

Connecticut State Department of Education

**Health Services Program
Information Survey Report
Concussion Analysis**

September 2, 2020

Developed for:

The Connecticut State Department of Education

By

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I. Introduction

The Connecticut State Department of Education (CSDE), as part of its ongoing efforts to support and expand school health services provided to Connecticut students, has surveyed District Nursing Coordinators since 2004. As one component of these continuing efforts, the CSDE commissioned the Center for Program Research & Evaluation (CPRE) at EdAdvance to develop and update an online survey to collect information regarding the status of school health services from school districts throughout Connecticut. The survey's objective has been to assist the CSDE in understanding school health services' quality and needs in individual school districts. The data gathered in this survey has been instrumental in shedding light on the ever-changing nature of school health services.

Before the 2014-2015 school year, and in concert with *Public Act No. 14-66*, the CSDE and CPRE worked together to add questions to the School Health Services Survey to collect information on the nature, extent, and circumstances of students' concussions. The survey gathered concussion data for the first time after the 2014-2015 school year. During the Summer of 2015, the CSDE and CPRE continued to improve the Survey and data collection methodology. What follows is an analysis of the concussion data collected for the 2019-2020 School Year.

II. Executive Summary

During the winter of 2019-2020, the State Department of Education sent an email to each of the state's school districts with instructions on how to complete the Health Services Program Information Survey. The districts were asked to work with their District Nursing Coordinators to gather and report the data required in the survey. The 2019-2020 email correspondence (Attached-Appendix A) announced that the entire survey would be **mandatory**.

Of the 197 School Districts in Connecticut, **136 School Districts** (Appendix C) (69.0%) completed the survey. This number is slightly less than in 2018-2019¹. The decrease can be explained by the events surrounding the COVID-19 pandemic, which impacted schools in the spring of 2020. For the schools that completed the survey in 2019-2020, there were **3,975** diagnosed concussions. As in the previous year, the most significant number of

¹ Statistical comparisons to previous years' data have not been included in the Executive Summary. The 2019-2020 school year was significantly different than the 2018-2019 school year because of the COVID-19 pandemic.

concussions occurred during “Interscholastic Athletic Activities” followed by “Outside of School” and “Non-School Sports Related” activities. As a result of the diagnosed concussions reported, school districts reported 7,408 accommodations. The majority of students with reported diagnosed concussions (71.1%) missed less than five school days because of the concussion, while a small percentage (less than 1%) missed more than 20 school days.

III. Results of Concussion Questions

The concussion section of the Health Services Program Information Survey consisted of seven questions. The survey was designed to prevent respondents from moving on to other parts of the survey or submitting the survey unless these questions had been answered. What follows are the descriptive statistics and synopsis of those questions as well as a comparison to the previous year's data, where appropriate. *The TOTAL number of students diagnosed with a concussion during the 2019-2020 school year was 3,975.* The mean number of concussions per district was 29.2.

A. Concussions by Gender

The number of diagnosed concussions among FEMALE and MALE students during the 2019-2020 school year:

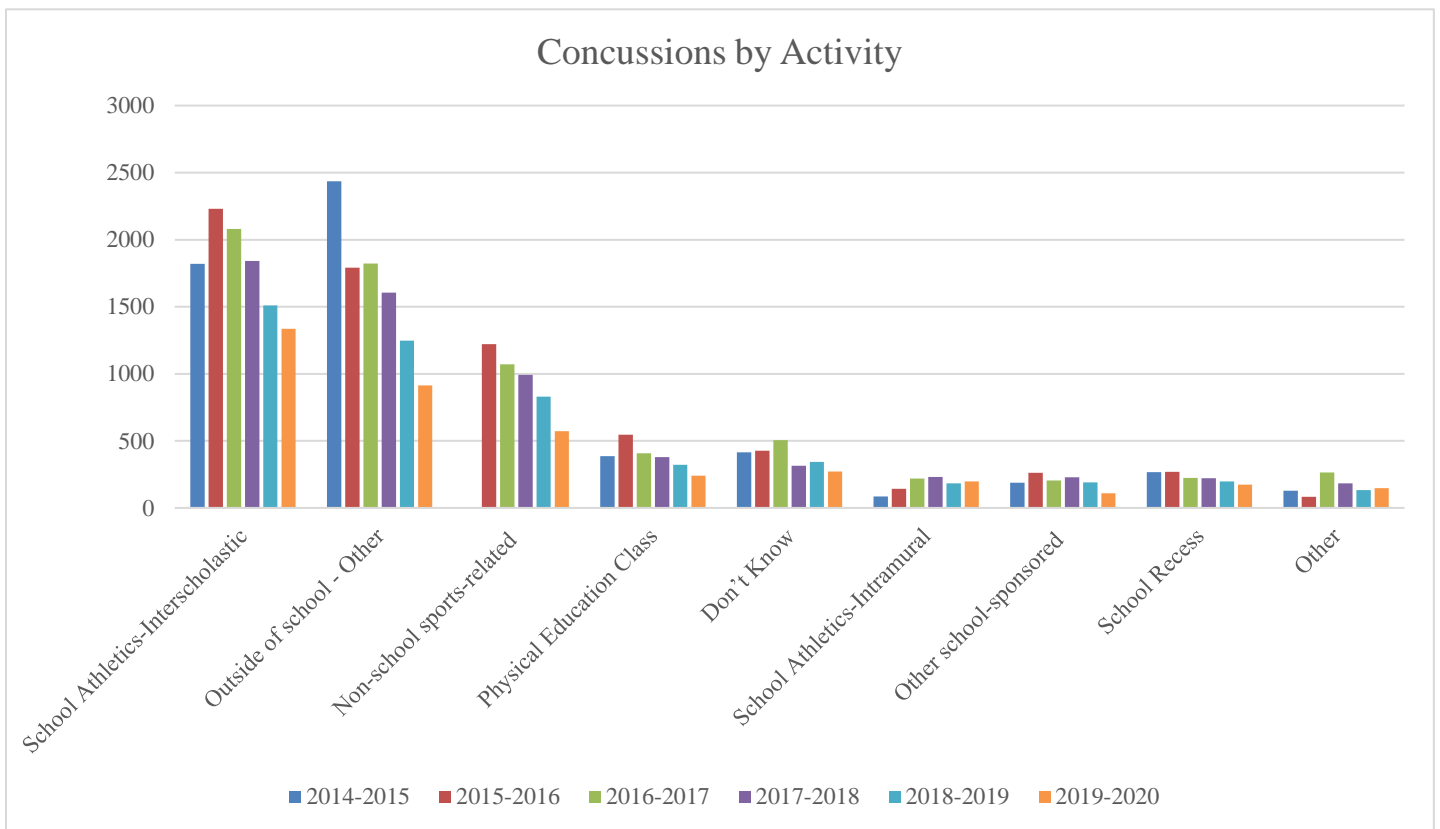
Grade	Diagnosed Concussions FEMALES			Diagnosed Concussions MALES			Total		
	2017- 2018	2018- 2019	2019- 2020	2017- 2018	2018- 2019	2019- 2020	2017- 2018	2018- 2019	2019- 2020
Pre-K	3	6	8	4	6	6	7	12	14
Kindergarten	16	16	17	34	19	20	50	35	37
1 st Grade	30	20	19	44	39	37	74	59	56
2 nd Grade	35	30	26	64	54	36	99	84	62
3 rd Grade	43	43	29	99	84	54	142	127	83
4 th Grade	80	74	54	160	149	86	240	223	140
5 th Grade	110	128	71	234	196	146	344	324	217
6 th Grade	193	169	113	264	224	158	457	393	271
7 th Grade	281	229	159	288	251	183	569	480	342
8 th Grade	372	293	191	348	273	231	720	566	422
9 th Grade	572	427	362	466	389	313	1,038	816	675
10 th Grade	500	490	310	425	381	287	925	871	597
11 th Grade	464	383	321	392	357	281	856	740	602
12 th Grade	414	286	306	344	273	264	758	559	570
Total	3,113	2,594	1,986	3,166	2,695	2,102	6,279	5,289	4,088²

² The difference between this value and the number provided in the Executive Summary reflects reporting error. The first survey question asks how many diagnosed concussions were reported. For 2019-2020, that number was 3,975.

B. Concussions by Activity

The number of diagnosed concussions by activity:

Activity	# of Diagnosed Concussions	% of Diagnosed Concussions
School Athletics-Interscholastic	1,336	33.7
Outside of school - Other	913	23.0
Non-school sports Related (i.e. Local Town Recreational Sports)	571	14.4
Don't know	272	6.9
Physical Education Class	241	6.1
School Athletics-Intramural	197	5.0
School Recess	174	4.4
Other	148	3.7
Any other school sponsored activities	110	2.8
Total	3,962	



