

SUMMARY REPORT

**MICHIGAN HIGH SCHOOL ATHLETIC ASSOCIATION
HEAD INJURY REPORTING SYSTEM**

2021-2022 School Year

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I. Introduction & Methodology

1.1 Overview

Promotion of student-athlete health and safety is a core value of interscholastic athletics, and one of the guiding principles of the Michigan High School Athletic Association in its mission to increase participation and raise the quality of the experience for all involved in school sports in the state of Michigan. Over the past decade, few issues regarding the health of young student-athletes and the safety of school sports have generated as much concern as head trauma and concussions. Although equipment advancements, increases in coaches' education, and safety-oriented changes to practice policies and game rules have made school sports safer than they have ever been, precise data on the frequency and severity of head injuries incurred during interscholastic athletic events is limited. Beginning in the 2015-16 school year, the MHSAA required all head injuries sustained during MHSAA sponsored activities be reported to the MHSAA through an online reporting system. The data generated from the MHSAA Head Injury Reporting System will establish a baseline, and eventually allow the MHSAA to determine progress year-to-year in Michigan school sports in this critical area of health and safety.

1.2 Aims

The specific objectives of the MHSAA Head Injury Reporting System are:

- A. Determine the incidence (total number) of head injuries sustained by athletes participating in MHSAA sponsored activities.
- B. Calculate and compare head injury prevalence rates using head injury report counts and participation data for MHSAA sponsored activities.
- C. Provide detailed information regarding head injuries sustained during MHSAA sponsored activities including athlete demographics, the circumstances of the injury event (date, practice or game, time during practice or game of injury, protective equipment worn, cause of injury event, initial examiner, etc.) as well as subsequent clearance/return to activity after the injury.
- D. Use the collected data to identify any patterns across variables.

1.3 Design

Beginning with the 2015-16 school year, head injury reporting became mandatory for MHSAA member schools. Under the MHSAA Concussion Protocol, **member schools are required to complete and submit an online report designated by the MHSAA to record and track head injury events when they occur in all levels of all sports during the season in practices and competitions.** The reporting mechanism developed by the MHSAA is identified in this report as the MHSAA Head Injury Reporting System. Reporting by member schools required completion of two basic online report forms; the first report completed after the initial head injury event, and the second completed after the student has received clearance to return to activity after the head injury or the season in which the injury occurred has ended.

Definitions

The MHSAA Concussion Protocol and Head Injury Reporting System defined a head injury as:

An injury that occurred as a result of participation during an in-season practice, scrimmage, or game in one of the 28 sports for which the MHSAA provides a post season tournament – namely baseball, boys and girls basketball, boys and girls bowling, girls competitive cheer, boys and girls cross country, football (11-player and 8-player), boys and girls golf, girls gymnastics, ice hockey, boys and girls alpine skiing, boys and girls lacrosse, boys and girls soccer, softball, boys and girls swimming & diving, boys and girls tennis, boys and girls track & field, volleyball, and wrestling – **and** – required the athlete be withheld from activity after exhibiting signs, symptoms, or behaviors consistent with a concussion (such as loss of consciousness, headache, dizziness, confusion or balance problems).

The MHSAA Concussion Protocol and Head Injury Reporting System defined clearance as:

Written authorization from an M.D., D.O., Nurse Practitioner, or Physician's Assistant to return to unrestricted activity.

Population

All male and female students grades 9-12 of MHSAA member schools participating in MHSAA sponsored activities during the 2021-22 school year.

The MHSAA is an association of approximately 1500 individual public, private and parochial high schools and junior high/middle schools. At the start of the 2021-22 school year, member schools include 750 high schools of various enrollments and resources (185 schools with an enrollment greater than 835 students, 188 schools with an enrollment between 834-399 students, 187 schools with an enrollment between 398-189 students, and 192 schools with an enrollment less than 188 students) and 800+ member junior/middle schools*.

*Junior high/middle school head injury data is not part of this report. Injuries to 6th, 7th and 8th graders participating on high school teams (allowable under specific circumstance for schools and cooperative programs with fewer than 100 students) were included.

1.4 Data Collection

As MHSAA member schools vary widely with respect to school personnel and resources (not all schools employ an athletic trainer, or even a full-time athletic administrator), the MHSAA Head Injury Reporting System was designed for use by athletic trainers, school administrators, and coaches. The system was accessed through login to MHSAA.com. Only users identified within the system as athletic trainer, school administrator (i.e. athletic director, athletic department secretary, principal, or superintendent), or coach had the ability to access to the online system, and submit and review reports for the school(s) with which they are associated. The MHSAA Concussion Protocol does not specifically legislate who at the school must complete and submit the report, nor does it specify a time frame to submit the report after a head injury event – local schools were left to make those decisions and create their own reporting protocol based on their personnel and resources. However, reports were procured by the end of each season.

The MHSAA Head Injury Reporting System process consisted of two parts: 1) an initial head injury report, and 2) subsequent follow-up report. After a head injury event, the school was required to complete and submit an initial head injury report. This initial report was an online form designed to collect general information about the student (i.e., grade, gender, level, sport) and the injury event, including event date, whether injury

event occurred in practice or game, time of injury event during practice or game, protective equipment worn on the head at the time of the event, cause of the event (i.e., person to person contact, person to object contact, person to ground contact, or unknown), surface type, initial examiner, and removal from play decision.)

After the initial head injury report was submitted, the report was assigned a unique seven-digit ID code and was saved in a report listing. This served as an electronic record of the head injury reports submitted by the school into the system and where the school accessed and completed a follow up report (details forthcoming). In addition to being saved in the report list, a PDF file of the report containing the ID code was generated and sent via email to the school. No personally identifiable information was included on the report in order to protect student privacy. Schools were instructed to print the PDF copy and record the injured student's name or student ID number as a means to link the report with the specific student so that report could be referenced for completion of the second part of the reporting process: the follow-up report.

The final part of the reporting process required completion of a follow-up report. The follow-up is a second online report form linked to the initial head injury report designed to collect general information regarding the student's return to activity after the head injury, including the official diagnosis of the head injury event, the date the student was authorized to return to activity, medical examiner authorizing return to activity, facility in which the student was seen by the authorizing medical examiner, conditions to return, and missed school as a result of injury event. The follow-up report was to be completed once the student received authorization to return to activity or the season ended.

1.5 Data Management

Initial head injury reports were reviewed by members of the MHSAA staff on a daily basis. The school was contacted if a clear reporting error or anomaly was identified during review. As schools were not given the ability to edit reports once submitted, all changes or removal of reports were handled by the MHSAA staff.

Follow-up reports were also reviewed on a weekly basis. Schools were contacted approximately three weeks after the reported injury date and then each week in the two to three weeks prior to the end of the season. If the head injury report remained unresolved, reminders were sent for completion of the follow-up report once the student received appropriate clearance or the season in which the injury occurred ended.

Head injury reports not diagnosed as concussions, and confirmed as no concussion in the follow-up report were marked and excluded from this report. Head injury reports with no follow-up report completed were included, however.

Schools with no head injury reports for a season (Fall, Winter, and Spring) were required to report this at the conclusion of each season by attesting to this information in the Head Injury Reporting System. Follow-up continued each season with all schools who had not reported concussion or zero concussion until data was received by no less than 99% of MHSAA member high schools.

1.6 Data Analysis

The data contained in this report is largely a summary of the data gathered by the MHSAA Head Injury Reporting System by sport.

Head injury prevalence rates were calculated by dividing head injury reports count by participation. For instance:

$$\text{Girls Soccer Head Injury Prevalence Rate} = \frac{\text{\# girls soccer head injury reports}}{\text{girls soccer participation \#}}$$

In order to more easily compare head injury prevalence rates between sports, the head injury prevalence rate was also expressed per 1,000 participants. Head injury prevalence rate per 1,000 participants was found by placing the head injury prevalence ratio (injury reports/participation) on one side of an equation and placing the ratio (X / 1,000 participants) on the other side of the equation and solving algebraically for X. Essentially, the head injury prevalence rate per 1,000 participants for each sport was found by multiplying the head injury prevalence rates by 1,000 and then rounding to the nearest whole number.

II. Overall Head Injury Reports

Table 2.1 Reported Head Injuries by Sport, MHSAA Head Injury Reporting System, 2021-22 School Year

Baseball	Varsity	34	Boys Golf	Varsity	1	Softball	Varsity	63
	Junior Varsity	16		Junior Varsity	0		Junior Varsity	44
	Freshman	3		Freshman	0		Freshman	0
	TOTAL	53		TOTAL	1		TOTAL	107
Boys Basketball	Varsity	60	Girls Golf	Varsity	1	Boys Swimming & Diving	Varsity	11
	Junior Varsity	41		Junior Varsity	0		Junior Varsity	0
	Freshman	22		Freshman	0		Freshman	0
	TOTAL	123		TOTAL	1		TOTAL	11
Girls Basketball	Varsity	151	Girls Gymnastics	Varsity	7	Girls Swimming & Diving	Varsity	29
	Junior Varsity	100		Junior Varsity	0		Junior Varsity	1
	Freshman	28		Freshman	0		Freshman	1
	TOTAL	279		TOTAL	7		TOTAL	31
Boys Bowling	Varsity	0	Ice Hockey	Varsity	59	Boys Tennis	Varsity	1
	Junior Varsity	0		Junior Varsity	2		Junior Varsity	0
	Freshman	0		Freshman	0		Freshman	0
	TOTAL	0		TOTAL	61		TOTAL	1
Girls Bowling	Varsity	0	Boys Lacrosse	Varsity	43	Girls Tennis	Varsity	2
	Junior Varsity	0		Junior Varsity	22		Junior Varsity	0
	Freshman	0		Freshman	0		Freshman	0
	TOTAL	0		TOTAL	65		TOTAL	2
Girls Competitive Cheer	Varsity	80	Girls Lacrosse	Varsity	47	Boys Track & Field	Varsity	10
	Junior Varsity	16		Junior Varsity	18		Junior Varsity	0
	Freshman	0		Freshman	0		Freshman	0
	TOTAL	96		TOTAL	65		TOTAL	10
Boys Cross Country	Varsity	3	Boys Skiing	Varsity	2	Girls Track & Field	Varsity	8
	Junior Varsity	0		Junior Varsity	0		Junior Varsity	0
	Freshman	0		Freshman	0		Freshman	0
	TOTAL	3		TOTAL	2		TOTAL	8
Girls Cross Country	Varsity	2	Girls Skiing	Varsity	4	Volleyball	Varsity	63
	Junior Varsity	0		Junior Varsity	0		Junior Varsity	36
	Freshman	0		Freshman	0		Freshman	21
	TOTAL	2		TOTAL	4		TOTAL	120
11-Player Football	Varsity	485	Boys Soccer	Varsity	104	Wrestling	Varsity	156
	Junior Varsity	396		Junior Varsity	27		Junior Varsity	25
	Freshman	116		Freshman	7		Freshman	0
	TOTAL	997		TOTAL	138		TOTAL	181
8-Player Football	Varsity	43	Girls Soccer	Varsity	195			
	Junior Varsity	10		Junior Varsity	58			
	Freshman	0		Freshman	3			
	TOTAL	53		TOTAL	256			

TOTAL REPORTS 2677

Table 2.2 Head Injury Prevalence Rates by Sport, MHSAA Head Injury Reporting System, 2021-22 School Year

SPORT	Boys*				Girls			
	PARTICIPANTS	HEAD INJURY REPORTS	HEAD INJURY REPORT PREVALENCE RATE	HEAD INJURY REPORTS PER THOUSAND PARTICIPANTS	PARTICIPANTS	HEAD INJURY REPORTS	HEAD INJURY REPORT PREVALENCE RATE	HEAD INJURY REPORTS PER THOUSAND PARTICIPANTS
Baseball	16,528	53	0.32%	3	-	-	-	-
Basketball	20,017	123	0.61%	6	13,596	279	2.05%	21
Bowling	4,085	0	0.00%	0	2,684	0	0.00%	0
Competitive Cheer	-	-	-	-	5,741	96	1.67%	17
Cross Country	8,058	3	0.04%	0	7,150	2	0.03%	0
Football - 11-player	31,084	997	3.21%	32	-	-	-	-
8-player	2,200	53	2.41%	24	-	-	-	-
Golf	6,829	1	0.01%	0	3,875	1	0.03%	0
Gymnastics	-	-	-	-	585	7	1.20%	12
Ice Hockey	3,174	61	1.92%	19	-	-	-	-
Lacrosse	4,773	65	1.36%	14	3,053	65	2.13%	21
Skiing	1,001	2	0.20%	2	837	4	0.48%	5
Soccer	13,161	138	1.05%	10	11,826	256	2.16%	22
Softball	-	-	-	-	11,800	107	0.91%	9
Swimming & Diving	4,359	11	0.25%	3	5,174	31	0.60%	6
Tennis	6,067	1	0.02%	0	7,936	2	0.03%	0
Track & Field	22,120	10	0.05%	0	15,594	8	0.05%	1
Volleyball	-	-	-	-	18,798	120	0.64%	6
Wrestling	9,057	181	2.00%	20	-	-	-	-

*Boys participation and head injury data includes both males AND females playing on primarily male teams.

Table 2.3 Head Injuries by Grade - All MHSAA High School Sports Included, MHSAA Head Injury Reporting System, 2021-22 School Year

	Boys		Girls		Overall	
	n	%	n	%	n	%
6th	0	0.0%	0	0.0%	0	0.0%
7th	1	0.1%	0	0.0%	1	0.0%
8th	1	0.1%	0	0.0%	1	0.0%
9th	489	29.1%	269	27.0%	758	28.3%
10th	443	26.4%	315	31.6%	758	28.3%
11th	366	21.8%	211	21.2%	577	21.6%
12th	381	22.7%	201	20.2%	582	21.7%
TOTAL	1681	100.0%	996	100.0%	2677	100.0%

Table 2.4 Head Injuries by Level of Competition - All MHSAA High School Sports Included, MHSAA Head Injury Reporting System, 2021-22 School Year

	Boys		Girls		Overall	
	n	%	n	%	n	%
Freshman	147	8.7%	54	5.4%	201	7.5%
Junior Varsity	533	31.7%	279	28.0%	812	30.3%
Varsity	1001	59.5%	663	66.6%	1664	62.2%
TOTAL	1681	100.0%	996	100.0%	2677	100.0%

Table 2.5 Head Injuries by Type of Exposure - All MHSAA High School Sports Included, MHSAA Head Injury Reporting System, 2021-22 School Year

	Boys		Girls		Overall	
	n	%	n	%	n	%
Practice	525	31.2%	320	32.1%	845	31.6%
Competition	1156	68.8%	676	67.9%	1832	68.4%
TOTAL	1681	100.0%	996	100.0%	2677	100.0%

Table 2.6 Head Injuries by Time during Practice or Competition of Injury Event - All MHSAA High School Sports Included, MHSAA Head Injury Reporting System, 2021-22 School Year

	Boys		Girls		Overall	
	n	%	n	%	n	%
Start of practice	44	8.4%	37	11.6%	81	9.6%
Middle of practice	301	57.3%	167	52.2%	468	55.4%
End of practice	180	34.3%	116	36.3%	296	35.0%
PRACTICE TOTAL	525	100.0%	320	100.0%	845	100.0%
Start of competition	115	9.9%	75	11.1%	190	10.4%
Middle of competition	566	49.0%	345	51.0%	911	49.7%
End of competition	475	41.1%	256	37.9%	731	39.9%
COMPETITION TOTAL	1156	100.0%	676	100.0%	1832	100.0%

Table 2.7 Activity Type for All Head Injury Events during Practice – All MHSAA High School Sports Included, MHSAA Head Injury Reporting System, 2021-22 School Year

	Boys		Girls		Overall	
	n	%	n	%	n	%
During a drill	380	72.4%	249	77.8%	629	74.4%
During simulated competition-scrimmage	132	25.1%	65	20.3%	197	23.3%
Not specified	13	2.5%	6	1.9%	19	2.2%
TOTAL	525	100.0%	320	100.0%	845	100.0%

Table 2.8 Head Injuries by Cause of Injury Event - All MHSAA High School Sports Included, MHSAA Head Injury Reporting System, 2021-22 School Year

	Boys		Girls		Overall	
	n	%	n	%	n	%
Person to person contact	1079	64.2%	336	33.7%	1415	52.9%
Person to object contact (e.g. wall, equipment)	152	9.0%	326	32.7%	478	17.9%
Person to playing surface contact	291	17.3%	276	27.7%	567	21.2%
Uncertain as to the cause of the event	159	9.5%	58	5.8%	217	8.1%
TOTAL	1681	100.0%	996	100.0%	2677	100.0%

Table 2.9 Head Injuries by Initial Examiner - All MHSAA High School Sports Included, MHSAA Head Injury Reporting System, 2021-22 School Year

	Boys		Girls		Overall	
	n	%	n	%	n	%
Athletic trainer	1068	63.5%	555	55.7%	1623	60.6%
Coach	220	13.1%	231	23.2%	451	16.8%
Sideline emergency personnel	7	0.4%	2	0.2%	9	0.3%
Other appropriate health care professional	39	2.3%	18	1.8%	57	2.1%
DO	8	0.5%	3	0.3%	11	0.4%
MD	43	2.6%	13	1.3%	56	2.1%
PA	3	0.2%	1	0.1%	4	0.1%
NP	2	0.1%	2	0.2%	4	0.1%
Athletic director	7	0.4%	5	0.5%	12	0.4%
Multiple examiners	284	16.9%	166	16.7%	450	16.8%
TOTAL	1681	100.0%	996	100.0%	2677	100.0%

Table 2.10 Athlete Removal from Activity at the Time of Injury Event – All MHSAA High School Sports Included, MHSAA Head Injury Reporting System, 2021-22 School Year

	Boys		Girls		Overall	
	n	%	n	%	n	%
Removed	1349	80.2%	791	79.4%	2140	79.9%
Not removed*	332	19.8%	205	20.6%	537	20.1%
TOTAL	1681	100.0%	996	100.0%	2677	100.0%

*Not indicating the injury was mismanaged at the time of the event; athlete may not have reported injury, symptoms may not have presented until after the event, etc.

Table 2.11 Athletes Reporting Previous Concussion after Head Injury Event – All MHSAA High School Sports Included, MHSAA Head Injury Reporting System, 2021-22 School Year

	Boys		Girls		Overall	
	n	%	n	%	n	%
Reported at least one previous concussion	294	17.5%	161	16.2%	455	17.0%
No reported previous concussions	1387	82.5%	835	83.8%	2222	83.0%
TOTAL	1681	100.0%	996	100.0%	2677	100.0%

Table 2.12 Most Recent Concussion for Athletes Reporting Previous Concussion after Head Injury Event – All MHSAA High School Sports Included, MHSAA Head Injury Reporting System, 2021-22 School Year

	Boys		Girls		Overall	
	n	%	n	%	n	%
Within last month	15	5.1%	3	1.9%	18	4.0%
Within one to six months	23	7.8%	25	15.5%	48	10.5%
Within six months to one year	46	15.6%	31	19.3%	77	16.9%
Over one year	210	71.4%	102	63.4%	312	68.6%
TOTAL	294	100.0%	161	100.0%	455	100.0%

Table 2.13 Number of Previous Concussions for Athletes Reporting Previous Concussion after Head Injury Event – All MHSAA High School Sports Included, MHSAA Head Injury Reporting System, 2021-22 School Year

	Boys		Girls		Overall	
	n	%	n	%	n	%
1 concussion	223	75.9%	110	68.3%	333	73.2%
2 concussions	44	15.0%	28	17.4%	72	15.8%
3 concussions	16	5.4%	8	5.0%	24	5.3%
≥4 concussions	9	3.1%	10	6.2%	19	4.2%
Not specified	2	0.7%	5	3.1%	7	1.5%
TOTAL	294	100.0%	161	100.0%	455	100.0%

Table 2.14 Head Injuries by Athlete Clearance to Return to Activity before the End of Season in which the Injury Event Occurred - All MHSAA High School Sports Included, MHSAA Head Injury Reporting System, 2021-22 School Year

	Boys		Girls		Overall	
	n	%	n	%	n	%
Received written authorization to return by the end of season	1389	82.6%	804	80.7%	2193	81.9%
Did not receive written authorization to return by the end of season	257	15.3%	143	14.4%	400	14.9%
Follow-up Report not completed	35	2.1%	49	4.9%	84	3.1%
TOTAL	1681	100.0%	996	100.0%	2677	100.0%

Table 2.15 Head Injuries by Medical Examiner Authorizing Return to Activity - All MHSAA High School Sports Included, MHSAA Head Injury Reporting System, 2021-22 School Year

	Boys		Girls		Overall	
	n	%	n	%	n	%
MD	755	44.9%	433	43.5%	1188	44.4%
DO	341	20.3%	174	17.5%	515	19.2%
PA	141	8.4%	86	8.6%	227	8.5%
NP	152	9.0%	111	11.1%	263	9.8%
Medical examiner data not available*	292	17.4%	192	19.3%	484	18.1%
TOTAL	1681	100.0%	996	100.0%	2677	100.0%

Table 2.16 Head Injuries by Facility where Medical Examiner Authorized Return to Activity - All MHSAA High School Sports Included, MHSAA Head Injury Reporting System, 2021-22 School Year

	Boys		Girls		Overall	
	n	%	n	%	n	%
Hospital	55	3.3%	18	1.8%	73	2.7%
Urgent or Ready Care business	126	7.5%	74	7.4%	200	7.5%
Primary care physician or pediatrician's office	902	53.7%	561	56.3%	1463	54.7%
Neurologist's office	108	6.4%	51	5.1%	159	5.9%
Team doctor	198	11.8%	100	10.0%	298	11.1%
Medical facility data not available*	292	17.4%	192	19.3%	484	18.1%
TOTAL	1681	100.0%	996	100.0%	2677	100.0%

Table 2.17 Head Injuries by Clearance Return to Activity Conditions - All MHSAA High School Sports Included, MHSAA Head Injury Reporting System, 2021-22 School Year

	Boys		Girls		Overall	
	n	%	n	%	n	%
Unconditional return	1256	74.7%	726	72.9%	1982	74.0%
Conditions to return	133	7.9%	78	7.8%	211	7.9%
Return to activity data not available*	292	17.4%	192	19.3%	484	18.1%
TOTAL	1681	100.0%	996	100.0%	2677	100.0%

Table 2.18 Head Injuries by Missed School Days after Injury Event Date - All MHSAA High School Sports Included, MHSAA Head Injury Reporting System, 2021-22 School Year

	Boys		Girls		Overall	
	n	%	n	%	n	%
0 Days	884	52.6%	473	47.5%	1357	50.7%
1-2 Days	348	20.7%	227	22.8%	575	21.5%
3-6 Days	100	5.9%	81	8.1%	181	6.8%
7-9 Days	26	1.5%	12	1.2%	38	1.4%
10-20 Days	27	1.6%	11	1.1%	38	1.4%
≥21 Days	4	0.2%	0	0.0%	4	0.1%
Missed school data not available*	292	17.4%	192	19.3%	484	18.1%
TOTAL	1681	100.0%	996	100.0%	2677	100.0%

Table 2.19 Head Injuries by Time between Injury Event Date and Authorization Date to Return - All MHSAA High School Sports Included, MHSAA Head Injury Reporting System, 2021-22 School Year

	Boys		Girls		Overall	
	n	%	n	%	n	%
1-2 Days	18	1.1%	19	1.9%	37	1.4%
3-5 Days	122	7.3%	60	6.0%	182	6.8%
6-10 Days	397	23.6%	242	24.3%	639	23.9%
11-15 Days	431	25.6%	230	23.1%	661	24.7%
16-20 Days	166	9.9%	108	10.8%	274	10.2%
≥21 Days	228	13.6%	132	13.3%	360	13.4%
Data not available**	319	19.0%	205	20.6%	524	19.6%
TOTAL	1681	100.0%	996	100.0%	2677	100.0%

84 Missing Follow-up Reports*

400 Did not receive clearance to return to activity before the end of season (thus no follow-up data)*

40 Data entry errors**

III. Baseball Head Injury Reports

Table 3.1 Head Injury Prevalence Rate for Baseball, MHSAA Head Injury Reporting System, 2021-22 School Year

Baseball Participation	16,528
All Baseball Head Injuries	53
Baseball Head Injury Prevalence Rate (reported head injuries/total participants)	0.32%
Baseball Head Injury Prevalence Rate Per Thousand Participants	3

Table 3.2 Baseball Head Injuries by Level of Competition, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Varsity	34	64.2%
Junior Varsity	16	30.2%
Freshman	3	5.7%
TOTAL	53	100.0%

Table 3.3 Baseball Head Injuries by Type of Exposure, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Practice	15	28.3%
Competition	38	71.7%
TOTAL	53	100.0%

Table 3.4 Baseball Head Injuries by Time during Practice or Competition of Injury, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Start of practice	3	20.0%
Middle of practice	8	53.3%
End of practice	4	26.7%
PRACTICE TOTAL	15	100.0%
Start of competition	10	26.3%
Middle of competition	21	55.3%
End of competition	7	18.4%
COMPETITION TOTAL	38	100.0%

Table 3.5 Activity Type for All Baseball Head Injury Events during Practice, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
During a drill	14	93.3%
During simulated competition-scrimmage	1	6.7%
Not specified	0	0.0%
TOTAL	15	100.0%

Table 3.6 Baseball Head Injuries by Cause of Injury, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Person to person contact	13	24.5%
Person to object contact (e.g. wall, equipment)	35	66.0%
Person to playing surface contact	3	5.7%
Uncertain as to the cause of the event	2	3.8%
TOTAL	53	100.0%

Table 3.7 Person to Playing Surface Contact Baseball Head Injuries by Surface Type, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Natural grass	1	33.3%
Dirt	1	33.3%
Concrete	1	33.3%
TOTAL	3	100.0%

Table 3.8 Baseball Head Injuries by Initial Examiner, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Athletic trainer	23	43.4%
Coach	16	30.2%
Sideline emergency personnel	0	0.0%
Other appropriate health care professional	2	3.8%
DO	0	0.0%
MD	0	0.0%
PA	0	0.0%
NP	0	0.0%
Athletic director	0	0.0%
Multiple examiners	12	22.6%
TOTAL	53	100.0%

Table 3.9 Baseball Athlete Removal from Activity at the Time of Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Removed	47	88.7%
Not removed*	6	11.3%
TOTAL	53	100.0%

*Not indicating the injury was mismanaged at the time of the event; athlete may not have reported injury, symptoms may not have presented until after the event, etc.

