



2013 Nebraska Sports Concussion Survey Results:

Head Coach Survey

June 2013



NEBRASKA SCHOOL ACTIVITIES ASSOCIATION



2013 Nebraska Sports Concussion Head Coach Survey Results

Nebraska Department of Health & Human Services
Division of Public Health
Injury Prevention Program

Nebraska School Activities Association

Brain Injury Association of Nebraska

Nebraska State Athletic Trainers Association, Inc.

Report prepared by
Will Schmeeckle, M.A.
Schmeeckle Research Inc.

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- Joyce Schmeeckle, PhD, Schmeeckle Research
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For more information about this report, or for questions or comments, please contact:

Injury Prevention Program
Nebraska Department of Health and Human Services
301 Centennial Mall South
P.O. Box 95044
Lincoln, NE 68509
(402) 471-2101

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Executive Summary

Background: evaluating the effectiveness and impact of Nebraska's Concussion Awareness Act (LB260)

In an attempt to reduce the long-lasting consequences of second-impact concussions, the Nebraska State Legislature enacted the Concussion Awareness Act (LB260) in 2012. There are four essential components of LB260, which are:

- Concussion education training must be made available to all coaches on how to recognize symptoms of a concussion, and how to seek proper medical treatment.
- Athletes and parents must be provided with information about concussions prior to an athlete's participation in school sanctioned sports on an annual basis.
- An athlete suspected of having a concussion must be removed from participation and may not return until evaluated by an appropriate licensed health care professional.
- An athlete removed from participation for a suspected concussion must receive written and signed clearance from an appropriate licensed health care professional and from the athlete's parents prior to returning to play.

In order to evaluate the effectiveness and impact of this new law, the Concussion Evaluation Work Group was formed from individuals participating in the Injury Community Planning Group (ICPG). The work group created three separate surveys to answer a broad array of evaluation questions. Head coaches of organized high school sports, athletic directors and/or activities coordinators at high schools, and youth who received a concussion as a result of participation in an organized sport were surveyed.

This report presents the results of the Head Coach Survey.

Survey sample

- 1,074 surveys were collected from head coaches of organized school sports (NSAA sanctioned) across Nebraska via SurveyMonkey from April 1 to April 15.
- Response rate: 46% of surveys were completed (2,348 surveys sent out).
- Head coaches from 19 sports were surveyed, with a fairly even distribution across Class A, B, C, and D schools.

Survey Results

I. Concussion training and education about Nebraska's Concussion Awareness Act (LB260) is being offered by most schools, and is more commonly offered by larger schools.

- The vast majority (92%) of surveyed head coaches reported that their school made training on the signs and symptoms of concussions available to them before the start of practice, and 87% reported that their school made concussion training mandatory.
- The vast majority (91%) of respondents reported attending at least some sort of concussion training - either provided by their school or another organization.
- Slightly less than three-fourths (73%) of respondents reported that their school has provided education on the components and requirements of the Nebraska Concussion Awareness Act (LB260).

- Respondents from larger schools (i.e., Class A and B) were more likely to report that their school made concussion training available and provided them with education or training on LB260, as compared to those from smaller schools (i.e., Class C and D). However, respondents from smaller schools were more likely to report that they attended concussion training that was provided by an organization other than their school.

II. The four state approved concussion trainings are more effective compared to "other types" of concussion training attended by respondents.

- Respondents who attended one of the four state-approved concussion trainings reported that the training they attended improved their ability to recognize the signs and symptoms of concussions at rates of 86% to 95%, whereas just 67% of those who reported attending another type of training felt the training they attended improved their ability to recognize the signs and symptoms of concussions.

III. In general, coaches perceive LB260 as effective and not a hindrance to their ability to coach.

- The vast majority (89%) of respondents perceived LB260 as effective or highly effective in allowing a student athlete with a concussion to recover completely before returning to play.
- A very small minority (3%) of respondents perceive LB260 as a hindrance to their ability to coach. The remainder of the surveyed head coaches perceive the law as helpful or neutral, with approximately one fourth (26%) perceiving the law as helpful, but also adding some difficulties to their position as coach.

IV. There are some alarming barriers facing coaches to properly manage athletes with suspected concussions, including resistance from athletes and parents, and a lack of notification when an athlete receives a concussion in another sport or activity.

- A strong majority (71%) of head coach respondents have coached an athlete who suffered a concussion or was suspected of suffering a concussion while playing a sport they coach.
- Among those who have coached an athlete who suffered a concussion or was suspected of suffering a concussion...
 - 29% reported knowledge of an athlete they coached not reporting their concussion symptoms in order to continue playing.
 - 44% reported that an athlete they coached has resisted being removed from play due to a suspected concussion.
 - 13% reported that the parents of an athlete with a suspected concussion have tried to stop them from removing their child from play.
 - 23% reported that the parents of an athlete with a suspected concussion have tried to have their child return to play without a doctor's clearance.
- Less than half (44%) of respondents reported being always or often notified when a student athlete suffers a concussion in another school sport.
- A minority (19%) of respondents reported being always or often notified when a student athlete suffers a concussion in a non-school activity or club sport.
- Respondents from smaller schools were more likely to report being notified when an athlete they coach receives a concussion in another sport or activity (whether it be a school-sanctioned activity or not), as compared to those from larger schools.

2013 Nebraska Sports Concussion Head Coach Survey Results

Introduction

The Centers for Disease Control and Prevention (CDC) define a concussion as a "type of traumatic brain injury, or TBI, caused by a bump, blow, or jolt to the head that can change the way your brain normally works" (www.cdc.gov/concussion/sports). From 2009-2011, there were 1,089 sports-related concussions that required medical attention (emergency department visit, inpatient hospitalization, visit to physician's clinic, etc.) among those ages 5 to 19 in Nebraska (Nebraska Hospital Discharge Data).

In an attempt to reduce the long-lasting consequences of second-impact concussions, the Nebraska State Legislature enacted the Concussion Awareness Act (LB260) in 2012. There are four essential components of LB260, which are:

- Concussion education training must be made available to all coaches on how to recognize symptoms of a concussion, and how to seek proper medical treatment.
- Athletes and parents must be provided with information about concussions prior to an athlete's participation in school sanctioned sports on an annual basis.
- An athlete suspected of having a concussion must be removed from participation and may not return until evaluated by an appropriate licensed health care professional.
- An athlete removed from participation for a suspected concussion must receive written and signed clearance from an appropriate licensed health care professional and from the athlete's parents prior to returning to play.

In order to evaluate the effectiveness of this new law, the Concussion Evaluation Work Group was formed from individuals participating in the Injury Community Planning Group (ICPG). The work group designed three surveys to answer the following evaluation questions:

- Do coaches and athletic trainers have concussion training available? Are they aware of the signs and symptoms of concussions?
- Do youth and parents receive education on concussions before the start of practice?
- Are youth athletes with a suspected concussion as a result of a school related activity removed from play? Are their parents given notification? Are they offered post-concussion assistance when returning to school? Are they cleared by a licensed medical professional and parent before returning to play?
- Do schools and youth sport organizations have a policy in place for removal, clearance, and return to play?
- Do schools and organizations have a policy for paperwork and record keeping when a youth receives a concussion?
- Are second impact concussions being prevented?

Three surveys were developed to gather feedback from one of the following groups: (1) head coaches of Nebraska high school organized sports, (2) athletic directors and activities coordinators at Nebraska high schools, and (3) youth who received a concussion as a result of participation in an organized sport.

This report presents the results from the Head Coach Survey. An online survey was administered via SurveyMonkey in April 2013 to head coaches of one or more of the 19 sports sanctioned by the Nebraska School Activities Association (NSAA).

Survey Response and Respondent Characteristics

A total of 2,348 Nebraska Sports Concussion Coach Surveys were sent out electronically via SurveyMonkey in April 2013 to head coaches of 19 high school organized sports sanctioned by NSAA across Nebraska. A total of 1,074 surveys were completed, making for a response rate of 45.7%. The vast majority (86 out of 93) Nebraska counties had at least one representative on the survey.

