

Connecticut State Department of Education

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

August 29, 2016

Developed for:

The Connecticut State Department of Education

By

Kevin P. Glass, MSRSM, Director
Margot Snellback, Research Associate
Center for Program Research & Evaluation

Contact:

EdAdvance
P.O. Box 909
355 Goshen Road
Litchfield, CT 06759-0909
Phone: 860-567-0863

Contact:

Connecticut State Department of Education
Stephanie G. Knutson, Education Consultant
Bureau of Health/Nutrition, Family Services and Adult Education
Connecticut State Department of Education
25 Industrial Park Road
Middletown, CT 06457
Phone: 860-807-2108

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 (formerly EDUCATION CONNECTION) 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 2015-2016 School Year.

II. Executive Summary

During the winter of 2015-2016 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), 168 School Districts (85.3%) completed the concussion section of the survey. For the schools that completed the concussion questions in 2015-2016 there were 7,075 diagnosed concussions. The greatest occurrences of concussions occurred during "Interscholastic Athletic Activities" followed closely by "Outside of School" and "Non-School Sports Related" activities. As a result of the diagnosed concussions reported, there were over 13,000 accommodations made by school districts. A majority of students with reported diagnosed concussions (69.8%) missed less than 5 school days because of the concussion while a relatively small percentage (1.4%) missed more than 20 school days.

III. Results of Concussion Questions

The concussion section of the School Health Services Survey consisted of six 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 2015-2016 school year = **7,075***

The mean number of concussions per district was 42.1. This was an increase from the 2014-2015 mean of 39.9 diagnosed concussions per district. The Fairfield School District was the only district that reported a number (318) that could be considered an outlier. The next highest reported number of concussions were by Trumbull and West Hartford, both reporting 188 concussions.

The number of FEMALE students diagnosed with a concussion during the 2015-2016 school year:

Grade	# of Diagnosed Concussions
Pre-K	9
Kindergarten	16
1 st Grade	22
2 nd Grade	42
3 rd Grade	63
4 th Grade	103
5 th Grade	156
6 th Grade	219
7 th Grade	350
8 th Grade	433
9 th Grade	645
10 th Grade	601
11 th Grade	503
12 Grade	389
Total	3,551

The number of MALE students diagnosed with a concussion during the 2015-2016 school year:

Grade	# of Diagnosed Concussions
Pre-K	5
Kindergarten	13
1 st Grade	38
2 nd Grade	64
3 rd Grade	117
4 th Grade	187
5 th Grade	267
6 th Grade	302
7 th Grade	353
8 th Grade	443
9 th Grade	585
10 th Grade	487
11 th Grade	424
12 th Grade	360
Total	3,645

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 and declined thereafter.

The number of diagnosed concussion occurrences during the following categories:

Activities	# of Diagnosed Concussions	% of Diagnosed Concussions
Physical Education Class	545	7.8
School Recess	268	3.8
School Athletics-Intramural	142	2.0
School Athletics-Interscholastic	2,231	32.0
Any other school sponsored activities	262	3.8
Non-school sports Related (i.e. Local Town Recreational Sports)	1,221	17.5
Outside of school - Other	1,791	25.7
Don't know	426	6.1
Other	84	1.2

The highest number of diagnosed concussions occurred during Athletic Activities, both Interscholastic (32.0%) and Non-School Sports Related (17.5%). The number of concussion that occurred Outside of School accounted for 25.7% of the total concussions reported.

Of students diagnosed with concussions during the 2015-16 school year, number requiring the following accommodations:

Accommodations	# of Accommodations Required
Individual Health Care Plan	2,070
Section 504 Plan	395
Academic Accommodations	4,719
Physical Activity Accommodations	5,675
Homebound Instruction	79
No accommodations required	538

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 79 incidences of “Homebound Instruction” required due to a diagnosed concussion.

Of concussions diagnosed during school year 2015-16, 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	17.7
Section 504 Plan	41.5
Academic Accommodations	26.3
Physical Activity Accommodations	23.8
Homebound Instruction	9.1

The average length of the “Physical Activity Accommodation” was 23.8 days while the average “Academic Accommodation” was 26.3 days. The average “Homebound Instruction” accommodation lasted 9.1 days.

The number of students who missed school days due to concussions during the 2015-16 school year, for each category below:

School Days Missed	# of Students
Less than 5 school days	4,336
5 to 10 school days	1,030
11 - 15 school days	142
16 - 20 school days	77
21 - 60 school days	64
61 - 120 school days	21
Greater than 120 school days	3
Don't know	540
Total	6,213

A vast majority (69.8%) of students diagnosed with a concussion missed less than 5 school days. 16.6% of students missed between 5 and 10 days of school while 1.4% of students missed more than 20 days of school.

IV. Demographics of Survey Respondents

District Reference Group	Number of Districts Responding	Percent
A	10	6.0
B	21	12.5
C	27	16.1
D	28	16.7
E	28	16.7
F	14	8.3
G	19	11.3
H	10	6.0
I	11	6.5
Total	168	100.0

Type of District	Number of Districts Responding	Percent
Urban	24	14.3
Suburban	92	54.8
Rural	52	31.0
Total	168	100.0

	Number of Districts Responding	Percent
Public School District	160	95.2
Charter School	7	4.2
Regional Educational Service Center	1	.6
Total	168	100.0

V. Data Limitations

With great effort from the District Nurse Supervisors and the CSDE, 85.3% of the school districts completed the concussion portion of the School Health Services Survey. While this is an improvement on 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 were introduced in the 2014-2015 school year, they were changed significantly this year. Comparisons between the data collected between the 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 2015-2016, a significantly higher number (168) of school districts reported total numbers of concussions (7,075). It is impossible to tell if the higher number reported this year is a trend towards actually increased numbers of diagnosed concussions or a result of greater data tracking and reporting. 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.



