



Connecticut State Department of Education

Health Services Program Information Survey Report Concussion Analysis

August 29, 2017

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 ongoing 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 objective of the survey has been to assist the CSDE in understanding the status and needs of school health services 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.

Prior to 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 student concussions. Data was gathered for the 2014-2015 school year. During the Summer of 2015, the CSDE and CPRE continued to improve the Survey and the manner in which the data was collected. What follows is an analysis of the data collected for the 2016-2017 School Year.

II. Executive Summary

During the winter of 2016-2017 an email was sent out to each of the state's school districts with instructions on how to complete the School Health Services Survey. The districts were asked to work with their District Nursing Coordinators to gather and report the data required within the survey. In the email correspondence (Appendix A), it was made clear that while a majority of the survey was voluntary, the questions related to concussions were **mandatory** (Appendix B).

Of the 197 School Districts in Connecticut (Appendix C), 171 School Districts (86.8%) completed the concussion section of the survey. For the schools that completed the concussion questions in 2016-2017 there were 6,797 diagnosed concussions. Similar to 2016, the greatest occurrences of 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, there were 11,650 accommodations reported by school districts. A majority of students with reported diagnosed concussions (79.5%) missed less than 5 school days because of the concussion while a relatively small percentage (1.3%) missed more than 20 school days.

III. Results of Concussion Questions

The concussion section of the School Health Services Survey consisted of seven mandatory 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. The concussion questions, along with the identifying demographic questions, were the only mandated questions on the survey. What follows are the descriptive statistics and synopsis of those questions.

*The TOTAL number of students diagnosed with concussion during 2016-2017 school year = **6,797***

The mean number of concussions per district was 39.3. This was a decrease from the 2015-2016 mean of 42.1 diagnosed concussions per district. The Fairfield School District was for the second time, the only district that reported a number (259) that could be considered an outlier. The next highest reported numbers of concussions were by West Hartford with 166, and Danbury reporting 146 concussions.

The number of FEMALE students diagnosed with a concussion during the 2016-2017 school year:

Grade	# of Diagnosed Concussions
Pre-K	4
Kindergarten	24
1 st Grade	35
2 nd Grade	43
3 rd Grade	64
4 th Grade	78
5 th Grade	149
6 th Grade	220
7 th Grade	292
8 th Grade	399
9 th Grade	586
10 th Grade	597
11 th Grade	478
12 Grade	393
Total	3,362

The number of MALE students diagnosed with a concussion during the 2016-2017 school year:

Grade	# of Diagnosed Concussions
Pre-K	9
Kindergarten	22
1 st Grade	31
2 nd Grade	65
3 rd Grade	113
4 th Grade	156
5 th Grade	233
6 th Grade	306
7 th Grade	330
8 th Grade	376
9 th Grade	572
10 th Grade	482
11 th Grade	381
12 th Grade	359
Total	3,435

There were no statistically significant differences for concussion rates between female and male students. Interestingly, however, rates increased for both genders and peaked at the 9th grade for boys, and 10th grade for girls, declining for each year thereafter.

The number of diagnosed concussion occurrences during the following categories:

Activities	# of Diagnosed Concussions	% of Diagnosed Concussions
Physical Education Class	407	5.9
School Recess	224	3.3
School Athletics-Intramural	220	3.2
School Athletics-Interscholastic	2,079	30.6
Any other school sponsored activities	205	3.0
Non-school sports Related (i.e. Local Town Recreational Sports)	1,071	15.8
Outside of school - Other	1,822	26.8
Don't know	505	7.4
Other	265	3.9

The highest number of diagnosed concussions occurred during Athletic Activities, both Interscholastic (30.6%) and Non-School Sports Related (15.8%). The number of concussions occurring outside of school accounted for 26.8% of the total concussions reported.

Of students diagnosed with concussions during the 2016-17 school year, number requiring the following accommodations:

Accommodations	# of Accommodations Required
Individual Health Care Plan	1,813
Section 504 Plan	343
Academic Accommodations	4,250
Physical Activity Accommodations	5,169
Homebound Instruction	75
No accommodations required	378

The number of accommodations required were greater than the total number of concussions as many diagnosed concussions required more than one type of accommodation. “Physical Activity Accommodations” and “Academic Accommodations” represent the largest number of interventions required. There were 75 incidences of “Homebound Instruction” required due to a diagnosed concussion.

Of concussions diagnosed during school year 2016-17, the (mean) average length of time (in days) that accommodations were needed:

Accommodations	Average Length of Time (Days) Accommodations Were Needed
Individual Health Care Plan	17.6
Section 504 Plan	30
Academic Accommodations	23.5
Physical Activity Accommodations	25.7
Homebound Instruction	5.9
Not Known	1.4

The average length of the “Physical Activity Accommodation” was 25.7 days while the average “Academic Accommodation” was 23.5 days. The average “Homebound Instruction” accommodation lasted 5.9 days.

