

# Athletic Trainer Availability in Interscholastic Athletics in Michigan

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**ABSTRACT:** *Between January and March 1989, I surveyed the athletic directors of the 711 high schools of the Michigan High School Athletic Association, in order to determine the level of medical care available for students who participate in various sports. The results were compared to previous studies done in Michigan and in other states, to determine if there had been any increase in the number of athletic trainers working in a high school setting or any improvement in their educational backgrounds. Certification by the National Athletic Trainers' Association (NATA) was the measurement used to determine improvement in educational background. With 57% of the 711 athletic directors responding, 41% reported that they had the services of an athletic trainer for at least one sport during the year. The percentage of athletic trainers varied directly with the size of the school. The more populous schools had the greatest percentage of athletic trainers. Seventy percent of the athletic trainers were reported to be certified by the NATA. These findings were compared to two earlier studies conducted in Michigan and to surveys in other states. It was determined that there was an increase in the availability of athletic trainers, particularly certified athletic trainers, at the post-secondary level.*

**S**tudies reporting the number of students who compete in interscholastic athletics and the frequency and severity of sports injuries leave little doubt about the need for adequate medical care for these

athletes (2,4,7,8,10). Yet, a serious question remains about the players' access to health care. Traditionally, medical care for athletes has meant the services of a team physician; however, numerous studies have demonstrated that only 40% to 80% of varsity football games have physicians in attendance (3,5,6,9, 12,13,14). These percentages drop dramatically to 6% to 13% for other sports (5,15). In addition, physicians almost never attend practices (5,14). In the past, this void in the provision of health care for athletes competing in interscholastic sports was filled by coaches (3,9,12,15). Unfortunately, coaches seldom have the ability and qualifications to provide this service (3,13).

The National Athletic Trainers' Association has worked to educate high school administrators and the public about the need for proper medical care for the high school athlete. There has been a strong effort to place athletic trainers, specifically certified athletic trainers, in high schools. This study was undertaken to assess the types of medical care available to students participating in interscholastic sports at each level of competition in Michigan. Then, these results were compared to results of previous surveys done in Michigan and in other states to determine if there had been any improvement in the availability of athletic trainers in general, and certified athletic trainers in particular.

## Materials and Methods

In January 1989, I mailed surveys to the 711 high school athletic directors in the state of Michigan. These athletic directors were affiliated with all of the public and private schools within the Michigan High School Athletic Association. In the survey, I requested demographic data to help group the results for further analysis.

The survey requested information from the athletic directors concerning the availability of student athletic trainers, athletic trainers, physicians, and other medical personnel (EMTs, paramedics, etc.) (Fig 1) for

each sport offered (Fig 2) and at each level of competition (Fig 3). They were to state what type of medical care was available at practices and at interscholastic competitions. Available was defined as, "present to render medical care for that team at either a practice or an interscholastic contest at least once during the season." A stamped, self-addressed envelope was provided with each survey.

## Results

Properly completed forms were returned by 57% (407/711) of the schools, somewhat evenly distributed among all classes of schools (52% to 60%) (Table 1). Forty-one percent of all responding schools reported having an athletic trainer available for at least one sport during the year. This ranged from 59% in Class A to 20% for Class D (Table 2). Of these athletic trainers, 70% were reported to be certified by the NATA. This varied from 82% to 25% among all classes of schools (Table 2). These figures did not include as "certified" those athletic trainers who were waiting to take the certification exam, awaiting the results of the examination, or completing their curriculum that semester.