The vast majority (86%) of surveyed head coaches indicated that their school is public (Table 1).

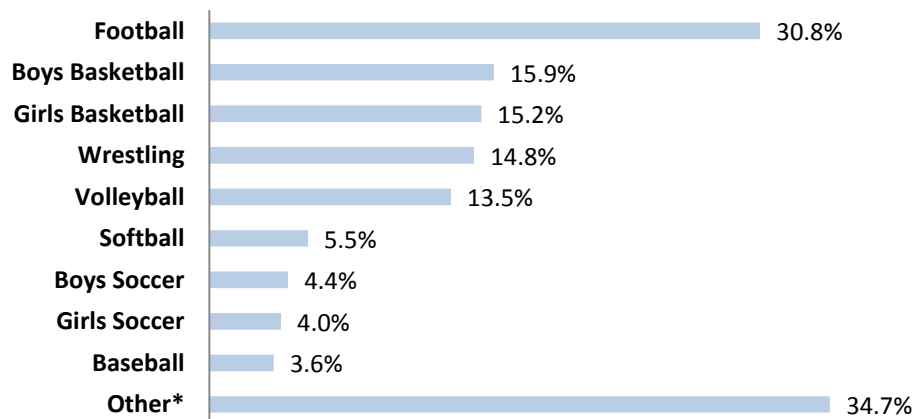
Table 1	Type of school (n=1,074)	
	Public	Private/parochial
	86.0%	14.0%

The school description of the respondents is outlined in Table 2 below. There was a small fraction (n=7) of middle school coaches who participated in the survey, the remainder of the respondents were coaches of high school sports. It is not entirely clear how and why the middle school coaches were included in the database of coaches.

Table 2	School description (n=1,074)			
	High school	Middle school	Both high school and middle school	K-12
	52.3%	0.7%	13.9%	33.1%

Just over 30% of the respondents identified themselves as football coaches. Basketball (both boys and girls), wrestling, and volleyball coaches comprised between 14% and 16% of the sample from each sport (Figure 1). Many coaches reported that they coached multiple sports. On average, respondents reported coaching 1.4 sports.

Figure 1. Sports teams coached in the 2012-2013 school year (multiple responses) (n=1,074)



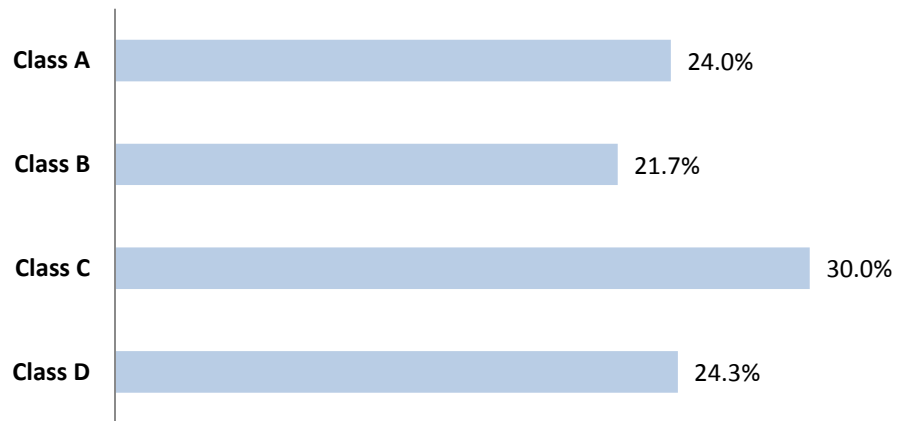
*"Other" includes track and field, cross country, golf, tennis, swimming, and junior high sports.

Respondents represent a largely experienced group of coaches, with 22.1% reporting 6 to 10 years of experience, 16% 11 to 15 years, and 46.7% over 15 years (Table 3).

Table 3		Number of years of coaching experience (n=1,074)			
1 to 3 years	4 to 5 years	6 to 10 years	11 to 15 years	Over 15 years	
8.4%	6.8%	22.1%	16.0%	46.7%	

Nebraska high school organized sports compete within class systems, with Class A representing the largest schools in the state and Class D representing the smallest. There was a fairly even distribution of respondents across the four classes of high school sports (Figure 2).

Figure 2. Class in which school participates for most sports and activities (n=1,066)

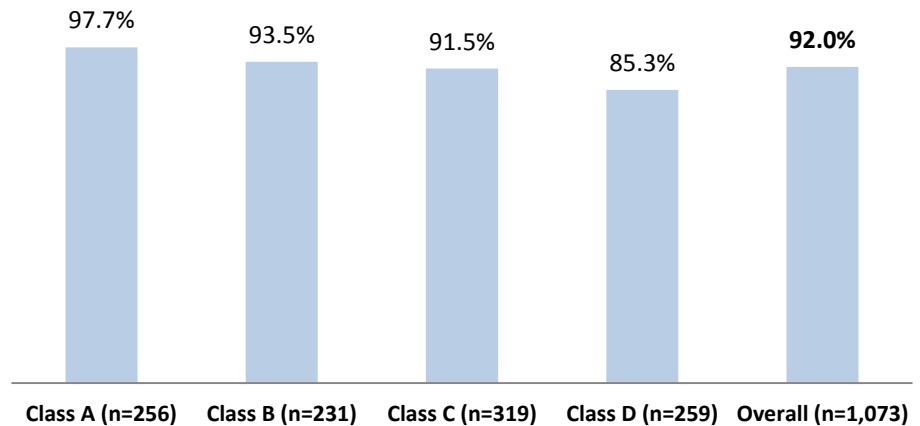


Survey Results Overall and by Class of School

Concussion Training

Over 90% of surveyed head coaches reported that their school made concussion training available before the start of practice. The larger the respondents' school was, the more likely they were to report that concussion training was made available to them (Figure 3).

Figure 3. School made training available before the start of practice on the signs and symptoms of concussions by class of school



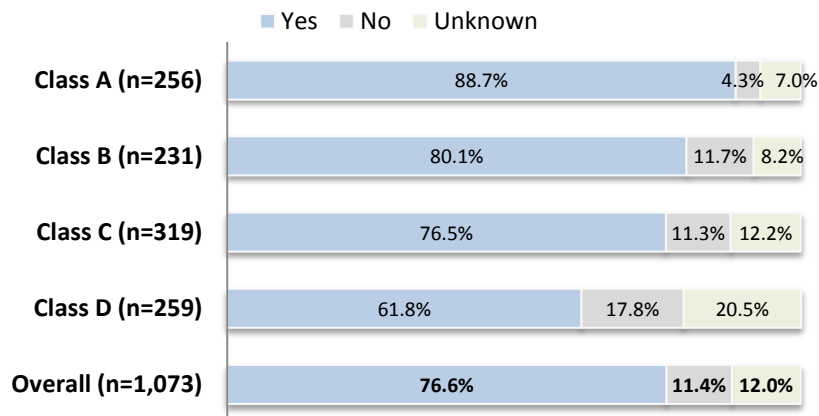
Although respondents from smaller schools reported that their school made concussion training available less frequently than those from larger schools (note Figure 3 above), this does not appear to have drastically hindered respondents from smaller schools from receiving some form of concussion training, as over 40% of respondents from Class C and D schools reported that they attended concussion training provided by another organization (not their school). Respondents from larger schools were more likely to report that they attended concussion training provided by their school, and respondents from Class A schools had the highest frequency of reporting that they attended any form of concussion training (Table 4).