Table 3.10 Baseball Athletes Reporting Previous Concussion after Head Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Reported at least one previous concussion	9	17.0%
No reported previous concussions	44	83.0%
TOTAL	53	100.0%

Table 3.11 Most Recent Concussion for Baseball Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Within last month	2	22.2%
Within one to six months	2	22.2%
Within six months to one year	0	0.0%
Over one year	5	55.6%
TOTAL	9	100.0%

Table 3.12 Number of Previous Concussions for Baseball Athletes Reporting Previous Concussion after Head Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
1 concussion	7	77.8%
2 concussions	0	0.0%
3 concussions	0	0.0%
≥4 concussions	0	0.0%
Not specified	2	22.2%
TOTAL	9	100.0%

Table 3.13 Baseball Head Injuries by Athlete Clearance to Return to Activity before the End of Season in which the Injury Occurred, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Received written authorization to return by the end of season	40	75.5%
Did not receive written authorization to return by the end of season	7	13.2%
Follow-up Report not completed	6	11.3%
TOTAL	53	100.0%

Table 3.14 Baseball Head Injuries by Medical Examiner Authorizing Return to Activity, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
MD	17	32.1%
DO	15	28.3%
PA	4	7.5%
NP	4	7.5%
Medical examiner data not available*	13	24.5%
TOTAL	53	100.0%

Table 3.15 Baseball Head Injuries by Facility where Medical Examiner Authorized Return to Activity, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Hospital	1	1.9%
Urgent or Ready Care business	5	9.4%
Primary care physician or pediatrician's office	24	45.3%
Neurologist's office	6	11.3%
Team doctor	4	7.5%
Medical facility data not available*	13	24.5%
TOTAL	53	100.0%

Table 3.16 Baseball Head Injuries by Clearance to Return to Activity Conditions, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Unconditional return	37	69.8%
Conditions to return	3	5.7%
Return to activity data not available*	13	24.5%
TOTAL	53	100.0%

Table 3.17 Baseball Head Injuries by Missed School Days after Injury Event Date, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
0 Days	24	45.3%
1-2 Days	15	28.3%
3-6 Days	1	1.9%
7-9 Days	0	0.0%
10-20 Days	0	0.0%
≥21 Days	0	0.0%
Missed school data not available*	13	24.5%
TOTAL	53	100.0%

Table 3.18 Baseball Head Injuries by Time between Head Injury Event Date and Authorization Date to Return, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
1-2 Days	2	3.8%
3-5 Days	2	3.8%
6-10 Days	18	34.0%
11-15 Days	13	24.5%
16-20 Days	2	3.8%
≥21 Days	3	5.7%
Data not available**	13	24.5%
TOTAL	53	100.0%

6 Missing Follow-up Reports*

7 Did not receive clearance to return to activity before the end of season (thus no follow-up data)*

0 Data entry errors**

IV. Boys Basketball Head Injury Reports

Table 4.1 Head Injury Prevalence Rate for Boys Basketball, MHSAA Head Injury Reporting System, 2021-22 School Year

Boys Basketball Participation	20,017
All Reported Boys Basketball Head Injuries	123
Boys Basketball Head Injury Prevalence Rate (reported head injuries/total participants)	0.61%
Boys Basketball Head Injury Prevalence Rate Per Thousand Participants	6

Table 4.2 Boys Basketball Head Injuries by Level of Competition, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Varsity	60	48.8%
Junior Varsity	41	33.3%
Freshman	22	17.9%
TOTAL	123	100.0%

Table 4.3 Boys Basketball Head Injuries by Gender, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Male	123	100.0%
Female	0	0.0%
TOTAL	123	100.0%

Table 4.4 Boys Basketball Head Injuries by Type of Exposure, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Practice	46	37.4%
Competition	77	62.6%
TOTAL	123	100.0%

Table 4.5 Boys Basketball Head Injuries by Time during Practice or Competition of Injury, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Start of practice	3	6.5%
Middle of practice	28	60.9%
End of practice	15	32.6%
PRACTICE TOTAL	46	100.0%
Start of competition	9	11.7%
Middle of competition	39	50.6%
End of competition	29	37.7%
COMPETITION TOTAL	77	100.0%

Table 4.6 Activity Type for Boys Basketball Head Injury Events during Practice, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
During a drill	29	63.0%
During simulated competition-scrimmage	17	37.0%
Not specified	0	0.0%
TOTAL	46	100.0%

Table 4.7 Boys Basketball Head Injuries by Cause of Injury, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Person to person contact	80	65.0%
Person to object contact (e.g. wall, equipment)	6	4.9%
Person to playing surface contact	33	26.8%
Uncertain as to the cause of the event	4	3.3%
TOTAL	123	100.0%

Table 4.8 Person to Playing Surface Contact Boys Basketball Head Injuries by Surface Type, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Wooden gym floor	23	69.7%
Basketball court	9	27.3%
TOTAL	33	100.0%

Table 4.9 Boys Basketball Head Injuries by Initial Examiner, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Athletic trainer	77	62.6%
Coach	21	17.1%
Sideline emergency personnel	0	0.0%
Other appropriate health care professional	2	1.6%
DO	0	0.0%
MD	3	2.4%
PA	0	0.0%
NP	0	0.0%
Athletic director	2	1.6%
Multiple examiners	18	14.6%
TOTAL	123	100.0%

Table 4.10 Athlete Removal from Activity at the Time of Injury Event – Boys Basketball Head Injuries, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Removed	108	87.8%
Not removed*	15	12.2%
TOTAL	123	100.0%

*Not indicating the injury was mismanaged at the time of the event; athlete may not have reported injury, symptoms may not have presented until after the event, etc.

Table 4.11 Boys Basketball Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Reported at least one previous concussion	26	21.1%
No reported previous concussions	97	78.9%
TOTAL	123	100.0%

Table 4.12 Most Recent Concussion for Boys Basketball Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Within last month	2	7.7%
Within one to six months	7	26.9%
Within six months to one year	1	3.8%
Over one year	16	61.5%
TOTAL	26	100.0%

Table 4.13 Number of Previous Concussions for Boys Basketball Athletes Reporting Previous Concussion after Head Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
1 concussion	18	69.2%
2 concussions	7	26.9%
3 concussions	1	3.8%
≥4 concussions	0	0.0%
Not specified	0	0.0%
TOTAL	26	100.0%

Table 4.14 Boys Basketball Head Injuries by Athlete Clearance to Return to Activity before the End of Season in which the Injury Occurred, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Received written authorization to return by the end of season	106	86.2%
Did not receive written authorization to return by the end of season	14	11.4%
Follow-up Report not completed	3	2.4%
TOTAL	123	100.0%

Table 4.15 Boys Basketball Head Injuries by Medical Examiner Authorizing Return to Activity, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
MD	57	46.3%
DO	26	21.1%
PA	9	7.3%
NP	14	11.4%
Medical examiner data not available*	17	13.8%
TOTAL	123	100.0%

Table 4.16 Boys Basketball Head Injuries by Facility where Medical Examiner Authorized Return to Activity, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Hospital	3	2.4%
Urgent or Ready Care business	9	7.3%
Primary care physician or pediatrician's office	76	61.8%
Neurologist's office	7	5.7%
Team doctor	11	8.9%
Medical facility data not available*	17	13.8%
TOTAL	123	100.0%

Table 4.17 Boys Basketball Head Injuries by Clearance to Return to Activity Conditions, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Unconditional return	92	74.8%
Conditions to return	14	11.4%
Return to activity data not available*	17	13.8%
TOTAL	123	100.0%

Table 4.18 Boys Basketball Head Injuries by Missed School Days After Injury Event Date, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
0 Days	62	50.4%
1-2 Days	30	24.4%
3-6 Days	9	7.3%
7-9 Days	4	3.3%
10-20 Days	1	0.8%
≥21 Days	0	0.0%
Missed school data not available*	17	13.8%
TOTAL	123	100.0%

Table 4.19 Boys Basketball Head Injuries by Time Between Head Injury Event Date and Authorization Date to Return, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
1-2 Days	3	2.4%
3-5 Days	10	8.1%
6-10 Days	38	30.9%
11-15 Days	27	22.0%
16-20 Days	12	9.8%
≥21 Days	15	12.2%
Data not available**	18	14.6%
TOTAL	123	100.0%

3 Missing Follow-up Reports*

14 Did not receive clearance to return to activity before the end of season (thus no follow-up data)*

1 Data entry errors**

V. Girls Basketball Head Injury Reports

Table 5.1 Head Injury Prevalence Rate for Girls Basketball, MHSAA Head Injury Reporting System, 2021-22 School Year

Girls Basketball Participation	13,596
All Reported Girls Basketball Head Injuries	279
Girls Basketball Head Injury Prevalence Rate (reported head injuries/total participants)	2.05%
Girls Basketball Head Injury Prevalence Rate Per Thousand Participants	21

Table 5.2 Girls Basketball Head Injuries by Level of Competition, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Varsity	151	54.1%
Junior Varsity	100	35.8%
Freshman	28	10.0%
TOTAL	279	100.0%

Table 5.3 Girls Basketball Head Injuries by Type of Exposure, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Practice	60	21.5%
Competition	219	78.5%
TOTAL	279	100.0%

Table 5.4 Girls Basketball Head Injuries by Time during Practice or Competition of Injury, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Start of practice	7	11.7%
Middle of practice	34	56.7%
End of practice	19	31.7%
PRACTICE TOTAL	60	100.0%
Start of competition	14	6.4%
Middle of competition	110	50.2%
End of competition	95	43.4%
COMPETITION TOTAL	219	100.0%

Table 5.5 Activity Type for Girls Basketball Head Injury Events during Practice, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
During a drill	39	65.0%
During simulated competition-scrimmage	19	31.7%
Not specified	2	3.3%
TOTAL	60	100.0%

Table 5.6 Girls Basketball Head Injuries by Cause of Injury, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Person to person contact	117	41.9%
Person to object contact (e.g. wall, equipment)	29	10.4%
Person to playing surface contact	118	42.3%
Uncertain as to the cause of the event	15	5.4%
TOTAL	279	100.0%

Table 5.7 Person to Playing Surface Contact Girls Basketball Head Injuries by Surface Type, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Wooden gym floor	48	40.7%
Basketball court	26	22.0%
TOTAL	118	100.0%

Table 5.8 Girls Basketball Head Injuries by Initial Examiner, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Athletic trainer	161	57.7%
Coach	61	21.9%
Sideline emergency personnel	2	0.7%
Other appropriate health care professional	3	1.1%
DO	0	0.0%
MD	2	0.7%
PA	0	0.0%
NP	1	0.4%
Athletic director	1	0.4%
Multiple examiners	48	17.2%
TOTAL	279	100.0%

Table 5.9 Girls Basketball Athlete Removal from Activity at the Time of Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Removed	216	77.4%
Not removed*	63	22.6%
TOTAL	279	100.0%

*Not indicating the injury was mismanaged at the time of the event; athlete may not have reported injury, symptoms may not have presented until after the event, etc.

Table 5.10 Girls Basketball Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Reported at least one previous concussion	48	17.2%
No reported previous concussions	231	82.8%
TOTAL	279	100.0%

Table 5.11 Most Recent Concussion for Girls Basketball Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Within last month	1	2.1%
Within one to six months	8	16.7%
Within six months to one year	9	18.8%
Over one year	30	62.5%
TOTAL	48	100.0%

Table 5.12 Number of Previous Concussions for Girls Basketball Athletes Reporting Previous Concussion after Head Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
1 concussion	34	70.8%
2 concussions	8	16.7%
3 concussions	3	6.3%
≥4 concussions	2	4.2%
Not specified	1	2.1%
TOTAL	48	100.0%

Table 5.13 Girls Basketball Head Injuries by Athlete Clearance to Return to Activity before the End of Season in which the Injury Occurred, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Received written authorization to return by the end of season	231	82.8%
Did not receive written authorization to return by the end of season	40	14.3%
Follow-up Report not completed	8	2.9%
TOTAL	279	100.0%

Table 5.14 Girls Basketball Head Injuries by Medical Examiner Authorizing Return to Activity, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
MD	124	44.4%
DO	50	17.9%
PA	31	11.1%
NP	26	9.3%
Medical examiner data not available*	48	17.2%
TOTAL	279	100.0%

Table 5.15 Girls Basketball Head Injuries by Facility where Medical Examiner Authorized Return to Activity, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Hospital	5	1.8%
Urgent or Ready Care business	25	9.0%
Primary care physician or pediatrician's office	158	56.6%
Neurologist's office	12	4.3%
Team doctor	31	11.1%
Medical facility data not available*	48	17.2%
TOTAL	279	100.0%

Table 5.16 Girls Basketball Head Injuries by Clearance to Return to Activity Conditions, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Unconditional return	214	76.7%
Conditions to return	17	6.1%
Return to activity data not available*	48	17.2%
TOTAL	279	100.0%

Table 5.17 Girls Basketball Head Injuries by Missed School Days after Injury Event Date, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
0 Days	135	48.4%
1-2 Days	69	24.7%
3-6 Days	23	8.2%
7-9 Days	2	0.7%
10-20 Days	2	0.7%
≥21 Days	0	0.0%
Missed school data not available*	48	17.2%
TOTAL	279	100.0%

Table 5.18 Girls Basketball Head Injuries by Time between Head Injury Event Date and Authorization Date to Return, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
1-2 Days	6	2.2%
3-5 Days	20	7.2%
6-10 Days	64	22.9%
11-15 Days	59	21.1%
16-20 Days	39	14.0%
≥21 Days	39	14.0%
Data not available**	52	18.6%
TOTAL	279	100.0%

8 Missing Follow-up Reports*

40 Did not receive clearance to return to activity before the end of season (thus no follow-up data)*

4 Data entry errors**

VI. Boys Bowling Head Injury Reports

Table 6.1 Head Injury Prevalence Rate for Boys Bowling, MHSAA Head Injury Reporting System, 2021-22 School Year

Boys Bowling Participation	4,085
All Reported Boys Bowling Head Injuries	0
Boys Bowling Head Injury Prevalence Rate (reported head injuries/total participants)	0.00%
Boys Bowling Head Injury Prevalence Rate Per Thousand Participants	0

Table 6.2 Boys Bowling Head Injuries by Level of Competition, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Varsity	0	0.0%
Junior Varsity	0	0.0%
Freshman	0	0.0%
TOTAL	0	0.0%

Table 6.3 Boys Bowling Head Injuries by Type of Exposure, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Practice	0	0.0%
Competition	0	0.0%
TOTAL	0	0.0%

Table 6.4 Boys Bowling Head Injuries by Time During Practice or Competition of Injury, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Start of practice	0	0.0%
Middle of practice	0	0.0%
End of practice	0	0.0%
PRACTICE TOTAL	0	0.0%
Start of competition	0	0.0%
Middle of competition	0	0.0%
End of competition	0	0.0%
COMPETITION TOTAL	0	0.0%

Table 6.5 Activity Type for Boys Bowling Head Injury Events during Practice, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
During a drill	0	0.0%
During simulated competition-scrimmage	0	0.0%
Not specified	0	0.0%
TOTAL	0	0.0%

Table 6.6 Boys Bowling Head Injuries by Cause of Injury, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Person to person contact	0	0.0%
Person to object contact (e.g. wall, equipment)	0	0.0%
Person to playing surface contact	0	0.0%
Uncertain as to the cause of the event	0	0.0%
TOTAL	0	0.0%

Table 6.7 Person to Playing Surface Contact Boys Bowling Head Injuries by Surface Type, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Wooden floor	0	0.0%
TOTAL	0	0.0%

Table 6.8 Boys Bowling Head Injuries by Initial Examiner, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Athletic trainer	0	0.0%
Coach	0	0.0%
Sideline emergency personnel	0	0.0%
Other appropriate health care professional	0	0.0%
DO	0	0.0%
MD	0	0.0%
PA	0	0.0%
NP	0	0.0%
Athletic director	0	0.0%
Multiple examiners	0	0.0%
TOTAL	0	0.0%

Table 6.9 Boys Bowling Athlete Removal from Activity at the Time of Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Removed	0	0.0%
Not removed*	0	0.0%
TOTAL	0	0.0%

*Not indicating the injury was mismanaged at the time of the event; athlete may not have reported injury, symptoms may not have presented until after the event, etc.

Table 6.10 Boys Bowling Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Reported at least one previous concussion	0	0.0%
No reported previous concussions	0	0.0%
TOTAL	0	0.0%

Table 6.11 Most Recent Concussion for Boys Bowling Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Within last month	0	0.0%
Within one to six months	0	0.0%
Within six months to one year	0	0.0%
Over one year	0	0.0%
TOTAL	0	0.0%

Table 6.12 Number of Previous Concussions for Boys Bowling Athletes Reporting Previous Concussion after Head Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
1 concussion	0	0.0%
2 concussions	0	0.0%
3 concussions	0	0.0%
≥4 concussions	0	0.0%
Not specified	0	0.0%
TOTAL	0	0.0%

Table 6.13 Boys Bowling Head Injuries by Athlete Clearance to Return to Activity Before the End of Season in which the Injury Occurred, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Received written authorization to return by the end of season	0	0.0%
Did not receive written authorization to return by the end of season	0	0.0%
Follow-up Report not completed	0	0.0%
TOTAL	0	0.0%

Table 6.14 Boys Bowling Head Injuries by Medical Examiner Authorizing Return to Activity, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
MD	0	0.0%
DO	0	0.0%
PA	0	0.0%
NP	0	0.0%
Medical examiner data not available*	0	0.0%
TOTAL	0	0.0%

Table 6.15 Boys Bowling Head Injuries by Facility where Medical Examiner Authorized Return to Activity, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Hospital	0	0.0%
Urgent or Ready Care business	0	0.0%
Primary care physician or pediatrician's office	0	0.0%
Neurologist's office	0	0.0%
Team doctor	0	0.0%
Medical facility data not available*	0	0.0%
TOTAL	0	0.0%

Table 6.16 Boys Bowling Head Injuries by Clearance to Return to Activity Conditions, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Unconditional return	0	0.0%
Conditions to return	0	0.0%
Return to activity data not available*	0	0.0%
TOTAL	0	0.0%

Table 6.17 Boys Bowling Head Injuries by Missed School Days After Injury Event Date, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
0 Days	0	0.0%
1-2 Days	0	0.0%
3-6 Days	0	0.0%
7-9 Days	0	0.0%
10-20 Days	0	0.0%
≥21 Days	0	0.0%
Missed school data not available*	0	0.0%
TOTAL	0	0.0%

Table 6.18 Boys Bowling Head Injuries by Time Between Head Injury Event Date and Authorization Date to Return, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
1-2 Days	0	0.0%
3-5 Days	0	0.0%
6-10 Days	0	0.0%
11-15 Days	0	0.0%
16-20 Days	0	0.0%
≥21 Days	0	0.0%
Data not available**	0	0.0%
TOTAL	0	0.0%

0 Missing Follow-up Reports*

0 Did not receive clearance to return to activity before the end of season (thus no follow-up data)*

0 Data entry errors**

VII. Girls Bowling Head Injury Reports

Table 7.1 Head Injury Prevalence Rate for Girls Bowling, MHSAA Head Injury Reporting System, 2021-22 School Year

Girls Bowling Participation	2,684
All Reported Girls Bowling Head Injuries	0
Girls Bowling Head Injury Prevalence Rate (reported head injuries/total participants)	0.00%
Girls Bowling Head Injury Prevalence Rate Per Thousand Participants	0

Table 7.2 Girls Bowling Head Injuries by Level of Competition, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Varsity	0	0.0%
Junior Varsity	0	0.0%
Freshman	0	0.0%
TOTAL	0	0.0%

Table 7.3 Girls Bowling Head Injuries by Type of Exposure, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Practice	0	0.0%
Competition	0	0.0%
TOTAL	0	0.0%

Table 7.4 Girls Bowling Head Injuries by Time During Practice or Competition of Injury, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Start of practice	0	0.0%
Middle of practice	0	0.0%
End of practice	0	0.0%
PRACTICE TOTAL	0	0.0%
Start of competition	0	0.0%
Middle of competition	0	0.0%
End of competition	0	0.0%
COMPETITION TOTAL	0	0.0%

Table 7.5 Activity Type for Girls Bowling Head Injury Events during Practice, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
During a drill	0	0.0%
During simulated competition-scrimmage	0	0.0%
Not specified	0	0.0%
TOTAL	0	0.0%

Table 7.6 Girls Bowling Head Injuries by Cause of Injury, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Person to person contact	0	0.0%
Person to object contact (e.g. wall, equipment)	0	0.0%
Person to playing surface contact	0	0.0%
Uncertain as to the cause of the event	0	0.0%
TOTAL	0	0.0%

Table 7.7 Person to Playing Surface Contact Girls Bowling Head Injuries by Surface Type, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Wooden floor	0	0.0%
TOTAL	0	0.0%

Table 7.8 Girls Bowling Head Injuries by Initial Examiner, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Athletic trainer	0	0.0%
Coach	0	0.0%
Sideline emergency personnel	0	0.0%
Other appropriate health care professional	0	0.0%
DO	0	0.0%
MD	0	0.0%
PA	0	0.0%
NP	0	0.0%
Athletic director	0	0.0%
Multiple examiners	0	0.0%
TOTAL	0	0.0%

Table 7.9 Girls Bowling Athlete Removal from Activity at the Time of Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Removed	0	0.0%
Not removed*	0	0.0%
TOTAL	0	0.0%

*Not indicating the injury was mismanaged at the time of the event; athlete may not have reported injury, symptoms may not have presented until after the event, etc.

Table 7.10 Girls Bowling Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Reported at least one previous concussion	0	0.0%
No reported previous concussions	0	0.0%
TOTAL	0	0.0%

Table 7.11 Most Recent Concussion for Girls Bowling Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Within last month	0	0.0%
Within one to six months	0	0.0%
Within six months to one year	0	0.0%
Over one year	0	0.0%
TOTAL	0	0.0%

Table 7.12 Number of Previous Concussions for Girls Bowling Athletes Reporting Previous Concussion after Head Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
1 concussion	0	0.0%
2 concussions	0	0.0%
3 concussions	0	0.0%
≥4 concussions	0	0.0%
Not specified	0	0.0%
TOTAL	0	0.0%

Table 7.13 Girls Bowling Head Injuries by Athlete Clearance to Return to Activity Before the End of Season in which the Injury Occurred, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Received written authorization to return by the end of season	0	0.0%
Did not receive written authorization to return by the end of season	0	0.0%
Follow-up Report not completed	0	0.0%
TOTAL	0	0.0%

Table 7.14 Girls Bowling Head Injuries by Medical Examiner Authorizing Return to Activity, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
MD	0	0.0%
DO	0	0.0%
PA	0	0.0%
NP	0	0.0%
Medical examiner data not available*	0	0.0%
TOTAL	0	0.0%

Table 7.15 Girls Bowling Head Injuries by Facility where Medical Examiner Authorized Return to Activity, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Hospital	0	0.0%
Urgent or Ready Care business	0	0.0%
Primary care physician or pediatrician's office	0	0.0%
Neurologist's office	0	0.0%
Team doctor	0	0.0%
Medical facility data not available*	0	0.0%
TOTAL	0	0.0%

Table 7.16 Girls Bowling Head Injuries by Clearance to Return to Activity Conditions, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Unconditional return	0	0.0%
Conditions to return	0	0.0%
Return to activity data not available*	0	0.0%
TOTAL	0	0.0%

Table 7.17 Girls Bowling Head Injuries by Missed School Days After Injury Event Date, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
0 Days	0	0.0%
1-2 Days	0	0.0%
3-6 Days	0	0.0%
7-9 Days	0	0.0%
10-20 Days	0	0.0%
≥21 Days	0	0.0%
Missed school data not available*	0	0.0%
TOTAL	0	0.0%

Table 7.18 Girls Bowling Head Injuries by Time Between Head Injury Event Date and Authorization Date to Return, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
1-2 Days	0	0.0%
3-5 Days	0	0.0%
6-10 Days	0	0.0%
11-15 Days	0	0.0%
16-20 Days	0	0.0%
≥21 Days	0	0.0%
Data not available**	0	0.0%
TOTAL	0	0.0%

0 Missing Follow-up Reports*

0 Did not receive clearance to return to activity before the end of season (thus no follow-up data)*

0 Data entry errors**

VIII. Competitive Cheer Head Injury Reports

Table 8.1 Head Injury Prevalence Rate for Competitive Cheer, MHSAA Head Injury Reporting System, 2021-22 School Year

Competitive Cheer Participation	5,741
All Reported Competitive Cheer Head Injuries	96
Competitive Cheer Head Injury Prevalence Rate (reported head injuries/total participants)	1.67%
Competitive Cheer Head Injury Prevalence Rate Per Thousand Participants	17

Table 8.2 Competitive Cheer Head Injuries by Level of Competition, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Varsity	80	83.3%
Junior Varsity	16	16.7%
Freshman	0	0.0%
TOTAL	96	100.0%

Table 8.3 Competitive Cheer Head Injuries by Type of Exposure, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Practice	89	92.7%
Competition	7	7.3%
TOTAL	96	100.0%

Table 8.4 Competitive Cheer Head Injuries by Time during Practice or Competition of Injury, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Start of practice	6	6.7%
Middle of practice	48	53.9%
End of practice	35	39.3%
PRACTICE TOTAL	89	100.0%
Start of competition	1	14.3%
Middle of competition	3	42.9%
End of competition	3	42.9%
COMPETITION TOTAL	7	100.0%

Table 8.5 Activity Type for Competitive Cheer Head Injury Events during Practice, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
During a drill	74	83.1%
During simulated competition-scrimmage	13	14.6%
Not specified	2	2.2%
TOTAL	89	100.0%

Table 8.6 Competitive Cheer Head Injuries by Cause of Injury, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Person to person contact	58	60.4%
Person to object contact (e.g. wall, equipment)	1	1.0%
Person to playing surface contact	35	36.5%
Uncertain as to the cause of the event	2	2.1%
TOTAL	96	100.0%

Table 8.7 Person to Playing Surface Contact Competitive Cheer Head Injuries by Surface Type, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Cheer mat	34	97.1%
Wooden gym floor	1	2.9%
TOTAL	35	100.0%

Table 8.8 Competitive Cheer Head Injuries by Initial Examiner, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Athletic trainer	51	53.1%
Coach	22	22.9%
Sideline emergency personnel	0	0.0%
Other appropriate health care professional	0	0.0%
DO	0	0.0%
MD	2	2.1%
PA	0	0.0%
NP	0	0.0%
Athletic director	0	0.0%
Multiple examiners	21	21.9%
TOTAL	96	100.0%

Table 8.9 Competitive Cheer Athlete Removal from Activity at the Time of Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Removed	78	81.3%
Not removed*	18	18.8%
TOTAL	96	100.0%

*Not indicating the injury was mismanaged at the time of the event; athlete may not have reported injury, symptoms may not have presented until after the event, etc.

Table 8.10 Competitive Cheer Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Reported at least one previous concussion	15	15.6%
No reported previous concussions	81	84.4%
TOTAL	96	100.0%

Table 8.11 Most Recent Concussion for Competitive Cheer Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Within last month	0	0.0%
Within one to six months	0	0.0%
Within six months to one year	2	13.3%
Over one year	13	86.7%
TOTAL	15	100.0%

Table 8.12 Number of Previous Concussions for Competitive Cheer Athletes Reporting Previous Concussion after Head Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
1 concussion	8	53.3%
2 concussions	5	33.3%
3 concussions	1	6.7%
≥4 concussions	0	0.0%
Not specified	1	6.7%
TOTAL	15	100.0%

Table 8.13 Competitive Cheer Head Injuries by Athlete Clearance to Return to Activity before the End of Season in which the Injury Occurred, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Received written authorization to return by the end of season	80	83.3%
Did not receive written authorization to return by the end of season	15	15.6%
Follow-up Report not completed	1	1.0%
TOTAL	96	100.0%

Table 8.14 Competitive Cheer Head Injuries by Medical Examiner Authorizing Return to Activity, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
MD	38	39.6%
DO	26	27.1%
PA	5	5.2%
NP	11	11.5%
Medical examiner data not available*	16	16.7%
TOTAL	96	100.0%

Table 8.15 Competitive Cheer Head Injuries by Facility where Medical Examiner Authorized Return to Activity, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Hospital	2	2.1%
Urgent or Ready Care business	6	6.3%
Primary care physician or pediatrician's office	54	56.3%
Neurologist's office	2	2.1%
Team doctor	16	16.7%
Medical facility data not available*	16	16.7%
TOTAL	96	100.0%

Table 8.16 Competitive Cheer Head Injuries by Clearance to Return to Activity Conditions, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Unconditional return	72	75.0%
Conditions to return	8	8.3%
Return to activity data not available*	16	16.7%
TOTAL	96	100.0%

Table 8.17 Competitive Cheer Head Injuries by Missed School Days After Injury Event Date, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
0 Days	50	52.1%
1-2 Days	13	13.5%
3-6 Days	14	14.6%
7-9 Days	3	3.1%
10-20 Days	0	0.0%
≥21 Days	0	0.0%
Missed school data not available*	16	16.7%
TOTAL	96	100.0%

Table 8.18 Competitive Cheer Head Injuries by Time between Head Injury Event Date and Authorization Date to Return, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
1-2 Days	0	0.0%
3-5 Days	8	8.3%
6-10 Days	11	11.5%
11-15 Days	24	25.0%
16-20 Days	9	9.4%
≥21 Days	26	27.1%
Data not available**	18	18.8%
TOTAL	96	100.0%

1 Missing Follow-up Report*

15 Did not receive clearance to return to activity before the end of season (thus no follow-up data)*

2 Data entry errors**

IX. Boys Cross Country Head Injury Reports

Table 9.1 Head Injury Prevalence Rate for Boys Cross Country, MHSAA Head Injury Reporting System, 2021-22 School Year

Boys Cross Country Participation	8,058
All Reported Boys Cross Country Head Injuries	3
Boys Cross Country Head Injury Prevalence Rate (reported head injuries/total participants)	0.04%
Boys Cross Country Head Injury Prevalence Rate Per Thousand Participants	0

Table 9.2 Boys Cross Country Head Injuries by Level of Competition, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Varsity	3	100.0%
Junior Varsity	0	0.0%
Freshman	0	0.0%
TOTAL	3	100.0%

Table 9.3 Boys Cross Country Head Injuries by Type of Exposure, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Practice	2	66.7%
Competition	1	33.3%
TOTAL	3	100.0%

Table 9.4 Boys Cross Country Head Injuries by Time during Practice or Competition of Injury, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Start of practice	0	0.0%
Middle of practice	2	100.0%
End of practice	0	0.0%
PRACTICE TOTAL	2	100.0%
Start of competition	0	0.0%
Middle of competition	0	0.0%
End of competition	1	33.3%
COMPETITION TOTAL	1	33.3%

Table 9.5 Activity Type for Boys Cross Country Head Injury Events during Practice, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
During a drill	0	0.0%
During simulated competition-scrimmage	0	0.0%
Not specified	2	100.0%
TOTAL	2	100.0%

Table 9.6 Boys Cross Country Head Injuries by Cause of Injury, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Person to person contact	0	0.0%
Person to object contact (e.g. wall, equipment)	2	66.7%
Person to playing surface contact	0	0.0%
Uncertain as to the cause of the event	1	33.3%
TOTAL	3	100.0%

Table 9.7 Person to Playing Surface Contact Boys Cross Country Head Injuries by Surface Type, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
N/A	0	0.0%
TOTAL	0	0.0%

Table 9.8 Boys Cross Country Head Injuries by Initial Examiner, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Athletic trainer	0	0.0%
Coach	2	66.7%
Sideline emergency personnel	0	0.0%
Other appropriate health care professional	1	33.3%
DO	0	0.0%
MD	0	0.0%
PA	0	0.0%
NP	0	0.0%
Athletic director	0	0.0%
Multiple examiners	0	0.0%
TOTAL	3	100.0%

Table 9.9 Boys Cross Country Athlete Removal from Activity at the Time of Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Removed	3	100.0%
Not removed*	0	0.0%
TOTAL	3	100.0%

*Not indicating the injury was mismanaged at the time of the event; athlete may not have reported injury, symptoms may not have presented until after the event, etc.

