward in the improvement of the overall health care and safety of its secondary public school student athletes. It is our hope that this project can aid other states and school districts to explore funding possibilities that will allow all secondary school youths to have access to appropriate health care when they participate in state and school-district-sponsored, organized sports activities.

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