Table 4	Participation in concussion training by class of school (multiple responses)		
	Attended concussion training provided by school	Attended concussion training provided by another organization	Attended <i>any</i> concussion training
Class A (n=256)	84.8%	25.4%	97.7%
Class B (n=231)	77.9%	20.3%	88.3%
Class C (n=319)	64.1%	40.6%	91.5%
Class D (n=259)	59.1%	41.7%	86.9%
Overall (n=1,073)	70.9%	32.9%	91.2%

Just as surveyed head coaches from larger schools were more likely to attend concussion training provided by their school (note Table 4 above), so were they more likely to report that their school made concussion training mandatory compared to respondents from smaller schools. Overall, over three-fourths (76.6%) of respondents reported that their school made concussion training mandatory (Figure 4).

Note that respondents who reported "unknown" were not counted as missing and are included in the tabulation in Figure 4 below. **Here, and on other survey items, it was deemed that an "unknown" response contained valuable information, as an "unknown" response may more likely be a "no" than a "yes".**

Figure 4. School made concussion training mandatory by class of school



There are four concussion trainings that are included on the Nebraska Department of Health and Human Services list of approved trainings, and these are listed below in Table 5. Among respondents who participated in concussion training, approximately three-fourths (76.3%) reported that they attended the training "Concussion in Sports - What You Need to Know (National Federation of High Schools)". It should be no surprise that this training is the most popular, as it is the one concussion training that is recommended by the NSAA. Among those who attended concussion training, 85.7% attended at least one of the approved trainings. Respondents from larger schools were slightly more likely to attend an approved training.

See also the section "Selected Survey Results by Type of Concussion Training(s) Attended" below (page 16).

Table 5	Type of concussion training participated in among concussion training participants by class of school (multiple responses)				
	Class A (n=248)	Class B (n=203)	Class C (n=288)	Class D (n=223)	Overall (n=970)
Concussion in Sports - What You Need to Know (National Federation of High Schools)	83.5%	76.4%	72.6%	73.5%	76.3%
Heads Up Concussions in Youth Sports (Centers for Disease Prevention and Control)	15.7%	18.7%	21.1%	19.3%	19.0%
ConcussionWise (Sports Safety International)	3.6%	3.9%	7.3%	1.3%	18.4%
ACTive Athletic Concussion Training for Coaches (Oregon Center for Applied Sciences)	3.6%	5.4%	8.0%	5.4%	5.8%
Other	15.3%	18.2%	19.1%	24.6%	19.1%
Attended an approved training	89.5%	86.7%	84.0%	82.1%	85.7%

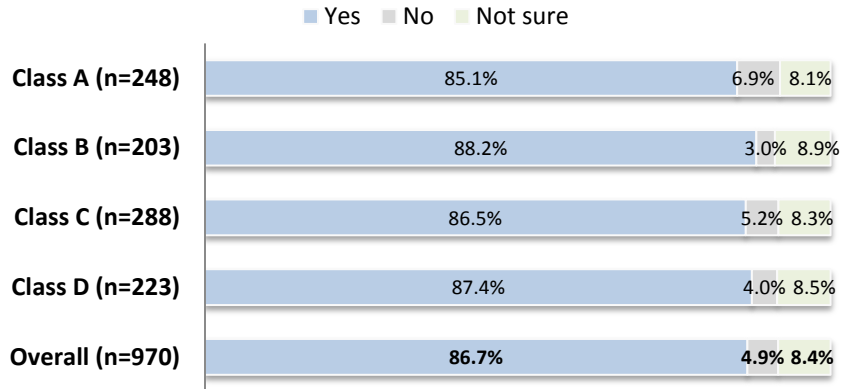
Most frequent "other" responses: speaker/training provided by a local health agency/clinic/hospital - 2.6%, ImPACT Concussion Training - 1.7%, athletic trainer provided training - 1.3%, training at coaches clinic - 0.8%, Nebraska Sports Concussion Network - 0.7%, online training (unspecified) - 0.7%, attended training in the past - 0.6%, school provided training/information - 0.6%, Nebraska Orthopedic - 0.4%, New West - 0.3%, don't remember/not sure/unknown - 3.3%.

Just under two-thirds (64.8%) of respondents who participated in concussion training reported that they received proof of completing concussion training in the form of a certificate of attendance/completion. Class A respondents were the most likely to report receiving a certificate of attendance/completion at 79.0%, whereas only half (50.7%) of Class D respondents reported receiving such a certificate (Table 6).

Table 6	Received a certificate of attendance/completion among concussion training participants by class of school				
	Class A (n=248)	Class B (n=203)	Class C (n=288)	Class D (n=223)	Overall (n=970)
	79.0%	58.6%	68.4%	50.7%	64.8%

A strong majority (86.7%) of surveyed head coaches reported that the concussion training they participated in improved their ability to recognize the signs and symptoms of a concussion (Figure 5).

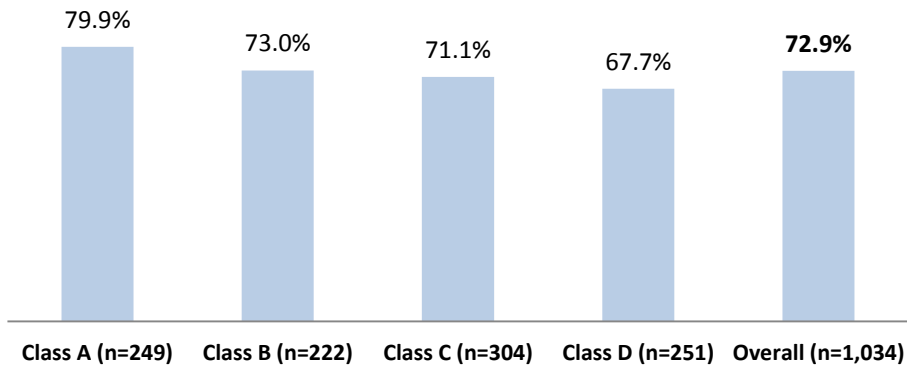
Figure 5. Concussion training improved ability to recognize the signs and symptoms of concussions among concussion training participants by class of school



The Nebraska Concussion Awareness Act (LB260)

Just under three-fourths (72.9%) of respondents reported that their school has provided them with education or training on the components and requirements of LB260. Respondents from larger schools were more likely to have received education or training about the law compared to those from smaller schools (Figure 6).

Figure 6. School has provided any education or training on the components and requirements of the Nebraska Concussion Awareness Act (LB260) by class of school



From a list of four components (all of which are part of LB260), head coaches were asked to identify which, if any, were components of the law. Each component was recognized as part of the law at a rate of 85% to 92% (Table 7). After answering this survey item, respondents were notified that all four components are part of the law.

Table 7	Correct identification of the components of the Nebraska Concussion Awareness Act (LB260)* by class of school				
	Class A (n=249)	Class B (n=222)	Class C (n=304)	Class D (n=251)	Overall (n=1,034)
Concussion education training must be made available to all coaches on how to recognize symptoms of a concussion, and how to seek proper medical treatment.	94.8%	89.6%	91.8%	92.0%	92.2%
Athletes and parents must be provided with information about concussions prior to an athlete's participation in school sanctioned sports on an annual basis.	82.7%	81.1%	86.8%	87.6%	84.8%
An athlete suspected of having a concussion must be removed from participation and may not return until evaluated by an appropriate licensed health care professional.	90.4%	91.0%	92.4%	89.6%	91.0%
An athlete removed from participation for a suspected concussion must receive written and signed clearance from an appropriate licensed health care professional and from the athlete's parents prior to returning to play.	81.1%	82.0%	88.5%	91.6%	86.2%

*Respondents were asked to identify which, if any, of the four components are contained in LB260. The percentages given are for the percent who identified the component as part of the law. All four components are contained in LB260.

After being apprised that all four components listed in Table 7 above are part of LB260, head coaches were asked about their perception of the effectiveness of the law in allowing a student with a concussion to recover completely before returning to play. Nearly 90% of all surveyed head coaches perceived the law as effective or highly effective. Perception of the effectiveness of the law was slightly higher among respondents from larger schools (Table 8).