Table 9.10 Boys Cross Country Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Reported at least one previous concussion	0	0.0%
No reported previous concussions	3	100.0%
TOTAL	3	100.0%

Table 9.11 Most Recent Concussion for Boys Cross Country Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Within last month	0	0.0%
Within one to six months	0	0.0%
Within six months to one year	0	0.0%
Over one year	0	0.0%
TOTAL	0	0.0%

Table 9.12 Number of Previous Concussions for Boys Cross Country Athletes Reporting Previous Concussion after Head Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
1 concussion	0	0.0%
2 concussions	0	0.0%
3 concussions	0	0.0%
≥4 concussions	0	0.0%
Not specified	0	0.0%
TOTAL	0	0.0%

Table 9.13 Boys Cross Country Head Injuries by Athlete Clearance to Return to Activity before the End of Season in which the Injury Occurred, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Received written authorization to return by the end of season	2	66.7%
Did not receive written authorization to return by the end of season	1	33.3%
Follow-up Report not completed	0	0.0%
TOTAL	3	100.0%

Table 9.14 Boys Cross Country Head Injuries by Medical Examiner Authorizing Return to Activity, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
MD	2	66.7%
DO	0	0.0%
PA	0	0.0%
NP	0	0.0%
Medical examiner data not available*	1	33.3%
TOTAL	3	100.0%

Table 9.15 Boys Cross Country Head Injuries by Facility where Medical Examiner Authorized Return to Activity, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Hospital	0	0.0%
Urgent or Ready Care business	0	0.0%
Primary care physician or pediatrician's office	2	66.7%
Neurologist's office	0	0.0%
Team doctor	0	0.0%
Medical facility data not available*	1	33.3%
TOTAL	3	100.0%

Table 9.16 Boys Cross Country Head Injuries by Clearance to Return to Activity Conditions, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Unconditional return	1	33.3%
Conditions to return	1	33.3%
Return to activity data not available*	1	33.3%
TOTAL	3	100.0%

Table 9.17 Boys Cross Country Head Injuries by Missed School Days after Injury Event Date, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
0 Days	1	33.3%
1-2 Days	1	33.3%
3-6 Days	0	0.0%
7-9 Days	0	0.0%
10-20 Days	0	0.0%
≥21 Days	0	0.0%
Missed school data not available*	1	33.3%
TOTAL	3	100.0%

Table 9.18 Boys Cross Country Head Injuries by Time between Head Injury Event Date and Authorization Date to Return, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
1-2 Days	0	0.0%
3-5 Days	0	0.0%
6-10 Days	0	0.0%
11-15 Days	1	33.3%
16-20 Days	0	0.0%
≥21 Days	1	33.3%
Data not available**	1	33.3%
TOTAL	3	100.0%

0 Missing Follow-up Reports*

1 Did not receive clearance to return to activity before the end of season (thus no follow-up data)*

0 Data entry errors**

X. Girls Cross Country Head Injury Reports

Table 10.1 Head Injury Prevalence Rate for Girls Cross Country, MHSAA Head Injury Reporting System, 2021-22 School Year

Girls Cross Country Participation	7,150
All Reported Girls Cross Country Head Injuries	2
Girls Cross Country Head Injury Prevalence Rate (reported head injuries/total participants)	0.03%
Girls Cross Country Head Injury Prevalence Rate Per Thousand Participants	0

Table 10.2 Girls Cross Country Head Injuries by Level of Competition, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Varsity	2	100.0%
Junior Varsity	0	0.0%
Freshman	0	0.0%
TOTAL	2	100.0%

Table 10.3 Girls Cross Country Head Injuries by Type of Exposure, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Practice	1	50.0%
Competition	1	50.0%
TOTAL	2	100.0%

Table 10.4 Girls Cross Country Head Injuries by Time during Practice or Competition of Injury, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Start of practice	0	0.0%
Middle of practice	0	0.0%
End of practice	1	100.0%
PRACTICE TOTAL	1	100.0%
Start of competition	0	0.0%
Middle of competition	0	0.0%
End of competition	1	50.0%
COMPETITION TOTAL	1	50.0%

Table 10.5 Activity Type for Girls Cross Country Head Injury Events during Practice, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
During a drill	1	100.0%
During simulated competition-scrimmage	0	0.0%
Not specified	0	0.0%
TOTAL	1	100.0%

Table 10.6 Girls Cross Country Head Injuries by Cause of Injury, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Person to person contact	0	0.0%
Person to object contact (e.g. wall, equipment)	0	0.0%
Person to playing surface contact	2	100.0%
Uncertain as to the cause of the event	0	0.0%
TOTAL	2	100.0%

Table 10.7 Person to Playing Surface Contact Girls Cross Country Head Injuries by Surface Type, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Natural grass	1	50.0%
Wooden gym floor	1	50.0%
TOTAL	2	100.0%

Table 10.8 Girls Cross Country Head Injuries by Initial Examiner, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Athletic trainer	1	50.0%
Coach	1	50.0%
Sideline emergency personnel	0	0.0%
Other appropriate health care professional	0	0.0%
DO	0	0.0%
MD	0	0.0%
PA	0	0.0%
NP	0	0.0%
Athletic director	0	0.0%
Multiple examiners	0	0.0%
TOTAL	2	100.0%

Table 10.9 Girls Cross Country Athlete Removal from Activity at the Time of Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Removed	2	100.0%
Not removed*	0	0.0%
TOTAL	2	100.0%

*Not indicating the injury was mismanaged at the time of the event; athlete may not have reported injury, symptoms may not have presented until after the event, etc.

Table 10.10 Girls Cross Country Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Reported at least one previous concussion	0	0.0%
No reported previous concussions	2	100.0%
TOTAL	2	100.0%

Table 10.11 Most Recent Concussion for Girls Cross Country Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Within last month	0	0.0%
Within one to six months	0	0.0%
Within six months to one year	0	0.0%
Over one year	0	0.0%
TOTAL	0	0.0%

Table 10.12 Number of Previous Concussions for Girls Cross Country Athletes Reporting Previous Concussion after Head Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
1 concussion	0	0.0%
2 concussions	0	0.0%
3 concussions	0	0.0%
≥4 concussions	0	0.0%
Not specified	0	0.0%
TOTAL	0	0.0%

Table 10.13 Girls Cross Country Head Injuries by Athlete Clearance to Return to Activity before the End of Season in which the Injury Occurred, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Received written authorization to return by the end of season	2	100.0%
Did not receive written authorization to return by the end of season	0	0.0%
Follow-up Report not completed	0	0.0%
TOTAL	2	100.0%

Table 10.14 Girls Cross Country Head Injuries by Medical Examiner Authorizing Return to Activity, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
MD	2	100.0%
DO	0	0.0%
PA	0	0.0%
NP	0	0.0%
Medical examiner data not available*	0	0.0%
TOTAL	2	100.0%

Table 10.15 Girls Cross Country Head Injuries by Facility where Medical Examiner Authorized Return to Activity, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Hospital	0	0.0%
Urgent or Ready Care business	0	0.0%
Primary care physician or pediatrician's office	0	0.0%
Neurologist's office	1	50.0%
Team doctor	1	50.0%
Medical facility data not available*	0	0.0%
TOTAL	2	100.0%

Table 10.16 Girls Cross Country Head Injuries by Clearance to Return to Activity Conditions, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Unconditional return	2	100.0%
Conditions to return	0	0.0%
Return to activity data not available*	0	0.0%
TOTAL	2	100.0%

Table 10.17 Girls Cross Country Head Injuries by Missed School Days after Injury Event Date, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
0 Days	1	50.0%
1-2 Days	1	50.0%
3-6 Days	0	0.0%
7-9 Days	0	0.0%
10-20 Days	0	0.0%
≥21 Days	0	0.0%
Missed school data not available*	0	0.0%
TOTAL	2	100.0%

Table 10.18 Girls Cross Country Head Injuries by Time between Head Injury Event Date and Authorization Date to Return, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
1-2 Days	0	0.0%
3-5 Days	0	0.0%
6-10 Days	1	50.0%
11-15 Days	1	50.0%
16-20 Days	0	0.0%
≥21 Days	0	0.0%
Data not available**	0	0.0%
TOTAL	2	100.0%

0 Missing-follow Up Reports*

0 Did not receive clearance to return to activity before the end of season (thus no follow-up data)*

0 Data entry errors**

XI. 11-Player Football Head Injury Reports

Table 11.1 Head Injury Prevalence Rate for 11-Player Football, MHSAA Head Injury Reporting System, 2021-22 School Year

11-Player Football Participation	31,084
All Reported 11-Player Football Head Injuries	997
11-Player Football Head Injury Prevalence Rate (reported head injuries/total participants)	3.21%
11-Player Football Head Injury Prevalence Rate Per Thousand Participants	32

Table 11.2 11-Player Football Head Injuries by Gender, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Male	992	99.5%
Female	5	0.5%
TOTAL	997	100.0%

Table 11.3 11-Player Football Head Injuries by Level of Competition, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Varsity	485	48.6%
Junior Varsity	396	39.7%
Freshman	116	11.6%
TOTAL	997	100.0%

Table 11.4 11-Player Football Head Injuries by Type of Exposure, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Practice	321	32.2%
Competition	676	67.8%
TOTAL	997	100.0%

Table 11.5 11-Player Football Head Injuries by Time during Practice or Competition of Injury, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Start of practice	27	8.4%
Middle of practice	180	56.1%
End of practice	114	35.5%
PRACTICE TOTAL	321	100.0%
Start of competition	71	10.5%
Middle of competition	318	47.0%
End of competition	287	42.5%
COMPETITION TOTAL	676	100.0%

Table 11.6 Activity Type for 11-Player Football Head Injury Events during Practice, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
During a drill	230	71.7%
During simulated competition-scrimmage	81	25.2%
Not specified	10	3.1%
TOTAL	321	100.0%

Table 11.7 11-Player Football Head Injuries by Cause of Injury, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Person to person contact	756	75.8%
Person to object contact (e.g. wall, equipment)	9	0.9%
Person to playing surface contact	121	12.1%
Uncertain as to the cause of the event	111	11.1%
TOTAL	997	100.0%

Table 11.8 Person to Playing Surface Contact 11-Player Football Head Injuries by Surface Type, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Natural grass	59	48.8%
Artificial turf	53	43.8%
Football field	9	7.4%
TOTAL	121	100.0%

Table 11.9 11-Player Football Head Injuries by Initial Examiner, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Athletic trainer	665	66.7%
Coach	101	10.1%
Sideline emergency personnel	5	0.5%
Other appropriate health care professional	25	2.5%
DO	7	0.7%
MD	30	3.0%
PA	1	0.1%
NP	1	0.1%
Athletic director	2	0.2%
Multiple examiners	160	16.0%
TOTAL	997	100.0%

Table 11.10 11-Player Football Athlete Removal from Activity at the Time of Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Removed	785	78.7%
Not removed*	212	21.3%
TOTAL	997	100.0%

*Not indicating the injury was mismanaged at the time of the event; athlete may not have reported injury, symptoms may not have presented until after the event, etc.

Table 11.11 11-Player Football Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Reported at least one previous concussion	174	17.5%
No reported previous concussions	823	82.5%
TOTAL	997	100.0%

Table 11.12 Most Recent Concussion for 11-Player Football Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Within last month	11	6.3%
Within one to six months	4	2.3%
Within six months to one year	27	15.5%
Over one year	132	75.9%
TOTAL	174	100.0%

Table 11.13 Number of Previous Concussions for 11-Player Football Athletes Reporting Previous Concussion after Head Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
1 concussion	135	77.6%
2 concussions	25	14.4%
3 concussions	10	5.7%
≥4 concussions	4	2.3%
Not specified	0	0.0%
TOTAL	174	100.0%

Table 11.14 11-Player Football Head Injuries by Athlete Clearance to Return to Activity before the End of Season in which the Injury Occurred, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Received written authorization to return by the end of season	822	82.4%
Did not receive written authorization to return by the end of season	160	16.0%
Follow-up Report not completed	15	1.5%
TOTAL	997	100.0%

Table 11.15 11-Player Football Head Injuries by Medical Examiner Authorizing Return to Activity, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
MD	451	45.2%
DO	200	20.1%
PA	82	8.2%
NP	89	8.9%
Medical examiner data not available*	175	17.6%
TOTAL	997	100.0%

Table 11.16 11-Player Football Head Injuries by Facility where Medical Examiner Authorized Return to Activity, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Hospital	30	3.0%
Urgent or Ready Care business	85	8.5%
Primary care physician or pediatrician's office	528	53.0%
Neurologist's office	55	5.5%
Team doctor	124	12.4%
Medical facility data not available*	175	17.6%
TOTAL	997	100.0%

Table 11.17 11-Player Football Head Injuries by Clearance to Return to Activity Conditions, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Unconditional return	742	74.4%
Conditions to return	80	8.0%
Return to activity data not available*	175	17.6%
TOTAL	997	100.0%

Table 11.18 11-Player Football Head Injuries by Missed School Days after Injury Event Date, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
0 Days	546	54.8%
1-2 Days	185	18.6%
3-6 Days	58	5.8%
7-9 Days	11	1.1%
10-20 Days	19	1.9%
≥21 Days	3	0.3%
Missed school data not available*	175	17.6%
TOTAL	997	100.0%

Table 11.19 11-Player Football Head Injuries by Time between Head Injury Event Date and Authorization Date to Return, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
1-2 Days	9	0.9%
3-5 Days	65	6.5%
6-10 Days	216	21.7%
11-15 Days	279	28.0%
16-20 Days	101	10.1%
≥21 Days	131	13.1%
Data not available**	196	19.7%
TOTAL	997	100.0%

15 Missing Follow-up Reports*

160 Did not receive clearance to return to activity before the end of season (thus no follow-up data)*

21 Data entry errors**

XII. 8-Player Football Head Injuries Reports

Table 12.1 Head Injury Prevalence Rate for 8-Player Football, MHSAA Head Injury Reporting System, 2021-22 School Year

8-Player Football Participation	2,200
All Reported 8-Player Football Head Injuries	53
8-Player Football Head Injury Prevalence Rate (reported head injuries/total participants)	2.41%
8-Player Football Head Injury Prevalence Rate Per Thousand Participants	24

Table 12.2 8-Player Football Head Injuries by Gender, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Male	53	100.0%
Female	0	0.0%
TOTAL	53	100.0%

Table 12.3 8-Player Football Head Injuries by Level of Competition, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Varsity	43	81.1%
Junior Varsity	10	18.9%
Freshman	0	0.0%
TOTAL	53	100.0%

Table 12.4 8-Player Football Head Injuries by Type of Exposure, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Practice	13	24.5%
Competition	40	75.5%
TOTAL	53	100.0%

Table 12.5 8-Player Football Head Injuries by Time during Practice or Competition of Injury, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Start of practice	0	0.0%
Middle of practice	9	69.2%
End of practice	4	30.8%
PRACTICE TOTAL	13	100.0%
Start of competition	5	12.5%
Middle of competition	18	45.0%
End of competition	17	42.5%
COMPETITION TOTAL	40	100.0%

Table 12.6 Activity Type for 8-Player Football Head Injury Events during Practice, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
During a drill	11	84.6%
During simulated competition-scrimmage	1	7.7%
Not specified	1	7.7%
TOTAL	13	100.0%

Table 12.7 8-Player Football Head Injuries by Cause of Injury, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Person to person contact	40	75.5%
Person to object contact (e.g. wall, equipment)	1	1.9%
Person to playing surface contact	4	7.5%
Uncertain as to the cause of the event	8	15.1%
TOTAL	53	100.0%

Table 12.8 Person to Playing Surface Contact 8-Player Football Head Injuries by Surface Type, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Natural grass	3	75.0%
Football field	1	25.0%
TOTAL	4	100.0%

Table 12.9 8-Player Football Head Injuries by Initial Examiner, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Athletic trainer	20	37.7%
Coach	19	35.8%
Sideline emergency personnel	1	1.9%
Other appropriate health care professional	1	1.9%
DO	1	1.9%
MD	0	0.0%
PA	0	0.0%
NP	0	0.0%
Athletic director	1	1.9%
Multiple examiners	10	18.9%
TOTAL	53	100.0%

Table 12.10 8-Player Football Athlete Removal from Activity at the Time of Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Removed	48	90.6%
Not removed*	5	9.4%
TOTAL	53	100.0%

*Not indicating the injury was mismanaged at the time of the event; athlete may not have reported injury, symptoms may not have presented until after the event, etc.

Table 12.11 8-Player Football Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Reported at least one previous concussion	4	7.5%
No reported previous concussions	49	92.5%
TOTAL	53	100.0%

Table 12.12 Most Recent Concussion for 8-Player Football Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Within last month	0	0.0%
Within one to six months	0	0.0%
Within six months to one year	1	25.0%
Over one year	3	75.0%
TOTAL	4	100.0%

Table 12.13 Number of Previous Concussions for 8-Player Football Athletes Reporting Previous Concussion after Head Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
1 concussion	3	75.0%
2 concussions	1	25.0%
3 concussions	0	0.0%
≥4 concussions	0	0.0%
Not specified	0	0.0%
TOTAL	4	100.0%

Table 12.14 8-Player Football Head Injuries by Athlete Clearance to Return to Activity before the End of Season in which the Injury Occurred, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Received written authorization to return by the end of season	41	77.4%
Did not receive written authorization to return by the end of season	11	20.8%
Follow-up Report not completed	1	1.9%
TOTAL	53	100.0%

Table 12.15 8-Player Football Head Injuries by Medical Examiner Authorizing Return to Activity, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
MD	20	37.7%
DO	4	7.5%
PA	10	18.9%
NP	7	13.2%
Medical examiner data not available*	12	22.6%
TOTAL	53	100.0%

Table 12.16 8-Player Football Head Injuries by Facility where Medical Examiner Authorized Return to Activity, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Hospital	9	17.0%
Urgent or Ready Care business	2	3.8%
Primary care physician or pediatrician's office	24	45.3%
Neurologist's office	2	3.8%
Team doctor	4	7.5%
Medical facility data not available*	12	22.6%
TOTAL	53	100.0%

Table 12.17 8-Player Football Head Injuries by Clearance to Return to Activity Conditions, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Unconditional return	33	62.3%
Conditions to return	8	15.1%
Return to activity data not available*	12	22.6%
TOTAL	53	100.0%

Table 12.18 8-Player Football Head Injuries by Missed School Days after Injury Event Date, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
0 Days	21	39.6%
1-2 Days	11	20.8%
3-6 Days	4	7.5%
7-9 Days	3	5.7%
10-20 Days	2	3.8%
≥21 Days	0	0.0%
Missed school data not available*	12	22.6%
TOTAL	53	100.0%

Table 12.19 8-Player Football Head Injuries by Time between Head Injury Event Date and Authorization Date to Return, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
1-2 Days	0	0.0%
3-5 Days	6	11.3%
6-10 Days	8	15.1%
11-15 Days	12	22.6%
16-20 Days	6	11.3%
≥21 Days	8	15.1%
Data not available**	13	24.5%
TOTAL	53	100.0%

1 Missing Follow-up Reports*

11 Did not receive clearance to return to activity before the end of season (thus no follow-up data)*

1 Data entry errors**

XIII. Boys Golf Head Injury Reports

Table 13.1 Head Injury Prevalence Rate for Boys Golf, MHSAA Head Injury Reporting System, 2021-22 School Year

Boys Golf Participation	6,829
All Boys Golf Head Injuries	1
Boys Golf Head Injury Prevalence Rate (reported head injuries/total participants)	0.01%
Boys Golf Head Injury Prevalence Rate Per Thousand Participants	0

Table 13.2 Boys Golf Head Injuries by Level of Competition, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Varsity	1	100.0%
Junior Varsity	0	0.0%
Freshman	0	0.0%
TOTAL	1	100.0%

Table 13.3 Boys Golf Head Injuries by Type of Exposure, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Practice	1	100.0%
Competition	0	0.0%
TOTAL	1	100.0%

Table 13.4 Boys Golf Head Injuries by Time during Practice or Competition of Injury, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Start of practice	1	100.0%
Middle of practice	0	0.0%
End of practice	0	0.0%
PRACTICE TOTAL	1	100.0%
Start of competition	0	0.0%
Middle of competition	0	0.0%
End of competition	0	0.0%
COMPETITION TOTAL	0	0.0%

Table 13.5 Activity Type for Boys Golf Head Injury Events during Practice, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
During a drill	1	100.0%
During simulated competition-scrimmage	0	0.0%
Not specified	0	0.0%
TOTAL	1	100.0%

Table 13.6 Boys Golf Head Injuries by Cause of Injury, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Person to person contact	0	0.0%
Person to object contact (e.g. wall, equipment)	1	100.0%
Person to playing surface contact	0	0.0%
Uncertain as to the cause of the event	0	0.0%
TOTAL	1	100.0%

Table 13.7 Person to Playing Surface Contact Boys Golf Head Injuries by Surface Type, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
n/a	0	0.0%
TOTAL	0	0.0%

Table 13.8 Boys Golf Head Injuries by Initial Examiner, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Athletic trainer	1	100.0%
Coach	0	0.0%
Sideline emergency personnel	0	0.0%
Other appropriate health care professional	0	0.0%
DO	0	0.0%
MD	0	0.0%
PA	0	0.0%
NP	0	0.0%
Athletic director	0	0.0%
Multiple examiners	0	0.0%
TOTAL	1	100.0%

Table 13.9 Boys Golf Athlete Removal from Activity at the Time of Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Removed	1	100.0%
Not removed*	0	0.0%
TOTAL	1	100.0%

*Not indicating the injury was mismanaged at the time of the event; athlete may not have reported injury, symptoms may not have presented until after the event, etc.

Table 13.10 Boys Golf Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Reported at least one previous concussion	0	0.0%
No reported previous concussions	1	100.0%
TOTAL	1	100.0%

Table 13.11 Most Recent Concussion for Boys Golf Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Within last month	0	0.0%
Within one to six months	0	0.0%
Within six months to one year	0	0.0%
Over one year	0	0.0%
TOTAL	0	0.0%

Table 13.12 Number of Previous Concussions for Boys Golf Athletes Reporting Previous Concussion after Head Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
1 concussion	0	0.0%
2 concussions	0	0.0%
3 concussions	0	0.0%
≥4 concussions	0	0.0%
Not specified	0	0.0%
TOTAL	0	0.0%

Table 13.13 Boys Golf Head Injuries by Athlete Clearance to Return to Activity before the End of Season in which the Injury Occurred, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Received written authorization to return by the end of season	1	100.0%
Did not receive written authorization to return by the end of season	0	0.0%
Follow-up Report not completed	0	0.0%
TOTAL	1	100.0%

Table 13.14 Boys Golf Head Injuries by Medical Examiner Authorizing Return to Activity, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
MD	0	0.0%
DO	0	0.0%
PA	0	0.0%
NP	1	100.0%
Medical examiner data not available*	0	0.0%
TOTAL	1	100.0%

Table 13.15 Boys Golf Head Injuries by Facility where Medical Examiner Authorized Return to Activity, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Hospital	0	0.0%
Urgent or Ready Care business	0	0.0%
Primary care physician or pediatrician's office	1	100.0%
Neurologist's office	0	0.0%
Team doctor	0	0.0%
Medical facility data not available*	0	0.0%
TOTAL	1	100.0%

Table 13.16 Boys Golf Head Injuries by Clearance to Return to Activity Conditions, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Unconditional return	1	100.0%
Conditions to return	0	0.0%
Return to activity data not available*	0	0.0%
TOTAL	1	100.0%

Table 13.17 Boys Golf Head Injuries by Missed School Days after Injury Event Date, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
0 Days	1	100.0%
1-2 Days	0	0.0%
3-6 Days	0	0.0%
7-9 Days	0	0.0%
10-20 Days	0	0.0%
≥21 Days	0	0.0%
Missed school data not available*	0	0.0%
TOTAL	1	100.0%

Table 13.18 Boys Golf Head Injuries by Time between Head Injury Event Date and Authorization Date to Return, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
1-2 Days	0	0.0%
3-5 Days	0	0.0%
6-10 Days	0	0.0%
11-15 Days	0	0.0%
16-20 Days	0	0.0%
≥21 Days	1	100.0%
Data not available**	0	0.0%
TOTAL	1	100.0%

0 Missing Follow-up Reports*

0 Did not receive clearance to return to activity before the end of season (thus no follow-up data)*

0 Data entry errors**

XIV. Girls Golf Head Injury Reports

Table 14.1 Head Injury Prevalence Rate for Girls Golf, MHSAA Head Injury Reporting System, 2021-22 School Year

Girls Golf Participation	3,875
All Reported Girls Golf Head Injuries	1
Girls Golf Head Injury Prevalence Rate (reported head injuries/total participants)	0.03%
Girls Golf Head Injury Prevalence Rate Per Thousand Participants	0

Table 14.2 Girls Golf Head Injuries by Level of Competition, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Varsity	1	100.0%
Junior Varsity	0	0.0%
Freshman	0	0.0%
TOTAL	1	100.0%

Table 14.3 Girls Golf Head Injuries by Type of Exposure, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Practice	1	100.0%
Competition	0	0.0%
TOTAL	1	100.0%

Table 14.4 Girls Golf Head Injuries by Time during Practice or Competition of Injury, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Start of practice	1	100.0%
Middle of practice	0	0.0%
End of practice	0	0.0%
PRACTICE TOTAL	1	100.0%
Start of competition	0	0.0%
Middle of competition	0	0.0%
End of competition	0	0.0%
COMPETITION TOTAL	0	0.0%

Table 14.5 Activity Type for Girls Golf Head Injury Events during Practice, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
During a drill	1	100.0%
During simulated competition-scrimmage	0	0.0%
Not specified	0	0.0%
TOTAL	1	100.0%

Table 14.6 Girls Golf Head Injuries by Cause of Injury, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Person to person contact	0	0.0%
Person to object contact (e.g. wall, equipment)	1	100.0%
Person to playing surface contact	0	0.0%
Uncertain as to the cause of the event	0	0.0%
TOTAL	1	100.0%

Table 14.7 Person to Playing Surface Contact Girls Golf Head Injuries by Surface Type, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
n/a	0	0.0%
TOTAL	0	0.0%

Table 14.8 Girls Golf Head Injuries by Initial Examiner, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Athletic trainer	1	100.0%
Coach	0	0.0%
Sideline emergency personnel	0	0.0%
Other appropriate health care professional	0	0.0%
DO	0	0.0%
MD	0	0.0%
PA	0	0.0%
NP	0	0.0%
Athletic director	0	0.0%
Multiple examiners	0	0.0%
TOTAL	1	100.0%

Table 14.9 Girls Golf Athlete Removal from Activity at the Time of Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Removed	1	100.0%
Not removed*	0	0.0%
TOTAL	1	100.0%

*Not indicating the injury was mismanaged at the time of the event; athlete may not have reported injury, symptoms may not have presented until after the event, etc.

