Connecticut State Department of Education

Health Services Program Information Survey Report

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Developed for:

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By

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Executive Summary

Background and Methodology:

The Connecticut State Department of Education (CSDE), as part of its ongoing efforts to support and expand school health services provided to Connecticut students, is continuing the data collection process for school health services begun in 2004. This process is designed to assist the CSDE to understand the status of school health services in Connecticut school districts, the needs of school districts and students in the area of school health services and progress being made in these areas over time. As one component of these ongoing efforts, the CSDE commissioned the Center for Collaborative Evaluation and Strategic Change (CCESC) at EDUCATION CONNECTION to develop an online survey to collect information regarding the status of school health services from school districts throughout Connecticut.

The survey development process was designed to encourage participation of state and district staff through each stage in the process. The process included the initial consultation of the CSDE with the CPRE (Center for Program Research & Evaluation at EDUCATION CONNECTION. The survey was developed for data collection after a review of the professional literature related to school health services. The CSDE and the Connecticut State Health Records Committee (CSHRC) assisted EDUCATION CONNECTION to adapt the survey development process as necessary to meet the needs of school districts and the CSDE.

The CSDE and the CSHRC provided suggestions to EDUCATION CONNECTION for areas and categories for which they sought information. Additionally, as appropriate, questions were used from similar surveys administered by other states. The use of these questions was intended to maximize survey reliability and to allow Connecticut to compare results, as necessary, with results from other states.

EDUCATION CONNECTION staff developed specific questionnaire items based on these suggestions and questions asked on other state health questionnaires. The CSDE and the CSHRC approved all aspects of survey development before survey administration. The survey was pilot tested in spring 2003. Based on the results of the pilot test, and consequent survey administrations, the survey has been revised as necessary over time.

Scales were developed to identify perceptions of the importance, satisfaction or frequency of an item using a Likert-type scale. Demographic information was collected including: type of district; types of districts served by the respondent; district reference group (DRG); and name and identification number of the school district. Open-ended questions allowed respondents to comment freely on their expectations, needs and satisfaction. Survey questions have been revised slightly each year based on district requests or the results of survey data analysis.

The survey was incorporated into the EDUCATION CONNECTION website to facilitate completion by respondents. The Coordinator of Health Services in each Connecticut school district, or the equivalent, was asked to complete the online survey.

Questionnaire results were analyzed statistically using IBM SPSS Statistics. Frequencies and means were obtained on all data as appropriate.

Profile of Districts Who Participated in the Data Collection Process:
During 2014-2015, a total of 169 questionnaires were distributed with 139 received and analyzed, yielding a response rate of 82.2%.

The majority of respondents (93.5%) were from public school districts, while 4.3% of respondents represented charter schools and 2.2% represented Regional Educational Services Centers. Slightly less than half (44.6%) of respondents represented suburban districts; 38.8% represented rural districts; and 16.5% represented urban districts. By a small margin, the majority of respondents (80) provided services only to public schools and 51 districts also provided services to private, non-profit schools. It should be noted that approximately 5.8% of respondents did not answer this question.

Respondents included districts from all District Reference Groups (DRG) and were represented by the following percentages:

DRG	% of Survey Responses
A	15.1
B	12.9
C	11.5
D	16.5
E	13.7
F	7.9
G	11.5
H	4.3
I	6.5

School Health Services Conclusions and Recommendations:
Overall, school health services staff reflect varying perceptions of the status of health services in Connecticut districts. As in previous years, survey respondents were generally positive as indicated by the quantitative survey results and the number of comments on the survey. The CSDE and EDUCATION CONNECTION staff examined data resulting from the twelfth year of survey administration.

That examination resulted in the following conclusions regarding school health services in Connecticut:

- Optional services provided by participating districts to public school students generated more than 13,000 referrals to outside providers. These numbers indicate a continued need for screenings in these areas;
- Students in private, non-profit schools served by responding districts were somewhat less likely than their public school counterparts to receive optional services for mental health or dental screening, but remain as or more likely to receive other optional services such as pediculosis screenings during 2014-2015.
- In general, nurse-to-student ratios decrease as grade levels increase. Between 15-16% of secondary schools have only one nurse to more than 750 students;
- Districts employ a wide range of health care specialists. The most common specialists for 2014-15 are mental health consultants, followed by assistive technology specialists;
- Connecticut school districts are caring for children with a wide range of physical, developmental, behavioral and emotional conditions;
- Connecticut districts report 16,207 students with documented dietary restrictions including nut, wheat, milk and lactose intolerance allergies;
- Districts regularly prescribe emergency medications as needed including glucagon, diastat and epinephrine;
- Connecticut nurses report spending an average of 25.4 hours per week on routine nursing interventions;
- Districts identify a need for more mental health services, as well as programs related to healthier lifestyles and better nutrition, increased physical activity and overall fitness;
- During 2014-2015, 1,810 9-1-1 calls were made by Connecticut public and private, non-profit schools for students and adults combined, down 2% from 2013-14.
- In responding districts, 19% (9,695) fewer public school students and 16.9% (84) fewer private school students were reported as uninsured during 2014-2015 than in the prior year;

- Approximately 89% of Connecticut public school districts and 48% of private school districts report using computer software to collect and record school health information. The most commonly used software in both public and private schools was SNAP, followed by software programs not listed in the survey.
- Between 59-80% of Connecticut school health staff members report at least some involvement in teaching topics including: nutrition and physical activity, injury prevention, disease prevention and substance abuse prevention. Other topics include hygiene, dental and heart health, and independent chronic disease management. Some school health staff report collaborating with teachers to facilitate health-related topics.
- Respondents provide a wide range of observations and suggestions regarding services that would increase district satisfaction with the provision of health services to students including; nurses being an underutilized resource due to staffing constraints, increasing inclusion of nurses as part of an interdisciplinary health curriculum team, and meeting the need for mental and physical health curricula in districts currently without it.