Table 8	Perceived effectiveness of LB260 in allowing a student with a concussion to recover completely before returning to play by class of school*				
	Class A (n=248)	Class B (n=218)	Class C (n=304)	Class D (n=248)	Overall (n=1,025)
Effective or highly effective	91.9%	90.8%	86.8%	87.0%	89.1%
Neither ineffective nor effective	7.7%	8.7%	11.8%	11.7%	10.0%
Ineffective or highly ineffective	0.4%	0.5%	1.3%	1.2%	0.9%

*Respondents were notified that all four components included in Table 7 above were part of LB260 prior to responding to this survey item.

Head coaches were asked about the impact of LB260 on their ability to coach. Three-in-ten (30.7%) respondents reported that the law has helped, just over one-fourth (26.3%) perceived the law as helping, but also adding difficulties to their position as coach, and over one-third (34.9%) perceived that the law has neither helped nor hurt. A very small percentage (2.6%) reported that the law has hindered their ability to coach. Respondents from Class A and B schools were more likely to report simply that the law has helped compared to those from Class C and D schools, while those from Class C and D schools were more likely to report that the law has helped, but with some added difficulties to their position as a coach (Table 9).

Table 9	Impact of LB260 on coaching ability by class of school*				
	Class A (n=248)	Class B (n=218)	Class C (n=304)	Class D (n=248)	Overall (n=1,025)
It has helped	37.5%	33.0%	28.3%	23.4%	30.7%
It has helped, but there have been some difficulties added to my position as a coach	19.0%	24.3%	29.9%	31.9%	26.3%
It has neither helped, nor hindered	36.7%	32.6%	34.5%	36.3%	34.9%
It has hindered my ability to coach	1.6%	3.7%	2.6%	2.8%	2.6%
Not sure	5.2%	6.4%	4.6%	5.6%	5.4%

*Respondents were notified that all four components included in Table 7 above were part of LB260 prior to responding to this survey item.

Removal of Athletes from Play

Over 90% of all respondents reported that they know their school's policy on removal and return to play for athletes with suspected concussions. Respondents from Class D schools were the least likely to know their school's policy and the most likely to not know if their school has a policy (Table 10).

Table 10	Knowledge of school's policy on removal and return to play for athletes with suspected concussions by class of school				
	Class A (n=248)	Class B (n=218)	Class C (n=304)	Class D (n=248)	Overall (n=1,024)
Yes	96.0%	94.5%	90.8%	81.9%	90.7%
No	2.4%	1.8%	1.6%	2.4%	2.1%
N/A - no school policy	0.4%	0.9%	2.3%	4.4%	2.1%
Do not know if school has a policy	1.2%	2.8%	5.3%	11.3%	5.2%

A strong majority of respondents (71.2%) reported that they have coached an athlete who suffered a concussion or was suspected of suffering a concussion while playing a sport they coach (Figure 7). Among those who have coached an athlete who suffered a concussion or was suspected of suffering a concussion...

- 87.3% have personally removed an athlete from play due to a suspected concussion (Figure 8).
- 28.8% reported knowledge of an athlete they coached not reporting their concussion symptoms in order to continue playing (Figure 9).
- 43.5% reported that an athlete they coached has resisted being removed from play due to a suspected concussion (Figure 10).
- 12.7% reported that the parents of an athlete with a suspected concussion have tried to stop them from removing their child from play (Figure 11).
- 22.6% reported that the parents of an athlete with a suspected concussion have tried to have their child return to play without a doctor's clearance (Figure 12).

Several of these results present alarming barriers in the ability of a coach to properly manage an athlete with a suspected concussion.

Figure 7. Percentage of respondents who have coached an athlete who ever suffered a concussion or been suspected of suffering a concussion while playing the sport they coached by class of school

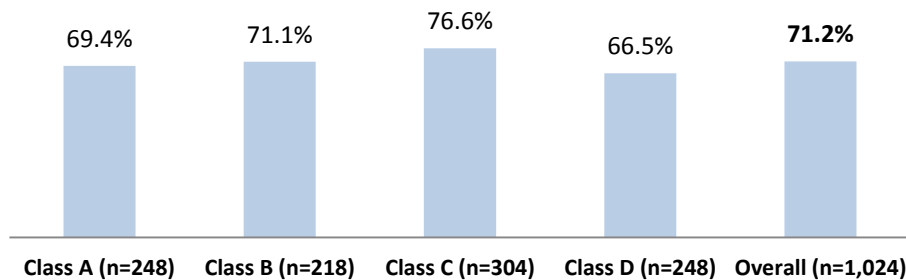
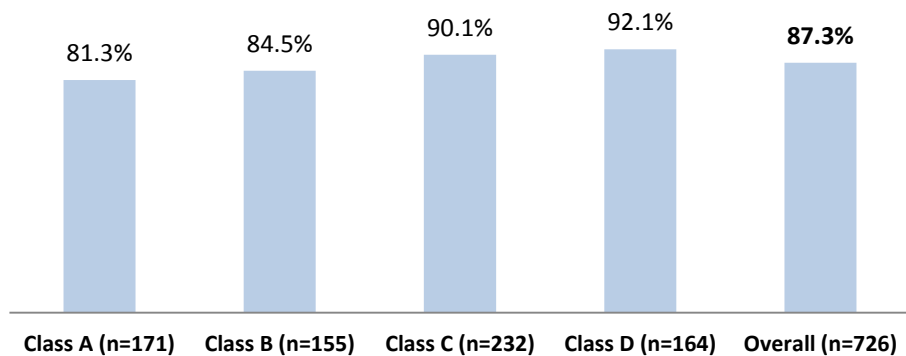
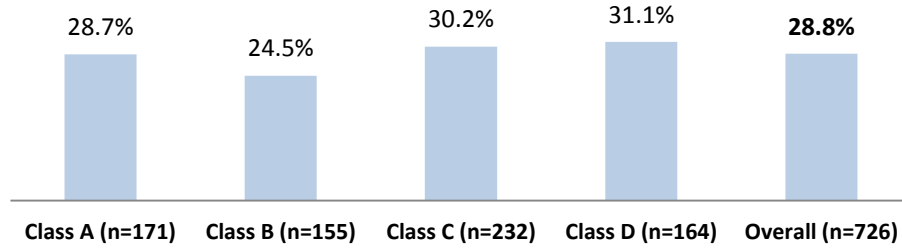


Figure 8. Percentage of respondents* who have personally removed an athlete from play due to a suspected concussion by class of school



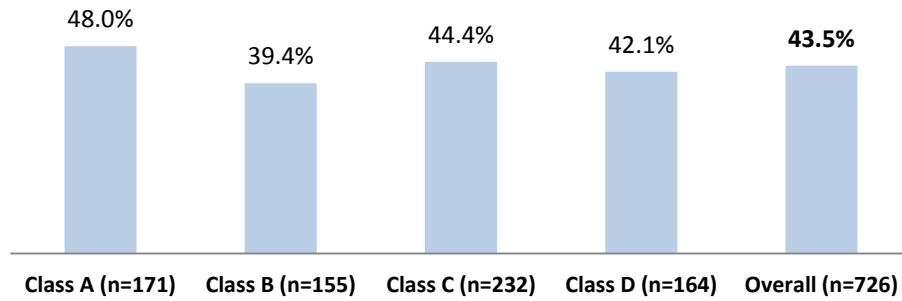
*Among those who have coached an athlete who ever suffered a concussion or was suspected of suffering a concussion while playing the sport coached by the survey respondent.

Figure 9. Percentage of respondents* who know of an athlete they coached that did not report concussion symptoms in order to continue playing by class of school



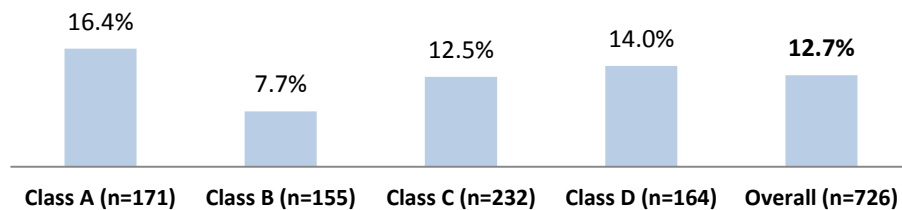
*Among those who have coached an athlete who ever suffered a concussion or was suspected of suffering a concussion while playing the sport coached by the survey respondent.