Table 14.10 Girls Golf Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Reported at least one previous concussion	0	0.0%
No reported previous concussions	1	100.0%
TOTAL	1	100.0%

Table 14.11 Most Recent Concussion for Girls Golf Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Within last month	0	0.0%
Within one to six months	0	0.0%
Within six months to one year	0	0.0%
Over one year	0	0.0%
TOTAL	0	0.0%

Table 14.12 Number of Previous Concussions for Girls Golf Athletes Reporting Previous Concussion after Head Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
1 concussion	0	0.0%
2 concussions	0	0.0%
3 concussions	0	0.0%
≥4 concussions	0	0.0%
Not specified	0	0.0%
TOTAL	0	0.0%

Table 14.13 Girls Golf Head Injuries by Athlete Clearance to Return to Activity before the End of Season in which the Injury Occurred, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Received written authorization to return by the end of season	1	100.0%
Did not receive written authorization to return by the end of season	0	0.0%
Follow-up Report not completed	0	0.0%
TOTAL	1	100.0%

Table 14.14 Girls Golf Head Injuries by Medical Examiner Authorizing Return to Activity, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
MD	1	100.0%
DO	0	0.0%
PA	0	0.0%
NP	0	0.0%
Medical examiner data not available*	0	0.0%
TOTAL	1	100.0%

Table 14.15 Girls Golf Head Injuries by Facility where Medical Examiner Authorized Return to Activity, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Hospital	0	0.0%
Urgent or Ready Care business	0	0.0%
Primary care physician or pediatrician's office	1	100.0%
Neurologist's office	0	0.0%
Team doctor	0	0.0%
Medical facility data not available*	0	0.0%
TOTAL	1	100.0%

Table 14.16 Girls Golf Head Injuries by Clearance to Return to Activity Conditions, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Unconditional return	1	100.0%
Conditions to return	0	0.0%
Return to activity data not available*	0	0.0%
TOTAL	1	100.0%

Table 14.17 Girls Golf Head Injuries by Missed School Days after Injury Event Date, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
0 Days	1	100.0%
1-2 Days	0	0.0%
3-6 Days	0	0.0%
7-9 Days	0	0.0%
10-20 Days	0	0.0%
≥21 Days	0	0.0%
Missed school data not available*	0	0.0%
TOTAL	1	100.0%

Table 14.18 Girls Golf Head Injuries by Time between Head Injury Event Date and Authorization Date to Return, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
1-2 Days	0	0.0%
3-5 Days	0	0.0%
6-10 Days	1	100.0%
11-15 Days	0	0.0%
16-20 Days	0	0.0%
≥21 Days	0	0.0%
Data not available**	0	0.0%
TOTAL	1	100.0%

0 Missing Follow-up Reports*

0 Did not receive clearance to return to activity before the end of season (thus no follow-up data)*

0 Data entry errors**

XV. Gymnastics Head Injury Reports

Table 15.1 Head Injury Prevalence Rate for Gymnastics, MHSAA Head Injury Reporting System, 2021-22 School Year

Gymnastics Participation	585
All Reported Gymnastics Head Injuries	7
Gymnastics Head Injury Prevalence Rate (reported head injuries/total participants)	1.20%
Gymnastics Head Injury Prevalence Rate Per Thousand Participants	12

Table 15.2 Gymnastics Head Injuries by Level of Competition, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Varsity	7	100.0%
Junior Varsity	0	0.0%
Freshman	0	0.0%
TOTAL	7	100.0%

Table 15.3 Gymnastics Head Injuries by Type of Exposure, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Practice	4	57.1%
Competition	3	42.9%
TOTAL	7	100.0%

Table 15.4 Gymnastics Head Injuries by Time during Practice or Competition of Injury, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Start of practice	0	0.0%
Middle of practice	3	75.0%
End of practice	1	25.0%
PRACTICE TOTAL	4	100.0%
Start of competition	0	0.0%
Middle of competition	1	33.3%
End of competition	2	66.7%
COMPETITION TOTAL	3	100.0%

Table 15.5 Activity Type for Gymnastics Head Injury Events during Practice, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
During a drill	4	100.0%
During simulated competition-scrimmage	0	0.0%
Not specified	0	0.0%
TOTAL	4	100.0%

Table 15.6 Gymnastics Head Injuries by Cause of Injury, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Person to person contact	1	14.3%
Person to object contact (e.g. wall, equipment)	0	0.0%
Person to playing surface contact	6	85.7%
Uncertain as to the cause of the event	0	0.0%
TOTAL	7	100.0%

Table 15.7 Person to Playing Surface Contact Gymnastics Head Injuries by Surface Type, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Gymnastics mat	3	50.0%
Gymnastics spring floor	2	33.3%
Floor	1	16.7%
TOTAL	6	100.0%

Table 15.8 Gymnastics Head Injuries by Initial Examiner, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Athletic trainer	4	57.1%
Coach	3	42.9%
Sideline emergency personnel	0	0.0%
Other appropriate health care professional	0	0.0%
DO	0	0.0%
MD	0	0.0%
PA	0	0.0%
NP	0	0.0%
Athletic director	0	0.0%
Multiple examiners	0	0.0%
TOTAL	7	100.0%

Table 15.9 Gymnastics Athlete Removal from Activity at the Time of Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Removed	7	100.0%
Not removed*	0	0.0%
TOTAL	7	100.0%

*Not indicating the injury was mismanaged at the time of the event; athlete may not have reported injury, symptoms may not have presented until after the event, etc.

Table 15.10 Gymnastics Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Reported at least one previous concussion	1	14.3%
No reported previous concussions	6	85.7%
TOTAL	7	100.0%

Table 15.11 Most Recent Concussion for Gymnastics Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Within last month	0	0.0%
Within one to six months	0	0.0%
Within six months to one year	0	0.0%
Over one year	1	100.0%
TOTAL	1	100.0%

Table 15.12 Number of Previous Concussions for Gymnastics Athletes Reporting Previous Concussion after Head Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
1 concussion	0	0.0%
2 concussions	0	0.0%
3 concussions	0	0.0%
≥4 concussions	1	100.0%
Not specified	0	0.0%
TOTAL	1	100.0%

Table 15.13 Gymnastics Head Injuries by Athlete Clearance to Return to Activity before the End of Season in which the Injury Occurred, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Received written authorization to return by the end of season	7	100.0%
Did not receive written authorization to return by the end of season	0	0.0%
Follow-up Report not completed	0	0.0%
TOTAL	7	100.0%

Table 15.14 Gymnastics Head Injuries by Medical Examiner Authorizing Return to Activity, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
MD	5	71.4%
DO	1	14.3%
PA	0	0.0%
NP	1	14.3%
Medical examiner data not available*	0	0.0%
TOTAL	7	100.0%

Table 15.15 Gymnastics Head Injuries by Facility where Medical Examiner Authorized Return to Activity, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Hospital	0	0.0%
Urgent or Ready Care business	1	14.3%
Primary care physician or pediatrician's office	6	85.7%
Neurologist's office	0	0.0%
Team doctor	0	0.0%
Medical facility data not available*	0	0.0%
TOTAL	7	100.0%

Table 15.16 Gymnastics Head Injuries by Clearance to Return to Activity Conditions, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Unconditional return	5	71.4%
Conditions to return	2	28.6%
Return to activity data not available*	0	0.0%
TOTAL	7	100.0%

Table 15.17 Gymnastics Head Injuries by Missed School Days after Injury Event Date, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
0 Days	3	42.9%
1-2 Days	1	14.3%
3-6 Days	0	0.0%
7-9 Days	1	14.3%
10-20 Days	2	28.6%
≥21 Days	0	0.0%
Missed school data not available*	0	0.0%
TOTAL	7	100.0%

Table 15.18 Gymnastics Head Injuries by Time between Head Injury Event Date and Authorization Date to Return, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
1-2 Days	0	0.0%
3-5 Days	0	0.0%
6-10 Days	1	14.3%
11-15 Days	4	57.1%
16-20 Days	0	0.0%
≥21 Days	2	28.6%
Data not available**	0	0.0%
TOTAL	7	100.0%

0 Missing Follow-up Reports*

0 Did not receive clearance to return to activity before the end of season (thus no follow-up data)*

0 Data entry errors**

XVI. Ice Hockey Head Injury Reports

Table 16.1 Head Injury Prevalence Rate for Ice Hockey, MHSAA Head Injury Reporting System, 2021-22 School Year

Ice Hockey Participation	3,174
All Reported Ice Hockey Head Injuries	61
Ice Hockey Head Injury Prevalence Rate (reported head injuries/total participants)	1.92%
Ice Hockey Head Injury Prevalence Rate Per Thousand Participants	19

Table 16.2 Ice Hockey Head Injuries by Gender, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Male	61	100.0%
Female	0	0.0%
TOTAL	61	100.0%

Table 16.3 Ice Hockey Head Injuries by Level of Competition, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Varsity	59	96.7%
Junior Varsity	2	3.3%
Freshman	0	0.0%
TOTAL	61	100.0%

Table 16.4 Ice Hockey Head Injuries by Type of Exposure, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Practice	6	9.8%
Competition	55	90.2%
TOTAL	61	100.0%

Table 16.5 Ice Hockey Head Injuries by Time during Practice or Competition of Injury, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Start of practice	1	16.7%
Middle of practice	3	50.0%
End of practice	2	33.3%
PRACTICE TOTAL	6	100.0%
Start of competition	1	1.8%
Middle of competition	29	52.7%
End of competition	25	45.5%
COMPETITION TOTAL	55	100.0%

Table 16.6 Activity Type for Ice Hockey Head Injury Events during Practice, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
During a drill	3	50.0%
During simulated competition-scrimmage	3	50.0%
Not specified	0	0.0%
TOTAL	6	100.0%

Table 16.7 Ice Hockey Head Injuries by Cause of Injury, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Person to person contact	30	49.2%
Person to object contact (e.g. wall, equipment)	18	29.5%
Person to playing surface contact	7	11.5%
Uncertain as to the cause of the event	6	9.8%
TOTAL	61	100.0%

Table 16.8 Person to Playing Surface Contact Ice Hockey Head Injuries by Surface Type, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Ice	7	100.0%
TOTAL	7	100.0%

Table 16.9 Ice Hockey Head Injuries by Initial Examiner, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Athletic trainer	39	63.9%
Coach	11	18.0%
Sideline emergency personnel	0	0.0%
Other appropriate health care professional	0	0.0%
DO	0	0.0%
MD	1	1.6%
PA	0	0.0%
NP	0	0.0%
Athletic director	0	0.0%
Multiple examiners	10	16.4%
TOTAL	61	100.0%

Table 16.10 Ice Hockey Athlete Removal from Activity at the Time of Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Removed	49	80.3%
Not removed*	12	19.7%
TOTAL	61	100.0%

*Not indicating the injury was mismanaged at the time of the event; athlete may not have reported injury, symptoms may not have presented until after the event, etc.

Table 16.11 Ice Hockey Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Reported at least one previous concussion	18	29.5%
No reported previous concussions	43	70.5%
TOTAL	61	100.0%

Table 16.12 Most Recent Concussion for Ice Hockey Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Within last month	0	0.0%
Within one to six months	4	22.2%
Within six months to one year	2	11.1%
Over one year	12	66.7%
TOTAL	18	100.0%

Table 16.13 Number of Previous Concussions for Ice Hockey Athletes Reporting Previous Concussion after Head Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
1 concussion	15	83.3%
2 concussions	2	11.1%
3 concussions	0	0.0%
≥4 concussions	0	0.0%
Not specified	1	5.6%
TOTAL	18	100.0%

Table 16.14 Ice Hockey Head Injuries by Athlete Clearance to Return to Activity before the End of Season in which the Injury Occurred, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Received written authorization to return by the end of season	56	91.8%
Did not receive written authorization to return by the end of season	5	8.2%
Follow-up Report not completed	0	0.0%
TOTAL	61	100.0%

Table 16.15 Ice Hockey Head Injuries by Medical Examiner Authorizing Return to Activity, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
MD	31	50.8%
DO	13	21.3%
PA	7	11.5%
NP	5	8.2%
Medical examiner data not available*	5	8.2%
TOTAL	61	100.0%

Table 16.16 Ice Hockey Head Injuries by Facility where Medical Examiner Authorized Return to Activity, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Hospital	1	1.6%
Urgent or Ready Care business	4	6.6%
Primary care physician or pediatrician's office	37	60.7%
Neurologist's office	6	9.8%
Team doctor	8	13.1%
Medical facility data not available*	5	8.2%
TOTAL	61	100.0%

Table 16.17 Ice Hockey Head Injuries by Clearance to Return to Activity Conditions, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Unconditional return	51	83.6%
Conditions to return	5	8.2%
Return to activity data not available*	5	8.2%
TOTAL	61	100.0%

Table 16.18 Ice Hockey Head Injuries by Missed School Days after Injury Event Date, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
0 Days	33	54.1%
1-2 Days	18	29.5%
3-6 Days	4	6.6%
7-9 Days	0	0.0%
10-20 Days	1	1.6%
≥21 Days	0	0.0%
Missed school data not available*	5	8.2%
TOTAL	61	100.0%

Table 16.19 Ice Hockey Head Injuries by Time between Head Injury Event Date and Authorization Date to Return, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
1-2 Days	0	0.0%
3-5 Days	6	9.8%
6-10 Days	20	32.8%
11-15 Days	12	19.7%
16-20 Days	8	13.1%
≥21 Days	9	14.8%
Data not available**	6	9.8%
TOTAL	61	100.0%

0 Missing Follow-up Reports*

5 Did not receive clearance to return to activity before the end of season (thus no follow-up data)*

1 Data entry errors**

XVII. Boys Lacrosse Head Injury Reports

Table 17.1 Head Injury Prevalence Rate for Boys Lacrosse, MHSAA Head Injury Reporting System, 2021-22 School Year

Boys Lacrosse Participation	4,773
All Boys Lacrosse Head Injuries	65
Boys Lacrosse Head Injury Prevalence Rate (reported head injuries/total participants)	1.36%
Boys Lacrosse Head Injury Prevalence Rate Per Thousand Participants	14

Table 17.2 Boys Lacrosse Head Injuries by Gender, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Male	63	96.9%
Female	2	3.1%
TOTAL	65	100.0%

Table 17.3 Boys Lacrosse Head Injuries by Level of Competition, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Varsity	43	66.2%
Junior Varsity	22	33.8%
Freshman	0	0.0%
TOTAL	65	100.0%

Table 17.4 Boys Lacrosse Head Injuries by Type of Exposure, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Practice	14	21.5%
Competition	51	78.5%
TOTAL	65	100.0%

Table 17.5 Boys Lacrosse Head Injuries by Time during Practice or Competition of Injury, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Start of practice	1	7.1%
Middle of practice	9	64.3%
End of practice	4	28.6%
PRACTICE TOTAL	14	100.0%
Start of competition	2	3.9%
Middle of competition	26	51.0%
End of competition	23	45.1%
COMPETITION TOTAL	51	100.0%

Table 17.6 Activity Type for Boys Lacrosse Head Injury Events during Practice, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
During a drill	10	71.4%
During simulated competition-scrimmage	4	28.6%
Not specified	0	0.0%
TOTAL	14	100.0%

Table 17.7 Boys Lacrosse Head Injuries by Cause of Injury, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Person to person contact	30	46.2%
Person to object contact (e.g. wall, equipment)	20	30.8%
Person to playing surface contact	10	15.4%
Uncertain as to the cause of the event	5	7.7%
TOTAL	65	100.0%

Table 17.8 Person to Playing Surface Contact Boys Lacrosse Head Injuries by Surface Type, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Artificial turf	6	60.0%
Natural grass	2	20.0%
TOTAL	10	40.0%

Table 17.9 Boys Lacrosse Head Injuries by Initial Examiner, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Athletic trainer	44	67.7%
Coach	9	13.8%
Sideline emergency personnel	0	0.0%
Other appropriate health care professional	1	1.5%
DO	0	0.0%
MD	1	1.5%
PA	1	1.5%
NP	0	0.0%
Athletic director	0	0.0%
Multiple examiners	9	13.8%
TOTAL	65	100.0%

Table 17.10 Boys Lacrosse Athlete Removal from Activity at the Time of Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Removed	53	81.5%
Not removed*	12	18.5%
TOTAL	65	100.0%

*Not indicating the injury was mismanaged at the time of the event; athlete may not have reported injury, symptoms may not have presented until after the event, etc.

Table 17.11 Boys Lacrosse Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Reported at least one previous concussion	17	26.2%
No reported previous concussions	48	73.8%
TOTAL	65	100.0%

Table 17.12 Most Recent Concussion for Boys Lacrosse Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Within last month	0	0.0%
Within one to six months	1	5.9%
Within six months to one year	4	23.5%
Over one year	12	70.6%
TOTAL	17	100.0%

Table 17.13 Number of Previous Concussions for Boys Lacrosse Athletes Reporting Previous Concussion after Head Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
1 concussion	13	76.5%
2 concussions	2	11.8%
3 concussions	0	0.0%
≥4 concussions	2	11.8%
Not specified	0	0.0%
TOTAL	17	100.0%

Table 17.14 Boys Lacrosse Head Injuries by Athlete Clearance to Return to Activity before the End of Season in which the Injury Occurred, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Received written authorization to return by the end of season	51	78.5%
Did not receive written authorization to return by the end of season	11	16.9%
Follow-up Report not completed	3	4.6%
TOTAL	65	100.0%

Table 17.15 Boys Lacrosse Head Injuries by Medical Examiner Authorizing Return to Activity, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
MD	26	40.0%
DO	15	23.1%
PA	5	7.7%
NP	5	7.7%
Medical examiner data not available*	14	21.5%
TOTAL	65	100.0%

Table 17.16 Boys Lacrosse Head Injuries by Facility where Medical Examiner Authorized Return to Activity, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Hospital	1	1.5%
Urgent or Ready Care business	2	3.1%
Primary care physician or pediatrician's office	31	47.7%
Neurologist's office	7	10.8%
Team doctor	10	15.4%
Medical facility data not available*	14	21.5%
TOTAL	65	100.0%

Table 17.17 Boys Lacrosse Head Injuries by Clearance to Return to Activity Conditions, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Unconditional return	48	73.8%
Conditions to return	3	4.6%
Return to activity data not available*	14	21.5%
TOTAL	65	100.0%

Table 17.18 Boys Lacrosse Head Injuries by Missed School Days after Injury Event Date, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
0 Days	24	36.9%
1-2 Days	17	26.2%
3-6 Days	7	10.8%
7-9 Days	2	3.1%
10-20 Days	0	0.0%
≥21 Days	1	1.5%
Missed school data not available*	14	21.5%
TOTAL	65	100.0%

Table 17.19 Boys Lacrosse Head Injuries by Time between Head Injury Event Date and Authorization Date to Return, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
1-2 Days	1	1.5%
3-5 Days	6	9.2%
6-10 Days	12	18.5%
11-15 Days	16	24.6%
16-20 Days	5	7.7%
≥21 Days	11	16.9%
Data not available**	14	21.5%
TOTAL	65	100.0%

3 Missing Follow-up Reports*

11 Did not receive clearance to return to activity before the end of season (thus no follow-up data)*

0 Data entry errors**

XVIII. Girls Lacrosse Head Injuries

Table 18.1 Head Injury Prevalence Rate for Girls Lacrosse, MHSAA Head Injury Reporting System, 2021-22 School Year

Girls Lacrosse Participation	3,053
All Girls Lacrosse Head Injuries	65
Girls Lacrosse Head Injury Prevalence Rate (reported head injuries/total participants)	2.13%
Girls Lacrosse Head Injury Prevalence Rate Per Thousand Participants	21

Table 18.2 Girls Lacrosse Head Injuries by Level of Competition, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Varsity	47	72.3%
Junior Varsity	18	27.7%
Freshman	0	0.0%
TOTAL	65	100.0%

Table 18.3 Girls Lacrosse Head Injuries by Type of Exposure, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Practice	10	15.4%
Competition	55	84.6%
TOTAL	65	100.0%

Table 18.4 Girls Lacrosse Head Injuries by Time during Practice or Competition of Injury, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Start of practice	2	20.0%
Middle of practice	5	50.0%
End of practice	3	30.0%
PRACTICE TOTAL	10	100.0%
Start of competition	11	20.0%
Middle of competition	25	45.5%
End of competition	19	34.5%
COMPETITION TOTAL	55	100.0%

Table 18.5 Activity Type for Girls Lacrosse Head Injury Events during Practice, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
During a drill	6	60.0%
During simulated competition-scrimmage	4	40.0%
Not specified	0	0.0%
TOTAL	10	100.0%

Table 18.6 Girls Lacrosse Head Injuries by Cause of Injury, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Person to person contact	15	23.1%
Person to object contact (e.g. wall, equipment)	36	55.4%
Person to playing surface contact	11	16.9%
Uncertain as to the cause of the event	3	4.6%
TOTAL	65	100.0%

Table 18.7 Person to Playing Surface Contact Girls Lacrosse Head Injuries by Surface Type, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Artificial turf	9	81.8%
Natural grass	1	9.1%
Wooden gym floor	1	9.1%
TOTAL	11	18.2%

Table 18.8 Girls Lacrosse Head Injuries by Initial Examiner, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Athletic trainer	37	56.9%
Coach	12	18.5%
Sideline emergency personnel	0	0.0%
Other appropriate health care professional	2	3.1%
DO	0	0.0%
MD	3	4.6%
PA	0	0.0%
NP	0	0.0%
Athletic director	0	0.0%
Multiple examiners	11	16.9%
TOTAL	65	100.0%

Table 18.9 Girls Lacrosse Athlete Removal from Activity at the Time of Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Removed	46	70.8%
Not removed*	19	29.2%
TOTAL	65	100.0%

*Not indicating the injury was mismanaged at the time of the event; athlete may not have reported injury, symptoms may not have presented until after the event, etc.

Table 18.10 Girls Lacrosse Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Reported at least one previous concussion	10	15.4%
No reported previous concussions	55	84.6%
TOTAL	65	100.0%

Table 18.11 Most Recent Concussion for Girls Lacrosse Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Within last month	0	0.0%
Within one to six months	1	10.0%
Within six months to one year	4	40.0%
Over one year	5	50.0%
TOTAL	10	100.0%

Table 18.12 Number of Previous Concussions for Girls Lacrosse Athletes Reporting Previous Concussion after Head Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
1 concussion	7	70.0%
2 concussions	2	20.0%
3 concussions	0	0.0%
≥4 concussions	1	10.0%
Not specified	0	0.0%
TOTAL	10	100.0%

Table 18.13 Girls Lacrosse Head Injuries by Athlete Clearance to Return to Activity before the End of Season in which the Injury Occurred, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Received written authorization to return by the end of season	58	89.2%
Did not receive written authorization to return by the end of season	7	10.8%
Follow-up Report not completed	0	0.0%
TOTAL	65	100.0%

Table 18.14 Girls Lacrosse Head Injuries by Medical Examiner Authorizing Return to Activity, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
MD	29	44.6%
DO	15	23.1%
PA	5	7.7%
NP	9	13.8%
Medical examiner data not available*	7	10.8%
TOTAL	65	100.0%

Table 18.15 Girls Lacrosse Head Injuries by Facility where Medical Examiner Authorized Return to Activity, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Hospital	0	0.0%
Urgent or Ready Care business	2	3.1%
Primary care physician or pediatrician's office	41	63.1%
Neurologist's office	6	9.2%
Team doctor	9	13.8%
Medical facility data not available*	7	10.8%
TOTAL	65	100.0%

Table 18.16 Girls Lacrosse Head Injuries by Clearance to Return to Activity Conditions, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Unconditional return	51	78.5%
Conditions to return	7	10.8%
Return to activity data not available*	7	10.8%
TOTAL	65	100.0%

Table 18.17 Girls Lacrosse Head Injuries by Missed School Days after Injury Event Date, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
0 Days	40	61.5%
1-2 Days	12	18.5%
3-6 Days	6	9.2%
7-9 Days	0	0.0%
10-20 Days	0	0.0%
≥21 Days	0	0.0%
Missed school data not available*	7	10.8%
TOTAL	65	100.0%

Table 18.18 Girls Lacrosse Head Injuries by Time between Head Injury Event Date and Authorization Date to Return, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
1-2 Days	2	3.1%
3-5 Days	4	6.2%
6-10 Days	17	26.2%
11-15 Days	18	27.7%
16-20 Days	9	13.8%
≥21 Days	7	10.8%
Data not available**	8	12.3%
TOTAL	65	100.0%

0 Missing Follow-up Reports*

7 Did not receive clearance to return to activity before the end of season (thus no follow-up data)*

1 Data entry errors**

XIX. Boys Skiing Head Injury Reports

Table 19.1 Head Injury Prevalence Rate for Boys Skiing, MHSAA Head Injury Reporting System, 2021-22 School Year

Boys Skiing Participation	1,001
All Reported Boys Skiing Head Injuries	2
Boys Skiing Head Injury Prevalence Rate (reported head injuries/total participants)	0.20%
Boys Skiing Head Injury Prevalence Rate Per Thousand Participants	2

Table 19.2 Boys Skiing Head Injuries by Level of Competition, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Varsity	2	100.0%
Junior Varsity	0	0.0%
Freshman	0	0.0%
TOTAL	2	100.0%

Table 19.3 Boys Skiing Head Injuries by Type of Exposure, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Practice	1	50.0%
Competition	1	50.0%
TOTAL	2	100.0%

Table 19.4 Boys Skiing Head Injuries by Time during Practice or Competition of Injury, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Start of practice	0	0.0%
Middle of practice	1	100.0%
End of practice	0	0.0%
PRACTICE TOTAL	1	100.0%
Start of competition	0	0.0%
Middle of competition	1	100.0%
End of competition	0	0.0%
COMPETITION TOTAL	1	100.0%

Table 19.5 Activity Type for Boys Skiing Head Injury Events during Practice, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
During a drill	1	100.0%
During simulated competition-scrimmage	0	0.0%
Not specified	0	0.0%
TOTAL	1	100.0%

Table 19.6 Boys Skiing Head Injuries by Cause of Injury, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Person to person contact	0	0.0%
Person to object contact (e.g. wall, equipment)	0	0.0%
Person to playing surface contact	1	50.0%
Uncertain as to the cause of the event	1	50.0%
TOTAL	2	100.0%

Table 19.7 Person to Playing Surface Contact Boys Skiing Head Injuries by Surface Type, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Snow/ice covered ground	1	100.0%
TOTAL	1	100.0%

Table 19.8 Boys Skiing Head Injuries by Initial Examiner, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Athletic trainer	0	0.0%
Coach	0	0.0%
Sideline emergency personnel	0	0.0%
Other appropriate health care professional	1	50.0%
DO	0	0.0%
MD	0	0.0%
PA	0	0.0%
NP	0	0.0%
Athletic director	0	0.0%
Multiple examiners	1	50.0%
TOTAL	2	100.0%

Table 19.9 Boys Skiing Athlete Removal from Activity at the Time of Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Removed	2	100.0%
Not removed*	0	0.0%
TOTAL	2	100.0%

*Not indicating the injury was mismanaged at the time of the event; athlete may not have reported injury, symptoms may not have presented until after the event, etc.