Future Data Collection Conclusions and Recommendations:

A number of specific recommendations for the CSDE regarding future data collection efforts were also developed, and are specified within the report.

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Introduction

EDUCATION CONNECTION submits this report to the Connecticut State Department of Education (CSDE) in fulfillment of the task to collect survey data to assist the CSDE to identify the status of school health services in Connecticut. Survey results are used to monitor the characteristics of, and trends in, school health services in Connecticut school districts at the elementary, middle/junior high school and senior high school levels. Data was collected through the administration of the Health Services Program Information Survey. Funding for this project was provided by the CSDE. This report summarizes the results of data collection for the 2014-2015 academic year. This is the twelfth year for which data was collected.

Theoretical Framework

The theoretical framework followed in the planning and implementation of the data collection process includes the concepts of participatory evaluation, systems thinking, and a constructivist theory of learning.

Review of the Literature

A summary of national literature regarding the importance of school health services and student health to student academic performance was provided in the 2003-04 report and will not be repeated here. The concepts outlined in this review of the literature were used to guide and focus data collection efforts and include the following:

Academic Performance and Health

- Nutrition
- Physical Health
- Mental Health
- Vision Care
- Oral Health
- Absenteeism Rates
- Access to Health Care and Coverage

Status of School Health Services

- Staffing
- Medication Administration
- Computer Software Available
- Role of School Health Services
- Guidelines and Ratios
- Health Care Provision in School Districts
- Effectiveness of School Health Services

Status of Student Health

- Alcohol & Drug Use
- Injury & Violence (including suicide)
- Nutrition
- Physical Activity
- Sexual Behaviors
- Tobacco Use
- Emerging Issues:
  - Concussion Occurrence (new 2015)
  - Food Safety
  - Asthma
  - Skin Cancer
  - Type I Diabetes
  - Type II Diabetes
  - Dental Disease

Data Collection Process

Survey Development

All survey development processes were described in the 2003-04 report and will not be repeated here. Based on results of the 2009-2010 survey administration, a limited number of changes were made in the survey prior to the 2011 through 2015 administrations. The CSDE and the Connecticut State Health Records Committee assisted EDUCATION CONNECTION to adapt the survey as necessary to meet the needs of school districts and the CSDE. Ongoing adaptations have been made in collaboration with Kevin Glass, MSRSM, Director of the Center for Program Research & Evaluation at EDUCATION CONNECTION.

The survey collected data in the following areas:

- Types and results of services provided in Connecticut public and private, non-profit schools.
- Staff of health services in Connecticut schools:
  - numbers of staff;
  - nurse/student ratios;
  - qualifications of staff; and
  - specialists linked to nursing services.
- Numbers of students with specific health care needs in public schools and private, non-profit schools.
- Types of health care procedures performed by health services staff in public and private, non- profit schools.
- Number of students dismissed and reasons for dismissal in public and private, non-profit schools.
- Number of students without health insurance in public and private, non-profit schools.
- Numbers of and reasons for 911 calls in public and private, non-profit schools.
- Concussion Diagnosis/Frequency
- Availability of health coordination and education activities.
- Involvement of health services staff with health coordination and education activities.
- Software available to support health service data collection.
- Demographic information including:
  - District Reference Group (DRG)
  - Type of District:
    - rural/urban/suburban; and private/public/regional educational service center;
  - Types of schools to which the district provides health services;
  - Name and identification of district; and
  - Name of survey respondent.

Reliability and validity of the survey were discussed in previous reports and are not repeated here. Reliability was maximized through a comprehensive pilot testing process and through the development of questions following generally accepted standards. Survey validity is primarily determined through the use of a survey development process that collects data on all relevant key concepts and is generally assessed non-statistically by a panel of experts. This survey was developed in close partnership with the CSDE. It is expected that the questionnaire is sufficiently valid and reliable.

Survey Administration

The survey was posted to the EDUCATION CONNECTION website to increase ease of completion. Survey directions, sources of data necessary for survey completion, and results of the eleven previous survey administrations are also available for downloading on the EDUCATION CONNECTION website.

Ms. Stephanie Knutson, the CSDE Education Consultant, Bureau of Health/Nutrition, Family Services and Adult Education, introduced participants to the purpose and history of the survey and shared the survey with the group online. Ms. Knutson answered questions concerning the practicalities of survey completion, state expectations for survey completion and expected use of data.

The CSDE sent a letter of intent to each Coordinator of Health Services, or the equivalent, in Connecticut informing them that they would shortly be receiving a letter requesting that they complete the survey. The letter directed recipients to the EDUCATION CONNECTION Web site for survey completion.

The CSDE and EDUCATION CONNECTION responded to questions and concerns regarding the survey as they arose. A total of 169 questionnaires were distributed. 139 responses were received in time to be analyzed, yielding a response rate of 82.2%.

Data Analysis Methodology

Survey results were analyzed using IBM SPSS Statistics. The total number of individuals, frequencies and means were obtained as appropriate.

Results

The response totals, frequencies or mean response, as appropriate, are listed below. Respondents who answered "Don't Know/Need More Info" were not included in the analysis.

During 2014-2015, districts reported information for public schools and private, non-profit schools separately for a variety of topics. Results are reported separately for public and private, non-profit schools as appropriate. Approximately 39% of responding districts reported that they also provided services to private, non-profit schools.