Figure 10. Percentage of respondents* reporting that an athlete they coached has ever resisted being removed from play due to a suspected concussion by class of school



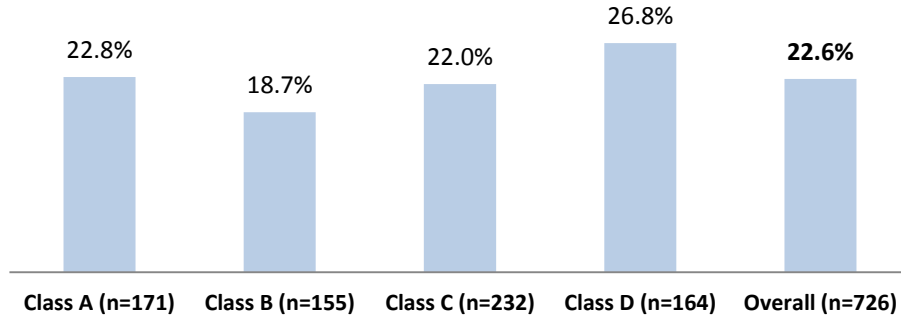
*Among those who have coached an athlete who ever suffered a concussion or was suspected of suffering a concussion while playing the sport they coached.

Figure 11. Percentage of respondents* reporting that the parents of an athlete with a suspected concussion ever tried to stop them from removing their child from play by class of school



*Among those who have coached an athlete who ever suffered a concussion or was suspected of suffering a concussion while playing the sport coached by the survey respondent.

Figure 12. Percentage of respondents* reporting the parents of an athlete with a suspected concussion have ever tried to have their child return to play without a doctor's clearance by class of school



*Among those who have coached an athlete who ever suffered a concussion or was suspected of suffering a concussion while playing the sport coached by the survey respondent.

Knowing when an athlete receives a concussion in another activity is an important piece of information for coaches to have, in order to reduce the long-lasting consequences of second impact concussions. Most head coaches do not appear to be notified with great frequency when an athlete suffers a concussion in another school sport, with just 26.1% of respondents reporting that they are always notified of such an occurrence and 17.7% reporting that they are often notified. It appears that as the school size of the respondent decreases notification of athletes receiving concussions in other school sports increases (Table 11).

Table 11	How often notification occurs when a student athlete suffers a concussion in another school sport				
	Class A (n=247)	Class B (n=216)	Class C (n=301)	Class D (n=246)	Overall (n=1,016)
Always	17.0%	19.4%	28.2%	37.8%	26.1%
Often	14.2%	17.1%	18.6%	21.1%	17.7%
Sometimes	28.7%	27.3%	23.3%	25.6%	25.9%
Rarely	21.9%	19.9%	18.9%	8.9%	17.4%
Never	18.2%	16.2%	11.0%	6.5%	12.9%

Head coach respondents reported receiving notification with even less frequency when an athlete suffers a concussion in a non-school sanctioned activity or club sport, with just 7.4% reporting that they are always notified in such an occurrence and 11.6% reporting that they are often notified. Again, respondents from smaller schools reported being notified about their athletes' concussions in other activities with greater frequency as compared to those from larger schools (Table 12).

Table 12	How often notification occurs when a student athlete suffers a concussion in a non-school sanctioned activity or club sport				
	Class A (n=247)	Class B (n=216)	Class C (n=301)	Class D (n=246)	Overall (n=1,016)
Always	3.6%	5.6%	8.3%	11.4%	7.4%
Often	7.3%	12.0%	12.3%	15.0%	11.6%
Sometimes	24.3%	20.8%	24.3%	37.0%	26.6%
Rarely	32.4%	37.5%	32.2%	22.0%	30.9%
Never	32.4%	24.1%	22.9%	14.6%	23.5%

Respondents were asked to imagine their response to potentially alarming signs and symptoms that an athlete might present after receiving a bump, blow, or jolt to the head or body. In all such scenarios, the appropriate response would likely be to keep an athlete out of play. Respondents were given the options to "keep out", "return to play", or "too close to call". All or almost all (over 99%) of respondents indicated that a player should be kept out if he or she is unsure of game, score, or opponent; cannot recall events prior to or after the hit or fall; or loses consciousness even briefly after a bump, blow, or jolt to the head. However, a lower percentage of respondents felt that a player should be kept out if he or she exhibits signs of appearing dazed, confused, or forgetful after a bump, blow, or jolt to the head or body (Table 13).

Table 13	Coach's decision on how to manage an athlete exhibiting the following signs and symptoms after a bump, blow, or jolt to the head or body.					
		Class A (n=247)	Class B (n=216)	Class C (n=301)	Class D (n=246)	Overall (n=1,016)
Appears dazed or stunned	KEEP OUT	92.7%	90.3%	93.4%	85.4%	90.6%
	RETURN TO PLAY	0.4%	0.0%	0.3%	0.0%	0.2%
	TOO CLOSE TO CALL	6.9%	9.7%	6.3%	14.6%	9.2%
Is confused about assignment or position	KEEP OUT	91.1%	90.2%	90.4%	87.0%	89.7%
	RETURN TO PLAY	1.6%	0.5%	1.0%	1.2%	1.1%
	TOO CLOSE TO CALL	7.3%	9.3%	8.6%	11.8%	9.2%
Forgets an instruction	KEEP OUT	73.8%	70.7%	70.7%	72.2%	71.8%
	RETURN TO PLAY	3.7%	2.8%	2.3%	3.3%	3.0%
	TOO CLOSE TO CALL	22.5%	26.5%	27.0%	24.5%	25.2%
Is unsure of game, score, or opponent	KEEP OUT	99.6%	97.7%	98.0%	98.0%	98.3%
	RETURN TO PLAY	0.0%	0.0%	0.0%	0.0%	0.0%
	TOO CLOSE TO CALL	0.4%	2.3%	2.0%	2.0%	1.7%

Table 13		continued				
		Class A (n=247)	Class B (n=216)	Class C (n=301)	Class D (n=246)	Overall (n=1,016)
Moves clumsily	KEEP OUT	95.5%	91.1%	94.3%	92.3%	93.5%
	RETURN TO PLAY	0.4%	0.0%	0.0%	0.4%	0.2%
	TOO CLOSE TO CALL	4.0%	8.9%	5.7%	7.3%	6.3%
Answers questions slowly	KEEP OUT	87.4%	82.6%	84.2%	82.4%	84.2%
	RETURN TO PLAY	0.4%	0.0%	0.3%	1.6%	0.6%
	TOO CLOSE TO CALL	12.2%	17.4%	15.4%	15.9%	15.2%
Shows personality or behavior changes	KEEP OUT	95.5%	94.9%	94.7%	93.9%	94.8%
	RETURN TO PLAY	0.4%	0.0%	0.0%	0.0%	0.1%
	TOO CLOSE TO CALL	4.1%	5.1%	5.6%	6.1%	5.1%
Can't recall events prior to the hit or fall	KEEP OUT	99.2%	98.1%	99.0%	99.2%	98.9%
	RETURN TO PLAY	0.4%	0.0%	0.3%	0.4%	0.3%
	TOO CLOSE TO CALL	0.4%	1.9%	0.7%	0.4%	0.8%
Can't recall events after the hit or fall	KEEP OUT	99.6%	99.1%	99.3%	98.8%	99.2%
	RETURN TO PLAY	0.4%	0.0%	0.3%	0.0%	0.2%
	TOO CLOSE TO CALL	0.0%	0.9%	0.3%	1.2%	0.6%
Loses consciousness (even briefly)	KEEP OUT	100%	99.5%	100%	100%	99.9%
	RETURN TO PLAY	0.0%	0.0%	0.0%	0.0%	0.0%
	TOO CLOSE TO CALL	0.0%	0.5%	0.0%	0.0%	0.1%

Recognition of Concussions

On a "true/false quiz" about some of the basic facts about concussions, in which each correct response was "true", over 99% of respondents answered each item correctly (Table 14).