Table 19.10 Boys Skiing Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Reported at least one previous concussion	0	0.0%
No reported previous concussions	2	100.0%
TOTAL	2	100.0%

Table 19.11 Most Recent Concussion for Boys Skiing Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Within last month	0	0.0%
Within one to six months	0	0.0%
Within six months to one year	0	0.0%
Over one year	0	0.0%
TOTAL	0	0.0%

Table 19.12 Number of Previous Concussions for Boys Skiing Athletes Reporting Previous Concussion after Head Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
1 concussion	0	0.0%
2 concussions	0	0.0%
3 concussions	0	0.0%
≥4 concussions	0	0.0%
Not specified	0	0.0%
TOTAL	0	0.0%

Table 19.13 Boys Skiing Head Injuries by Athlete Clearance to Return to Activity before the End of Season in which the Injury Occurred, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Received written authorization to return by the end of season	2	100.0%
Did not receive written authorization to return by the end of season	0	0.0%
Follow-up Report not completed	0	0.0%
TOTAL	2	100.0%

Table 19.14 Boys Skiing Head Injuries by Medical Examiner Authorizing Return to Activity, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
MD	1	50.0%
DO	1	50.0%
PA	0	0.0%
NP	0	0.0%
Medical examiner data not available*	0	0.0%
TOTAL	2	100.0%

Table 19.15 Boys Skiing Head Injuries by Facility where Medical Examiner Authorized Return to Activity, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Hospital	0	0.0%
Urgent or Ready Care business	0	0.0%
Primary care physician or pediatrician's office	2	100.0%
Neurologist's office	0	0.0%
Team doctor	0	0.0%
Medical facility data not available*	0	0.0%
TOTAL	2	100.0%

Table 19.16 Boys Skiing Head Injuries by Clearance to Return to Activity Conditions, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Unconditional return	2	100.0%
Conditions to return	0	0.0%
Return to activity data not available*	0	0.0%
TOTAL	2	100.0%

Table 19.17 Boys Skiing Head Injuries by Missed School Days after Injury Event Date, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
0 Days	0	0.0%
1-2 Days	2	100.0%
3-6 Days	0	0.0%
7-9 Days	0	0.0%
10-20 Days	0	0.0%
≥21 Days	0	0.0%
Missed school data not available*	0	0.0%
TOTAL	2	100.0%

Table 19.18 Boys Skiing Head Injuries by Time between Head Injury Event Date and Authorization Date to Return, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
1-2 Days	0	0.0%
3-5 Days	1	50.0%
6-10 Days	1	50.0%
11-15 Days	0	0.0%
16-20 Days	0	0.0%
≥21 Days	0	0.0%
Data not available**	0	0.0%
TOTAL	2	100.0%

0 Missing Follow-up Reports*

0 Did not receive clearance to return to activity before the end of season (thus no follow-up data)*

0 Data entry errors**

XX. Girls Skiing Head Injury Reports

Table 20.1 Head Injury Prevalence Rate for Girls Skiing, MHSAA Head Injury Reporting System, 2021-22 School Year

Girls Skiing Participation	837
All Reported Girls Skiing Head Injuries	4
Girls Skiing Head Injury Prevalence Rate (reported head injuries/total participants)	0.48%
Girls Skiing Head Injury Prevalence Rate Per Thousand Participants	5

Table 20.2 Girls Skiing Head Injuries by Level of Competition, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Varsity	4	100.0%
Junior Varsity	0	0.0%
Freshman	0	0.0%
TOTAL	4	100.0%

Table 20.3 Girls Skiing Head Injuries by Type of Exposure, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Practice	4	100.0%
Competition	0	0.0%
TOTAL	4	100.0%

Table 20.4 Girls Skiing Head Injuries by Time during Practice or Competition of Injury, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Start of practice	1	25.0%
Middle of practice	1	25.0%
End of practice	2	50.0%
PRACTICE TOTAL	4	100.0%
Start of competition	0	0.0%
Middle of competition	0	0.0%
End of competition	0	0.0%
COMPETITION TOTAL	0	0.0%

Table 20.5 Activity Type for Girls Skiing Head Injury Events during Practice, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
During a drill	2	50.0%
During simulated competition-scrimmage	2	50.0%
Not specified	0	0.0%
TOTAL	4	100.0%

Table 20.6 Girls Skiing Head Injuries by Cause of Injury, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Person to person contact	0	0.0%
Person to object contact (e.g. wall, equipment)	0	0.0%
Person to playing surface contact	4	100.0%
Uncertain as to the cause of the event	0	0.0%
TOTAL	4	100.0%

Table 20.7 Person to Playing Surface Contact Girls Skiing Head Injuries by Surface Type, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Snow/ice covered ground	4	100.0%
TOTAL	4	100.0%

Table 20.8 Girls Skiing Head Injuries by Initial Examiner, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Athletic trainer	0	0.0%
Coach	3	75.0%
Sideline emergency personnel	0	0.0%
Other appropriate health care professional	1	25.0%
DO	0	0.0%
MD	0	0.0%
PA	0	0.0%
NP	0	0.0%
Athletic director	0	0.0%
Multiple examiners	0	0.0%
TOTAL	4	100.0%

Table 20.9 Girls Skiing Athlete Removal from Activity at the Time of Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Removed	4	100.0%
Not removed*	0	0.0%
TOTAL	4	100.0%

*Not indicating the injury was mismanaged at the time of the event; athlete may not have reported injury, symptoms may not have presented until after the event, etc.

Table 20.10 Girls Skiing Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Reported at least one previous concussion	0	0.0%
No reported previous concussions	4	100.0%
TOTAL	4	100.0%

Table 20.11 Most Recent Concussion for Girls Skiing Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Within last month	0	0.0%
Within one to six months	0	0.0%
Within six months to one year	0	0.0%
Over one year	0	0.0%
TOTAL	0	0.0%

Table 20.12 Number of Previous Concussions for Girls Skiing Athletes Reporting Previous Concussion after Head Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
1 concussion	0	0.0%
2 concussions	0	0.0%
3 concussions	0	0.0%
≥4 concussions	0	0.0%
Not specified	0	0.0%
TOTAL	0	0.0%

Table 20.13 Girls Skiing Head Injuries by Athlete Clearance to Return to Activity before the End of Season in which the Injury Occurred, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Received written authorization to return by the end of season	4	100.0%
Did not receive written authorization to return by the end of season	0	0.0%
Follow-up Report not completed	0	0.0%
TOTAL	4	100.0%

Table 20.14 Girls Skiing Head Injuries by Medical Examiner Authorizing Return to Activity, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
MD	4	100.0%
DO	0	0.0%
PA	0	0.0%
NP	0	0.0%
Medical examiner data not available*	0	0.0%
TOTAL	4	100.0%

Table 20.15 Girls Skiing Head Injuries by Facility where Medical Examiner Authorized Return to Activity, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Hospital	0	0.0%
Urgent or Ready Care business	0	0.0%
Primary care physician or pediatrician's office	3	75.0%
Neurologist's office	1	25.0%
Team doctor	0	0.0%
Medical facility data not available*	0	0.0%
TOTAL	4	100.0%

Table 20.16 Girls Skiing Head Injuries by Clearance to Return to Activity Conditions, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Unconditional return	4	100.0%
Conditions to return	0	0.0%
Return to activity data not available*	0	0.0%
TOTAL	4	100.0%

Table 20.17 Girls Skiing Head Injuries by Missed School Days after Injury Event Date, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
0 Days	4	100.0%
1-2 Days	0	0.0%
3-6 Days	0	0.0%
7-9 Days	0	0.0%
10-20 Days	0	0.0%
≥21 Days	0	0.0%
Missed school data not available*	0	0.0%
TOTAL	4	100.0%

Table 20.18 Girls Skiing Head Injuries by Time between Head Injury Event Date and Authorization Date to Return, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
1-2 Days	0	0.0%
3-5 Days	0	0.0%
6-10 Days	2	50.0%
11-15 Days	0	0.0%
16-20 Days	1	25.0%
≥21 Days	0	0.0%
Data not available**	1	25.0%
TOTAL	4	100.0%

0 Missing Follow-up Reports*

0 Did not receive clearance to return to activity before the end of season (thus no follow-up data)*

1 Data entry errors**

XXI. Boys Soccer Head Injury Reports

Table 21.1 Head Injury Prevalence Rate for Boys Soccer, MHSAA Head Injury Reporting System, 2021-22 School Year

Boys Soccer Participation	13,161
All Reported Boys Soccer Head Injuries	138
Boys Soccer Head Injury Prevalence Rate (reported head injuries/total participants)	1.05%
Boys Soccer Head Injury Prevalence Rate Per Thousand Participants	10

Table 21.2 Boys Soccer Head Injuries by Gender, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Male	138	100.0%
Female	0	0.0%
TOTAL	138	100.0%

Table 21.3 Boys Soccer Head Injuries by Level of Competition, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Varsity	104	75.4%
Junior Varsity	27	19.6%
Freshman	7	5.1%
TOTAL	138	100.0%

Table 21.4 Boys Soccer Head Injuries by Type of Exposure, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Practice	22	15.9%
Competition	116	84.1%
TOTAL	138	100.0%

Table 21.5 Boys Soccer Head Injuries by Time during Practice or Competition of Injury, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Start of practice	2	9.1%
Middle of practice	12	54.5%
End of practice	8	36.4%
PRACTICE TOTAL	22	100.0%
Start of competition	10	8.6%
Middle of competition	64	55.2%
End of competition	42	36.2%
COMPETITION TOTAL	116	100.0%

Table 21.6 Activity Type for Boys Soccer Head Injury Events during Practice, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
During a drill	16	72.7%
During simulated competition-scrimmage	6	27.3%
Not specified	0	0.0%
TOTAL	22	100.0%

Table 21.7 Boys Soccer Head Injuries by Cause of Injury, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Person to person contact	66	47.8%
Person to object contact (e.g. wall, equipment)	45	32.6%
Person to playing surface contact	18	13.0%
Uncertain as to the cause of the event	9	6.5%
TOTAL	138	100.0%

Table 21.8 Person to Playing Surface Contact Boys Soccer Head Injuries by Surface Type, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Natural grass	8	44.4%
Artificial turf	9	50.0%
Playing surface	1	5.6%
TOTAL	18	100.0%

Table 21.9 Boys Soccer Head Injuries by Initial Examiner, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Athletic trainer	90	65.2%
Coach	15	10.9%
Sideline emergency personnel	0	0.0%
Other appropriate health care professional	4	2.9%
DO	0	0.0%
MD	3	2.2%
PA	1	0.7%
NP	0	0.0%
Athletic director	2	1.4%
Multiple examiners	23	16.7%
TOTAL	138	100.0%

Table 21.10 Boys Soccer Athlete Removal from Activity at the Time of Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Removed	109	79.0%
Not removed*	29	21.0%
TOTAL	138	100.0%

*Not indicating the injury was mismanaged at the time of the event; athlete may not have reported injury, symptoms may not have presented until after the event, etc.

Table 21.11 Boys Soccer Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Reported at least one previous concussion	14	10.1%
No reported previous concussions	124	89.9%
TOTAL	138	100.0%

Table 21.12 Most Recent Concussion for Boys Soccer Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Within last month	0	0.0%
Within one to six months	0	0.0%
Within six months to one year	5	35.7%
Over one year	9	64.3%
TOTAL	14	100.0%

Table 21.13 Number of Previous Concussions for Boys Soccer Athletes Reporting Previous Concussion after Head Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
1 concussion	10	71.4%
2 concussions	1	7.1%
3 concussions	3	21.4%
≥4 concussions	0	0.0%
Not specified	0	0.0%
TOTAL	14	100.0%

Table 21.14 Boys Soccer Head Injuries by Athlete Clearance to Return to Activity before the End of Season in which the Injury Occurred, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Received written authorization to return by the end of season	120	87.0%
Did not receive written authorization to return by the end of season	14	10.1%
Follow-up Report not completed	4	2.9%
TOTAL	138	100.0%

Table 21.15 Boys Soccer Head Injuries by Medical Examiner Authorizing Return to Activity, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
MD	75	54.3%
DO	27	19.6%
PA	8	5.8%
NP	10	7.2%
Medical examiner data not available*	18	13.0%
TOTAL	138	100.0%

Table 21.16 Boys Soccer Head Injuries by Facility where Medical Examiner Authorized Return to Activity, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Hospital	3	2.2%
Urgent or Ready Care business	9	6.5%
Primary care physician or pediatrician's office	74	53.6%
Neurologist's office	15	10.9%
Team doctor	19	13.8%
Medical facility data not available*	18	13.0%
TOTAL	138	100.0%

Table 21.17 Boys Soccer Head Injuries by Clearance to Return to Activity Conditions, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Unconditional return	114	82.6%
Conditions to return	6	4.3%
Return to activity data not available*	18	13.0%
TOTAL	138	100.0%

Table 21.18 Boys Soccer Head Injuries by Missed School Days after Injury Event Date, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
0 Days	73	52.9%
1-2 Days	36	26.1%
3-6 Days	8	5.8%
7-9 Days	3	2.2%
10-20 Days	0	0.0%
≥21 Days	0	0.0%
Missed school data not available*	18	13.0%
TOTAL	138	100.0%

Table 21.19 Boys Soccer Head Injuries by Time between Head Injury Event Date and Authorization Date to Return, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
1-2 Days	3	2.2%
3-5 Days	13	9.4%
6-10 Days	46	33.3%
11-15 Days	37	26.8%
16-20 Days	12	8.7%
≥21 Days	7	5.1%
Data not available**	20	14.5%
TOTAL	138	100.0%

4 Missing Follow-up Reports*

14 Did not receive clearance to return to activity before the end of season (thus no follow-up data)*

2 Data entry errors**

XXII. Girls Soccer Head Injury Reports

Table 22.1 Head Injury Prevalence Rate for Girls Soccer, MHSAA Head Injury Reporting System, 2021-22 School Year

Girls Soccer Participation	11,826
All Girls Soccer Head Injuries	256
Girls Soccer Head Injury Prevalence Rate (reported head injuries/total participants)	2.16%
Girls Soccer Head Injury Prevalence Rate Per Thousand Participants	22

Table 22.2 Girls Soccer Head Injuries by Level of Competition, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Varsity	195	76.2%
Junior Varsity	58	22.7%
Freshman	3	1.2%
TOTAL	256	100.0%

Table 22.3 Girls Soccer Head Injuries by Type of Exposure, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Practice	28	10.9%
Competition	228	89.1%
TOTAL	256	100.0%

Table 22.4 Girls Soccer Head Injuries by Time during Practice or Competition of Injury, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Start of practice	2	7.1%
Middle of practice	16	57.1%
End of practice	10	35.7%
PRACTICE TOTAL	28	100.0%
Start of competition	15	6.6%
Middle of competition	117	51.3%
End of competition	96	42.1%
COMPETITION TOTAL	228	100.0%

Table 22.5 Activity Type for Girls Soccer Head Injury Events during Practice, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
During a drill	18	64.3%
During simulated competition-scrimmage	9	32.1%
Not specified	1	3.6%
TOTAL	28	100.0%

Table 22.6 Girls Soccer Head Injuries by Cause of Injury, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Person to person contact	92	35.9%
Person to object contact (e.g. wall, equipment)	100	39.1%
Person to playing surface contact	48	18.8%
Uncertain as to the cause of the event	16	6.3%
TOTAL	256	100.0%

Table 22.7 Person to Playing Surface Contact Girls Soccer Head Injuries by Surface Type, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Natural grass	25	52.1%
Artificial turf	22	45.8%
Field	1	2.1%
TOTAL	48	100.0%

Table 22.8 Girls Soccer Head Injuries by Initial Examiner, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Athletic trainer	173	67.6%
Coach	42	16.4%
Sideline emergency personnel	0	0.0%
Other appropriate health care professional	6	2.3%
DO	2	0.8%
MD	3	1.2%
PA	0	0.0%
NP	1	0.4%
Athletic director	3	1.2%
Multiple examiners	26	10.2%
TOTAL	256	100.0%

Table 22.9 Girls Soccer Athlete Removal from Activity at the Time of Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Removed	204	79.7%
Not removed*	52	20.3%
TOTAL	256	100.0%

*Not indicating the injury was mismanaged at the time of the event; athlete may not have reported injury, symptoms may not have presented until after the event, etc.

Table 22.10 Girls Soccer Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Reported at least one previous concussion	49	19.1%
No reported previous concussions	207	80.9%
TOTAL	256	100.0%

Table 22.11 Most Recent Concussion for Girls Soccer Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Within last month	2	4.1%
Within one to six months	7	14.3%
Within six months to one year	5	10.2%
Over one year	35	71.4%
TOTAL	49	100.0%

Table 22.12 Number of Previous Concussions for Girls Soccer Athletes Reporting Previous Concussion after Head Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
1 concussion	34	69.4%
2 concussions	9	18.4%
3 concussions	3	6.1%
≥4 concussions	1	2.0%
Not specified	2	4.1%
TOTAL	49	100.0%

Table 22.13 Girls Soccer Head Injuries by Athlete Clearance to Return to Activity before the End of Season in which the Injury Occurred, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Received written authorization to return by the end of season	197	77.0%
Did not receive written authorization to return by the end of season	37	14.5%
Follow-up Report not completed	22	8.6%
TOTAL	256	100.0%

Table 22.14 Girls Soccer Head Injuries by Medical Examiner Authorizing Return to Activity, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
MD	107	41.8%
DO	43	16.8%
PA	13	5.1%
NP	34	13.3%
Medical examiner data not available*	59	23.0%
TOTAL	256	100.0%

Table 22.15 Girls Soccer Head Injuries by Facility where Medical Examiner Authorized Return to Activity, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Hospital	4	1.6%
Urgent or Ready Care business	14	5.5%
Primary care physician or pediatrician's office	141	55.1%
Neurologist's office	14	5.5%
Team doctor	24	9.4%
Medical facility data not available*	59	23.0%
TOTAL	256	100.0%

Table 22.16 Girls Soccer Head Injuries by Clearance to Return to Activity Conditions, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Unconditional return	174	68.0%
Conditions to return	23	9.0%
Return to activity data not available*	59	23.0%
TOTAL	256	100.0%

Table 22.17 Girls Soccer Head Injuries by Missed School Days after Injury Event Date, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
0 Days	113	44.1%
1-2 Days	64	25.0%
3-6 Days	14	5.5%
7-9 Days	4	1.6%
10-20 Days	2	0.8%
≥21 Days	0	0.0%
Missed school data not available*	59	23.0%
TOTAL	256	100.0%

Table 22.18 Girls Soccer Head Injuries by Time between Head Injury Event Date and Authorization Date to Return, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
1-2 Days	6	2.3%
3-5 Days	12	4.7%
6-10 Days	71	27.7%
11-15 Days	60	23.4%
16-20 Days	21	8.2%
≥21 Days	24	9.4%
Data not available**	62	24.2%
TOTAL	256	100.0%

22 Missing Follow-up Reports*

37 Did not receive clearance to return to activity before the end of season (thus no follow-up data)*

3 Data entry errors**

XXIII. Softball Head Injury Reports

Table 23.1 Head Injury Prevalence Rate for Softball, MHSAA Head Injury Reporting System, 2021-22 School Year

Softball Participation	11,800
All Softball Head Injuries	107
Softball Head Injury Prevalence Rate (reported head injuries/total participants)	0.91%
Softball Head Injury Prevalence Rate Per Thousand Participants	9

Table 23.2 Softball Head Injuries by Level of Competition, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Varsity	63	58.9%
Junior Varsity	44	41.1%
Freshman	0	0.0%
TOTAL	107	100.0%

Table 23.3 Softball Head Injuries by Type of Exposure, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Practice	32	29.9%
Competition	75	70.1%
TOTAL	107	100.0%

Table 23.4 Softball Head Injuries by Time during Practice or Competition of Injury, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Start of practice	7	21.9%
Middle of practice	15	46.9%
End of practice	10	31.3%
PRACTICE TOTAL	32	100.0%
Start of competition	18	24.0%
Middle of competition	46	61.3%
End of competition	11	14.7%
COMPETITION TOTAL	75	100.0%

Table 23.5 Activity Type for Softball Head Injury Events during Practice, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
During a drill	30	93.8%
During simulated competition-scrimmage	2	6.3%
Not specified	0	0.0%
TOTAL	32	100.0%

Table 23.6 Softball Head Injuries by Cause of Injury, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Person to person contact	22	20.6%
Person to object contact (e.g. wall, equipment)	71	66.4%
Person to playing surface contact	6	5.6%
Uncertain as to the cause of the event	8	7.5%
TOTAL	107	100.0%

Table 23.7 Person to Playing Surface Contact Softball Head Injuries by Surface Type, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Natural grass	2	33.3%
Infield dirt	1	16.7%
Softball field	1	16.7%
TOTAL	6	100.0%

Table 23.8 Softball Head Injuries by Initial Examiner, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Athletic trainer	46	43.0%
Coach	34	31.8%
Sideline emergency personnel	0	0.0%
Other appropriate health care professional	1	0.9%
DO	0	0.0%
MD	2	1.9%
PA	1	0.9%
NP	0	0.0%
Athletic director	0	0.0%
Multiple examiners	23	21.5%
TOTAL	107	100.0%

Table 23.9 Softball Athlete Removal from Activity at the Time of Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Removed	87	81.3%
Not removed*	20	18.7%
TOTAL	107	100.0%

*Not indicating the injury was mismanaged at the time of the event; athlete may not have reported injury, symptoms may not have presented until after the event, etc.

Table 23.10 Softball Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Reported at least one previous concussion	10	9.3%
No reported previous concussions	97	90.7%
TOTAL	107	100.0%

Table 23.11 Most Recent Concussion for Softball Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Within last month	0	0.0%
Within one to six months	6	60.0%
Within six months to one year	2	20.0%
Over one year	2	20.0%
TOTAL	10	100.0%

Table 23.12 Number of Previous Concussions for Softball Athletes Reporting Previous Concussion after Head Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
1 concussion	8	80.0%
2 concussions	0	0.0%
3 concussions	0	0.0%
≥4 concussions	2	20.0%
Not specified	0	0.0%
TOTAL	10	100.0%

Table 23.13 Softball Head Injuries by Athlete Clearance to Return to Activity before the End of Season in which the Injury Occurred, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Received written authorization to return by the end of season	79	73.8%
Did not receive written authorization to return by the end of season	16	15.0%
Follow-up Report not completed	12	11.2%
TOTAL	107	100.0%

Table 23.14 Softball Head Injuries by Medical Examiner Authorizing Return to Activity, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
MD	43	40.2%
DO	13	12.1%
PA	10	9.3%
NP	13	12.1%
Medical examiner data not available*	28	26.2%
TOTAL	107	100.0%

Table 23.15 Softball Head Injuries by Facility where Medical Examiner Authorized Return to Activity, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Hospital	3	2.8%
Urgent or Ready Care business	12	11.2%
Primary care physician or pediatrician's office	56	52.3%
Neurologist's office	2	1.9%
Team doctor	6	5.6%
Medical facility data not available*	28	26.2%
TOTAL	107	100.0%

Table 23.16 Softball Head Injuries by Clearance to Return to Activity Conditions, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Unconditional return	69	64.5%
Conditions to return	10	9.3%
Return to activity data not available*	28	26.2%
TOTAL	107	100.0%

Table 23.17 Softball Head Injuries by Missed School Days after Injury Event Date, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
0 Days	42	39.3%
1-2 Days	21	19.6%
3-6 Days	14	13.1%
7-9 Days	1	0.9%
10-20 Days	1	0.9%
≥21 Days	0	0.0%
Missed school data not available*	28	26.2%
TOTAL	107	100.0%

Table 23.18 Softball Head Injuries by Time between Head Injury Event Date and Authorization Date to Return, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
1-2 Days	1	0.9%
3-5 Days	6	5.6%
6-10 Days	28	26.2%
11-15 Days	21	19.6%
16-20 Days	11	10.3%
≥21 Days	10	9.3%
Data not available**	30	28.0%
TOTAL	107	100.0%

12 Missing Follow-up Reports*

16 Did not receive clearance to return to activity before the end of season (thus no follow-up data)*

2 Data entry errors**

XXIV. Boys Swimming & Diving Head Injury Reports

Table 24.1 Head Injury Prevalence Rate for Boys Swimming & Diving, MHSAA Head Injury Reporting System, 2021-22 School Year

Boys Swimming & Diving Participation	4,359
All Reported Boys Swimming & Diving Head Injuries	11
Boys Swimming & Diving Head Injury Prevalence Rate (reported head injuries/total participants)	0.25%
Boys Swimming & Diving Head Injury Prevalence Rate Per Thousand Participants	3

Table 24.2 Boys Swimming & Diving Head Injuries by Level of Competition, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Varsity	11	100.0%
Junior Varsity	0	0.0%
Freshman	0	0.0%
TOTAL	11	100.0%

Table 24.3 Boys Swimming & Diving Head Injuries by Type of Exposure, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Practice	7	63.6%
Competition	4	36.4%
TOTAL	11	100.0%

Table 24.4 Boys Swimming & Diving Head Injuries by Time during Practice or Competition of Injury, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Start of practice	1	14.3%
Middle of practice	5	71.4%
End of practice	1	14.3%
PRACTICE TOTAL	7	100.0%
Start of competition	0	0.0%
Middle of competition	1	25.0%
End of competition	3	75.0%
COMPETITION TOTAL	4	100.0%

Table 24.5 Activity Type for Boys Swimming & Diving Head Injury Events during Practice, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
During a drill	7	100.0%
During simulated competition-scrimmage	0	0.0%
Not specified	0	0.0%
TOTAL	7	100.0%

Table 24.6 Boys Swimming & Diving Head Injuries by Cause of Injury, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Person to person contact	2	18.2%
Person to object contact (e.g. wall, equipment)	5	45.5%
Person to playing surface contact	4	36.4%
Uncertain as to the cause of the event	0	0.0%
TOTAL	11	100.0%

Table 24.7 Person to Playing Surface Contact Boys Swimming & Diving Head Injuries by Surface Type, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Water	3	75.0%
Pool	1	25.0%
TOTAL	4	100.0%

Table 24.8 Boys Swimming & Diving Head Injuries by Initial Examiner, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Athletic trainer	4	36.4%
Coach	2	18.2%
Sideline emergency personnel	0	0.0%
Other appropriate health care professional	0	0.0%
DO	0	0.0%
MD	1	9.1%
PA	0	0.0%
NP	0	0.0%
Athletic director	0	0.0%
Multiple examiners	4	36.4%
TOTAL	11	100.0%

Table 24.9 Boys Swimming & Diving Athlete Removal from Activity at the Time of Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Removed	8	72.7%
Not removed*	3	27.3%
TOTAL	11	100.0%

*Not indicating the injury was mismanaged at the time of the event; athlete may not have reported injury, symptoms may not have presented until after the event, etc.