The athletic directors were asked to report, as accurately as possible, the fees or salary paid to the athletic trainers. This was either the supplemental salary that the individual received or the fee that was paid to a hospital or sports medicine clinic for providing athletic trainers to the school district. These salaries represent the amount earned by an individual or corporation for that academic year for their athletic training services. No distinction was made about the amount of time that the athletic trainer worked or the number of teams that received medical care. Thirty-eight percent, ranging from 25% to 71%, of all athletic trainers were volunteers; that is, they received no reimbursement for their services (Table 2). Fifty-five percent of these volunteers were certified athletic trainers. Thirty percent of all certified athletic

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### Medical Care for Interscholastic Athletes

School District: \_\_\_\_\_

Is your high school a 3-year (10-12) or 4-year (9-12) school? \_\_\_\_\_

What is your estimated enrollment ("Fourth Friday Count")? \_\_\_\_\_

Boys: \_\_\_\_\_ Girls: \_\_\_\_\_

What is the MHSAA classification of your school? \_\_\_\_\_

Please estimate the number of students out for at least one sport:

Boys: \_\_\_\_\_ Girls: \_\_\_\_\_ Total: \_\_\_\_\_

Does your high school have a person(s) in the position of student athletic trainer?

No \_\_\_\_\_ Yes \_\_\_\_\_ How many? \_\_\_\_\_

Does your high school have a person(s) in the position of athletic trainer?

No \_\_\_\_\_ Yes \_\_\_\_\_ How many? \_\_\_\_\_

If you do have a person(s) functioning in the capacity of athletic trainer:

Are they certified by the National Athletic Trainers' Association (NATA)?

No \_\_\_\_\_ Yes \_\_\_\_\_

How much are they paid for their work as an athletic trainer?

\$ \_\_\_\_\_

Does your high school have a person functioning in the capacity of team physician?

No \_\_\_\_\_ Yes \_\_\_\_\_

If you do have a team physician, what is his or her specialty?

Family/General Practice	_____	Pediatrics	_____
Internal Medicine	_____	Ob/Gyn	_____
Orthopaedics	_____	Other	_____
General Surgery	_____		

How much are they paid for functioning as the team physician?

\$ \_\_\_\_\_ (\$0.00 = Volunteer)

Fig 1.—Survey Mailed to 711 Michigan High School Athletic Directors

Please indicate with a check mark which of the following sports are offered by your school district for interscholastic competition, and at which levels.

Sport	Freshman	Sophomore	Jr. Varsity	Varsity
Football				
Boys Basketball				
Girls Basketball				
Volleyball				
Boys Soccer				
Girls Soccer				
Wrestling				
Gymnastics				
Boys Cross Country				
Girls Cross Country				
Baseball				
Softball				
Boys Track				
Girls Track				
Boys Golf				
Girls Golf				
Boys Tennis				
Girls Tennis				
Boys Swimming				
Girls Swimming				
Boys Skiing				
Girls Skiing				
Ice Hockey				

Fig 2.—Survey of High School Sports Offered in Michigan

trainers in this study worked as volunteers. The average salary for athletic trainers who received a salary was \$5,508 a year (Table 2).

The percentage of schools that have an athletic trainer available for each of their sports is listed in Table 3. The percentages are listed only for schools that offer competition in the sport (the number in parentheses), not the total number of schools responding to the survey. Athletic trainers most often were present for football. Looking at all of the varsity teams, only 22% of them had an athletic trainer available either for practice or competition during the year.

### Discussion

Forty-one percent of the schools responding had the services of an athletic trainer for at least one sport at least one time during the year. These percentages are markedly different from Redfeam's (12) 1975 study, which reported that only 11% of the schools in Michigan had an athletic trainer. This 1975 survey disproportionately represented the larger schools (Table 1). Because larger schools are more likely to have athletic trainers, 11% may be an overestimate. The current study was more evenly distributed across all sizes of schools, which tends to enhance the difference between the two studies.

Similarly, Ray (11) in 1987 reported that only 15% (70/462) of the Michigan schools responding to his survey had athletic trainers. It would appear that the availability of athletic trainers has tripled in the three years since Ray's study; however, Ray never reported his definition of an athletic trainer and he did not clarify the distribution between the different classes of schools.

Comparisons with his study, therefore, need to be done with caution. Neither of these earlier studies mentioned the number of athletic trainers who were certified.