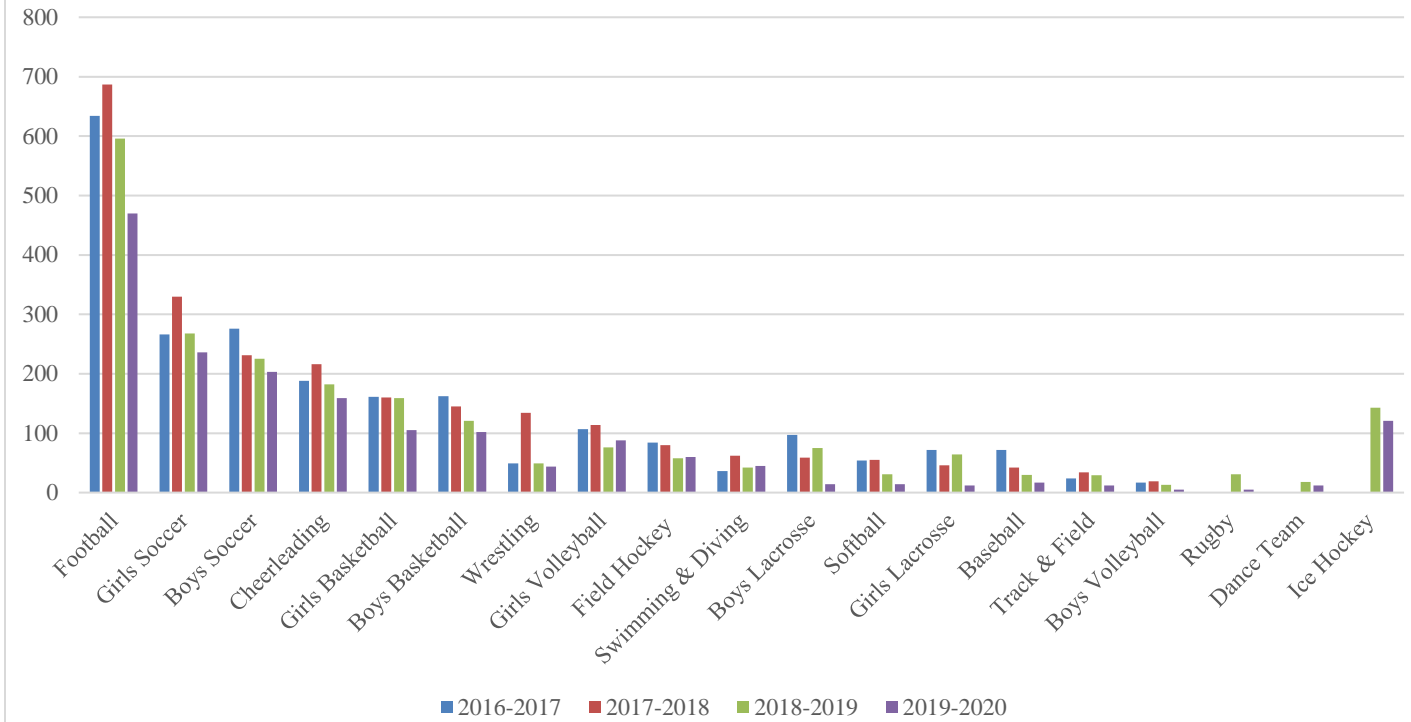
The highest number of reported diagnosed concussions occurred during Interscholastic Athletic Activities (33.7%), and Outside of School/Other reasons (23.0%).

C. Diagnosed Concussions by Sport

Number of concussions that occurred during each of the following sports:

Sport	# of Diagnosed Concussions	% of Diagnosed Concussions
Football	470	24.0
Girls Soccer	236	12.0
Other	235	12.0
Boys Soccer	203	10.4
Cheerleading	159	8.1
Ice Hockey	121	6.2
Girls Basketball	105	5.4
Boys Basketball	102	5.2
Girls Volleyball	88	4.5
Field Hockey	60	3.1
Swimming and Diving	45	2.3
Wrestling	44	2.2
Baseball	17	0.9
Boys Lacrosse	14	0.7
Softball	14	0.7
Girls Lacrosse	12	0.6
Track and Field	12	0.6
Dance Team	12	0.6
Rugby	5	0.3
Boys Volleyball	5	0.3
Total	1,959	