Table 24.10 Boys Swimming & Diving Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Reported at least one previous concussion	3	27.3%
No reported previous concussions	8	72.7%
TOTAL	11	100.0%

Table 24.11 Most Recent Concussion for Boys Swimming & Diving Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Within last month	0	0.0%
Within one to six months	0	0.0%
Within six months to one year	0	0.0%
Over one year	3	100.0%
TOTAL	3	100.0%

Table 24.12 Number of Previous Concussions for Boys Swimming & Diving Athletes Reporting Previous Concussion after Head Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
1 concussion	3	100.0%
2 concussions	0	0.0%
3 concussions	0	0.0%
≥4 concussions	0	0.0%
Not specified	0	0.0%
TOTAL	3	100.0%

Table 24.13 Boys Swimming & Diving Head Injuries by Athlete Clearance to Return to Activity before the End of Season in which the Injury Occurred, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Received written authorization to return by the end of season	8	72.7%
Did not receive written authorization to return by the end of season	1	9.1%
Follow-up Report not completed	2	18.2%
TOTAL	11	100.0%

Table 24.14 Boys Swimming & Diving Head Injuries by Medical Examiner Authorizing Return to Activity, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
MD	6	54.5%
DO	1	9.1%
PA	1	9.1%
NP	0	0.0%
Medical examiner data not available*	3	27.3%
TOTAL	11	100.0%

Table 24.15 Boys Swimming & Diving Head Injuries by Facility where Medical Examiner Authorized Return to Activity, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Hospital	0	0.0%
Urgent or Ready Care business	0	0.0%
Primary care physician or pediatrician's office	8	72.7%
Neurologist's office	0	0.0%
Team doctor	0	0.0%
Medical facility data not available*	3	27.3%
TOTAL	11	100.0%

Table 24.16 Boys Swimming & Diving Head Injuries by Clearance to Return to Activity Conditions, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Unconditional return	7	63.6%
Conditions to return	1	9.1%
Return to activity data not available*	3	27.3%
TOTAL	11	100.0%

Table 24.17 Boys Swimming & Diving Head Injuries by Missed School Days after Injury Event Date, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
0 Days	7	63.6%
1-2 Days	1	9.1%
3-6 Days	0	0.0%
7-9 Days	0	0.0%
10-20 Days	0	0.0%
≥21 Days	0	0.0%
Missed school data not available*	3	27.3%
TOTAL	11	100.0%

Table 24.18 Boys Swimming & Diving Head Injuries by Time between Head Injury Event Date and Authorization Date to Return, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
1-2 Days	0	0.0%
3-5 Days	0	0.0%
6-10 Days	5	45.5%
11-15 Days	2	18.2%
16-20 Days	0	0.0%
≥21 Days	1	9.1%
Data not available**	3	27.3%
TOTAL	11	100.0%

2 Missing Follow-up Reports*

1 Did not receive clearance to return to activity before the end of season (thus no follow-up data)*

0 Data entry errors**

XXV. Girls Swimming & Diving Head Injury Reports

Table 25.1 Head Injury Prevalence Rate for Girls Swimming & Diving, MHSAA Head Injury Reporting System, 2021-22 School Year

Girls Swimming & Diving Participation	5,174
All Reported Girls Swimming & Diving Head Injuries	31
Girls Swimming & Diving Head Injury Prevalence Rate (reported head injuries/total participants)	0.60%
Girls Swimming & Diving Head Injury Prevalence Rate Per Thousand Participants	6

Table 25.2 Girls Swimming & Diving Head Injuries by Level of Competition, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Varsity	29	93.5%
Junior Varsity	1	3.2%
Freshman	1	3.2%
TOTAL	31	100.0%

Table 25.3 Girls Swimming & Diving Head Injuries by Type of Exposure, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Practice	20	64.5%
Competition	11	35.5%
TOTAL	31	100.0%

Table 25.4 Girls Swimming & Diving Head Injuries by Time during Practice or Competition of Injury, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Start of practice	5	16.1%
Middle of practice	9	29.0%
End of practice	6	19.4%
PRACTICE TOTAL	20	64.5%
Start of competition	4	36.4%
Middle of competition	2	18.2%
End of competition	5	45.5%
COMPETITION TOTAL	11	100.0%

Table 25.5 Activity Type for Girls Swimming & Diving Head Injury Events during Practice, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
During a drill	18	90.0%
During simulated competition-scrimmage	1	5.0%
Not specified	1	5.0%
TOTAL	20	100.0%

Table 25.6 Girls Swimming & Diving Head Injuries by Cause of Injury, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Person to person contact	4	12.9%
Person to object contact (e.g. wall, equipment)	13	41.9%
Person to playing surface contact	13	41.9%
Uncertain as to the cause of the event	1	3.2%
TOTAL	31	100.0%

Table 25.7 Person to Playing Surface Contact Girls Swimming & Diving Head Injuries by Surface Type, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Water	11	84.6%
Pool	2	15.4%
TOTAL	13	15.4%

Table 25.8 Girls Swimming & Diving Head Injuries by Initial Examiner, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Athletic trainer	13	41.9%
Coach	6	19.4%
Sideline emergency personnel	0	0.0%
Other appropriate health care professional	0	0.0%
DO	0	0.0%
MD	0	0.0%
PA	0	0.0%
NP	0	0.0%
Athletic director	0	0.0%
Multiple examiners	12	38.7%
TOTAL	31	100.0%

Table 25.9 Girls Swimming & Diving Athlete Removal from Activity at the Time of Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Removed	26	83.9%
Not removed*	5	16.1%
TOTAL	31	100.0%

*Not indicating the injury was mismanaged at the time of the event; athlete may not have reported injury, symptoms may not have presented until after the event, etc.

Table 25.10 Girls Swimming & Diving Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Reported at least one previous concussion	10	32.3%
No reported previous concussions	21	67.7%
TOTAL	31	100.0%

Table 25.11 Most Recent Concussion for Girls Swimming & Diving Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Within last month	0	0.0%
Within one to six months	1	10.0%
Within six months to one year	1	10.0%
Over one year	8	80.0%
TOTAL	10	100.0%

Table 25.12 Number of Previous Concussions for Girls Swimming & Diving Athletes Reporting Previous Concussion after Head Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
1 concussion	6	60.0%
2 concussions	3	30.0%
3 concussions	0	0.0%
≥4 concussions	1	10.0%
Not specified	0	0.0%
TOTAL	10	100.0%

Table 25.13 Girls Swimming & Diving Head Injuries by Athlete Clearance to Return to Activity before the End of Season in which the Injury Occurred, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Received written authorization to return by the end of season	24	77.4%
Did not receive written authorization to return by the end of season	4	12.9%
Follow-up Report not completed	3	9.7%
TOTAL	31	100.0%

Table 25.14 Girls Swimming & Diving Head Injuries by Medical Examiner Authorizing Return to Activity, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
MD	16	51.6%
DO	4	12.9%
PA	3	9.7%
NP	1	3.2%
Medical examiner data not available*	7	22.6%
TOTAL	31	100.0%

Table 25.15 Girls Swimming & Diving Head Injuries by Facility where Medical Examiner Authorized Return to Activity, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Hospital	0	0.0%
Urgent or Ready Care business	1	3.2%
Primary care physician or pediatrician's office	17	54.8%
Neurologist's office	2	6.5%
Team doctor	4	12.9%
Medical facility data not available*	7	22.6%
TOTAL	31	100.0%

Table 25.16 Girls Swimming & Diving Head Injuries by Clearance to Return to Activity Conditions, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Unconditional return	21	67.7%
Conditions to return	3	9.7%
Return to activity data not available*	7	22.6%
TOTAL	31	100.0%

Table 25.17 Girls Swimming & Diving Head Injuries by Missed School Days after Injury Event Date, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
0 Days	11	35.5%
1-2 Days	11	35.5%
3-6 Days	1	3.2%
7-9 Days	0	0.0%
10-20 Days	1	3.2%
≥21 Days	0	0.0%
Missed school data not available*	7	22.6%
TOTAL	31	100.0%

Table 25.18 Girls Swimming & Diving Head Injuries by Time between Head Injury Event Date and Authorization Date to Return, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
1-2 Days	1	3.2%
3-5 Days	3	9.7%
6-10 Days	5	16.1%
11-15 Days	7	22.6%
16-20 Days	3	9.7%
≥21 Days	5	16.1%
Data not available**	7	22.6%
TOTAL	31	100.0%

3 Missing Follow-up Reports*

4 Did not receive clearance to return to activity before the end of season (thus no follow-up data)*

0 Data entry errors**

XXVI. Boys Tennis Head Injury Reports

Table 26.1 Head Injury Prevalence Rate for Boys Tennis, MHSAA Head Injury Reporting System, 2021-22 School Year

Boys Tennis Participation	6,067
All Reported Boys Tennis Head Injuries	1
Boys Tennis Head Injury Prevalence Rate (reported head injuries/total participants)	0.02%
Boys Tennis Head Injury Prevalence Rate Per Thousand Participants	0

Table 26.2 Boys Tennis Head Injuries by Level of Competition, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Varsity	1	100.0%
Junior Varsity	0	0.0%
Freshman	0	0.0%
TOTAL	1	100.0%

Table 26.3 Boys Tennis Head Injuries by Type of Exposure, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Practice	0	0.0%
Competition	1	100.0%
TOTAL	1	100.0%

Table 26.4 Boys Tennis Head Injuries by Time during Practice or Competition of Injury, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Start of practice	0	0.0%
Middle of practice	0	0.0%
End of practice	0	0.0%
PRACTICE TOTAL	0	0.0%
Start of competition	0	0.0%
Middle of competition	1	100.0%
End of competition	0	0.0%
COMPETITION TOTAL	1	100.0%

Table 26.5 Activity Type for Boys Tennis Head Injury Events during Practice, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
During a drill	0	0.0%
During simulated competition-scrimmage	0	0.0%
Not specified	0	0.0%
TOTAL	0	0.0%

Table 26.6 Boys Tennis Head Injuries by Cause of Injury, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Person to person contact	0	0.0%
Person to object contact (e.g. wall, equipment)	1	100.0%
Person to playing surface contact	0	0.0%
Uncertain as to the cause of the event	0	0.0%
TOTAL	1	100.0%

Table 26.7 Person to Playing Surface Contact Boys Tennis Head Injuries by Surface Type, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Tennis court	0	0.0%
TOTAL	0	0.0%

Table 26.8 Boys Tennis Head Injuries by Initial Examiner, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Athletic trainer	0	0.0%
Coach	0	0.0%
Sideline emergency personnel	0	0.0%
Other appropriate health care professional	0	0.0%
DO	0	0.0%
MD	0	0.0%
PA	0	0.0%
NP	0	0.0%
Athletic director	0	0.0%
Multiple examiners	1	100.0%
TOTAL	1	100.0%

Table 26.9 Boys Tennis Athlete Removal from Activity at the Time of Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Removed	1	100.0%
Not removed*	0	0.0%
TOTAL	1	100.0%

*Not indicating the injury was mismanaged at the time of the event; athlete may not have reported injury, symptoms may not have presented until after the event, etc.

Table 26.10 Boys Tennis Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Reported at least one previous concussion	0	0.0%
No reported previous concussions	1	100.0%
TOTAL	1	100.0%

Table 26.11 Most Recent Concussion for Boys Tennis Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Within last month	0	0.0%
Within one to six months	0	0.0%
Within six months to one year	0	0.0%
Over one year	0	0.0%
TOTAL	0	0.0%

Table 26.12 Number of Previous Concussions for Boys Tennis Athletes Reporting Previous Concussion after Head Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
1 concussion	0	0.0%
2 concussions	0	0.0%
3 concussions	0	0.0%
≥4 concussions	0	0.0%
Not specified	0	0.0%
TOTAL	0	0.0%

Table 26.13 Boys Tennis Head Injuries by Athlete Clearance to Return to Activity before the End of Season in which the Injury Occurred, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Received written authorization to return by the end of season	1	100.0%
Did not receive written authorization to return by the end of season	0	0.0%
Follow-up Report not completed	0	0.0%
TOTAL	1	100.0%

Table 26.14 Boys Tennis Head Injuries by Medical Examiner Authorizing Return to Activity, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
MD	1	100.0%
DO	0	0.0%
PA	0	0.0%
NP	0	0.0%
Medical examiner data not available*	0	0.0%
TOTAL	1	100.0%

Table 26.15 Boys Tennis Head Injuries by Facility where Medical Examiner Authorized Return to Activity, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Hospital	0	0.0%
Urgent or Ready Care business	0	0.0%
Primary care physician or pediatrician's office	1	100.0%
Neurologist's office	0	0.0%
Team doctor	0	0.0%
Medical facility data not available*	0	0.0%
TOTAL	1	100.0%

Table 26.16 Boys Tennis Head Injuries by Clearance to Return to Activity Conditions, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Unconditional return	0	0.0%
Conditions to return	1	100.0%
Return to activity data not available*	0	0.0%
TOTAL	1	100.0%

Table 26.17 Boys Tennis Head Injuries by Missed School Days after Injury Event Date, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
0 Days	1	100.0%
1-2 Days	0	0.0%
3-6 Days	0	0.0%
7-9 Days	0	0.0%
10-20 Days	0	0.0%
≥21 Days	0	0.0%
Missed school data not available*	0	0.0%
TOTAL	1	100.0%

Table 26.18 Boys Tennis Head Injuries by Time between Head Injury Event Date and Authorization Date to Return, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
1-2 Days	0	0.0%
3-5 Days	0	0.0%
6-10 Days	0	0.0%
11-15 Days	1	100.0%
16-20 Days	0	0.0%
≥21 Days	0	0.0%
Data not available**	0	0.0%
TOTAL	1	100.0%

0 Missing Follow-up Reports*

0 Did not receive clearance to return to activity before the end of season (thus no follow-up data)*

0 Data entry errors**

XXVII. Girls Tennis Head Injury Reports

Table 27.1 Head Injury Prevalence Rate for Girls Tennis, MHSAA Head Injury Reporting System, 2021-22 School Year

Girls Tennis Participation	7,936
All Girls Tennis Head Injuries	2
Girls Tennis Head Injury Prevalence Rate	0.03%
Girls Tennis Head Injury Prevalence Rate Per Thousand Participants	0

Table 27.2 Girls Tennis Head Injuries by Level of Competition, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Varsity	2	100.0%
Junior Varsity	0	0.0%
Freshman	0	0.0%
TOTAL	2	100.0%

Table 27.3 Girls Tennis Head Injuries by Type of Exposure, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Practice	1	50.0%
Competition	1	50.0%
TOTAL	2	100.0%

Table 27.4 Girls Tennis Head Injuries by Time during Practice or Competition of Injury, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Start of practice	0	0.0%
Middle of practice	1	100.0%
End of practice	0	0.0%
PRACTICE TOTAL	1	100.0%
Start of competition	0	0.0%
Middle of competition	1	100.0%
End of competition	0	0.0%
COMPETITION TOTAL	1	100.0%

Table 27.5 Activity Type for Girls Tennis Head Injury Events during Practice, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
During a drill	1	100.0%
During simulated competition-scrimmage	0	0.0%
Not specified	0	0.0%
TOTAL	1	100.0%

Table 27.6 Girls Tennis Head Injuries by Cause of Injury, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Person to person contact	0	0.0%
Person to object contact (e.g. wall, equipment)	2	100.0%
Person to playing surface contact	0	0.0%
Uncertain as to the cause of the event	0	0.0%
TOTAL	2	100.0%

Table 27.7 Person to Playing Surface Contact Girls Tennis Head Injuries by Surface Type, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Tennis court	0	0.0%
TOTAL	0	0.0%

Table 27.8 Girls Tennis Head Injuries by Initial Examiner, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Athletic trainer	2	100.0%
Coach	0	0.0%
Sideline emergency personnel	0	0.0%
Other appropriate health care professional	0	0.0%
DO	0	0.0%
MD	0	0.0%
PA	0	0.0%
NP	0	0.0%
Athletic director	0	0.0%
Multiple examiners	0	0.0%
TOTAL	2	100.0%

Table 27.9 Girls Tennis Athlete Removal from Activity at the Time of Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Removed	2	100.0%
Not removed*	0	0.0%
TOTAL	2	100.0%

*Not indicating the injury was mismanaged at the time of the event; athlete may not have reported injury, symptoms may not have presented until after the event, etc.

Table 27.10 Girls Tennis Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Reported at least one previous concussion	1	50.0%
No reported previous concussions	1	50.0%
TOTAL	2	100.0%

Table 27.11 Most Recent Concussion for Girls Tennis Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Within last month	0	0.0%
Within one to six months	0	0.0%
Within six months to one year	0	0.0%
Over one year	1	100.0%
TOTAL	1	100.0%

Table 27.12 Number of Previous Concussions for Girls Tennis Athletes Reporting Previous Concussion after Head Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
1 concussion	1	100.0%
2 concussions	0	0.0%
3 concussions	0	0.0%
≥4 concussions	0	0.0%
Not specified	0	0.0%
TOTAL	1	100.0%

Table 27.13 Girls Tennis Head Injuries by Athlete Clearance to Return to Activity before the End of Season in which the Injury Occurred, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Received written authorization to return by the end of season	2	100.0%
Did not receive written authorization to return by the end of season	0	0.0%
Follow-up Report not completed	0	0.0%
TOTAL	2	100.0%

Table 27.14 Girls Tennis Head Injuries by Medical Examiner Authorizing Return to Activity, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
MD	1	50.0%
DO	1	50.0%
PA	0	0.0%
NP	0	0.0%
Medical examiner data not available*	0	0.0%
TOTAL	2	100.0%

Table 27.15 Girls Tennis Head Injuries by Facility where Medical Examiner Authorized Return to Activity, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Hospital	0	0.0%
Urgent or Ready Care business	2	100.0%
Primary care physician or pediatrician's office	0	0.0%
Neurologist's office	0	0.0%
Team doctor	0	0.0%
Medical facility data not available*	0	0.0%
TOTAL	2	100.0%

Table 27.16 Girls Tennis Head Injuries by Clearance to Return to Activity Conditions, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Unconditional return	2	100.0%
Conditions to return	0	0.0%
Return to activity data not available*	0	0.0%
TOTAL	2	100.0%

Table 27.17 Girls Tennis Head Injuries by Missed School Days after Injury Event Date, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
0 Days	0	0.0%
1-2 Days	2	100.0%
3-6 Days	0	0.0%
7-9 Days	0	0.0%
10-20 Days	0	0.0%
≥21 Days	0	0.0%
Missed school data not available*	0	0.0%
TOTAL	2	100.0%

Table 27.18 Girls Tennis Head Injuries by Time between Head Injury Event Date and Authorization Date to Return, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
1-2 Days	0	0.0%
3-5 Days	0	0.0%
6-10 Days	0	0.0%
11-15 Days	2	100.0%
16-20 Days	0	0.0%
≥21 Days	0	0.0%
Data not available**	0	0.0%
TOTAL	2	100.0%

0 Missing Follow-up Reports*

0 Did not receive clearance to return to activity before the end of season (thus no follow-up data)*

0 Data entry errors**

**XXVIII. Boys Track & Field
Head Injury Reports**

Table 28.1 Head Injury Prevalence Rate for Boys Track & Field, MHSAA Head Injury Reporting System, 2021-22 School Year

Boys Track and Field Participation	22,120
All Boys Track and Field Head Injuries	10
Boys Track and Field Head Injury Prevalence Rate (reported head injuries/total participants)	0.05%
Boys Track and Field Head Injury Prevalence Rate Per Thousand Participants	0

Table 28.2 Boys Track & Field Head Injuries by Level of Competition, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Varsity	10	100.0%
Junior Varsity	0	0.0%
Freshman	0	0.0%
TOTAL	10	100.0%

Table 28.3 Boys Track & Field Head Injuries by Type of Exposure, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Practice	8	80.0%
Competition	2	20.0%
TOTAL	10	100.0%

Table 28.4 Boys Track & Field Head Injuries by Time during Practice or Competition of Injury, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Start of practice	1	12.5%
Middle of practice	4	50.0%
End of practice	3	37.5%
PRACTICE TOTAL	8	100.0%
Start of competition	2	100.0%
Middle of competition	0	0.0%
End of competition	0	0.0%
COMPETITION TOTAL	2	100.0%

Table 28.5 Activity Type for Boys Track & Field Head Injury Events during Practice, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
During a drill	8	100.0%
During simulated competition-scrimmage	0	0.0%
Not specified	0	0.0%
TOTAL	8	100.0%

Table 28.6 Boys Track & Field Head Injuries by Cause of Injury, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Person to person contact	1	10.0%
Person to object contact (e.g. wall, equipment)	6	60.0%
Person to playing surface contact	3	30.0%
Uncertain as to the cause of the event	0	0.0%
TOTAL	10	100.0%

Table 28.7 Person to Playing Surface Contact Boys Track & Field Head Injuries by Surface Type, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Track	1	33.3%
Concrete	1	33.3%
Pole vault runway	1	33.3%
TOTAL	3	100.0%

Table 28.8 Boys Track & Field Head Injuries by Initial Examiner, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Athletic trainer	5	50.0%
Coach	4	40.0%
Sideline emergency personnel	0	0.0%
Other appropriate health care professional	0	0.0%
DO	0	0.0%
MD	0	0.0%
PA	0	0.0%
NP	0	0.0%
Athletic director	0	0.0%
Multiple examiners	1	10.0%
TOTAL	10	100.0%

Table 28.9 Boys Track & Field Athlete Removal from Activity at the Time of Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Removed	8	80.0%
Not removed*	2	20.0%
TOTAL	10	100.0%

*Not indicating the injury was mismanaged at the time of the event; athlete may not have reported injury, symptoms may not have presented until after the event, etc.

Table 28.10 Boys Track & Field Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Reported at least one previous concussion	2	20.0%
No reported previous concussions	8	80.0%
TOTAL	10	100.0%

Table 28.11 Most Recent Concussion for Boys Track & Field Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Within last month	0	0.0%
Within one to six months	0	0.0%
Within six months to one year	1	50.0%
Over one year	1	50.0%
TOTAL	2	100.0%

Table 28.12 Number of Previous Concussions for Boys Track & Field Athletes Reporting Previous Concussion after Head Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
1 concussion	1	50.0%
2 concussions	0	0.0%
3 concussions	1	50.0%
≥4 concussions	0	0.0%
Not specified	0	0.0%
TOTAL	2	100.0%

Table 28.13 Boys Track & Field Head Injuries by Athlete Clearance to Return to Activity before the End of Season in which the Injury Occurred, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Received written authorization to return by the end of season	8	80.0%
Did not receive written authorization to return by the end of season	1	10.0%
Follow-up Report not completed	1	10.0%
TOTAL	10	100.0%

Table 28.14 Boys Track & Field Head Injuries by Medical Examiner Authorizing Return to Activity, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
MD	2	20.0%
DO	1	10.0%
PA	4	40.0%
NP	1	10.0%
Medical examiner data not available*	2	20.0%
TOTAL	10	100.0%

Table 28.15 Boys Track & Field Head Injuries by Facility where Medical Examiner Authorized Return to Activity, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Hospital	0	0.0%
Urgent or Ready Care business	2	20.0%
Primary care physician or pediatrician's office	5	50.0%
Neurologist's office	0	0.0%
Team doctor	1	10.0%
Medical facility data not available*	2	20.0%
TOTAL	10	100.0%

Table 28.16 Boys Track & Field Head Injuries by Clearance to Return to Activity Conditions, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Unconditional return	8	80.0%
Conditions to return	0	0.0%
Return to activity data not available*	2	20.0%
TOTAL	10	100.0%

Table 28.17 Boys Track & Field Head Injuries by Missed School Days after Injury Event Date, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
0 Days	5	50.0%
1-2 Days	3	30.0%
3-6 Days	0	0.0%
7-9 Days	0	0.0%
10-20 Days	0	0.0%
≥21 Days	0	0.0%
Missed school data not available*	2	20.0%
TOTAL	10	100.0%

Table 28.18 Boys Track & Field Head Injuries by Time between Head Injury Event Date and Authorization Date to Return, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
1-2 Days	0	0.0%
3-5 Days	0	0.0%
6-10 Days	3	30.0%
11-15 Days	1	10.0%
16-20 Days	2	20.0%
≥21 Days	2	20.0%
Data not available**	2	20.0%
TOTAL	10	100.0%

1 Missing Follow-up Reports*

1 Did not receive clearance to return to activity before the end of season (thus no follow-up data)*

0 Data entry errors**

**XXIX. Girls Track & Field
Head Injury Reports**

Table 29.1 Head Injury Prevalence Rate for Girls Track & Field, MHSAA Head Injury Reporting System, 2021-22 School Year

Girls Track and Field Participation	15,594
All Girls Track and Field Head Injuries	8
Girls Track and Field Head Injury Prevalence Rate (reported head injuries/total participants)	0.05%
Girls Track and Field Head Injury Prevalence Rate Per Thousand Participants	1

Table 29.2 Girls Track & Field Head Injuries by Level of Competition, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Varsity	8	100.0%
Junior Varsity	0	0.0%
Freshman	0	0.0%
TOTAL	8	100.0%

Table 29.3 Girls Track & Field Head Injuries by Type of Exposure, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Practice	5	62.5%
Competition	3	37.5%
TOTAL	8	100.0%

Table 29.4 Girls Track & Field Head Injuries by Time during Practice or Competition of Injury, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Start of practice	0	0.0%
Middle of practice	0	0.0%
End of practice	5	100.0%
PRACTICE TOTAL	5	100.0%
Start of competition	0	0.0%
Middle of competition	2	66.7%
End of competition	1	33.3%
COMPETITION TOTAL	3	100.0%

Table 29.5 Activity Type for Girls Track & Field Head Injury Events during Practice, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
During a drill	4	80.0%
During simulated competition-scrimmage	1	20.0%
Not specified	0	0.0%
TOTAL	5	100.0%

Table 29.6 Girls Track & Field Head Injuries by Cause of Injury, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Person to person contact	0	0.0%
Person to object contact (e.g. wall, equipment)	3	37.5%
Person to playing surface contact	5	62.5%
Uncertain as to the cause of the event	0	0.0%
TOTAL	8	100.0%

Table 29.7 Person to Playing Surface Contact Girls Track & Field Head Injuries by Surface Type, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Track	4	80.0%
Hardwood gym floor	1	20.0%
TOTAL	5	100.0%

Table 29.8 Girls Track & Field Head Injuries by Initial Examiner, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Athletic trainer	3	37.5%
Coach	4	50.0%
Sideline emergency personnel	0	0.0%
Other appropriate health care professional	0	0.0%
DO	0	0.0%
MD	0	0.0%
PA	0	0.0%
NP	0	0.0%
Athletic director	0	0.0%
Multiple examiners	1	12.5%
TOTAL	8	100.0%

Table 29.9 Girls Track & Field Athlete Removal from Activity at the Time of Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Removed	8	100.0%
Not removed*	0	0.0%
TOTAL	8	100.0%

*Not indicating the injury was mismanaged at the time of the event; athlete may not have reported injury, symptoms may not have presented until after the event, etc.

Table 29.10 Girls Track & Field Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Reported at least one previous concussion	2	25.0%
No reported previous concussions	6	75.0%
TOTAL	8	100.0%

Table 29.11 Most Recent Concussion for Girls Track & Field Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Within last month	0	0.0%
Within one to six months	0	0.0%
Within six months to one year	2	100.0%
Over one year	0	0.0%
TOTAL	2	100.0%

Table 29.12 Number of Previous Concussions for Girls Track & Field Athletes Reporting Previous Concussion after Head Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
1 concussion	1	50.0%
2 concussions	1	50.0%
3 concussions	0	0.0%
≥4 concussions	0	0.0%
Not specified	0	0.0%
TOTAL	2	100.0%

Table 29.13 Girls Track & Field Head Injuries by Athlete Clearance to Return to Activity before the End of Season in which the Injury Occurred, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Received written authorization to return by the end of season	7	87.5%
Did not receive written authorization to return by the end of season	1	12.5%
Follow-up Report not completed	0	0.0%
TOTAL	8	100.0%

Table 29.14 Girls Track & Field Head Injuries by Medical Examiner Authorizing Return to Activity, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
MD	4	50.0%
DO	2	25.0%
PA	1	12.5%
NP	0	0.0%
Medical examiner data not available*	1	12.5%
TOTAL	8	100.0%

Table 29.15 Girls Track & Field Head Injuries by Facility where Medical Examiner Authorized Return to Activity, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Hospital	0	0.0%
Urgent or Ready Care business	0	0.0%
Primary care physician or pediatrician's office	5	62.5%
Neurologist's office	0	0.0%
Team doctor	2	25.0%
Medical facility data not available*	1	12.5%
TOTAL	8	100.0%

Table 29.16 Girls Track & Field Head Injuries by Clearance to Return to Activity Conditions, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Unconditional return	6	75.0%
Conditions to return	1	12.5%
Return to activity data not available*	1	12.5%
TOTAL	8	100.0%

Table 29.17 Girls Track & Field Head Injuries by Missed School Days after Injury Event Date, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
0 Days	5	62.5%
1-2 Days	1	12.5%
3-6 Days	1	12.5%
7-9 Days	0	0.0%
10-20 Days	0	0.0%
≥21 Days	0	0.0%
Missed school data not available*	1	12.5%
TOTAL	8	100.0%

Table 29.18 Girls Track & Field Head Injuries by Time between Head Injury Event Date and Authorization Date to Return, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
1-2 Days	0	0.0%
3-5 Days	0	0.0%
6-10 Days	2	25.0%
11-15 Days	2	25.0%
16-20 Days	0	0.0%
≥21 Days	3	37.5%
Data not available**	1	12.5%
TOTAL	8	100.0%

0 Missing Follow-up Reports*

1 Did not receive clearance to return to activity before the end of season (thus no follow-up data)*

0 Data entry errors**

XXX. Volleyball Head Injury Reports

Table 30.1 Head Injury Prevalence Rate for Volleyball, MHSAA Head Injury Reporting System, 2021-22 School Year

Volleyball Participation	18,798
All Reported Volleyball Head Injuries	120
Volleyball Head Injury Prevalence Rate (reported head injuries/total participants)	0.64%
Volleyball Head Injury Prevalence Rate Per Thousand Participants	6

Table 30.2 Volleyball Head Injuries by Level of Competition, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Varsity	63	52.5%
Junior Varsity	36	30.0%
Freshman	21	17.5%
TOTAL	120	100.0%

Table 30.3 Volleyball Head Injuries by Type of Exposure, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Practice	55	45.8%
Competition	65	54.2%
TOTAL	120	100.0%

Table 30.4 Volleyball Head Injuries by Time during Practice or Competition of Injury, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Start of practice	6	10.9%
Middle of practice	30	54.5%
End of practice	19	34.5%
PRACTICE TOTAL	55	100.0%
Start of competition	10	15.4%
Middle of competition	32	49.2%
End of competition	23	35.4%
COMPETITION TOTAL	65	100.0%

Table 30.5 Activity Type for Volleyball Head Injury Events during Practice, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
During a drill	46	83.6%
During simulated competition-scrimmage	9	16.4%
Not specified	0	0.0%
TOTAL	55	100.0%

Table 30.6 Volleyball Head Injuries by Cause of Injury, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Person to person contact	18	15.0%
Person to object contact (e.g. wall, equipment)	67	55.8%
Person to playing surface contact	22	18.3%
Uncertain as to the cause of the event	13	10.8%
TOTAL	120	100.0%

Table 30.7 Person to Playing Surface Contact Volleyball Head Injuries by Surface Type, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Wooded gym floor	21	95.5%
Other	1	4.5%
TOTAL	22	100.0%

Table 30.8 Volleyball Head Injuries by Initial Examiner, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Athletic trainer	51	42.5%
Coach	40	33.3%
Sideline emergency personnel	0	0.0%
Other appropriate health care professional	5	4.2%
DO	1	0.8%
MD	0	0.0%
PA	0	0.0%
NP	0	0.0%
Athletic director	1	0.8%
Multiple examiners	22	18.3%
TOTAL	120	100.0%

Table 30.9 Volleyball Athlete Removal from Activity at the Time of Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Removed	96	80.0%
Not removed*	24	20.0%
TOTAL	120	100.0%

*Not indicating the injury was mismanaged at the time of the event; athlete may not have reported injury, symptoms may not have presented until after the event, etc.