Table 14		Recognition of concussions (n=1,016)	
		True	False
A concussion is a type of traumatic brain injury or TBI.		99.3%	0.7%
All concussions are serious.		99.5%	0.5%
Concussions can occur even without a loss of consciousness.		100%	0.0%
Recognition and proper response to concussions when they first appear may prevent further injury or even death.		99.8%	0.2%
Concussions are caused by a bump, blow, or jolt to the head and can change the way your brain normally works.		100%	0.0%
Even a "ding", "getting your bell rung" or what seems to be a mild bump or blow to the head can be serious.		99.9%	0.1%
Concussions can occur in any sport or recreational activity.		99.8%	0.2%
A repeat concussion that occurs before the brain recovers from the first can slow the recovery or increase the likelihood of having long-term problems.		100%	0.0%

Note: only overall results presented due to 99% or more of respondents recognizing each item as true.

Selected Survey Results by Type of Concussion Training(s) Attended

In order to assess certain aspects of the types of concussion training in which coaches may participate in accordance with the law, two survey items are cross-tabulated below by the type of concussion training that respondents attended. Respondents were asked if they participated in one of the four concussion trainings approved by the Nebraska Department of Health and Human Services, and also given the option to identify any other concussion trainings they may have attended.

Note the relatively small sample sizes for some of the trainings. Also note that many respondents have participated in multiple trainings and we are unable to know which training they had in mind when answering follow-up questions about concussion training. Therefore, **results in this section should only be interpreted broadly.**

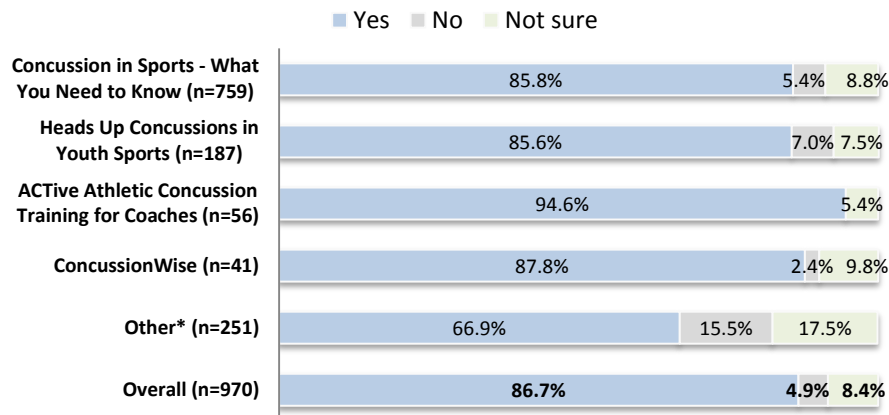
Between 70% and 95% of respondents who participated in one of the four state-approved concussion trainings reported that they received a certificate of attendance/completion, whereas just over one-fourth (25.9%) of those who participated in another (i.e., non-approved) concussion training indicated that they received a certificate of attendance/completion. Those who participated in ConcussionWise indicated with the greatest frequency (95.1%) that they received a certificate of attendance or completion. Note, however, the small sample size (just 41 respondents attended ConcussionWise) (Table 15).

Table 15		Received a certificate of attendance/completion among concussion training participants by type of concussion training			
Concussion in Sports - What You Need to Know (n=759)	Heads Up Concussions in Youth Sports (n=187)	ACTIVE Athletic Concussion Training for Coaches (n=56)	ConcussionWise (n=41)	Other* (n=251)	Overall (n=970)
70.5%	75.9%	80.4%	95.1%	25.9%	64.8%

*Most frequent "Other" responses include: speaker/training provided by a local health agency/clinic/hospital, ImPACT Concussion Training, athletic trainer provided training, training at coaches clinic, Nebraska Sports Concussion Network, online training (unspecified), attended training in the past, school provided training/information, Nebraska Orthopedic, New West, don't remember/not sure/unknown.

Respondents who participated in concussion training were also asked if the concussion training improved their ability to recognize the signs and symptoms of concussions. Between 85% and 95% of those who attended one of the four approved trainings indicated in the affirmative that the training improved their ability to recognize the signs and symptoms of concussions, whereas just two-thirds (66.9%) of those who participated in another (i.e., non-approved) training indicated that the training they attended improved their ability to recognize the signs and symptoms of concussion training. Respondents who attended ACTIVE Athletic Concussion Training for Coaches reported with the highest frequency (94.6%) that the training improved their ability to recognize the signs and symptoms of concussions. Again, note the small sample size (just 56 respondents attended ACTIVE Athletic Concussion Training) (Figure 13).

Figure 13. Concussion training improved ability to recognize the signs and symptoms of concussions among concussion training participants by type of concussion training



*Most frequent "Other" responses include: speaker/training provided by a local health agency/clinic/hospital, ImPACT Concussion Training, athletic trainer provided training, training at coaches clinic, Nebraska Sports Concussion Network, online training (unspecified), attended training in the past, school provided training/information, Nebraska Orthopedic, New West, don't remember/not sure/unknown.

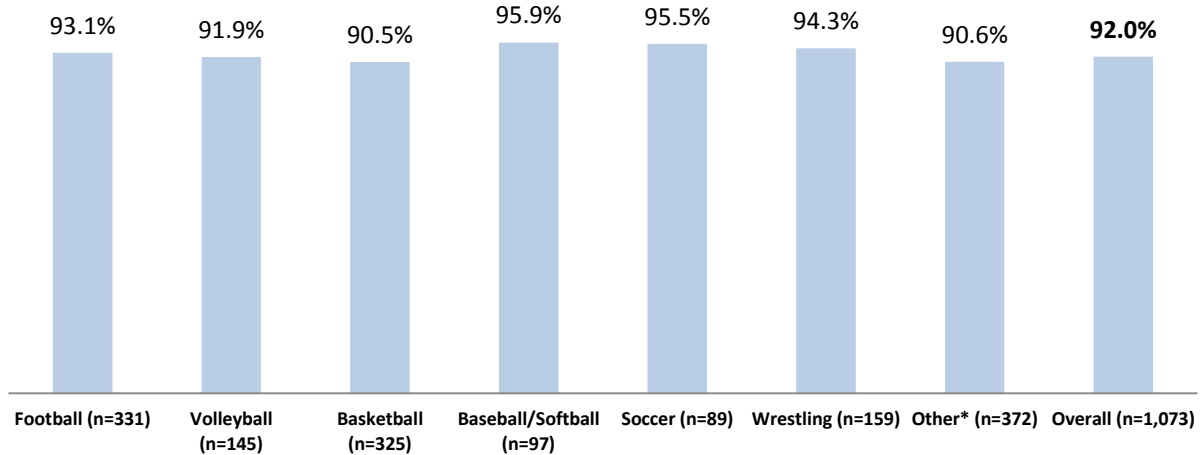
Selected Survey Results by Sport(s) Coached

Selected surveys results in this section are cross-tabulated in this section by the sport(s) coached by the respondent. Just as in the preceding section, **results in this section should only be interpreted broadly** due to the fact that many respondents reported coaching multiple sports, and there is no way to determine the sport they had in mind when responding to certain survey items.

Concussion Training

Schools do not appear to be targeting concussion training to coaches of only certain sports, evidenced by the fact that between 90% and 96% of coaches within each sport category indicated that training was made available to them (Figure 14), and between 88% and 97% of coaches within each sport category indicated that they participated in some form of concussion training (Table 16).

Figure 14. School made training available before the start of practice on the signs and symptoms of concussions by sport coached



*"Other" includes track and field, cross country, golf, tennis, swimming, and junior high sports.