Services Provided in Connecticut School Districts

Table 1A: Public School Students Receiving Services as Percent of Total

Note: For the table below, percentages were calculated ONLY for districts for which all data is available. Therefore, the total number of students reported by the districts varies by category and is dependent upon whether other data necessary to calculate percentages was provided. The total number of public school students reported by participating districts is 408,407.

Health Service	Number of Districts Reporting Students Receiving Service	Total Number of Public School Students Reported by Participating Districts	Number of Students Receiving Service Reported by Participating Districts	% of Students Receiving Service	Number of Districts Reporting Students Referred to Outside Provider	Number of Students Referred to Outside Provider	% of Students Receiving Service Referred to Outside Provider
Optional Services							
Body Mass Index	98	329,683	25,032	7.6%	81	302	1.2%
Pediculosis Screening	112	377,783	55,825	14.7	98	2,364	4.2
Nutrition Screening	100	337,102	2,681	0.8	85	231	8.6
Mental Health Consultation	100	352,221	14,517	4.1	87	5,638	38.8
Dental Screening	101	349,205	29,059	8.3	86	5,138	17.7
Total			**127,114 screenings**			**10,872 referrals**	
Mandatory Services*							
Vision					117	21,095	5.8%
Scoliosis					89	4,249	1.1
Hearing					102	4,974	1.3
Mandated Health Assessments					47	10,834	3.1
Total						**41,152 referrals**	

*No data collected for mandatory services, as these screenings are required for all students.

The optional service provided most frequently by Connecticut districts was pediculosis screening. In 2014-2015 14.7% of public school students in reporting districts received pediculosis screenings compared to 0.8% of students who received nutrition screenings. Mental health and dental screenings were the optional services most likely to result in a referral to an outside provider. Over 38% of students who received these two screenings were referred to an outside provider for further assistance. Additionally, 8.6% of students who received nutrition consultations were referred to an outside provider.

In 2014-2015, the number of students provided optional services by participating districts continues to be relatively small compared to the total number of students. Data suggest that many Connecticut school districts do not provide optional services or offer them only on a very limited basis. Participating districts voluntarily provided 165,018 screenings. These voluntary screenings resulted in 13,673 referrals, highlighting the need for screening services in Connecticut schools.

Results were similar for mandatory screenings. In 2014-2015, mandatory screenings in the responding districts resulted in 41,152 referrals to outside providers. Over half of all referrals were for vision. About 5.8% of vision screenings resulted in a referral.

Table 1B: Private, Non-Profit School Students Receiving Services as Percent of Total

Note: In Table 1B, percentages were calculated ONLY for districts for which all data was available. The total number of students reported by the districts varies by category and is dependent upon whether other data necessary to calculate percentages was provided. Participating districts reported a total of 43,941 private, non-profit school students.

Health Service	Number of Districts Reporting Private School Students Receiving Service	Total Number of Private School Students Reported by Participating Districts	Number of Private School Students Receiving Service Reported by Participating Districts	% of Private School Students Receiving Service	Number of Districts Reporting Private School Students Referred to Outside Provider	Number of Students Referred to Outside Provider	% of Students Receiving Service in Private Schools Referred to Outside Provider
Optional Services							
Body Mass Index	39	34,802	2,789	8.1%	33	15	0.5%
Pediculosis Screening	44	36,346	7,186	19.8%	39	235	3.3%
Nutrition Screening	40	35,654	383	1.1%	34	48	12.5%
Mental Health Consultation	40	35,654	926	2.6%	35	329	35.5%
Dental Screening	41	35,898	1,863	5.2%	37	295	15.8%
Total			**11,154 Screenings**			**662 referrals**	
Mandatory Services*							
Vision					46	1,724	3.9%
Scoliosis					41	580	1.3%
Hearing					41	617	1.4%
Mandated Health Assessments					35	1,804	4.1%
Total						**4,725 referrals**	

***No data collected for mandatory services, as these screenings are required for all students.**

Like public school students, students in private, non-profit schools received the optional service of pediculosis screening most frequently. Nutrition was the optional service provided least frequently. In 2014-2015, 19.8% of private, non-profit school students served by reporting districts received pediculosis screenings while only 1.1% received nutrition screenings. Approximately 15.8% of dental screenings, 35.5% of mental health consultations, and 12.5% of nutrition consultations resulted in referrals.

Staffing of Health Services in Connecticut School Districts

I. Nursing Staff:

Table 2: Numbers and Classification of Staff
Number and Percent

Staff Type	Nursing Staff Classification	Total Number of Staff in Participating Districts (FTE)	Percent of Total FTE Staff in Participating Districts
Registered Nurse	Nurse Leaders	99	7.4%
	School Nurses	899	67.6
	Nurse Practitioners	10	0.8
	Permanent Float Nurses	18	1.4
	One-to-One Nurses	36	2.7
	Contracted Nursing Staff	71	5.3
Total Registered Nurse Staff	**All RN Classifications**	**1,133**	**85.2%**
Nursing Support	Licensed Practical Nurses	48	3.6%
	Health Aide	80	6.0
	Nursing Clerk or Other Support Staff	69	5.2
Total Nursing Support Staff	**All Support Classifications**	**197**	**14.8%**
Total Staff	**All Classifications**	**1,330**	**100.0%**

Consistent with last year, 7.4% of full-time equivalent school health services staff are designated as nurse leaders. Another 77.7% percent of FTE staff are registered nurses who do not work in a leadership capacity. The remaining 14.8% are classified as nursing support staff.

II. Additional Staff:

District Medical Advisor:

Of the responding districts, 192 of them received services from a medical advisor. Of these, approximately 95% received services less than 10 hours per month. 1.6% received services between 11-20 hours per month, another 1.6% received services between 21-30 hours per month. Two districts received more than 40 hours of services from a medical advisor each month.