Diagnosed Concussion by Sport

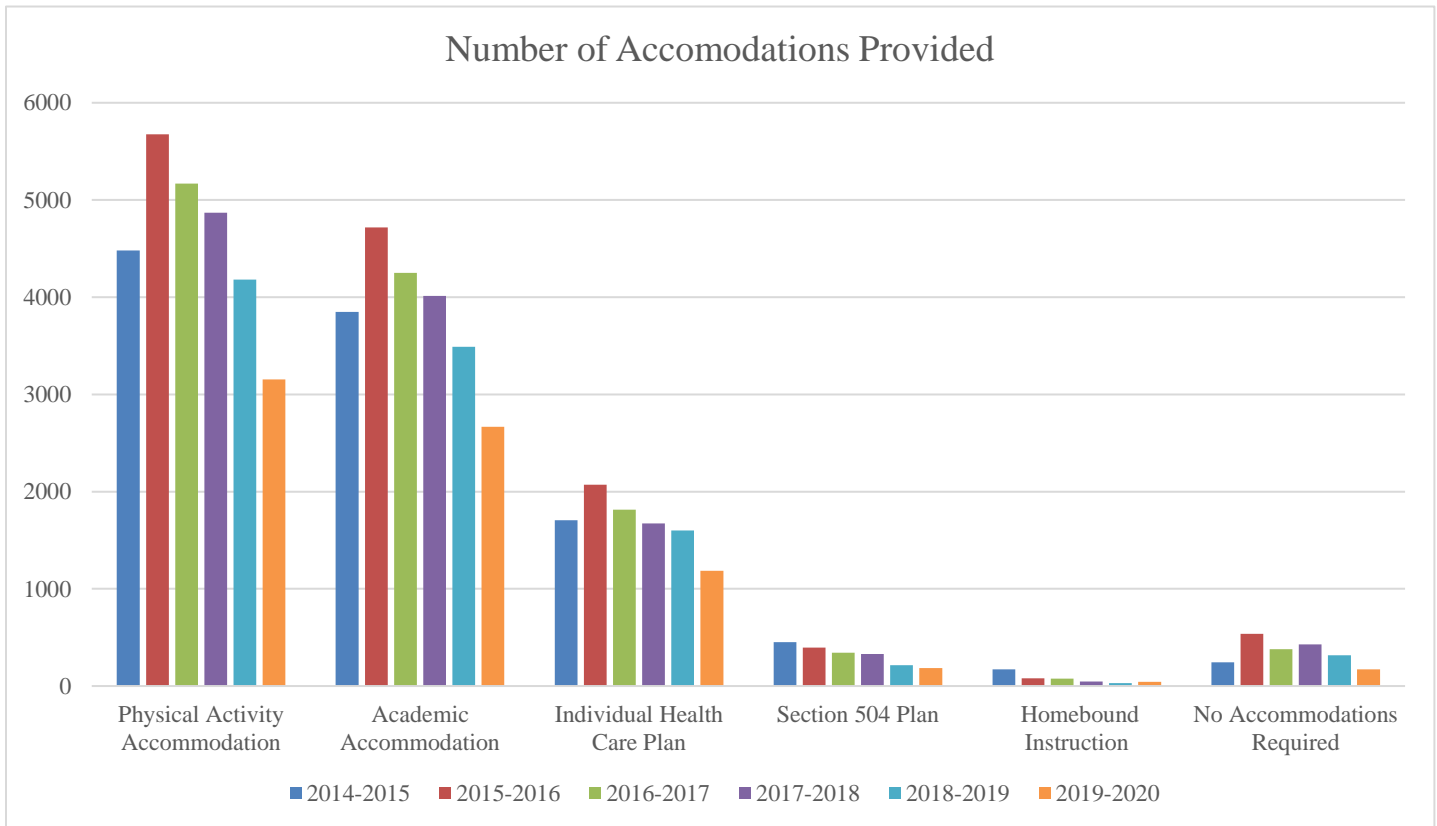


Football accounted for the most concussion occurrences among specific school-sponsored sports, resulting in 470 diagnosed concussions among reporting districts in 2019-2020. Girls’ soccer was next with 236 concussions reported, followed by boys’ soccer with 203 occurrences.

D. Type of Accommodation Provided

The number of accommodations provided as a result of a diagnosed concussion:

Accommodation	# of Accommodations Required ³
Physical Activity Accommodations	3,153
Academic Accommodations	2,668
Individual Health Care Plan	1,187
Section 504 Plan	184
No accommodations required	172
Homebound Instruction	44