Table 16	Participation in concussion training by sport coached (multiple responses)		
	Attended concussion training provided by school	Attended concussion training provided by another organization	Attended <i>any</i> concussion training
Football (n=331)	70.1%	44.4%	94.3%
Volleyball (n=145)	68.3%	29.0%	88.3%
Basketball (n=325)	67.1%	36.6%	92.3%
Baseball/Softball (n=97)	78.4%	32.0%	96.9%
Soccer (n=89)	78.7%	20.2%	89.9%
Wrestling (n=159)	74.8%	32.7%	95.0%
Other* (n=372)	67.7%	34.9%	88.4%
Overall (n=1,073)	70.9%	32.9%	91.2%

*"Other" includes track and field, cross country, golf, tennis, swimming, and junior high sports.

The Nebraska Concussion Awareness Act (LB260)

Between 82% and 94% of respondents perceived LB260 as effective or highly effective in allowing a student athlete with a concussion to recover completely before returning to play. Respondents who indicated football and wrestling as the sports they coached perceived LB260 with greater neutrality compared to coaches of other sports (Table 17). Coaches of these sports were also more likely to indicate that LB260 has helped their ability to coach, but has also added difficulties to their position (Table 18).

Table 17	Perceived effectiveness of LB260 in allowing a student with a concussion to recover completely before returning to play by sport coached*		
	Effective or highly effective	Neither ineffective nor effective	Ineffective or highly ineffective
Football (n=317)	85.2%	13.2%	1.6%
Volleyball (n=135)	91.9%	7.4%	0.7%
Basketball (n=314)	89.5%	9.9%	0.6%
Baseball/Softball (n=95)	93.7%	5.3%	1.1%
Soccer (n=83)	92.7%	7.2%	0.0%
Wrestling (n=150)	82.0%	16.0%	2.0%
Other ^o (n=360)	90.3%	9.2%	0.6%
Overall (n=1,025)	89.1%	10.0%	0.9%

*Respondents were notified that all four components included in Table 7 above were part of LB260 prior to responding to this survey item.

^o"Other" includes track and field, cross country, golf, tennis, swimming, and junior high sports.

Table 18	Impact of LB260 on coaching ability by sport coached*				
	It has helped	It has helped, but there have been some difficulties added to my position as a coach	It has neither helped, nor hindered	It has hindered my ability to coach	Not sure
Football (n=317)	23.3%	36.3%	32.2%	4.7%	3.5%
Volleyball (n=135)	34.8%	23.7%	37.0%	0.0%	4.4%
Basketball (n=314)	31.2%	28.0%	33.8%	2.5%	4.5%
Baseball/Softball (n=95)	34.7%	21.1%	38.9%	3.2%	2.1%
Soccer (n=83)	34.9%	22.9%	34.9%	1.2%	6.0%
Wrestling (n=150)	23.3%	45.3%	26.0%	3.3%	2.0%
Other ^o (n=360)	31.4%	21.7%	36.4%	2.2%	8.3%
Overall (n=1,025)	30.7%	26.3%	34.9%	2.6%	5.4%

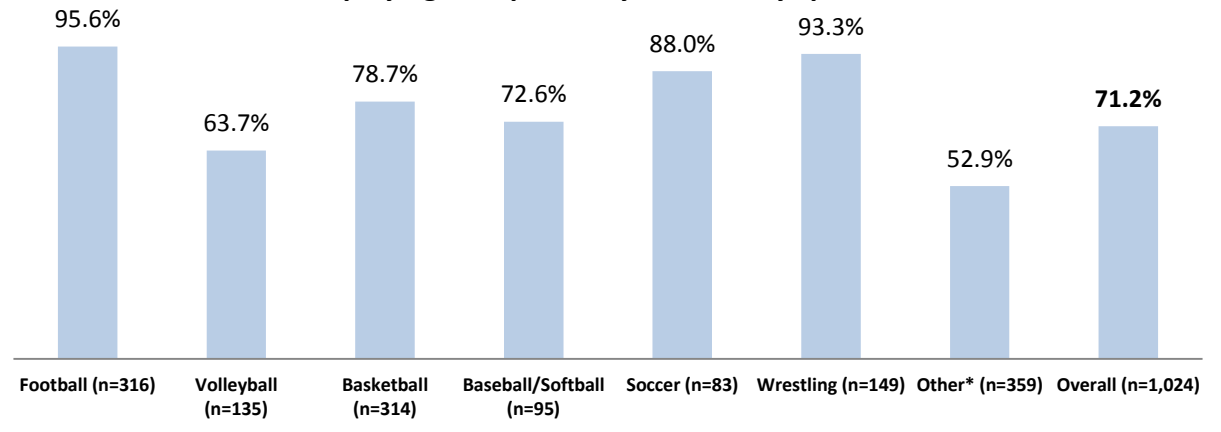
*Respondents were notified that all four components included in Table 7 above were part of LB260 prior to responding to this survey item.

^o"Other" includes track and field, cross country, golf, tennis, swimming, and junior high sports.

Removal of Athletes from Play

Respondents who indicated football, wrestling, and/or soccer as the sport they coach reported the highest rates (between 88% and 96%) of coaching an athlete who suffered a concussion or was suspected of suffering a concussion while playing the sport they coached (Figure 15).

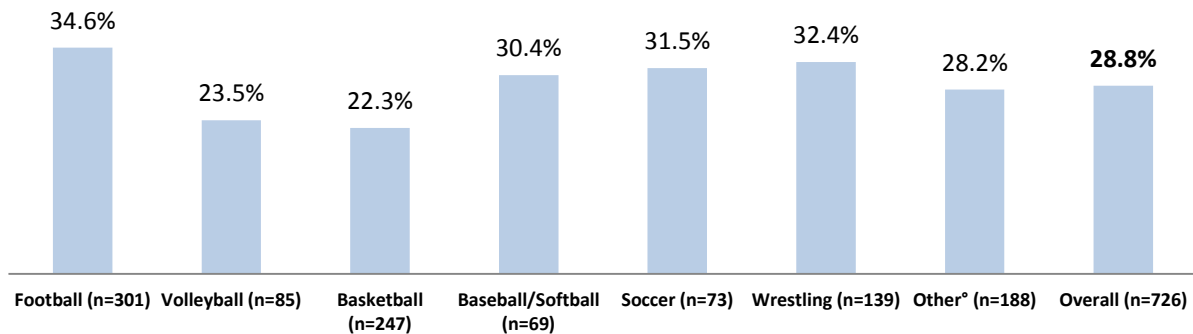
Figure 15. Percentage of respondents who have coached an athlete who ever suffered a concussion of been suspected of suffering a concussion while playing the sport they coached by sport coached



*"Other" includes track and field, cross country, golf, tennis, swimming, and junior high sports.

The remaining figures (16 through 19) in this section present specific barriers to the proper removal of athletes with suspected concussions from play. As previously noted, use caution when interpreting results by sport coached, due to respondents indicating that they coach multiple sports and the inability to know what sport they had in mind when responding to certain survey items.