Table 30.10 Volleyball Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Reported at least one previous concussion	14	11.7%
No reported previous concussions	106	88.3%
TOTAL	120	100.0%

Table 30.11 Most Recent Concussion for Volleyball Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Within last month	0	0.0%
Within one to six months	2	14.3%
Within six months to one year	6	42.9%
Over one year	6	42.9%
TOTAL	14	100.0%

Table 30.12 Number of Previous Concussions for Volleyball Athletes Reporting Previous Concussion after Head Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
1 concussion	9	64.3%
2 concussions	2	14.3%
3 concussions	1	7.1%
≥4 concussions	2	14.3%
Not specified	0	0.0%
TOTAL	14	100.0%

Table 30.13 Volleyball Head Injuries by Athlete Clearance to Return to Activity before the End of Season in which the Injury Occurred, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Received written authorization to return by the end of season	99	82.5%
Did not receive written authorization to return by the end of season	20	16.7%
Follow-up Report not completed	1	0.8%
TOTAL	120	100.0%

Table 30.14 Volleyball Head Injuries by Medical Examiner Authorizing Return to Activity, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
MD	53	44.2%
DO	18	15.0%
PA	13	10.8%
NP	15	12.5%
Medical examiner data not available*	21	17.5%
TOTAL	120	100.0%

Table 30.15 Volleyball Head Injuries by Facility where Medical Examiner Authorized Return to Activity, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Hospital	3	2.5%
Urgent or Ready Care business	10	8.3%
Primary care physician or pediatrician's office	67	55.8%
Neurologist's office	11	9.2%
Team doctor	8	6.7%
Medical facility data not available*	21	17.5%
TOTAL	120	100.0%

Table 30.16 Volleyball Head Injuries by Clearance to Return to Activity Conditions, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Unconditional return	92	76.7%
Conditions to return	7	5.8%
Return to activity data not available*	21	17.5%
TOTAL	120	100.0%

Table 30.17 Volleyball Head Injuries by Missed School Days after Injury Event Date, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
0 Days	59	49.2%
1-2 Days	29	24.2%
3-6 Days	7	5.8%
7-9 Days	1	0.8%
10-20 Days	3	2.5%
≥21 Days	0	0.0%
Missed school data not available*	21	17.5%
TOTAL	120	100.0%

Table 30.18 Volleyball Head Injuries by Time between Head Injury Event Date and Authorization Date to Return, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
1-2 Days	3	2.5%
3-5 Days	5	4.2%
6-10 Days	38	31.7%
11-15 Days	26	21.7%
16-20 Days	14	11.7%
≥21 Days	13	10.8%
Data not available**	21	17.5%
TOTAL	120	100.0%

1 Missing Follow-up Reports*

20 Did not receive clearance to return to activity before the end of season (thus no follow-up data)*

0 Data entry errors**

XXXI. Wrestling Head Injury Reports

Table 31.1 Head Injury Prevalence Rate for Wrestling, MHSAA Head Injury Reporting System, 2021-22 School Year

Wrestling Participation	9,057
All Reported Wrestling Head Injuries	181
Wrestling Head Injury Prevalence Rate (reported head injuries/total participants)	2.00%
Wrestling Head Injury Prevalence Rate Per Thousand Participants	20

Table 31.2 Wrestling Head Injuries by Gender, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Male	169	93.4%
Female	12	6.6%
TOTAL	181	100.0%

Table 31.3 Wrestling Head Injuries by Level of Competition, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Varsity	156	86.2%
Junior Varsity	25	13.8%
Freshman	0	0.0%
TOTAL	181	100.0%

Table 31.4 Wrestling Head Injuries by Type of Exposure, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Practice	79	43.6%
Competition	102	56.4%
TOTAL	181	100.0%

Table 31.5 Wrestling Head Injuries by Time during Practice or Competition of Injury, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Start of practice	4	5.1%
Middle of practice	45	57.0%
End of practice	30	38.0%
PRACTICE TOTAL	79	100.0%
Start of competition	7	6.9%
Middle of competition	54	52.9%
End of competition	41	40.2%
COMPETITION TOTAL	102	100.0%

Table 31.6 Activity Type for Wrestling Head Injury Events during Practice, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
During a drill	55	69.6%
During simulated competition-scrimmage	23	29.1%
Not specified	1	1.3%
TOTAL	79	100.0%

Table 31.7 Wrestling Head Injuries by Cause of Injury, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Person to person contact	70	38.7%
Person to object contact (e.g. wall, equipment)	6	3.3%
Person to playing surface contact	93	51.4%
Uncertain as to the cause of the event	12	6.6%
TOTAL	181	100.0%

Table 31.8 Person to Playing Surface Contact Wrestling Head Injuries by Surface Type, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Wrestling-type mat	90	97.8%
Wooden gym floor	2	2.2%
TOTAL	92	100.0%

Table 31.9 Wrestling Head Injuries by Initial Examiner, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Athletic trainer	112	61.9%
Coach	23	12.7%
Sideline emergency personnel	1	0.6%
Other appropriate health care professional	2	1.1%
DO	0	0.0%
MD	5	2.8%
PA	0	0.0%
NP	0	0.0%
Athletic director	0	0.0%
Multiple examiners	38	21.0%
TOTAL	181	100.0%

Table 31.10 Wrestling Athlete Removal from Activity at the Time of Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Removed	141	77.9%
Not removed*	40	22.1%
TOTAL	181	100.0%

*Not indicating the injury was mismanaged at the time of the event; athlete may not have reported injury, symptoms may not have presented until after the event, etc.

Table 31.11 Wrestling Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Reported at least one previous concussion	28	15.5%
No reported previous concussions	153	84.5%
TOTAL	181	100.0%

Table 31.12 Most Recent Concussion for Wrestling Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Within last month	0	0.0%
Within one to six months	5	17.9%
Within six months to one year	5	17.9%
Over one year	18	64.3%
TOTAL	28	100.0%

Table 31.13 Number of Previous Concussions for Wrestling Athletes Reporting Previous Concussion after Head Injury Event, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
1 concussion	20	71.4%
2 concussions	4	14.3%
3 concussions	1	3.6%
≥4 concussions	3	10.7%
Not specified	0	0.0%
TOTAL	28	100.0%

Table 31.14 Wrestling Head Injuries by Athlete Clearance to Return to Activity before the End of Season in which the Injury Occurred, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Received written authorization to return by the end of season	144	79.6%
Did not receive written authorization to return by the end of season	35	19.3%
Follow-up Report not completed	2	1.1%
TOTAL	181	100.0%

Table 31.15 Wrestling Head Injuries by Medical Examiner Authorizing Return to Activity, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
MD	72	39.8%
DO	39	21.5%
PA	16	8.8%
NP	17	9.4%
Medical examiner data not available*	37	20.4%
TOTAL	181	100.0%

Table 31.16 Wrestling Head Injuries by Facility where Medical Examiner Authorized Return to Activity, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Hospital	8	4.4%
Urgent or Ready Care business	9	5.0%
Primary care physician or pediatrician's office	101	55.8%
Neurologist's office	10	5.5%
Team doctor	16	8.8%
Medical facility data not available*	37	20.4%
TOTAL	181	100.0%

Table 31.17 Wrestling Head Injuries by Clearance to Return to Activity Conditions, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
Unconditional return	133	73.5%
Conditions to return	11	6.1%
Return to activity data not available*	37	20.4%
TOTAL	181	100.0%

Table 31.18 Wrestling Head Injuries by Missed School Days after Injury Event Date, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
0 Days	95	52.5%
1-2 Days	32	17.7%
3-6 Days	10	5.5%
7-9 Days	3	1.7%
10-20 Days	4	2.2%
≥21 Days	0	0.0%
Missed school data not available*	37	20.4%
TOTAL	181	100.0%

Table 31.19 Wrestling Head Injuries by Time between Head Injury Event Date and Authorization Date to Return, MHSAA Head Injury Reporting System, 2021-22 School Year

	n	%
1-2 Days	0	0.0%
3-5 Days	15	8.3%
6-10 Days	31	17.1%
11-15 Days	36	19.9%
16-20 Days	19	10.5%
≥21 Days	42	23.2%
Data not available**	38	21.0%
TOTAL	181	100.0%

2 Missing Follow-up Reports*

35 Did not receive clearance to return to activity before the end of season (thus no follow-up data)*

1 Data entry errors**

XXXII. Seven Year Comparison

Table 32.1 Head Injury Reports by Sport and Year, MHSAA Head Injury Reporting System, 2021-22 School Year

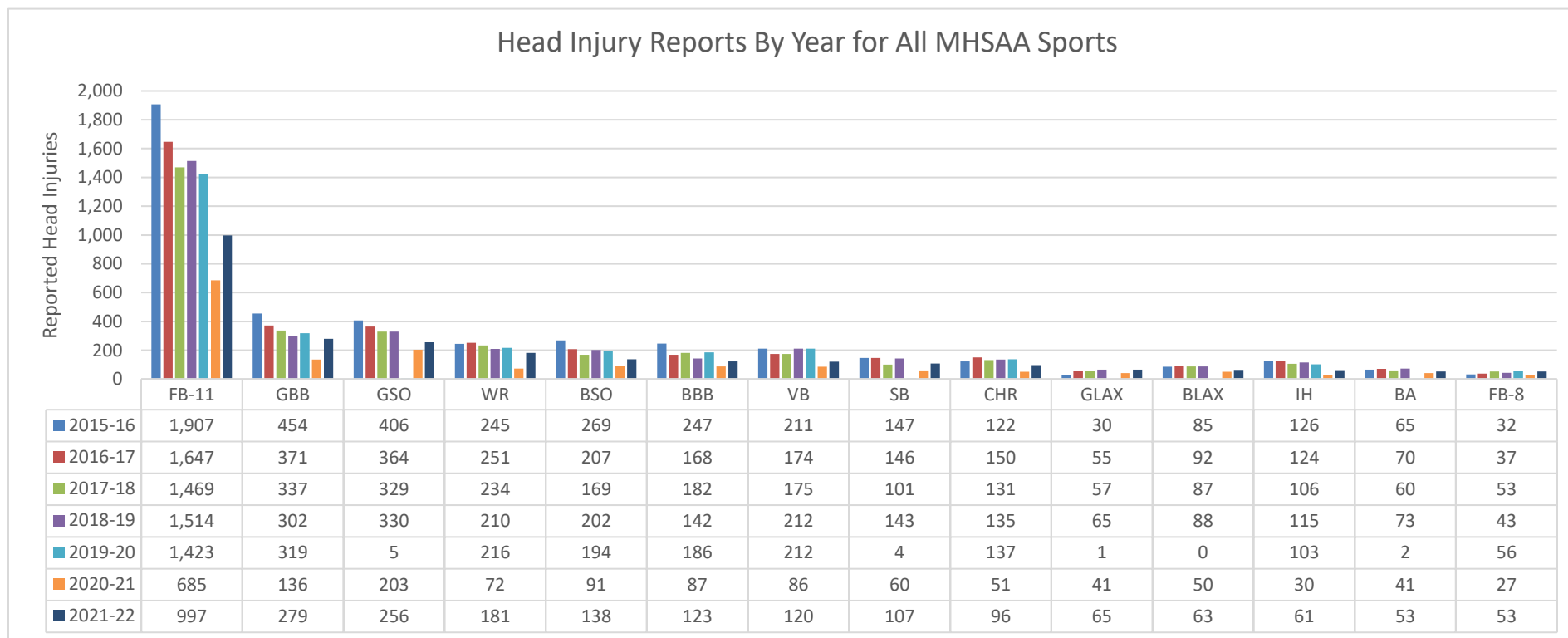
SPORTS	Boys*							Girls						
	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
Baseball	65	70	60	73	2	41	53	-	-	-	-	-	-	-
Basketball	247	168	182	142	186	87	123	454	371	337	302	319	136	279
Bowling	1	0	0	1	0	0	0	0	0	0	0	0	0	0
Competitive Cheer	-	-	-	-	-	-	-	122	150	131	135	137	51	96
Cross Country	4	1	1	3	4	1	3	4	6	3	7	2	1	2
Football - 11-Player	1,907	1,647	1,469	1,514	1,423	685	997	-	-	-	-	-	-	-
8-Player	32	37	53	43	56	27	53	-	-	-	-	-	-	-
Golf	1	1	0	2	0	0	1	2	1	0	0	2	0	1
Gymnastics	-	-	-	-	-	-	-	8	8	11	7	7	3	7
Ice Hockey	126	124	106	115	103	30	61	-	-	-	-	-	-	-
Lacrosse	85	92	87	88	0	50	63	30	55	57	65	1	41	65
Skiing-Alpine	3	3	5	5	4	2	2	6	2	1	2	12	3	4
Soccer	269	207	169	202	194	91	138	406	364	329	330	5	203	256
Softball	-	-	-	-	21	-	-	147	146	101	143	4	60	107
Swimming & Diving	14	11	14	19	1	2	11	31	33	25	26	39	15	31
Tennis	0	4	3	2	1	0	1	6	6	7	8	0	4	2
Track & Field	4	11	9	10	1	4	10	22	15	11	20	0	10	8
Volleyball	-	-	-	-	-	-	-	211	174	175	212	212	86	120
Wrestling	245	251	234	210	216	72	181	-	-	-	-	-	-	-

*Boys head injury data includes both males AND females playing on primarily male teams

Winter sports still in tournament play when activity was stopped due to the COVID-19 pandemic during the 2021-22 school year

Spring sports that had begun practice but not competition when activity was stopped due to the COVID-19 pandemic during the 2021-22 school year

Figure 32.1 Head Injury Reports by Sport and Year – Higher Incidence Sports, MHSAA Head Injury Reporting System, 2021-22 School Year



ABBREVIATIONS

Baseball – BA
 Competitive Cheer – CHR
 Boys Golf – BGO
 Girls Lacrosse – GLAX
 Softball – SB
 Boys Track & Field – BTR

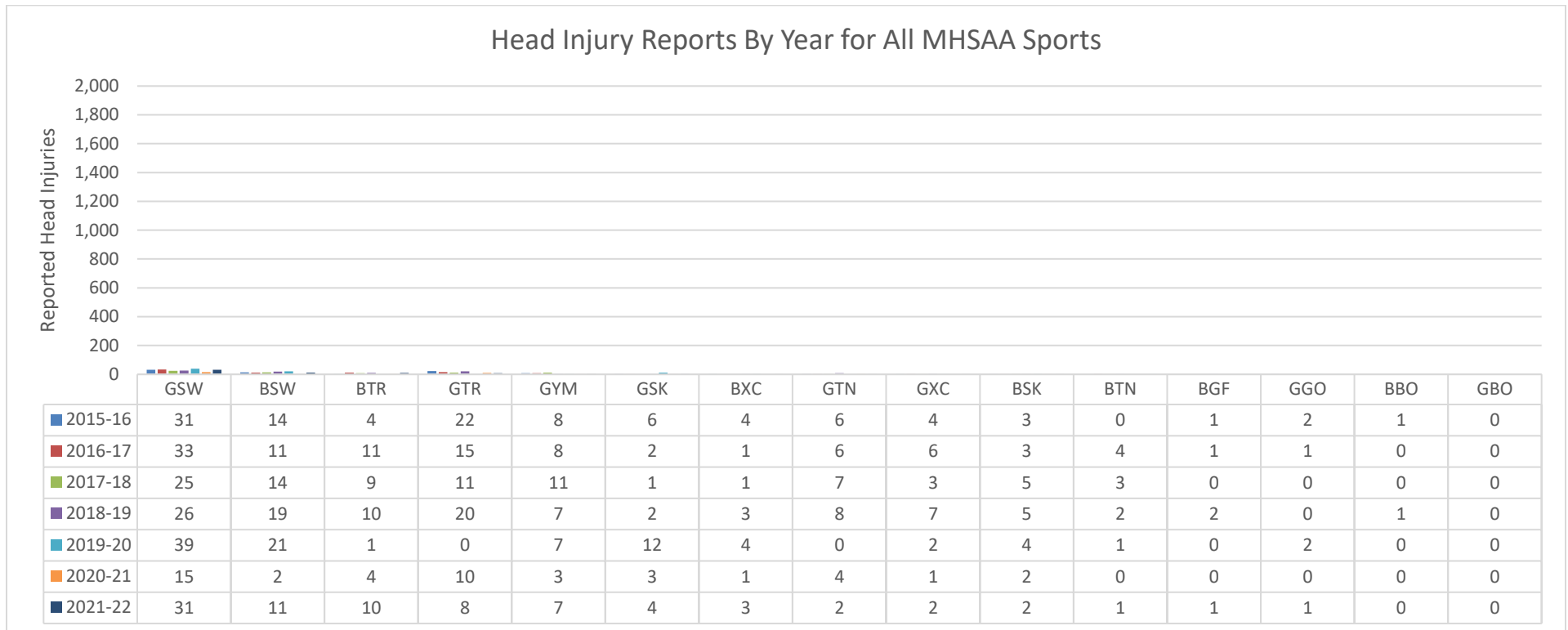
Boys Basketball – BBB
 Boys Cross Country – BXC
 Girls Golf – GGO
 Boys Skiing – BSK
 Boys Swimming & Diving – BSW
 Girls Track & Field – GTR

Girls Basketball – GBB
 Girls Cross Country – GXC
 Gymnastics – GYM
 Girls Skiing – GSK
 Girls Swimming & Diving – GSW
 Volleyball – VB

Boys Bowling – BBO
 Football – 11-Player – FB-11
 Ice Hockey – IH
 Boys Soccer – BSO
 Boys Tennis – BTN
 Wrestling – WR

Girls Bowling – GBO
 Football – 8-Player – FB-8
 Boys Lacrosse – BLAX
 Girls Soccer – GSO
 Girls Tennis – GTN

Figure 32.2 Head Injury Reports by Sport and Year – Lower Incidence Sports, MHSAA Head Injury Reporting System, 2021-22 School Year



ABBREVIATIONS

Baseball – BA
 Competitive Cheer – CHR
 Boys Golf – BGO
 Girls Lacrosse – GLAX
 Softball – SB
 Boys Track & Field – BTR

Boys Basketball – BBB
 Boys Cross Country – BXC
 Girls Golf – GGO
 Boys Skiing – BSK
 Boys Swimming & Diving – BSW
 Girls Track & Field – GTR

Girls Basketball – GBB
 Girls Cross Country – GXC
 Gymnastics – GYM
 Girls Skiing – GSK
 Girls Swimming & Diving – GSW
 Volleyball – VB

Boys Bowling – BBO
 Football – 11-Player – FB-11
 Ice Hockey – IH
 Boys Soccer – BSO
 Boys Tennis – BTN
 Wrestling - WR

Girls Bowling – GBO
 Football – 8-Player – FB-8
 Boys Lacrosse – BLAX
 Girls Soccer – GSO
 Girls Tennis - GTN

Table 32.2 Head Injury Reports per 1,000 Participants by Sport and Year, MHSAA Head Injury Reporting System, 2021-22 School Year

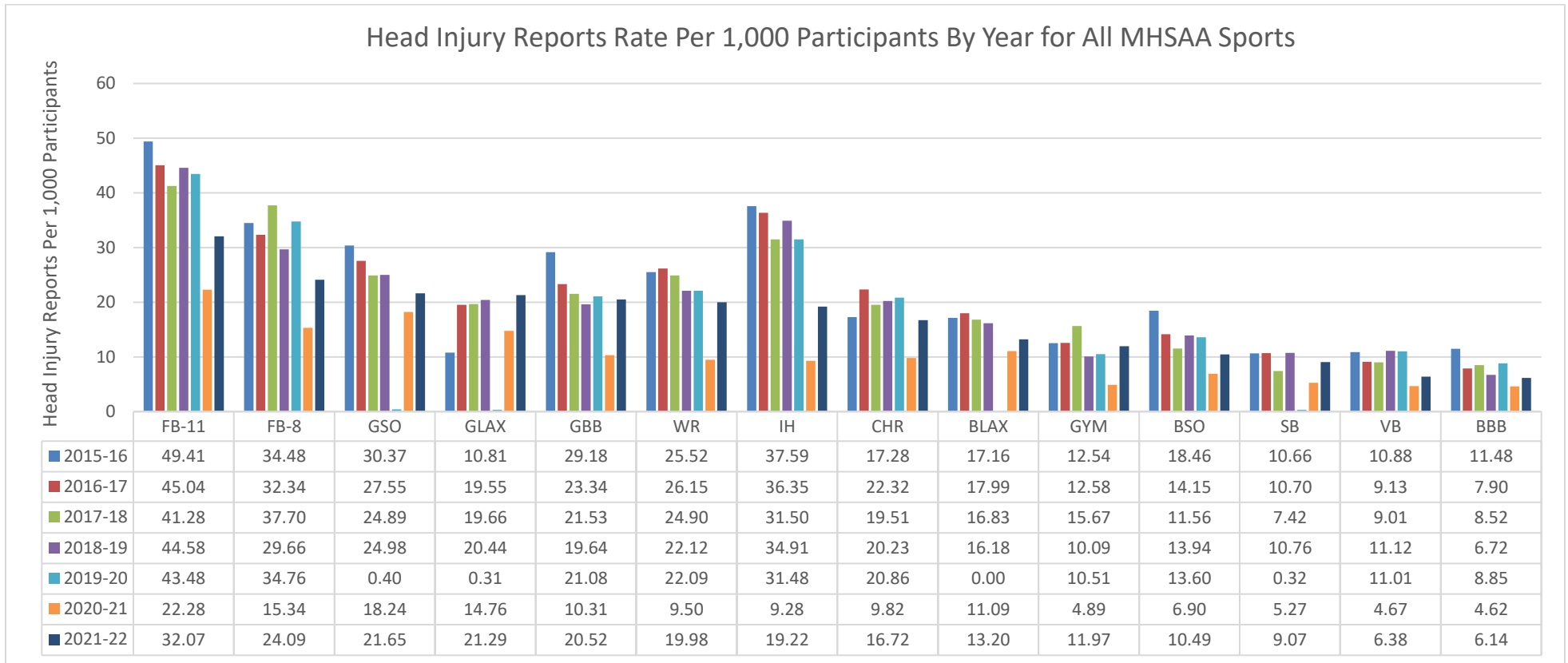
SPORTS	Boys*							Girls						
	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
Baseball	3.58	3.89	3.39	4.24	0.12	2.55	3.21	-	-	-	-	-	-	-
Basketball	11.48	7.90	8.52	6.72	8.85	4.62	6.14	29.18	23.34	21.53	19.64	21.08	10.31	20.52
Bowling	0.26	0.00	0.00	0.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Competitive Cheer	-	-	-	-	-	-	-	17.28	22.32	19.51	20.23	20.86	9.82	16.72
Cross Country	0.43	0.11	0.10	0.31	0.42	0.12	0.37	0.48	0.71	0.34	0.86	0.25	0.14	0.28
Football - 11-Player	49.41	45.04	41.28	44.58	43.48	22.28	32.07	-	-	-	-	-	-	-
8-Player	34.48	32.34	37.70	29.66	34.76	15.34	24.09	-	-	-	-	-	-	-
Golf	0.16	0.16	0.00	0.32	0.00	0.00	0.15	0.58	0.28	0.00	0.00	0.55	0.00	0.26
Gymnastics	-	-	-	-	-	-	-	12.54	12.58	15.67	10.09	10.51	4.89	11.97
Ice Hockey	37.59	36.35	31.50	34.91	31.48	9.28	19.22	-	-	-	-	-	-	-
Lacrosse	17.16	17.99	16.83	16.18	0.00	11.09	13.20	10.81	19.55	19.66	20.44	0.31	14.76	21.29
Skiing-Alpine	4.17	3.58	6.02	5.41	4.35	2.44	2.00	9.20	2.68	1.30	2.62	15.27	3.86	4.78
Soccer	18.46	14.15	11.56	13.94	13.60	6.90	10.49	30.37	27.55	24.89	24.98	0.40	18.24	21.65
Softball	-	-	-	-	-	-	-	10.66	10.70	7.42	10.76	0.32	5.27	9.07
Swimming & Diving	2.96	2.21	2.75	3.80	4.15	0.49	2.52	5.76	5.89	4.36	4.49	7.12	2.93	5.99
Tennis	0.00	0.66	0.49	0.32	0.16	0.00	0.16	0.69	0.67	0.77	0.86	0.00	0.56	0.25
Track & Field	0.18	0.47	0.38	0.42	0.05	0.23	0.45	1.32	0.88	0.64	1.15	0.00	0.78	0.51
Volleyball	-	-	-	-	-	-	-	10.88	9.13	9.01	11.12	11.01	4.67	6.38
Wrestling	25.52	26.15	24.90	22.12	22.09	9.50	19.98	-	-	-	-	-	-	-

*Boys head injury data includes both males AND females playing on primarily male teams

Winter sports still in tournament play when activity was stopped due to the COVID-19 pandemic during the 2021-22 school year

Spring sports that had begun practice but not competition when activity was stopped due to the COVID-19 pandemic during the 2021-22 school year

Figure 32.3 Head Injury Reports per 1,000 Participants by Sport and Year – Higher Incidence Sports, MHSAA Head Injury Reporting System, 2021-22 School Year



ABBREVIATIONS

Baseball – BA
 Competitive Cheer – CHR
 Boys Golf – BGO
 Girls Lacrosse – GLAX
 Softball – SB
 Boys Track & Field – BTR

Boys Basketball – BBB
 Boys Cross Country – BXC
 Girls Golf – GGO
 Boys Skiing – BSK
 Boys Swimming & Diving – BSW
 Girls Track & Field – GTR

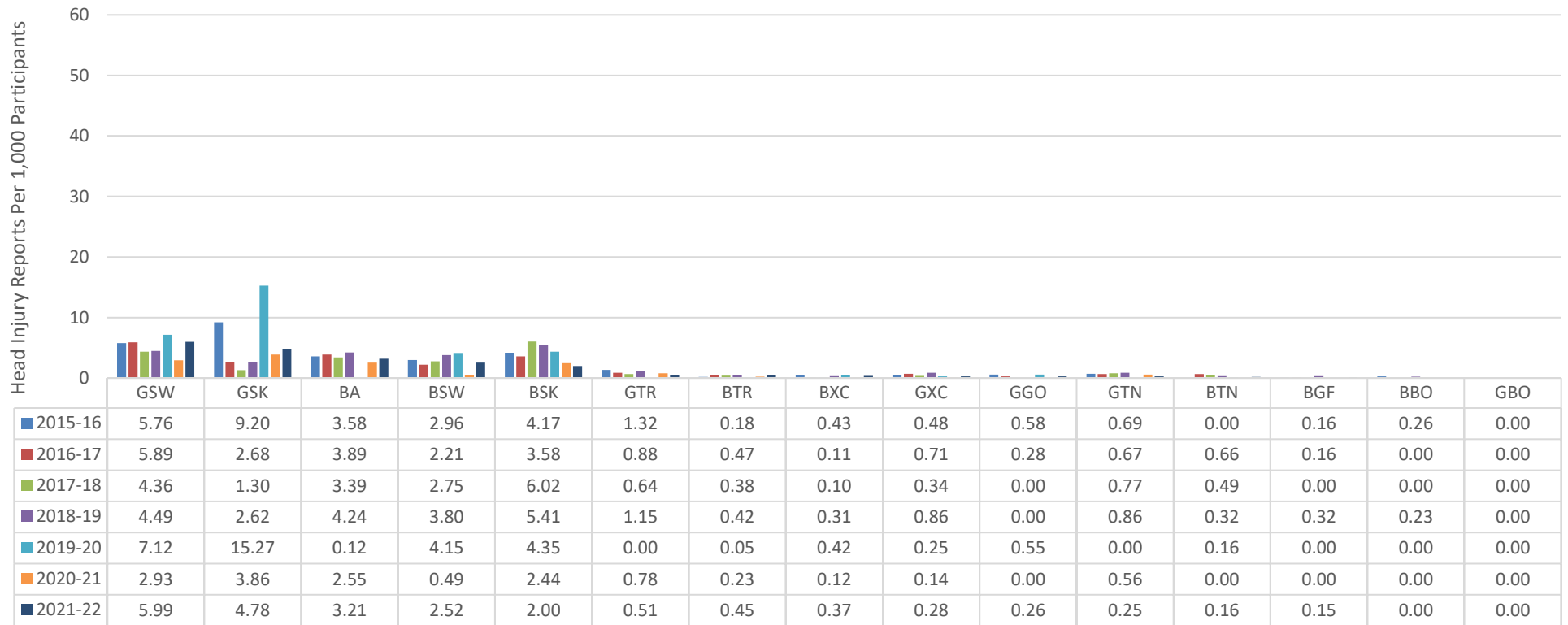
Girls Basketball – GBB
 Girls Cross Country – GXC
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 Girls Skiing – GSK
 Girls Swimming & Diving – GSW
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 Football – 11-Player – FB-11
 Ice Hockey – IH
 Boys Soccer – BSO
 Boys Tennis – BTN
 Wrestling - WR

Girls Bowling – GBO
 Football – 8-Player – FB-8
 Boys Lacrosse – BLAX
 Girls Soccer – GSO
 Girls Tennis - GTN

Figure 32.4 Head Injury Reports per 1,000 Participants by Sport and Year – Lower Incidence Sports, MHSAA Head Injury Reporting System, 2021-22 School Year

Head Injury Reports Rate Per 1,000 Participants By Year for All MHSAA Sports



ABBREVIATIONS

- | | | | | |
|--------------------------|------------------------------|-------------------------------|------------------------------|----------------------------|
| Baseball – BA | Boys Basketball – BBB | Girls Basketball – GBB | Boys Bowling – BBO | Girls Bowling – GBO |
| Competitive Cheer – CHR | Boys Cross Country – BXC | Girls Cross Country – GXC | Football – 11-Player – FB-11 | Football – 8-Player – FB-8 |
| Boys Golf – BGO | Girls Golf – GGO | Gymnastics – GYM | Ice Hockey – IH | Boys Lacrosse – BLAX |
| Girls Lacrosse – GLAX | Boys Skiing – BSK | Girls Skiing – GSK | Boys Soccer – BSO | Girls Soccer – GSO |
| Softball – SB | Boys Swimming & Diving – BSW | Girls Swimming & Diving – GSW | Boys Tennis – BTN | Girls Tennis - GTN |
| Boys Track & Field – BTR | Girls Track & Field – GTR | Volleyball – VB | Wrestling - WR | |

XXXIII. Executive Summary

33.1 Introduction

In May of 2015, the Representative Council of the Michigan High School Athletic Association approved two long-term additions to the history of efforts by MHSAA's member schools to promote and protect participant health.