Unfortunately, the availability of athletic trainers is directly proportional to the size of the school. Schools with a small population, which are the least likely to have athletic trainers, are also the least likely to have access to a physician (3,5,13). At such schools, the responsibility of medical care falls solely upon the coaching staff.

Nationally, the situation is not much better, and may be worse, than in Michigan. In 1980, Porter (9) reported that 49% of the public schools surveyed in the Chicago area had athletic trainers. Again the

Please indicate who is present at the practices and contests for the sports and levels of competition offered by your high school.

ST = Student Athletic Trainer  
AT = Athletic Trainer

MD = Medical Doctor  
OT = Other (paramedics, nurses, etc)

If none of the above are present at practices or contests, or your high school doesn't offer the sport or that level of competition, please leave those spaces blank. Otherwise use:

1 = Coverage at Practice only  
2 = Coverage at Contest only

3 = Coverage at Practice and Contests

Sport	Freshman				Sophomore				Jr. Varsity				Varsity			
	S T	A T	M D	O T	S T	A T	M D	O T	S T	A T	M D	O T	S T	A T	M D	O T
Football																
Boys Basketball																
Girls Basketball																
Volleyball																
Boys Soccer																
Girls Soccer																
Wrestling																
Gymnastics																
Boys Cross Country																
Girls Cross Country																
Baseball																
Softball																
Boys Track																
Girls Track																
Boys Golf																
Girls Golf																
Boys Tennis																
Girls Tennis																
Boys Swimming																
Girls Swimming																
Boys Skiing																
Girls Skiing																
Ice Hockey																

Fig 3.—Survey of the Levels of Competition Offered in High School Sports in Michigan

Table 1.—Response to Survey of Michigan High School Athletic Directors

	Number Possible	Total Responding	Return Percentage	Redfearn(12)
Number of Schools	711	407	57%	55%
Number of Class A Schools	177	103	58%	61%
Number of Class B Schools	178	107	60%	63%
Number of Class C Schools	178	105	59%	49%
Number of Class D Schools	178	92	52%	27%

percentages were higher in the larger, wealthier, nonurban schools. She also reported that 23% of these schools had certified athletic trainers. Expanding the study to include the remainder of Illinois, Bell (1) found that 24% of all Illinois schools employed athletic trainers. Culpepper (3) reported that between 5% and 24% of Alabama schools had athletic trainers, varying directly with the size of the school. Wrenn (15) reported in 1980, that only 2% of Maryland schools employed athletic trainers. More recently, Powell (10) estimated that only 16% of all high schools in the nation had athletic trainers.

One of the factors influencing whether a school district provides athletic trainers for their athletes is the cost. The most visible, if not the major, cost for the school district is the salary for the individual. Over one-third of all the athletic trainers who worked in the responding high schools received no monetary compensation. Similarly, 30% of the certified athletic trainers were volunteers. This speaks well for the altruism and commitment of athletic trainers. Unfortunately, it does not speak well for the concern of school districts in providing medical care for their athletes. The adequacy of the reimbursement obviously depends upon the number of teams that the athletic trainer covers and the number of hours worked. Calculation of per-hour payment for athletic trainers was beyond the scope of this survey; however, the results do indicate the amount that most school districts are willing to spend to obtain an athletic trainer. It also demonstrates that being an athletic trainer for a high school probably would not be a sole means of financial support. It would serve only as a supplement to an income derived from teaching or working as an athletic trainer or physical therapist at another institution.

## Conclusion

Based on this study, I think that the availability of medical care at interscholastic athletic practices and competitions is not adequate. In an attempt to address this problem, there has been an increasing effort to place certified athletic trainers into the high schools. In Michigan, the number of schools responding to the survey that they either employ or have the services of an athletic trainer has increased substantially. More importantly, 70% of these athletic trainers are now certified by the National Athletic Trainers' Association, a

Table 2.—High School Athletic Trainers in Michigan by Class of School

	Class A	Class B	Class C	Class D	Total
Schools responding that employ athletic trainers	59%(61/103)	48%(51/107)	34%(36/105)	20%(18/92)	41%(166/407)
Athletic trainers who are certified	75%(50/67)	82%(46/56)	75%(28/37)	25%(7/28)	70%(132/188)
Athletic trainers who are "volunteers"	25%(17/67)	36%(20/56)	38%(14/37)	71%(20/28)	38%(71/188)
Average salary of athletic trainers who receive a salary	\$6,671	\$6,863	\$2,798	\$4,225	\$5,508

\* Some schools employed more than one athletic trainer.