The number of students who missed school days due to concussions during the 2016-17 school year, for each category below:

School Days Missed	# of Students
Less than 5 school days	3,931
5 to 10 school days	788
11 - 15 school days	135
16 - 20 school days	54
21 - 60 school days	38
61 - 120 school days	16
Greater than 120 school days	12
Don't know	601
Total	5,575

A vast majority (73.2%) of students diagnosed with a concussion missed less than 5 school days. 11.6% of students missed between 5 and 10 days of school while 1.0% of students missed more than 20 days of school.

IV. Demographics of Survey Respondents

District Reference Group	Number of Districts Responding	Percent
A	10	5.8
B	22	12.9
C	28	16.4
D	24	14.0
E	33	19.3
F	16	9.4
G	19	11.1
H	8	4.7
I	11	6.4
Total	171	100.0

Type of District	Number of Districts Responding	Percent
Urban	28	16.4
Suburban	76	44.4
Rural	67	39.2
Total	168	100.0

	Number of Districts Responding	Percent
Public School District	163	95.3
Charter School	5	2.9
Regional Educational Service Center	3	1.8
Total	168	100.0

V. Data Limitations

With great effort from the District Nurse Supervisors and the CSDE, 86.8% of school districts completed the concussion portion of the School Health Services Survey. While this is an improvement on the previous year's data collection, it is still short of the 100% that should be completing these state mandated questions. The concussion portion of the School Health Services Survey was introduced in the 2014-2015 school year, and changed significantly last year. Comparisons between the data collected in the last two years of implementation are inappropriate except at the most basic level. Additionally, there seems to be a level of difficulty in

completing the survey at some of the school districts. 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 entered in the first question. In many cases, this was not the case. This disconnect makes the analysis of the questions somewhat difficult. Another issue in reporting was that some districts may have misinterpreted the question asking for the average amount of time an accommodation was needed. Several school districts entered numbers much greater than 180 days, which is not possible.

VI. Conclusions and Recommendations

The School Health Services Survey contained questions on student concussions in 2014-2015 for the first time. Those questions were constructed with cooperation between the Connecticut State Department of Education and the Center for Program Research & Evaluation at EdAdvance. As with all surveys, the usefulness of the results is dependent upon response rate. In 2016-2017, a slightly higher number (171) of school districts reported total numbers of concussions (6,797), with slightly fewer total concussions than for 2015-2016. Additional efforts need to be made in subsequent years to ensure 100% data collection. Districts also need to be trained in how to track and report concussion data accurately. If these efforts continue, comparisons between school years for concussion data will be appropriate and useful.

2017 Concussion Report Appendices

Appendix A



STATE OF CONNECTICUT
DEPARTMENT OF EDUCATION



TO: School District Nurse Coordinators/Supervisors
FROM: Stephanie Knutson, MSN, RN Education Consultant
DATE: April 20, 2017
SUBJECT: 2016-17 School Health Services Program Information Survey

Thank you for your efforts last year with the *Health Services Program Information Survey (Survey)*. A copy of the report along with the 2004-16 Summary Highlights Report is available on the Connecticut State Department of Education's (CSDE) Health Promotion Services/School Nurse Web site at www.ct.gov/sde/schoolnurse.

Public Act No. 14-66, *An Act Concerning Youth Athletics and Concussions* requires that for the school year commencing July 1, 2014, and annually thereafter, the State Board of Education shall require all local and regional school districts to collect and report all occurrences of concussions to the board. Each report shall contain, if known: (1) the nature and extent of the concussion, and (2) the circumstances in which the student sustained the concussion. For the school year commencing July 1, 2015, and each school year thereafter, the State Board of Education shall send a concussion report to the Department of Public Health containing all of the information received. In addition, not later than October 1, 2015, and annually thereafter, the Commissioner of Public Health shall report to the joint standing committees of the General Assembly the findings of the concussion report provided to the department.

In response to this new reporting requirement, the CSDE has incorporated concussion questions into the existing CSDE *Survey* that is completed annually by school nurses and school nurse supervisors throughout the state since 2004. While the full completion of the *Survey* is not mandatory, **questions 8 through 14 must be completed by all local and regional school districts** in order to comply with the concussion reporting requirements of Public Act No. 14-66. Over the past thirteen-year period, response rates of Connecticut school districts have ranged from 61 to 89 percent, providing valuable data that assists local and regional boards of education and state agencies with information on the health status of students. We therefore encourage completion of the entire survey.

All *Surveys* **MUST** be completed by June 15, 2017, to allow adequate time for data analysis.

All information needed to complete the *Survey* may be found on the EdAdvance Web site at www.edadvance.org. On the homepage near the top of the page you will see a list of links.