Medical advisors serving Connecticut school districts specialize in the following areas:

- Adolescent Health 21.6%
- Family Medicine 31.7%
- General Medicine 7.2%
- Internal Medicine 5.8%
- Orthopedics 1.4%
- Pediatrics 56.1%
- Public Health 5.8%
- Sports Medicine 3.6%
- Other 5.8%

Note: Medical advisors can have more than one specialty area. Numbers do not total 100 percent.

District Dental Services:

Results indicate that a majority (70.2%) of responding Connecticut districts do not provide dental services to their students. Among districts providing these services, 9.0% received services from a dentist and 91.0% received services from a dental hygienist.

III. Staffing Levels:

84% of responding districts reported having a nurse leader designee who is a nurse. Responding districts also reported a total of 1,050 Full-Time Equivalent (FTE) registered nurses and 200 FTE nursing support staff in 2014-2015.

Staffing by Grade Level and School

Table 3: Nurse-to-Student Ratio
Percent Respondents

	One Nurse to less than 250 Students	One Nurse to 250-500 Students	One Nurse to 501-750 Students	One Nurse to More Than 750 Students
Elementary nurse-to-student ratio in district	15.8%	63.2%	18.0%	3.0%
Secondary nurse-to-student ratio in district	11.7%	32.8%	39.8%	15.6%

A majority of Connecticut schools meet national guidelines that recommend a school district have a nurse-to-student ratio of no less than 1 nurse to 750 students in the general population. In addition, the guidelines recommend 1 nurse to 225 students in student populations requiring daily professional school nursing services or interventions, 1 nurse to 125 students in student populations with complex health care needs, and 1 nurse per student for individual students who require daily and continuous professional nursing services. Survey results indicate that slightly less than 1 in 6 secondary level schools in Connecticut may not meet general population guidelines. It is important to note that no information is collected regarding the acuity levels of the population of students reported.

IV. Staff Qualifications:

Table 4: Qualifications of Nurse Leaders
Percent Response

	Number of Respondents	Diploma Registered Nurse	AD	Other Associates Degree	BS in Nursing	Other Bachelor's degree	MS in Nursing	MPH	MHE	MBA
Nurse	139	18.7%	8.6%	0.7%	48.2%	6.5%	8.6%	5.8%	1.4%	1.4%
Nurse	18	33.3	11.1	0	50.0	5.63	0	0	0	0
Nurse	6	33.3	0	0	50.0	0	25.0	16.7	0	0
Nurse	4	25.0	0	0	75.0	0	0	0	0	0
Nurse	2	50.0	0.0	0	0	50.0	0	0	0	0

Districts reported the qualifications of each nurse leader in their district. Districts with more than one nurse leader reported additional qualifications under Nurse Leader 2-5 above. The most prevalent degrees among nurse leaders were a BS in Nursing and a Diploma Registered Nurse. Close to 50% of districts reported having at least one nurse leader with a BS in Nursing. Other qualifications among Nurse Leaders included APRN, MHCH, Speech Pathologist, and various degrees in progress.

Table 5: Additional Specialists Employed by Districts
Percent Response

Specialist	Yes
Nutritionist	10.4%
Mental Health Consultant	47.8
Psychiatrist	22.2
Assistive Technology Specialist	39.7
Other	20.4

Districts employed additional health care specialists to address student needs. Mental health consultants and assistive technology specialists remain the most commonly employed specialists by districts.

Student Health in Connecticut School Districts

Participating districts provided data on a wide range of topics related to student health. The 2014-2015 survey collected information on the health care needs of students in public and private non-profit schools served by participating districts. 39% of responding districts served students in private, non- profit schools. Results are summarized below.

I. Student Health Care Needs:

Table 6: Number of Students with Specific Health Care Needs

Health Condition	Public School Students	Private, Non- Profit School Students	Total Number of Students
Bee Sting Allergy	2001	274	2,275
Food (Life threatening only)	14,315	1,862	16,207
Latex/Environmental Allergy	8,048	1,342	9,390
Arthritis	528	178	706
Asthma	52,570	5,073	57,643
Autism Spectrum Disorders	5,373	347	5,720
ADHD/ADD	18,571	2,032	20,603
Concussion	1,842	376	2,218
Depression	4,674	356	5,030
Eating Disorders	1,003	380	1,383
Other Behavioral/Emotional	7,050	729	7,779
Hemophilia	170	56	226
Sickle Cell Trait	424	39	463
Other Blood Dyscrasias	760	84	844
Cancer	337	55	392
Cardiac Conditions	2,312	246	2,558
Cerebral Palsy	778	206	984
Developmental Delays	6,552	385	6,937
Diabetes Type I	1,057	128	1,158
Diabetes Type II	263	14	277
Lyme Disease	1,063	123	1,186
Migraine Headaches	3,242	497	3,739
Neurological Impairment	2,419	178	2,597
Other Health Impairment	4,430	462	4,892
Oral Health Needs	2,784	353	3,137
Orthopedic Impairment	4,005	702	4,707

Health Condition	Public School Students	Private, Non- Profit School Students	Total Number of Students
Seizure Disorder	2,780	243	3,023
Speech Defects	8,849	403	9,252
Severe Vision	1,305	129	1,434
Severe Hearing	1,486	137	1,623
Spina Bifida	96	8	104

Connecticut school nurses provided services to students with a wide range of physical and emotional health needs. The most prevalent conditions reported in order of frequency among public school students during 2014-2015 were Asthma, ADHD/ADD, food allergies, speech defects, and latex/environmental allergies. Results from private, non-profit schools were similar with the most prevalent conditions including asthma, ADHD/ADD, food allergies, and latex/environmental allergies. This was the sixth year for which data on Lyme disease was collected, and the first year for which concussion data was collected. A total of 1,186 Lyme Disease cases were reported in participating schools.