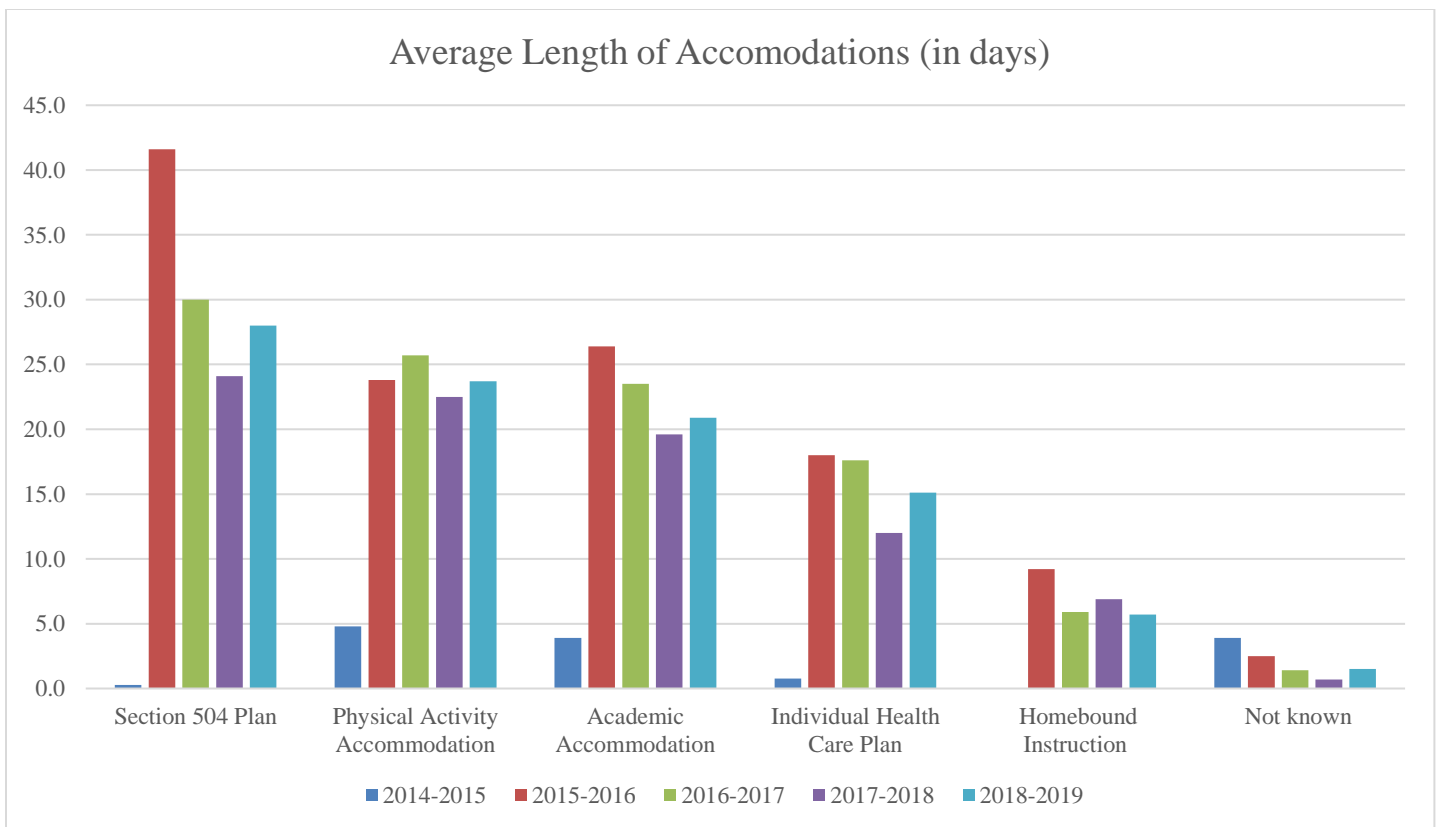
“Physical Activity Accommodations” and “Academic Accommodations” represent the largest number of interventions required. There were 44 directives for “Homebound Instruction” due to a diagnosed concussion.

³ The number of accommodations required were greater than the total number of concussions as many diagnosed concussions required more than one type of accommodation.

E. Length of Accommodations

Of concussions diagnosed during school year 2019-2020, the average length of time (in days) that accommodations were needed:

Accommodation	Average Length of Time (Days) Accommodations Were Needed
Physical Activity Accommodations	20.3
Academic Accommodations	18.7
Section 504 Plan	14.7
Individual Health Care Plan	13.4
Homebound Instruction	3.3
Not Known	1.4