The last link in the row is titled, "*School Services*". Please click on that link. On the left side of the next page you will see a list of links. Click on the third link down in the list, "*The Center for Program Research & Evaluation (CPRE)*". On the next page, the link below *CPRE* is the link for "*State Department of Education Health Services Survey*". Please click on that link to enter the "*SDE Health Services Survey*" Web page.

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On that Web page, you will see instructions to complete the survey/questionnaire, a sample form for data collection by school nurses at the building level, and reports from the last years of data collection including the summary reports tracking trends over time. A list of all school districts in Connecticut and their school codes is also posted for your convenience.

Each School Nurse Coordinator/Supervisor will need to gather some of the data from each building and compile the information. As the coordinator/supervisor, you will be entering only the totals for your district into the *Survey*. Only one survey per school district is accepted by the Survey Administrator.

Please feel free to contact me at 860-807-2108 or stephanie.knutson@ct.gov if you have any questions.

SGK:sk

Appendix B
Survey Concussion Questions

Health Services Program Information 2017

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 is the three digit number to the left of the district name. Click highlighted text for school district list.)

* 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 2016-2017 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 2016-2017 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 2016-2017 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-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 2016-2017 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-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"/>

* 10. Of the diagnosed concussions that occurred during the 2016-2017 school year, please provide the number of occurrences during the categories indicated below: (Sum of all choices in question 10 should match the number provided 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

Girls Soccers

Cheerleading

Boys Basketball

Girls Basketball

Football

Boys Lacrosse

Girls Lacrosse

Field Hockey

Track and Field

Baseball

Softball

Boys Volleyball

Girls Volleyball

Swimming and Diving

Wrestling

* 12. Of the students diagnosed with concussions during the 2016-2017 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 2016-2017 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 2016-2017 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

197 School Districts Receiving Survey Participation Request

Organization Type	District
Public School Districts	Andover School District
Public School Districts	Ansonia School District
Public School Districts	Ashford School District
Public School Districts	Avon School District
Public School Districts	Barkhamsted School District
Public School Districts	Berlin School District
Public School Districts	Bethany School District
Public School Districts	Bethel School District
Public School Districts	Bloomfield School District
Public School Districts	Bolton School District
Public School Districts	Bozrah School District
Public School Districts	Branford School District
Public School Districts	Bridgeport School District
Public School Districts	Bristol School District
Public School Districts	Brookfield School District
Public School Districts	Brooklyn School District
Public School Districts	Canaan School District
Public School Districts	Canterbury School District
Public School Districts	Canton School District
Public School Districts	Chaplin School District
Public School Districts	Cheshire School District
Public School Districts	Chester School District
Public School Districts	Clinton School District
Public School Districts	Colchester School District
Public School Districts	Colebrook School District
Public School Districts	Columbia School District
Public School Districts	Cornwall School District
Public School Districts	Coventry School District
Public School Districts	Cromwell School District
Public School Districts	Danbury School District
Public School Districts	Darien School District
Public School Districts	Deep River School District
Public School Districts	Derby School District
Public School Districts	East Granby School District
Public School Districts	East Haddam School District
Public School Districts	East Hampton School District
Public School Districts	East Hartford School District
Public School Districts	East Haven School District
Public School Districts	East Lyme School District

Public School Districts	East Windsor School District
Public School Districts	Eastford School District
Public School Districts	Easton School District
Public School Districts	Ellington School District
Public School Districts	Enfield School District
Public School Districts	Essex School District
Public School Districts	Fairfield School District
Public School Districts	Farmington School District
Public School Districts	Franklin School District
Public School Districts	Glastonbury School District
Public School Districts	Granby School District
Public School Districts	Greenwich School District
Public School Districts	Griswold School District
Public School Districts	Groton School District
Public School Districts	Guilford School District
Public School Districts	Hamden School District
Public School Districts	Hampton School District
Public School Districts	Hartford School District
Public School Districts	Hartland School District
Public School Districts	Hebron School District
Public School Districts	Kent School District
Public School Districts	Killingly School District
Public School Districts	Lebanon School District
Public School Districts	Ledyard School District
Public School Districts	Lisbon School District
Public School Districts	Litchfield School District
Public School Districts	Madison School District
Public School Districts	Manchester School District
Public School Districts	Mansfield School District
Public School Districts	Marlborough School District
Public School Districts	Meriden School District
Public School Districts	Middletown School District
Public School Districts	Milford School District
Public School Districts	Monroe School District
Public School Districts	Montville School District
Public School Districts	Naugatuck School District
Public School Districts	New Britain School District
Public School Districts	New Canaan School District
Public School Districts	New Fairfield School District
Public School Districts	New Hartford School District
Public School Districts	New Haven School District
Public School Districts	New London School District
Public School Districts	New Milford School District
Public School Districts	Newington School District
Public School Districts	Newtown School District