In the 113 districts who responded to the question, there were 15,765 students enrolled who had a special dietary need documented by an appropriate medical statement that is maintained on file.

In an effort to address the dietary needs of students, Connecticut school health services staff collaborates with food service staff on a somewhat frequent basis. Approximately one-third reported collaborating "*Some of the time*", while 36.3% collaborated "*Most of the time*" and approximately one quarter (24.2%) collaborate "*All of the time*." 6.5% indicated "*Never*" collaborating with Food Service staff.

School health services staff itemized the medical diagnoses held by students that require special dietary accommodations. Their responses are summarized in Table 7 below.

Table 7: Student Diagnoses Responsible for Dietary Accommodations
Percent Response

Diagnoses	% of Districts having students with this diagnosis
Milk allergies	93.2%
Tree nut allergies	92.6
Peanut allergies	92.6
Lactose intolerance	92.2
Wheat allergies	87.6
Diabetes	87.3
Shellfish allergies	85.3
Celiac disease	85.1
Egg allergies	83.6
Other allergies	81.9
Other food intolerances	79.0
Soy allergies	78.9
Fish allergies	78.6
Seed allergies	72.1
Other diagnoses	60.7

The most common "other" diagnoses provided by school nurse staff include swallowing disorders.

Table 8: Emergency Medication Administration
Percent Response

Medication	% of districts having used this medication in the past year
Epinephrine	41.1%
Diastat	13.2
Glucagon	6.5

6.5% of districts reported the use of glucagon, 13.2% reported the use of diastat and approximately 41.1% reported the use of epinephrine during the past year.

In the 123 responding Connecticut districts, 97.6% had a standing order for epinephrine, and 356 students with life threatening food allergies required the administration of epinephrine during the school year. The most common reasons for the provision of epinephrine were food allergies, and specifically nut allergies. There were 25 undiagnosed students experiencing food allergic reactions requiring administration of epinephrine during the school day.

Nurse's Time in Connecticut School Districts:

I. Allocation of Nurses' Time in Connecticut School Districts

Districts reported a range of activities engaged in by school nurses during the school day. Tables summarizing their responses are below.

Table 9: Number of Nurse Hours/Week Spent on Specific Health Interventions

Health Intervention	Number of Responding Districts	Mean Number of Hours Per Week	Total Nurse Hours Per Week
Routine nursing intervention	119	25.4	29
Referrals to health care provider	118	2.0	2
Administration of daily medication	119	3.4	3
Administration of as-needed medication	119	3.6	4
Performance of special health care procedures	119	3.0	3
Monitoring of health care needs	118	7.9	9
Case management	119	4.0	4
Mental health counseling	119	3.3	3

More than half of the the average Connecticut school nurses' time was spent on routine nursing interventions. Districts reported that nurses' time was also spent on activities including monitoring of health care needs, administration of medication, case management, mental health counseling, and performance of special health care procedures. Districts reported that nurses spent approximately three hours per week conducting mental health interventions during 2014-2015.

Table 10A: Types of Procedures Performed by Connecticut School Nurses
Percent of Responding Participants Providing Services to Public Schools

Procedure	% of Districts Serving Public Schools Performing Procedure in the Public School Setting
Nebulizer Treatments	91.5%
Blood Sugar Testing	90.7
Insulin Pump Management	82.2
Gastrostomy Tube Feedings	51.3
Catheterizations	32.1
Suctioning	30.7
Ostomy Care	26.1
Other Treatments	22.8
Oxygen Therapy	22.1
Tracheostomy Care	16.8
Ventilator Care	9.6
Nasogastric Tube Feedings	6.3
IV Therapy	3.5

Districts reported that school nurses performed a wide variety of procedures within the public school setting. The most common among them included: nebulizer treatments (91.5%), blood sugar testing (90.7%), and insulin pump management (82.2%).

Other treatments most frequently listed by districts included wound care, post-seizure care, cough-assist machine and anxiety care.

Table 10B: Types of Procedures Performed by Connecticut School Nurses
Percent of Responding Participants Providing Services to Private, Non-Profit Schools

Procedure	% of Districts Serving Private, Non-Profit Schools Performing Procedure in the Private, Non-Private School Setting
Nebulizer Treatments	66.0%
Blood Sugar Testing	62.1
Insulin Pump	46.8
Other Treatments	14.0
Gastrostomy Tube	9.0
Tracheostomy Care	2.3
Nasogastric Tube	2.3
Ventilator Care	2.3
Oxygen Therapy	2.3
Suctioning	0
Ostomy Care	0
IV Therapy	0
Catheterizations	0

Respondents serving private, non-profit schools most frequently reported the provision of nebulizer treatments (66%); blood sugar testing (62.1%); and insulin pump management (46.8%) in these schools.

All procedures were less likely to be performed in the private, non-profit school setting than in the public school setting.

II. Impact of Nursing Interventions

Table 11: Percentage of Students Returned to Classroom
Percent Response

Percentage of Students Returned Within One-Half Hour	% Response
0-25%	0.8%
26-50%	0
51-75%	4.9
76-100%	94.3

Approximately 94% of districts reported that 76-100% of students were returned to the classroom within one-half hour of receiving a nursing intervention.

Of the students dismissed and NOT returned to the classroom, districts identified the approximate percentage of students dismissed for each reason described below. Responses are summarized below.