Table 3.—Percentage of Schools Providing Athletic Trainer Coverage in Varsity Sports (Number Offering Athletic Trainer Coverage/Number Offering Participation)

Sport	Total	Class A	Class B	Class C	Class D
Football	37%(137/370)	58%(59/101)	43%(46/106)	24%(24/102)	13%(8/61)
Boys Basketball	28%(111/402)	46%(46/101)	34%(36/106)	19%(20/105)	10%(9/90)
Girls Basketball	26%(105/398)	43%(43/100)	32%(34/106)	20%(21/105)	8%(7/87)
Volleyball	24%(88/371)	38%(37/98)	29%(30/104)	16%(16/99)	7%(5/70)
Boys Soccer	31%(47/152)	39%(30/76)	26%(12/46)	25%(3/12)	11%(2/18)
Girls Soccer	31%(30/98)	39%(24/62)	19%(5/26)	0%(0/5)	20%(1/5)
Wrestling	35%(95/272)	48%(45/93)	34%(32/94)	23%(16/69)	13%(2/16)
Gymnastics	48%(26/54)	57%(20/35)	38%(5/13)	0%(0/1)	20%(1/5)
Boys Cross Country	17%(55/325)	27%(27/99)	16%(16/102)	11%(9/85)	8%(3/39)
Girls Cross Country	17%(52/313)	27%(26/97)	16%(16/98)	10%(8/83)	6%(2/35)
Baseball	20%(77/376)	33%(33/100)	22%(23/105)	15%(15/99)	8%(6/72)
Softball	20%(73/366)	33%(33/99)	20%(21/104)	15%(14/96)	7%(5/67)
Boys Track	24%(89/378)	42%(42/101)	25%(27/107)	16%(16/100)	6%(4/70)
Girls Track	23%(87/376)	40%(40/100)	25%(27/107)	16%(16/100)	6%(4/69)
Boys Golf	4%(11/280)	5%(5/94)	4%(4/92)	3%(2/69)	0%(0/25)
Girls Golf	2%(2/120)	5%(2/44)	0%(0/35)	0%(0/29)	0%(0/12)
Boys Tennis	17%(37/217)	22%(21/94)	16%(12/73)	8%(3/36)	7%(1/14)
Girls Tennis	19%(38/203)	24%(22/92)	17%(12/69)	10%(3/30)	8%(1/12)
Boys Swimming	25%(34/138)	28%(23/82)	23%(10/44)	11%(1/9)	0%(0/3)
Girls Swimming	23%(31/135)	25%(20/81)	25%(10/40)	10%(1/10)	0%(0/4)
Boys Skiing	2%(1/48)	5%(1/21)	0%(0/9)	0%(0/11)	0%(0/7)
Girls Skiing	2%(1/47)	5%(1/21)	0%(0/8)	0%(0/11)	0%(0/7)
Ice Hockey	31%(17/55)	41%(14/34)	9%(1/11)	20%(1/5)	20%(1/5)

greater percentage than was reported by other states or in national surveys.

Unfortunately, even with this marked improvement, 78% of the varsity teams were without the services of an athletic trainer at any given time during the seasons. While 41% of the school districts that responded had an athletic trainer available, only 25% of them actually hired an athletic trainer.

The argument may be raised that more schools would hire athletic trainers if they were available; however, 39% of the schools with athletic trainers relied upon volunteers to provide this service. This substantiates the fact that the problem is not merely a lack of availability of athletic trainers for high schools. The problem is still a lack of concern and commitment by the school districts and athletic departments.