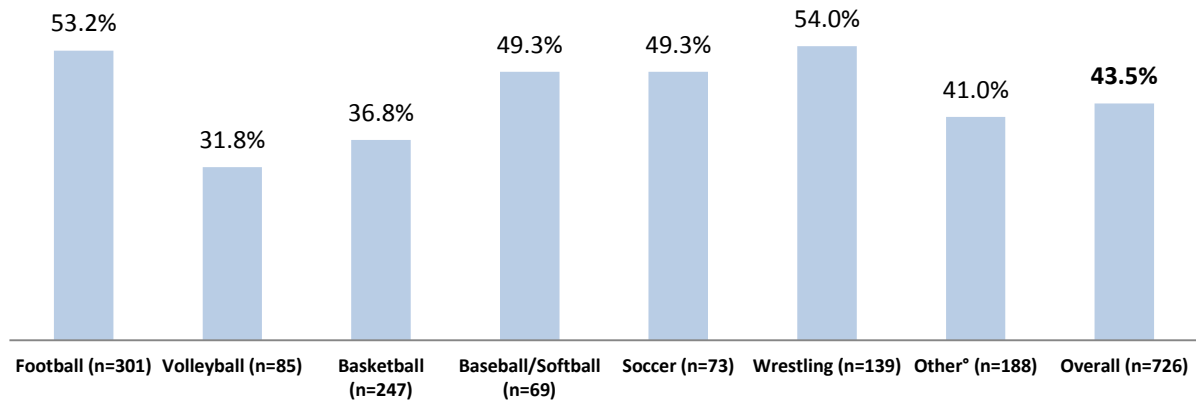
Figure 16. Percentage of respondents* who know of an athlete they coached that did not report concussion symptoms in order to continue playing by sport coached



*Among those who have coached an athlete who ever suffered a concussion or was suspected of suffering a concussion while playing the sport coached by the survey respondent.

°"Other" includes track and field, cross country, golf, tennis, swimming, and junior high sports.

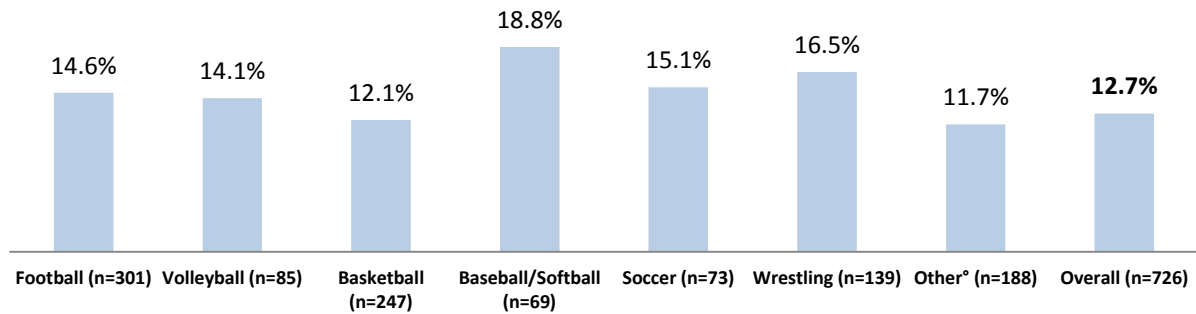
Figure 17. Percentage of respondents* reporting that an athlete they coached has ever resisted being removed from play due to a suspected concussion by sport coached



*Among those who have coached an athlete who ever suffered a concussion or was suspected of suffering a concussion while playing the sport coached by the survey respondent.

°"Other" includes track and field, cross country, golf, tennis, swimming, and junior high sports.

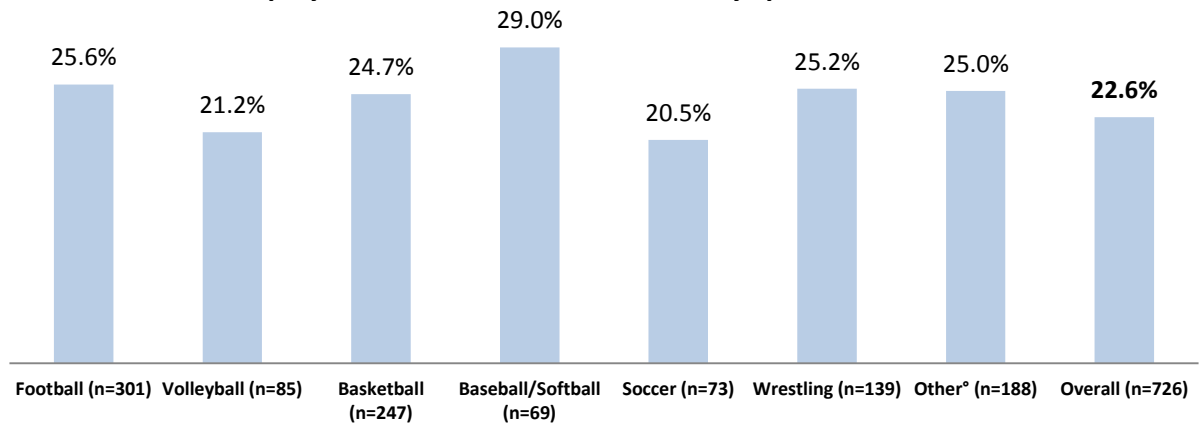
Figure 18. Percentage of respondents* reporting that the parents of an athlete with a suspected concussion ever tried to stop them from removing their child from play by sport coached



*Among those who have coached an athlete who ever suffered a concussion or was suspected of suffering a concussion while playing the sport coached by the survey respondent.

°"Other" includes track and field, cross country, golf, tennis, swimming, and junior high sports.

Figure 19. Percentage of respondents* reporting the parents of an athlete with a suspected concussion have ever tried to have their child return to play without a doctor's clearance by sport coached



*Among those who have coached an athlete who ever suffered a concussion or was suspected of suffering a concussion while playing the sport coached by the survey respondent.

^o"Other" includes track and field, cross country, golf, tennis, swimming, and junior high sports.

Conclusion

Results from the Nebraska Sports Concussion Coach Survey indicate that most schools (92% according to this sample of head coaches of high school sports) are making training available to coaches on the signs and symptoms of concussions. Although over 90% of respondents indicated that their school had made concussion training available, just seven-in-ten (71%) of surveyed head coaches attended concussion training provided by their school. Including those who attended concussion training provided by another organization (i.e., not their school), 91% of respondents reported that they have attended some form of concussion training. Respondents from larger schools were substantially more likely to attend concussion training provided by their school than respondents from smaller schools. At the same time, respondents from smaller schools were more likely to attend concussion training provided by another organization. Also, as school size increased, the report that concussion training was made mandatory for coaches also increased. These results may indicate that smaller (and most likely rural) schools may be in need of some technical assistance on how to make concussion training available to coaches, which is an important requirement of Nebraska's Concussion Awareness Act (LB260).

Coaches are likely to play an important role in the proper removal of athletes with suspected concussions from play. LB260 explicitly mandates that an athlete must be removed from participation if he or she is suspected of having a concussion and may not return to participation until evaluated by a licensed medical professional. Around three-fourths (73%) of respondents indicated that their school provided them with education or training on the components and requirements of LB260. However, the vast majority (91%) of respondents were aware of this removal-from-play requirement of LB260. Coaches appear to hold generally positive attitudes about LB260, with 89% perceiving the law as effective or highly effective and very few (3%) indicating that the law has hindered their ability to coach.

The vast majority of coaches appear to have the knowledge and will to properly treat athletes with a suspected concussion by removing them from play. However, there are some alarming barriers facing coaches from doing so. Among those who have coached an athlete who suffered a concussion or was suspected of suffering a concussion (which was 71% of the survey sample), 29% reported knowing of an athlete they coached not reporting their concussion symptoms in order to continue playing, 44% reported that an athlete they coached has resisted being removed from play due to a suspected concussion, and 13% reported that the parents of an athlete with a suspected concussion have tried to stop them from removing their child from play.

Without proper recovery time, an individual who has sustained a concussion is at serious risk of sustaining a second impact concussion, the consequences of which can be long-term. Although the vast majority of coaches appear to know how to properly handle an athlete with a suspected concussion, there is always the risk that a coach may have an athlete that sustained a concussion in another activity, which the coach may not know about. Less than half (44%) of respondents reported being always or often notified when a student athlete suffers a concussion in another school sport, and a minority (19%) reported being always or often notified when a student athlete suffers a concussion in a non-school activity or club sport.

Certainly, results from the Nebraska Sports Concussion Coach Survey indicate a continued need for public awareness about the severity of concussions. Results from this survey may serve as a baseline, from which changes in concussion training participation by coaches, the attitudes and knowledge of coaches regarding concussions, and barriers to the proper treatment of athletes with suspected concussions may be tracked over time.