Table 12: Reason for Dismissal
Percent Response

Reason for Dismissal	Number of Public School Students Dismissed	% of Private, Non-Profit School Students Dismissed
Illness	85.8%	87.9%
Injury	10.7	8.8
Other	3.5	3.3

Most student dismissals during 2014-2015 among both public school students and private, non-profit school students were because of illness. Approximately 11% of dismissals in public schools, and 9% in private, non-profit schools were due to injury.

Table 13: Dismissal Destination
Average Response

Dismissal Destination	% of Public School Students Dismissed	% of Private, Non-Profit School Students Dismissed
Home	91.8%	91.8%
Emergency Room	2.4	1.3
Other Healthcare Provider	5.8	6.9

Roughly 92% of students dismissed for health reasons from both public and private, non-profit schools were sent home. Respondents reported that 2.4% from public schools and 1.3% from private, non-profit schools were sent to an emergency room.

Other Factors Impacting Student Health:

105 public school districts provided information on the number of students without health insurance coverage. In those districts, 9,695 students were without health insurance during 2014-2015.

43 districts serving private non-profit school students provided information reporting that 84 students were uninsured during 2014-2015.

Table 14: 9-1-1 Calls in Public and Private, Non-Profit Schools

	Public Schools	Private, Non-Profit Schools	Total
Number of students in responding districts	408,407	43,941	452,348
Number of 9-1-1 Calls per 1,000 students per year	3.4	1.7	3.2
Total number of 911 calls	1,376	75	1,451

118 districts reported the number of 9-1-1 calls made in public schools and 49 districts reported the number of 9-1-1 calls made in private, non-profit schools during the 2014-2015 school year. About 3.4 9-1-1 calls were made for every 1,000 students in the public schools. Slightly less than 2 calls per 1,000 students were made in the private, non-profit schools.

56% of respondents identified injuries as the most common reason for 9-1-1 calls. As in the previous year, "Other" continued to be reported as the second most common reason for 9-1-1 calls followed by "anaphylaxis" and "seizure."

For staff or other adults, 119 public school districts reported that 311 9-1-1 calls were made, while 49 private school districts reported a total of 48 9-1-1 calls placed for adults. "Other" continued to be identified as the most common reason for 9-1-1 calls, followed by "injury", "anaphylaxis" and "seizure".

Concussion Evaluation

For the first time in 2014-2015, at the request and with the cooperation of the State Department of Education, a series of questions pertaining to student concussions were added to the School Health Services Survey. Both mean and median descriptive statistics are included in the analysis of each question due to significant outliers. Below is a synopsis of the results for these questions.

Analysis of Concussion Questions

Table 15: Number of Diagnosed Concussions Occurring during the 2014-2015 School Year

Number of Districts Responding	139
Mean number of concussions per district	39.9
Median number of concussions per district	28.0
Total number of diagnosed concussions for reporting districts in Connecticut for the 2014-2015 school year	5,551

District Nursing Coordinators from 139 school districts responded to the survey reporting a total of 5,551 concussions during the 2014-2015 school year. The mean number of concussions per district was 39.9 with a median value of 28.0. The discrepancy between the mean number of concussions and the mean number of concussions can be attributed to two outlying school district responses. Two, medium sized school districts reported 434 and 208 concussions respectively. Conversely, 4 small school districts reported zero incidences of concussions for the 2014-2015 school year. See chart below:

Figure 1: Total Number of Diagnosed Concussions

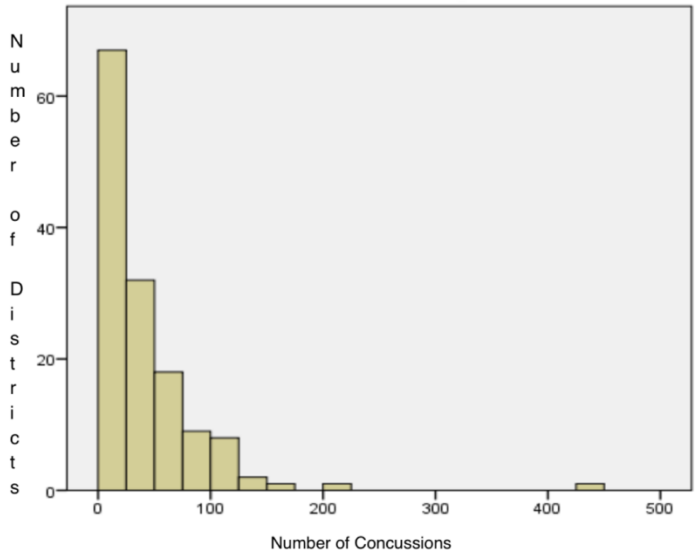

Table 16: Number of diagnosed concussions in the 2014-2015 school year which occurred during the following activities

	Physical Education Class	School Recess	School Athletics Intramural	School Athletics Interscholastic	School Sponsored Activities	Outside of School	Don't Know	Other
Number of districts responding	112	101	87	113	97	125	75	67
Mean number of concussions per district	3.5	2.6	.98	16.1	1.9	19.5	5.5	1.9
Median number of concussions per district	2.0	1.0	0	12.0	1.0	11.0	1.0	1.0
Total number of concussions per activity	387	267	85	1820	187	2436	415	129

The greatest number of concussions took place outside of school, with a total of 2,436 reported for the 2014-2015 school year with a mean per district of 19.5. The second leading category was interscholastic athletic events, with 1,820 concussions reported. Intramural Athletic events provided the fewest number of concussions, with only 85 incidences reported.