While there has been improvement in the levels of both the quality and quantity of athletic trainers for high school athletes, these levels are still inadequate. There needs to be an increase in the number of athletic trainers employed by school districts either as teachers/athletic trainers or contract workers from local sports medicine centers or physical therapy departments. Only 25% of the schools responding

employed an athletic trainer. This demonstrates the need to educate the school districts about the importance of proper medical care for athletes participating in interscholastic sports. The best way to provide this care is with certified athletic trainers.

## Acknowledgements

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## Comments

We often talk about the differences in approaches to sports medicine by coaches, physicians, and athletic trainers. Lindaman, author of the previous article, has been all three, so he has a unique view of sports medicine and high school athletics.

Dr. Lindaman was a student athletic trainer for four years at the University of Iowa. He was certified and returned to Iowa for an additional year as a graduate assistant athletic trainer. He taught high school for three years in Illinois and Iowa where he coached football, basketball, and track. He spent an additional three years as a graduate assistant track coach. He then went to medical school. For the past ten years, he has served as a high school team physician in Illinois, Michigan, Tennessee, and Iowa. So, he has spent considerable time (in the trenches) of all three professions.

In the process of working on this article with Dr. Lindaman and members of our Editorial Board (whose identities were unknown to each other), his unique background became apparent, as did some additional feelings of Dr. Lindaman concerning high school sports medicine. His comments follow.

Kenneth L. Knight, PhD, ATC  
Editor-in-Chief

I am appalled that the field of sports medicine has exploded over the last fifteen years, but has left medical care for the athlete who participates in high school interscholastic sports truly lagging behind. This has not been the result of any lack of effort on the part of the National Athletic Trainers' Association, however.

Most of the school boards in areas in which I have lived for the past fifteen years have been facing tremendous increases in costs. During this same time, the community has been voting down tax increases. Almost universally, the first part of the school district budget that is trimmed is the athletic department budget, and one of the first "sacrificial lambs" in the athletic department is usually any allocation for athletic trainers or for other forms of medical care. As athletic trainers, physicians, and parents attempt to improve the medical care for high school athletes, they are going to have to answer several questions from the athletic departments, the school boards,

and the taxpayers. Two of these questions are posed and answered below.

"Is there a need for medical care?" Absolutely. The articles cited in my introductory paragraph, along with the ongoing research by Powell and others, document that there is a significant injury rate in all sports in high school athletics.

"Is the level of medical care currently provided adequate?" It is not even close, from a physician's standpoint. (See my research on physicians that was published in *The American Journal of Sports Medicine*.) This study in Michigan, and those done in other states previously, have shown that the level of athletic trainer availability is not adequate, even with the improvement in the last fifteen years.

Some reviewers of this paper were offended by the fact that in my survey, I had counted as athletic trainers individuals who were not certified by the National Athletic Trainers' Association. My stand is that athletic trainer is a job description; Certified Athletic Trainer is a professional title. One reviewer appeared to be offended by this and responded, "According to your survey, anyone providing athletic training services is an athletic trainer," and "Anyone breathing who can semi-tape an ankle and attend practice could be considered an athletic trainer." I too am somewhat offended by this. Also, I am offended by the fact that any person who has gone through four years of medical school, who cannot tape an ankle, who does not know a sprain from a fracture, and who has a level of sports medicine knowledge that is far inferior to that of any athletic trainer, may walk onto an athletic field and call himself or herself a team physician. Unfortunately, that is the current status of the world of sports medicine. Until the states define athletic training and set licensure standards, such as certification by the National Athletic Trainers' Association, the reviewer's statement as to who may be considered an athletic trainer are very true.

If readers are offended by this, as they have a right to be, I would encourage them not to accept it and to work either at the local, state, or national level to come up with licensure standards for athletic training, to see that all schools have athletic trainers, and that they are certified.

Athletic trainers, whether they are certified or inept, and team physicians, whether specialists in sports medicine or inept, do serve a very vital role. Probably their most important function is to remove