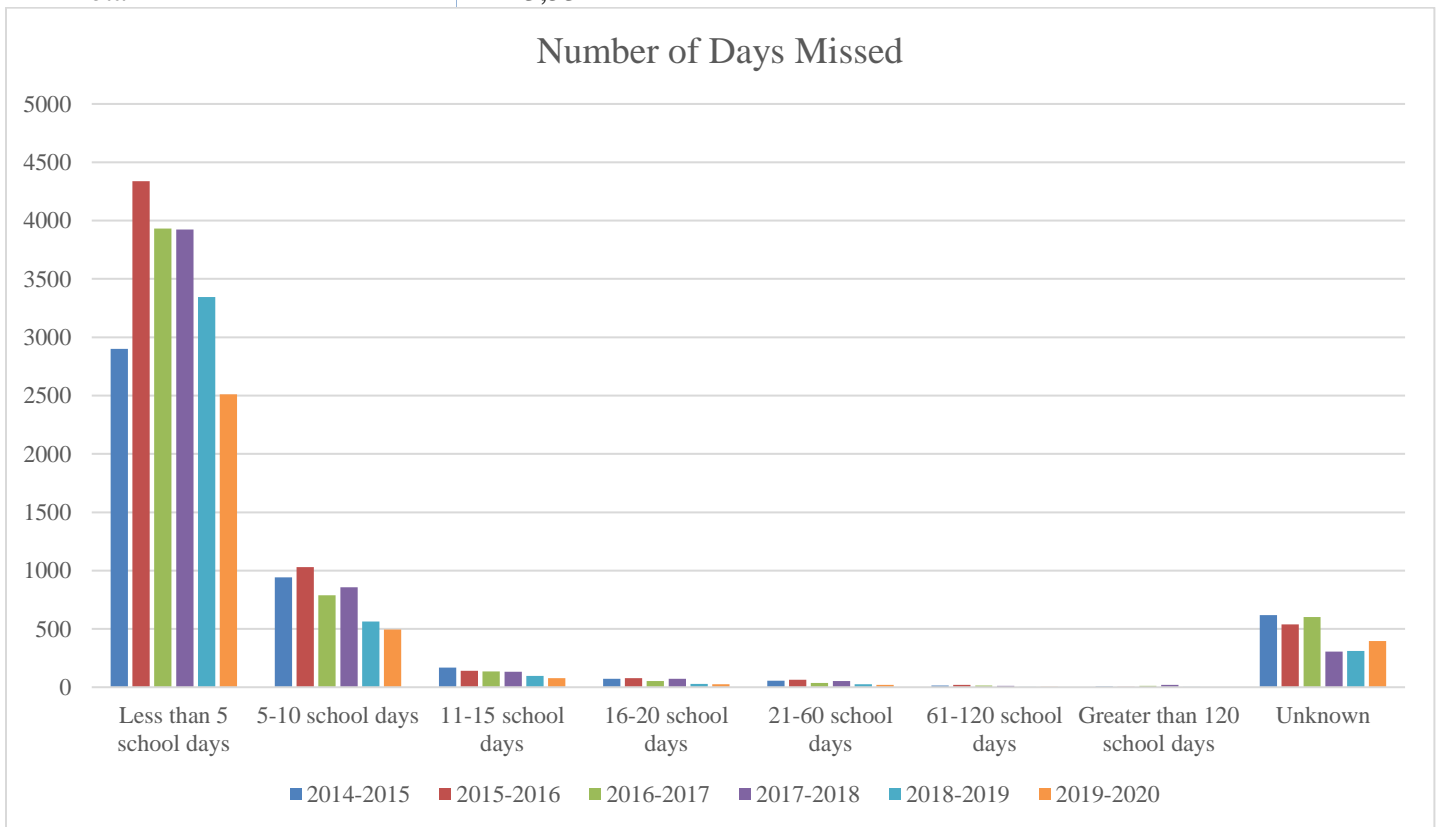


The average length of the “Physical Activity Accommodation” was 20.3 days while the average “Academic Accommodation” was 18.7 days. The average “Homebound Instruction” accommodation lasted 3.3 days.

F. Number of Days Missed

The number of students who missed school days due to concussions during the 2019-2020 school year:

School Days Missed	# of Students
Less than 5 school days	2,512
5 to 10 school days	495
11 - 15 school days	79
16 - 20 school days	27
21 - 60 school days	19
61 - 120 school days	3
Greater than 120 school days	0
Unknown	397
Total	3,532



The majority (71.1%) of students diagnosed with a concussion missed less than 5 school days. 14.0% of students missed between 5 and 10 days of school while less than 1.0% of students missed more than 20 days of school.

IV. Demographics of Survey Respondents

District Reference Group	Districts Responding	Percent
A	8	5.9
B	22	16.2
C	24	17.6
D	20	14.7
E	21	15.4
F	11	8.1
G	17	12.5
H	7	5.1
I	6	4.4
Total	136	100.0

Type of District	Number of Districts Responding	Percent
Urban	18	13.2
Suburban	76	55.9
Rural	42	30.9
Total	136	100.0

Type of School District	Number of Districts Responding	Percent
Public School District	131	96.3
Charter School	2	1.5
Regional Educational Service Center	3	2.2
Total	136	100.0

V. Data Limitations

With substantial effort from District Nursing Supervisors and the CSDE, 69.0% of school districts completed the School Health Services Survey. The challenges posed by the COVID-19 epidemic meant that most schools in the state were closed for many months. The data presented this year should not be compared to previous years' data for that reason.

Additionally, the data reported by some districts were inconsistent with expected results. For example, the total number of diagnosed concussions is the first required question in the survey. The instructions for the following questions remind respondents that the numbers entered must add up to the number of diagnosed concussions documented in the first question. In many cases, this was not the case. This disconnect makes the analysis of the questions complex.