STATE OF CONNECTICUT
DEPARTMENT OF EDUCATION



TO: School Nurse Supervisors

FROM: Stephanie
Knutson, MSN,
RN Education
Consultant

DATE: April 13, 2016

SUBJECT: 2015-16 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 2004-15 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 13 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 twelve-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, 2016, to allow adequate time for data analysis.

All information needed to complete the *Survey* may be found on the EDUCATION CONNECTION Web site at www.educationconnection.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.

25 Industrial Park Road • Middletown, Connecticut 06457
An Equal Opportunity Employer

2015-16 School Health Services Program Information Survey

April 13, 2016

Page 2

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: Concussion Questions on School Health Services Survey

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 students were diagnosed with concussions during the 2015-2016 school year?

* 9a. In your district, how many FEMALE students were diagnosed with a concussion during the 2015-2016 school year in the following grades?

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 2015-2016 school year in the following grades? (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 2015-2016 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. Of the students diagnosed with concussions during the 2015-2016 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

* 12. Of the diagnosed concussions during the 2015-2016 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

* 13. If known, please provide the number of students who missed school days due to concussions during the 2015-2016 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: Applicable School Districts in Connecticut

Achievement First Hartford Academy Inc. District
Amistad Academy District
Andover School District
Ansonia School District
Ashford School District
Avon School District
Barkhamsted School District
Berlin School District
Bethany School District
Bethel School District
Bloomfield School District
Bolton School District
Booker T. Washington Academy District
Bozrah School District
Branford School District
Brass City Charter School District
Bridgeport Achievement First District
Bridgeport School District
Bristol School District
Brookfield School District
Brooklyn School District
Canaan School District
Canterbury School District
Canton School District
Capital Preparatory Harbor School Inc. District
Chaplin School District
Cheshire School District
Chester School District
Clinton School District
Colchester School District
Colebrook School District
Columbia School District

Common Ground High School District
Connecticut Technical High School System
Cornwall School District
Coventry School District
Cromwell School District
Danbury School District
Darien School District
Deep River School District
Derby School District
East Granby School District
East Haddam School District
East Hampton School District
East Hartford School District
East Haven School District
East Lyme School District
East Windsor School District
Eastern Connecticut Regional Educational Service Center (EASTCONN)
Eastford School District
Easton School District
Ellington School District
Elm City College Preparatory School District
Elm City Montessori School District
Enfield School District
Essex School District
Explorations District
Fairfield School District
Farmington School District
Franklin School District
Glastonbury School District
Goodwin College
Granby School District
Great Oaks Charter School District
Greenwich School District

Griswold School District
Groton School District
Guilford School District
Hamden School District
Hampton School District
Hartford School District
Hartland School District
Hebron School District
Highville Charter School District
Integrated Day Charter School District
Interdistrict School for Arts and Comm District
Jumoke Academy District
Kent School District
Killingly School District
Lebanon School District
Ledyard School District
Lisbon School District
Litchfield School District
Madison School District
Manchester School District
Mansfield School District
Marlborough School District
Meriden School District
Middletown School District
Milford School District
Monroe School District
Montville School District
Naugatuck School District
New Beginnings Inc., Family Academy District
New Britain School District
New Canaan School District
New Fairfield School District
New Hartford School District

New Haven School District
New London School District
New Milford School District
Newington School District
Newtown School District
Norfolk School District
North Branford School District
North Canaan School District
North Haven School District
North Stonington School District
Norwalk School District
Norwich Free Academy District
Norwich School District
Odyssey Community School District
Old Saybrook School District
Orange School District
Oxford School District
Park City Prep Charter School District
Path Academy District
Plainfield School District
Plainville School District
Plymouth School District
Pomfret School District
Portland School District
Preston School District
Putnam School District
Redding School District
Regional School District 01
Regional School District 04
Regional School District 05
Regional School District 06
Regional School District 07
Regional School District 08

Regional School District 09
Regional School District 10
Regional School District 11
Regional School District 12
Regional School District 13
Regional School District 14
Regional School District 15
Regional School District 16
Regional School District 17
Regional School District 18
Regional School District 19
Ridgefield School District
Rocky Hill School District
Salem School District
Salisbury School District
Scotland School District
Seymour School District
Sharon School District
Shelton School District
Sherman School District
Side By Side Charter School District
Simsbury School District
Somers School District
South Windsor School District
Southington School District
Sprague School District
Stafford School District
Stamford Academy District
Stamford Charter School for Excellence District
Stamford School District
Sterling School District
Stonington School District
Stratford School District

Suffield School District
The Bridge Academy District
The Gilbert School District
Thomaston School District
Thompson School District
Tolland School District
Torrington School District
Trailblazers Academy District
Trumbull School District
Union School District
Vernon School District
Voluntown School District
Wallingford School District
Waterbury School District
Waterford School District
Watertown School District
West Hartford School District
West Haven School District
Westbrook School District
Weston School District
Westport School District
Wethersfield School District
Willington School District
Wilton School District
Winchester School District
Windham School District
Windsor Locks School District
Windsor School District
Wolcott School District
Woodbridge School District
Woodstock Academy District
Woodstock School District