***Table 17: Number of students diagnosed with concussion during the 2014-2015 school year that required the following accommodations*:**

	Individual Health Care Plan	Section 504 Plan	Academic Accommodations	Physical Activity Accommodations	Homebound Instruction	No accommodations required
Number of districts responding	111	106	126	132	102	99
Mean number of students requiring the accommodation	15.35	4.25	30.54	33.94	1.69	2.46
Median number of students requiring the accommodation	6.00	2.00	21.00	25.00	1.00	1.00
Total number of students requiring the accommodation	1,704	451	3,848	4,480	172	244

A combined total of 10,655 accommodations were provided to students diagnosed with concussion in the 2014-2015 school year. The most frequently provided accommodation was for modification of physical activity, with 4,480 students in need of the accommodation. The least necessary accommodation was for homebound instruction, with 172 students receiving the service across all reporting districts.

***Table 18: Mean length of time the accommodations were needed for students diagnosed with concussion during the 2014-2015 school year*:**

	Individual Health Care Plan	Section 504 Plan	Academic Accommodations	Physical Activity Accommodations	Homebound Instruction	Not Known
Number of responding districts	27	25	14	15	42	44
Mean length of time accommodations were needed (days)	.78	.28	3.9	4.8	.02	NA
Median length of time accommodations were needed (days)	.00	.00	.50	3.00	.00	NA
Total incidences for each accommodation	21	7	55	72	1	NA

This question had the fewest number of responses suggesting that many respondents may not have had access to, or knowledge of this information. Among those who did respond, the accommodation requiring the greatest number of days of service was for physical activity, reflecting a mean of 4.8 days based on 15 responses. Academic accommodations were required for a mean of 3.9 days per diagnosed student as indicated by 14 responses, while Individual Health Care Plans, Section 504 Plans and Homebound Instructions each required less than one day of accommodation each.

***Table 19: Number of students who missed the corresponding number of school days due to concussion* during the 2014-2015 school year:**

	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
Number of responding districts	122	107	78	58	63	48	46	52
Mean number of days missed per district	23.78	8.80	2.17	1.26	.87	.29	.15	NA
Median number of days missed per district	15.50	4.00	1.00	.00	1.00	.00	.00	NA
Number of incidences	2,901	942	169	73	55	14	7	NA

For the data reported, a vast majority (69.7%) of concussion incidences required less than 5 school days missed. Also of note, 7 students from the reporting districts missed greater than 120 school days.

Concussion Data Conclusion and Recommendations

The concussion questions were constructed with cooperation between the Connecticut State Department of Education and the Center for Program Research & Evaluation at EDUCATION CONNECTION. As with all surveys, the usefulness of the results is dependent upon response rate. While 139 school districts reported total numbers of concussions (5,551), many of those districts did not report on the more specific questions as to accommodations needed, time needed for accommodations, and total days lost. Improvements need to be made in reporting protocols to ensure more detailed results.

Health Coordination/Education

Connecticut school nurses and their districts were involved in a variety of health coordination and educational activities. Summaries of results related to health coordination/education are in the tables below.

Table 20: Frequency of Provision of Health Care Management Services
Percent Response

My district provides the following student health care management services:	Don't Know	Never	Sometimes	Always
Development of Individual Health Care Plan	0%	0.8%	13.9%	85.2%
Development of Individual Emergency Plan	0	0	9.0	91.0
Development of 504 Plan	1.8	0	27.9	70.5
Staff Training to Meet Individual Student Health Needs	0.9	0.8	12.4	86.8

The majority of districts reported that health care management services are always provided. However, the number of districts that reported that health care management services are "*sometimes*" provided ranged from 9% to 28%. Data suggest that slightly more than one quarter of Connecticut districts provide development of 504 plan services on an inconsistent basis.

Approximately 76% of responding districts stated that nursing staffs were involved in the development of IEPs.

Table 21: Computer Software Used to Collect Student Health Information
Percent Response

Software	Public School Districts	Private, Non-Profit School Districts
None	10.7%	51.7%
SNAP	47.1	24.1
Health Master	2.5	1.7
School Nurse Manager	0	0
Other district wide data program	39.7	20.7

The software systems most commonly used in participating districts to collect student health information was SNAP. However, it is noted that over half of private, non-profit school districts, and more than one tenth of public school districts continue to have no health-reporting software system in use.

Table 22: Existence of Specific Activities
Percent Response

My district has:	Yes
Automatic External Defibrillator Program	98.4%
School Health Team	78.2

Survey results denote that almost 80% of Connecticut school districts have a school health team in place. Almost all respondents (98.4%) reported having an Automatic External Defibrillator program in place during 2014-2015.

Table 23: Collaboration of School Health Services Staff with Colleagues
Percent Response

Staff	% That Collaborate
Physical Education Staff	86.0%
Health Education Staff	80.8
Mental Health or Social Services Staff	80.0
Nutrition of Food Service Staff	79.3
School Health Council, Committee or Team	76.9

School health services staff collaborates with a variety of other staff members on a regular basis, most frequently with physical education health and mental health staff, and least frequently collaborate with the School Health Council, Committee or Team.

Table 24: Collaboration of School Health Services Staff with Colleagues to Implement Health Programs: Percent Response

Type of Program	% That Collaborate
Injury prevention and safety	78.7%
Emotional and mental health	75.2
Physical activity and fitness	74.6
Asthma	70.5
Violence prevention (e.g. bullying, fighting, homicide)	61.3
Human sexuality	56.8
Alcohol or other drug use prevention	49.6
Suicide prevention	45.8
Tobacco-use prevention	44.8
Foodborne illness prevention	37.6
STD prevention	36.2
Pregnancy prevention	33.3
HIV prevention	31.1

School health services staff collaborated with other school staff to implement a variety of programs. The most common collaborations involved injury prevention and safety, emotional and mental health, and physical activity and fitness. Health services staffs collaborate least frequently with others to develop programs in pregnancy prevention, STD prevention and HIV prevention.