VI. Conclusions and Recommendations

The School Health Services Survey contained questions on student concussions in 2014-2015 for the first time. The concussion questions were constructed with cooperation between the CSDE and the CPRE at EdAdvance. The questions have been updated and improved in the subsequent years. CPRE and CSDE will complete another round of question improvement before administering the 2020-2021 survey. The updated survey will address reporting errors in the concussion question set while also streamlining the district coordinators' completion process.

As with all surveys, the usefulness of the results is dependent upon the response rate. In 2019-2020, the response rate was down significantly from previous years. Much of this decrease can be explained by the COVID-19 pandemic. Ongoing efforts should be made in subsequent years to ensure a more robust data collection. Districts also need additional training in how to track and report concussion data accurately. If these efforts continue, comparisons between school years for concussion data will become more appropriate.

Appendix B

Survey Concussion Questions

Health Services Program Information 2020

Survey Instructions

Please take a moment to answer the following questions regarding the Health Services Programs in your district.

Notes on Data Entry:

If you exit the survey before finishing and then want to return later to edit or add data, you must return using the same computer from which the cookies have not been cleared.

Your data is not saved until you have clicked the appropriate button at the bottom of each page.

Please right click on any term highlighted in blue for additional information.

If you wish to retain the data you have entered, print each page before submitting. The data is not retrievable after it has been submitted.

I. Demographic Information

* 1. Please type the name of your school district below.

* 2. Please select the letter representing the District Reference Group (DRG) of your school district.

* 3. My district is considered to be:

- Urban Suburban Rural

* 4. My district is a:

* 5. Please type the identification number of your school district below. (The ID can be found in Table H starting on page 25 of the linked document)

* 6. Email address of the individual completing this questionnaire.

* 7. Does your district provide health services to private, non-profit schools?

- Yes No

II. Student Health - Concussions

Pursuant to Public Act 14-66 all school districts are mandated to collect and report all occurrences of concussions. Questions 8-13 therefore must be completed.

* 8. In your district, how many diagnosed concussions occurred during the 2019-2020 school year? Please record multiple concussions for the same individual as separate events.

* 9a. In your district, how many FEMALE students were diagnosed with a concussion during the 2019-2020 school year in the following grades? Please record multiple concussions for the same individual as separate events.

Pre-Kindergarten	<input type="text"/>
Kindergarten	<input type="text"/>
1st Grade	<input type="text"/>
2nd Grade	<input type="text"/>
3rd Grade	<input type="text"/>
4th Grade	<input type="text"/>
5th Grade	<input type="text"/>
6th Grade	<input type="text"/>
7th Grade	<input type="text"/>
8th Grade	<input type="text"/>
9th Grade	<input type="text"/>
10th Grade	<input type="text"/>
11th Grade	<input type="text"/>
12th Grade	<input type="text"/>

* 9b. In your district, how many MALE students were diagnosed with a concussion during the 2019-2020 school year in the following grades? Please record multiple concussions for the same individual as separate events. (Sum of all responses in questions 9a and 9b should equal number provided in question 8)

Pre-Kindergartenin	<input type="text"/>
Kindergarten	<input type="text"/>
1st Grade	<input type="text"/>
2nd Grade	<input type="text"/>
3rd Grade	<input type="text"/>
4th Grade	<input type="text"/>
5th Grade	<input type="text"/>
6th Grade	<input type="text"/>
7th Grade	<input type="text"/>
8th Grade	<input type="text"/>
9th Grade	<input type="text"/>
10th Grade	<input type="text"/>
11th Grade	<input type="text"/>
12th Grade	<input type="text"/>

* 10. Of the diagnosed concussions that occurred during the 2019-2020 school year, please provide the number of occurrences during the categories indicated below: (Sum of all choices in question 10 should match the number you entered in question 8.)

Physical Education Class

School Recess

School Athletics - Intramural

School Athletics - Interscholastic

Any Other School Sponsored Activities

Non-School Sports Related (i.e. Local Town
Recreational Sports)

Outside of School - Other

Don't Know

Other

If a number was entered for "Other" please describe
cause

11. Please identify the number of concussions that occurred during each sport. Include both interscholastic and intramural events.