- Concussion care “gap” insurance was provided by the MHSAA without cost to member schools or students' families, covering practices and competition for all levels of all MHSAA sports, 7th through 12th grades. The coverage was extended to 6th-graders in 2016-17. That coverage continued in 2017-18, 2018-19, 2019-20, 2020-21, and 2021-22 school years and will continue in 2022-23.
- Concussion reporting was required for all MHSAA member high schools for all head injury events taking place during in season practices and competition in all levels of all MHSAA sports. That requirement continues.

The purpose of the mandated concussion reporting is not to identify areas of the state or individual schools or teams that are above or below average in terms of the number of concussions reported. The intended purpose is to help identify the significant broad themes and questions that might be researched to help point school-sponsored sports leadership toward policies and procedures that will tend to improve the experience of students in interscholastic athletic programs of Michigan and beyond.

This Executive Summary is based on confirmed Head Injury Reports submitted for MHSAA supported sports sponsored and conducted at the MHSAA's member high schools during the 2015-16, 2016-17, 2017-18, 2018-19, 2019-20, 2020-21, and 2021-22 school years.

33.2 Ranking

SPORT	PARTICIPANTS	HEAD INJURY REPORTS	HEAD INJURY REPORTS PER THOUSAND PARTICIPANTS	HEAD INJURIES PER THOUSAND PARTICIPANTS RATE RANK OUT OF ALL MHSAA SPORTS
Football - 11 player	31,084	997	32	1
Football 8-player	2,200	53	24	2
Girls Soccer	11,826	256	22	3
Girls Lacrosse	3,053	65	21	4
Girls Basketball	13,596	279	21	5
Wrestling	9,057	181	20	6
Ice Hockey	3,174	61	19	7
Competitive Cheer	5,741	96	17	8
Boys Lacrosse	4,773	65	14	9
Gymnastics	585	7	12	10
Boys Soccer	13,161	138	10	11
Softball	11,800	107	9	12
Volleyball	18,798	120	6	13
Boys Basketball	20,017	123	6	14
Girls Swimming & Diving	5,174	31	6	15
Girls Skiing	837	4	5	16
Baseball	16,528	53	3	17
Boys Swimming & Diving	4,359	11	3	18
Boys Skiing	1,001	2	2	19
Girls Track & Field	15,594	8	1	20
Boys Track & Field	22,120	10	0	21
Boys Cross Country	8,058	3	0	22
Girls Cross Country	7150	2	0	23
Girls Golf	3,875	1	0	24
Girls Tennis	7,936	2	0	25
Boys Tennis	6,067	1	0	26
Boys Golf	6,829	1	0	27
Boys Bowling	4,085	0	0	28
Girls Bowling	2,684	0	0	28

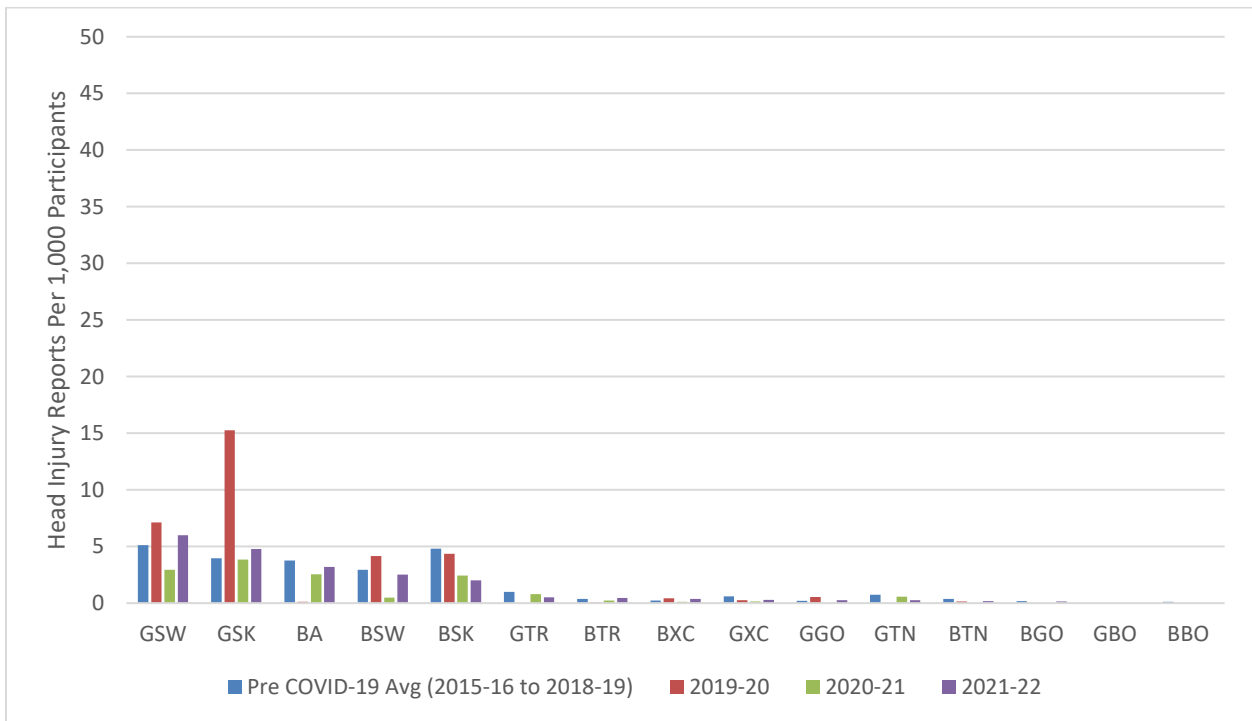
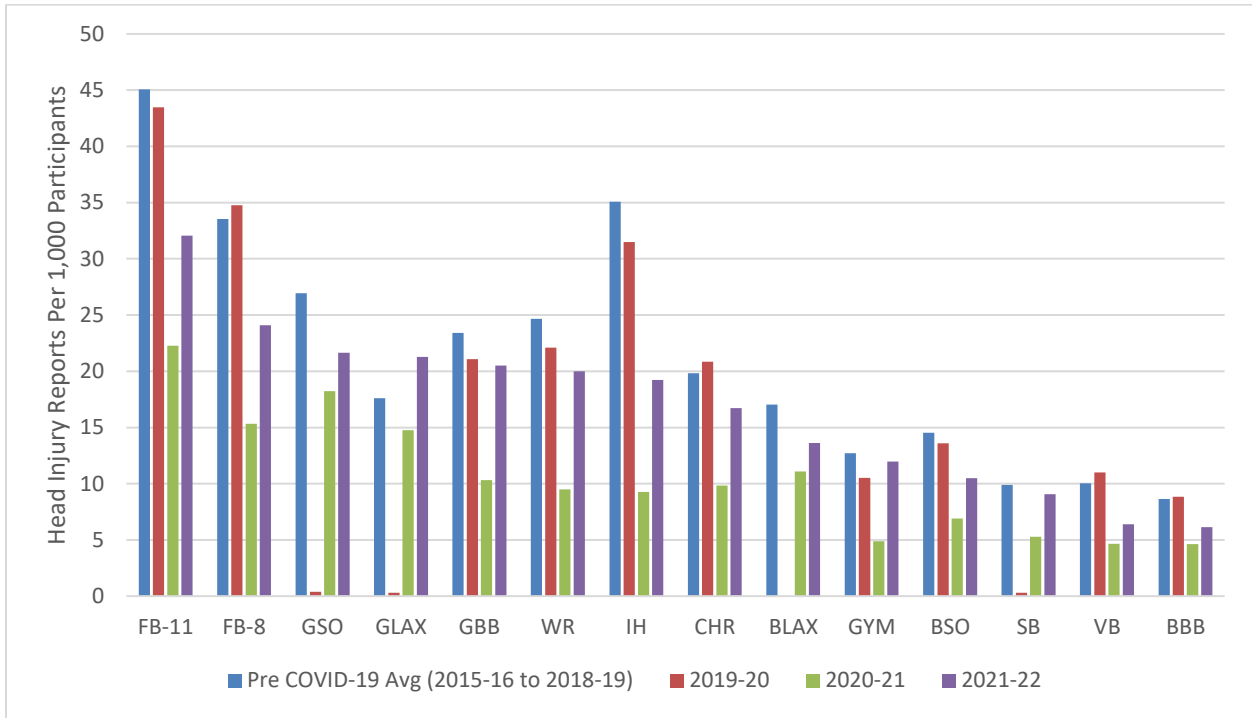
33.3 Observations of Year #7 (2021-22)

- During the 2021-22 school year, 3,109 suspected concussion reports were entered by MHSAA member schools into the Head Injury Reporting System:
 - 29 reports were duplicates and subsequently deleted
 - 27 reports were not included because of obvious entry errors
 - 167 reports were for injury events that either took place out of season or in a non-MHSAA event (sideline cheerleading, club sport, gym class, car accident, etc.)
 - 184 reported head injuries were not diagnosed as concussions and not included in the 2021-22 Summary Report
 - 25 reports were middle school athletes participating in middle school athletic events – because middle school reporting is voluntary and remains low, middle school data was not included in the 2021-22 Summary Report

With the above deletions and exclusions, **2,677** head injury reports were included in the 2021-22 Summary Report.

- 2,677 total head injury reports is up 56.6% from the 1,709 reports for the 2020-21 school year. This increase is most likely related to increase exposures to potential head injuries as participation, practices, and games schedules returned to more typical levels in 2021-22, following the onset of the COVID-19 pandemic during the spring of 2020 which resulted in significant declines in participation and interruptions in activity throughout the 2020-21 school year.
- 2021-22 head injury reporting rates in all MHSAA sports also increased. The charts on the following page show head injury reports per thousand participants in nearly all sports increased in 2021-22 compared to 2020-21, but are still lower than those seen prior to the COVID-19 pandemic.

Head Injury Reports Per Thousand Participants – Comparison between Average Rate Pre-COVID (2015-16 to 2018-19), 2019-20, 2020-21, and 2021-22 School Years, MHSAA Head Injury Reporting System



- Head injury reports per thousand participants in nearly all contact sports (i.e., sports that emphasize or require physical contact between players) are still anywhere from 12.4% to 45.2% lower in 2021-22 than average rates observed prior to the COVID-19 pandemic (average head injury reporting rates calculated using head injury reports and participation data from the 2015-16 through the 2018-19 school years). The only exception is girls lacrosse. There were 21 head injury reports per thousand participants in 2021-22, which is nearly 21% higher than the average rate of 18 head injury reports observed pre-COVID.

Head Injury Reports Per Thousand Participants – Comparison between Average Head Injury Report Rates Prior to the COVID-19 Pandemic and the 2019-20, 2020-21, and 2021-22 School Years, MHSAA Head Injury Reporting System

HEAD INURY REPORT RATES PER THOUSAND PARTICIPANTS							
SPORT	Average Pre-COVID 2015-16 to 2018-19	2019-20	2019-20 % Change from Pre-COVID Avg	2020-21	2020-21 % Change from Pre-COVID Avg	2021-22	2021-22 % Change from Pre-COVID Avg
Ice Hockey	35	31	-10.29%	9	-73.56%	19	-45.23%
Basketball (Boys)	9	9	2.28%	5	-46.58%	6	-28.99%
Football - 11-player	45	43	-3.55%	22	-50.57%	32	-28.85%
Football - 8-player	34	35	3.63%	15	-54.27%	24	-28.18%
Soccer (Boys)	15	14	-6.37%	7	-52.50%	10	-27.82%
Lacrosse (Boys)	17	0	-100.00%	11	-34.95%	14	-20.09%
Soccer (Girls)	27	0	-98.51%	18	-32.32%	22	-19.68%
Wrestling	25	22	-10.46%	9	-61.50%	20	-19.00%
Competitive Cheer	20	21	5.18%	10	-50.47%	17	-15.69%
Basketball (Girls)	23	21	-10.00%	10	-55.96%	21	-12.39%
Lacrosse (Girls)	18	0	-98.24%	15	-16.17%	21	20.88%

- 11-player football, 8-player football, girls soccer, ice hockey, wrestling and girls basketball continue to have the highest rate of head injury reports – these six sports have been in the top six with regard to head injury reports per 1,000 participants in every year head injury reporting data has been tracked and not affected by the COVID-19 pandemic.
- In sports sponsored under the same or similar playing rules for both genders (i.e. soccer, basketball, and baseball/softball), significantly more concussions continue to be reported for females compared to males at the high school level.

Girls Soccer – 22 per 1,000 (Ranks 3rd)
Boys Soccer – 10 per 1,000 (Ranks 11th)

Girls Basketball – 21 per 1,000 (Ranks 5th)
Boys Basketball – 6 per 1,000 (Ranks 14th)

Softball – 9 per 1,000 (Ranks 12th)
Baseball – 3 per 1,000 (Ranks 17th)

- As in the previous years, approximately two-thirds of reported concussions occur during competition (68.4%). Looking at each sport individually, about two-thirds or more of all reported concussions occur during competition with the exception of competitive cheer (92.7% in practice; 7.3% in competition), and wrestling (43.6% in practice; 56.4% in competition). Competitive cheer continues to be the only sport with a reasonably large sample size of head injury reports in which more concussions were sustained during practice.
- The 2021 football season marked the seventh season since the institution of MHSAA policies reducing contact during practices. Over these seven years, the incidence (percentage of reports) of head injuries incurred during practice have remained consistent:

11-Player Football – 35.4% in 2015; 37.5% in 2016; 37.0% in 2017; 36.0% in 2018; 34.3% in 2019; 34.2% in 2020; 32.2% in 2021

8-Player Football – 15.6% in 2015; 18.9% in 2016; 18.0% in 2017; 18.6% in 2018; 25.0% in 2019; 14.8% in 2020; 24.5% in 2021

Reports per 1,000 participants in both 11-player and 8-player football returned to more typical levels in 2021 following the significant decrease in 2020. Again, this drop was likely caused by interruptions in participation following the onset of the COVID-19 pandemic. In spite of the rebound, head injury reports per 1,000 participant data for both 11-player and 8-player football are still about 30% lower than reports per 1,000 participants using an average of the data collected during the 5 years prior to the pandemic from 2015-2019:

11-Player Football – 49 in 2015; 45 in 2016; 41 in 2017; 45 in 2018; 43 in 2019; 22 in 2020; 32 in 2021

8-Player Football – 34 in 2015; 32 in 2016; 38 in 2017; 30 in 2018; 35 in 2019; 15 in 2020; 24 in 2021

- The majority of injured athletes are initially examined by an athletic trainer (60.6%). That proportion is likely higher as 16.8% of athletes were reported as having been initially looked at by multiple examiners. 16.8% were initially examined only by the coach.
- 20.1% of athletes determined to have a concussion were not removed from activity at the time of the injury. This by no means indicates the injury was mismanaged at the time of the event; the athlete may not have reported the injury, symptoms may not have presented until after the event, or any number of different factors may have led to the athlete not being removed at the time of injury. The percentage of athletes later determined to have a concussion but were not removed from activity at the time of the injury has remained consistent over the five years this data has been collected:

16.4% in 2016-17; 16.5% in 2017-18; 18.5% in 2018-19; 18.0% in 2019-20
19.5% in 2020-21; 20.1% in 2021-22

- 72.2% of concussions caused athletes to be withheld from activity for 6 days or more.
- At the time of this summary, Online Follow-up Reports were not completed for 84 (3.1%) of the 2,677 reports.
- The MHSAA has received 618 Return to Activity and Post-Concussion Consent Forms (23.1% of the 2,677 reported head injuries for which a clearance should have been received). This does not suggest that student are not receiving proper clearance prior to returning to activity as this documentation is likely kept on file locally at the school, but it is not being sent to the MHSAA as indicated in the MHSAA Concussion Protocol. The 2021-22 school year is the first year in the past six that this percentage has not declined – in 2016-17, the MHSAA received clearance documentation in 46.0% of suspected head injuries; 40.5% in 2017-19; 37.9% in 2018-19; 30.3% in 2019-20, and 16.2% in 2020-21.
- In the Fall season, 450 schools reported concussions – 265 schools reported 0 concussions for the season – 20 schools did not have any Fall sports – 18 schools did not submit any response.
- In the Winter season, 363 schools reported concussions – 348 schools reported 0 concussions for the season – 19 schools did not have any Winter sports – 12 schools did not submit any response.

- In the Spring season, 317 schools reported concussions – 389 schools reported 0 concussions for the season – 32 schools did not have any Spring sports – 12 schools did not submit any response.

33.4 Emerging Inquires for Year #8 (2022-23)

- A. Following the marked decline in reported head injuries for the 2020-21 school year, which was most certainly linked to decreased participation in school sports during the COVID-19 pandemic, overall head injury reports and head injury reports per thousand participants increased in essentially all MHSAA sponsored sports during 2021-22. While this increase was expected as participation numbers and activity returned to more relatively normal levels in 2021-22, head injury reports and rates are still lower than those observed prior to the onset of the COVID-19 pandemic. The MHSAA will continue to monitor data for the 2022-23 school year and beyond to see if the 2021-22 data simply showed normal variation in sport-related head injuries, or if the decrease could be related to the prolonged resumption of normal sport participation or some other factor related to the COVID-19 pandemic.
- B. The 2021 football season marked the eighth since MHSAA policies reducing contact during practices have been in effect, and the seventh year the MHSAA has been collecting data related to head injuries. During that time, we have closely monitored the head injury reporting data for both 11-player and 8-player football to determine whether reduced contact during practice, accompanied by more awareness and use of non-contact methods of teaching blocking and tackling, could potentially lead to lower occurrences of concussions in football.

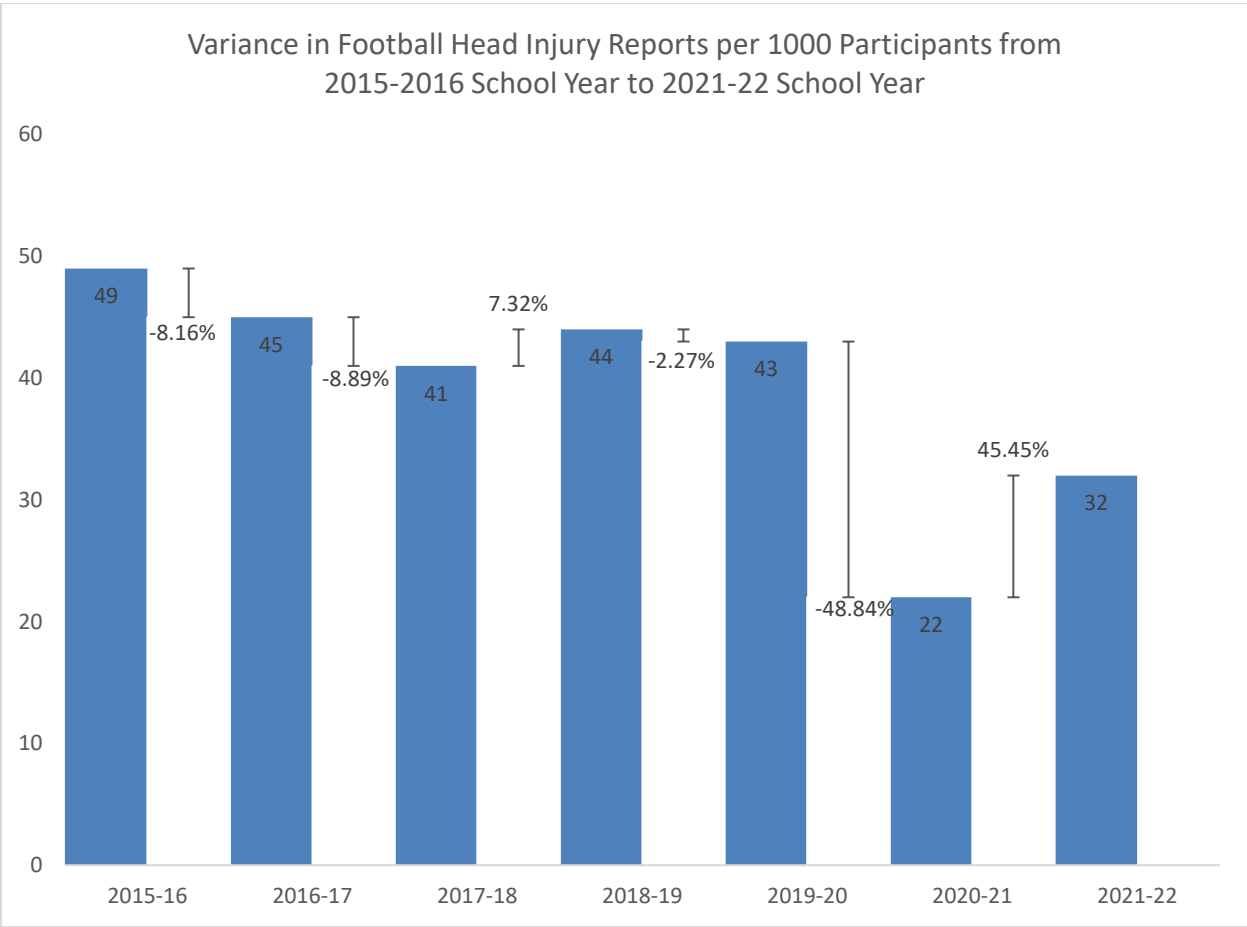
In the two seasons following the initial MHSAA football practice policies instituted in the 2014-15 school year, football head injuries per thousand participants (i.e., 11-player and 8-player football head injury reports and participation data combined) decreased approximately 17% (see figure below). The decrease was promising, but unfortunately with no data prior to the 2015-16 school year for comparison and football head injury reports increasing from 41 per 1,000 in 2017-18 to 44 per 1,000 in 2018-19, it seemed the variances observed could simply be the result of year-to-year fluctuations.

An additional MHSAA football policy took effect in 2019-20. This policy limited collision contact during practice to no more than 6 hours in a week during the first two weeks of practice before the first contest, and 30 total minutes of collision contact in any week after the first regular-season game.

In the first year following adoption in 2019-20, football head injury reports per thousand participants dropped 2.3%. In 2020-21, football head injury reports per

thousand participants decreased 48.8%. This decrease in 2020-21 is most certainly associated with the COVID-19 pandemic as very similar decreases in all other contact sports were observed and rates rebounded as participation and activity returned to more normal levels in 2021-22. Rates increased 45.5% from 22 reports per thousand participants in 2020-21 to 32 reports per thousand participants in 2021-22, but 32 reports per thousand participants is still approximately 27% lower than the average rate prior to the COVID-19 pandemic.

It will be interesting to once again observe the data in the 2022-23 school year to see if practice limitations are in fact having an impact on the incidence of head injuries in the sport of football, and if any residual effects of the COVID-19 pandemic on the incidence of head injuries can be discerned. With that, it is clear we must continue to examine closely the data related to football and try to identify where risks for injury are real and can be reduced.



- C. In order to ensure the quality and usefulness of head injury reporting data, the MHSAA must continue to investigate and discuss procedures that will improve compliance with the MHSAA Concussion Protocol and reporting initiative, especially:
1. Prompt submission of initial reports.
 2. Timely submission of follow-up reports.
 3. Consistent submission of Return to Activity documentation.

33.5 Next Steps

The 2015-16 school year report raised some initial themes while the 2016-17 report may have started the identification of trends. The 2017-18, 2018-19, 2019-20, and 2021-22 data has helped to refine our understanding of those trends and also continues to raise new questions.

Understanding questions does not demand that all actions must be delayed. It is not too soon to experiment with more head protection and modified play and practice rules in football, ice hockey, soccer, wrestling and lacrosse – all of which rank in the top ten sports in terms of number of injuries per thousand participants.

Moreover, efforts must be made to continue to educate players, parents, coaches and others involved to observe and report the signs and symptoms of concussion that they experience or that they see in others.

The 2022-23 school year will begin with the expectations that, again, nearly 100 percent of MHSAA member high schools will submit initial and follow-up reports of head injuries for every level of every MHSAA sport they sponsor. Furthermore, each MHSAA Sport Committee will examine the 2021-22 concussion data in their sport to assist in the health and risk management of the participants. The MHSAA Sports Medicine Advisory Committee (SMAC) will review the data to furnish additional educational resources and address emerging issues.

Meanwhile, the MHSAA invites colleges, universities and health care system in Michigan, as well as the National Federation of State High School Associations, to consider how they may assist in addressing developing issues and any other questions suggested by this data.

Interested representatives of these entities are invited to contact:

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