Public School Districts	Norfolk School District
Public School Districts	North Branford School District
Public School Districts	North Canaan School District
Public School Districts	North Haven School District
Public School Districts	North Stonington School District
Public School Districts	Norwalk School District
Public School Districts	Norwich School District
Public School Districts	Old Saybrook School District
Public School Districts	Orange School District
Public School Districts	Oxford School District
Public School Districts	Plainfield School District
Public School Districts	Plainville School District
Public School Districts	Plymouth School District
Public School Districts	Pomfret School District
Public School Districts	Portland School District
Public School Districts	Preston School District
Public School Districts	Putnam School District
Public School Districts	Redding School District
Public School Districts	Ridgefield School District
Public School Districts	Rocky Hill School District
Public School Districts	Salem School District
Public School Districts	Salisbury School District
Public School Districts	Scotland School District
Public School Districts	Seymour School District
Public School Districts	Sharon School District
Public School Districts	Shelton School District
Public School Districts	Sherman School District
Public School Districts	Simsbury School District
Public School Districts	Somers School District
Public School Districts	South Windsor School District
Public School Districts	Southington School District
Public School Districts	Sprague School District
Public School Districts	Stafford School District
Public School Districts	Stamford School District
Public School Districts	Sterling School District
Public School Districts	Stonington School District
Public School Districts	Stratford School District
Public School Districts	Suffield School District
Public School Districts	Thomaston School District
Public School Districts	Thompson School District
Public School Districts	Tolland School District
Public School Districts	Torrington School District
Public School Districts	Trumbull School District
Public School Districts	Union School District
Public School Districts	Vernon School District

Public School Districts	Voluntown School District
Public School Districts	Wallingford School District
Public School Districts	Waterbury School District
Public School Districts	Waterford School District
Public School Districts	Watertown School District
Public School Districts	West Hartford School District
Public School Districts	West Haven School District
Public School Districts	Westbrook School District
Public School Districts	Weston School District
Public School Districts	Westport School District
Public School Districts	Wethersfield School District
Public School Districts	Willington School District
Public School Districts	Wilton School District
Public School Districts	Winchester School District
Public School Districts	Windham School District
Public School Districts	Windsor Locks School District
Public School Districts	Windsor School District
Public School Districts	Wolcott School District
Public School Districts	Woodbridge School District
Public School Districts	Woodstock School District
Regional Education Service Center School Districts	Area Cooperative Educational Services
Public Charter School Districts	Achievement First Hartford Academy Inc. District
Public Charter School Districts	Amistad Academy District
Public Charter School Districts	Booker T. Washington Academy District
Public Charter School Districts	Brass City Charter School District
Public Charter School Districts	Bridgeport Achievement First District
Public Charter School Districts	Capital Preparatory Harbor School Inc. District
Public Charter School Districts	Common Ground High School District
Public Charter School Districts	Elm City College Preparatory School District
Public Charter School Districts	Elm City Montessori School District
Public Charter School Districts	Explorations District
Public Charter School Districts	Great Oaks Charter School District
Public Charter School Districts	Highville Charter School District
Public Charter School Districts	Integrated Day Charter School District
Public Charter School Districts	Interdistrict School for Arts and Comm District
Public Charter School Districts	Jumoke Academy District
Public Charter School Districts	New Beginnings Inc Family Academy District
Public Charter School Districts	Odyssey Community School District
Public Charter School Districts	Park City Prep Charter School District
Public Charter School Districts	Path Academy District
Public Charter School Districts	Side By Side Charter School District
Public Charter School Districts	Stamford Academy District
Public Charter School Districts	Stamford Charter School for Excellence District
Public Charter School Districts	The Bridge Academy District
Public Charter School Districts	Trailblazers Academy District

Regional School Districts	Regional School District 01
Regional School Districts	Regional School District 04
Regional School Districts	Regional School District 05
Regional School Districts	Regional School District 06
Regional School Districts	Regional School District 07
Regional School Districts	Regional School District 08
Regional School Districts	Regional School District 09
Regional School Districts	Regional School District 10
Regional School Districts	Regional School District 11
Regional School Districts	Regional School District 12
Regional School Districts	Regional School District 13
Regional School Districts	Regional School District 14
Regional School Districts	Regional School District 15
Regional School Districts	Regional School District 16
Regional School Districts	Regional School District 17
Regional School Districts	Regional School District 18
Regional School Districts	Regional School District 19
CT Technical Education and Career Districts	Connecticut Technical Education and Career System
Regional Education Service Center School Districts	Capitol Region Education Council
Regional Education Service Center School Districts	Cooperative Educational Services
Regional Education Service Center School Districts	Eastern Connecticut Regional Educational Service Center (EASTCONN)
Regional Education Service Center School Districts	EdAdvance
Regional Education Service Center School Districts	Learn