Boys Soccer	<input type="text"/>
Girls Soccers	<input type="text"/>
Cheerleading	<input type="text"/>
Boys Basketball	<input type="text"/>
Girls Basketball	<input type="text"/>
Football	<input type="text"/>
Boys Lacrosse	<input type="text"/>
Girls Lacrosse	<input type="text"/>
Field Hockey	<input type="text"/>
Track and Field	<input type="text"/>
Baseball	<input type="text"/>
Softball	<input type="text"/>
Boys Volleyball	<input type="text"/>
Girls Volleyball	<input type="text"/>
Swimming and Diving	<input type="text"/>
Wrestling	<input type="text"/>
Ice Hockey	<input type="text"/>
Rugby	<input type="text"/>
Dance Team	<input type="text"/>
Other	<input type="text"/>

* 12. Of the students diagnosed with concussions during the 2019-2020 school year, if known, please provide the number of students that required the following accommodations:

Individual Health Care Plan

Section 504 Plan

Academic Accommodations

Physical Activity Accommodations

Homebound Instruction

No accommodations required

* 13. Of the diagnosed concussions during the 2019-2020 school year, if known, please provide the AVERAGE length of time (in days) the accommodations were needed:

Individual Health Care Plan

Section 504 Plan

Academic Accommodations

Physical Activity Accommodations

Homebound Instruction

Not Known

* 14. If known, please provide the number of students who missed school days due to concussions during the 2019-2020 school year, for each category listed below:

Less than 5 school days

5 to 10 school days

11 to 15 school days

16 to 20 school days

21 to 60 school days

61 to 120 school days

Greater than 120 school days

Don't Know

Appendix C

2019-2020 Participating School Districts

1. Amity Regional School District #5
2. Andover
3. Ashford School
4. Avon
5. Barkhamsted
6. Bethany
7. Bethel Public Schools
8. Bloomfield Public Schools
9. Bolton Board of Education
10. Branford Public Schools
11. Bridgeport Board of Education
12. Bristol
13. Brookfield School District
14. Brooklyn Schools
15. Canterbury Public Schools
16. Canton
17. CES
18. Cheshire Public Schools
19. Colchester
20. Consolidated School District of New Britain
21. Coventry
22. Cromwell Public Schools
23. Danbury Public Schools
24. East Hampton School District
25. East Hartford
26. East Haven Public Schools
27. East Lyme School District
28. East Windsor Public Schools
29. Eastford
30. Easton
31. Explorations Charter School
32. Fairfield
33. Farmington
34. Glastonbury Public Schools
35. Granby Public Schools
36. Greenwich Public Schools
37. Griswold Public Schools
38. Groton Public School District
39. Guilford Public Schools
40. Hamden Public Schools
41. Hampton
42. Hartford Public Schools

43. Hartland School
44. Hebron School District
45. Highville Charter School
46. Killingly Public Schools
47. Lebanon Public Schools
48. Ledyard
49. Lisbon Central School
50. Litchfield Public Schools
51. Madison Public Schools
52. Manchester Public Schools
53. Mansfield BOE
54. Marlborough
55. Meriden
56. Middletown
57. Milford
58. Monroe
59. Montville Public Schools
60. Naugatuck Board of Education
61. New Canaan Public Schools
62. New Fairfield School District
63. New Hartford
64. New London Public Schools
65. New Milford Public Schools
66. Newington School District
67. Newtown Public Schools
68. North Branford
69. North Haven Public Schools
70. North Stonington
71. Northwestern Regional District 7
72. Norwalk Public Schools
73. Norwich Free Academy
74. Norwich Public Schools
75. Old Saybrook
76. Orange
77. Oxford
78. Plainville Community Schools
79. Plymouth
80. Pomfret
81. Portland School District
82. Putnam Public Schools
83. Redding
84. Region 8 (RHAM)
85. Region 9
86. Regional District #11
87. Regional District 19/EO Smith High School
88. Regional School District #4

89. Regional School District #13
90. Regional School District #14 Towns of Bethlehem/Woodbury
91. Regional School District #17
92. Regional School District #6
93. Regional School District 16
94. Regional School District 18 (Lyme-Old Lyme Public Schools)
95. Regional School District#10
96. Ridgefield
97. Rocky Hill
98. Salem School District
99. Salisbury Central School
100. Shepaug Valley Regional School #12
101. Sherman School
102. Simsbury
103. Somers
104. South Windsor Public Schools
105. Southington Public Schools
106. Sprague
107. Stafford Public Schools
108. Stamford
109. Sterling Community School
110. Stonington
111. Stratford Board of Education
112. The Gilbert School
113. The Woodstock Academy
114. Thompson Public Schools
115. Tolland Public Schools
116. Torrington Public Schools
117. Town of Berlin Connecticut
118. Trumbull
119. Vernon Public Schools
120. Wallingford School District
121. Waterford School District
122. Watertown School District
123. West Hartford Public Schools
124. West Haven School District
125. Westbrook Public Schools
126. Weston Public Schools
127. Westport Public Schools
128. Wethersfield Public Schools
129. Willington
130. Wilton Public Schools
131. Winchester Public Schools
132. Windham Public Schools
133. Windsor Locks Public Schools
134. Wolcott Public Schools

135. Woodbridge

136. Woodstock Public Schools