Table 25: Involvement of School Health Services Staff in Teaching Percent Response

In my district, school health staff is involved in teaching health promotion or prevention in the	**Never**	**Sometimes**	**Always**	**Don't Know**
Nutrition/Physical Activity	20.0%	66.7%	11.7%	1.7%
Human Sexuality Education	32.8	52.1	14.3	0.8
Disease Prevention	14.3	58.0	26.1	1.7
Injury Prevention	15.8	55.8	25.8	2.5
Substance Abuse Prevention	31.6	59.0	7.7	1.7
Other	41.0	29.5	9.8	19.7

School health services staff members most often describe themselves as "sometimes" involved in teaching a variety of specific content areas. Other content areas taught by school health services staff include hygiene, dental/heart health, asthma triggers and treatment, independent chronic disease management and self-destructive behavior management.

Demographics

Demographic data was collected from survey respondents and is shown below.

Table 26: District Reference Group (DRG) of Responding Districts
Percent Response

DRG	% of Survey Responses
A	15.1
B	12.9
C	11.5
D	16.5
E	13.7
F	7.9
G	11.5
H	4.3
I	6.5

Respondents represented all DRGs in Connecticut. Percentages of respondents from each DRG are generally reflective of the number of districts in the state from that DRG.

Table 27: Demographic Location of Responding Districts
Percent Response

Demographic Location	Percent
Urban	16.6%
Suburban	44.6
Rural	38.8

Approximately 45% of respondents represented suburban districts. Over 17% of respondents were from urban districts and over one third represented rural districts.
Approximately 94% of respondents were from public school districts. 4% were from charter schools and 2% were from Regional Educational Service Centers.

135 participants responded that they provided services to public schools only, and 55 districts provided services to private, non-profit schools. It should be noted that a small number of respondents did not answer the last question so the calculation of percentages was not completed.

Open-Ended Questions

Most frequent comments by respondents in open-ended questions are summarized below.

I. Health Services Provided to Students in the District:

Survey respondents offered numerous comments on issues encompassing the increasing demand for school health services, especially in the areas of mental health and dental health. Common comments revolved around the following topics:

- Student health needs have become more acute and this has taxed nursing resources further. The current ratio of nurses to students is not adequate to meet the demand.
- Mental health and concussion services have increased tremendously.
- RNs are seeing a big increase in the amount of time involved in new Homebound Regulations that are impacting on delivery of health services to student population.
- There needs to be more funding for School Based Health. This service is used by many families due to lack of transportation, and funding. This service allows kids to have better health services and stay in school therefore accessing their education.
- We have noticed a dramatic increase in psych/social/emotional issues this year. This includes an increase suicide thoughts, attempts, self-injurious behaviors, depression, and anxiety. Social media has played a significant role in this increase.
- More assistance is needed to provide timely and accurate screenings.
- Many students have complex, multiple diagnoses who need total nursing care to provide a comfortable and safe learning environment while in school.
- People are increasingly using the school nurse as a free and private clinic. Parents are telling students to go to the nurse to be checked when they should really be bringing them to their own physician.

Districts requested assistance from the CSDE in a number of areas. Respondents commonly cited the following needs:

- More guidance in the mental, emotional health of students.
- SDE support for more licensed staffing, improvements in electronic health records for standardization, and professional development emphasizing clinical training would be advantageous.
- Would like to see consistency in the interpretation of Field Trip Guidelines, Lice policies, protocols, Homebound, Concussion and PE excuse formats. Would also like to see clear directives regarding new epi-pen regulations, perhaps add more formalized training dates. They were closed out this spring.
- More parent education (advertising) about required immunizations especially the Flu vaccine for Pre-K.
- Educate the teachers and administrators on the importance of including the nurses in the 504, IEP, PPT and decision making process. Hold physicians accountable for completing the Mandated Screenings on their physicals.
- A list of Pediatricians, PCPs, Ophthalmologists, Optometrists and Dentists who accept Husky Insurance annually would be helpful.
- Expand mental health services so more students can be identified. Perhaps put a clinic in each high school.
- A review of the effectiveness of mandated screenings, particularly postural screening.
- Mandate staffing in school health offices. Full time RN, part time Certified nurse's aide and part time secretary.

II. Student Health

Student health concerns most frequently mentioned by respondents included:

- Due to the increase in concussions in the district- CHS is offering an alternative physical education class for these students, which will focus on wellness, health, nutrition and a fitness program designed for the concussed student. Low impact yoga class and stationary exercise equipment will also be used. The student will then be able to obtain PE credit for graduation as required. This class will also include a mental health section which will hopefully relieve the depression of some concussed students. It will also include students with low self-esteem or physical injuries, who will exercise in a much smaller group. A certified PE teacher will be running these classes. Numbers will vary during the school year.
- I have ongoing concerns with the increase in social/emotional needs of students this year. Inadequate mental health care providing services that are short in duration and limited in clinical interventions provide. This is evidenced by repeat hospital admissions for suicide attempts, ideation, and self-injurious behaviors.
- We need two full time nurses in each building for nurses to be able to attend, 504 PPT, SSRB and IEP meetings with the ever increasing needs of our student population. We have more than 55% of our student population qualifying for free lunch. Medical and emotional illnesses have increased.
- When referring to 911 calls it would be important to include mental health issues or 211 calls.
- It is very difficult for the nurses to have an accurate number for the number of students uninsured. They really don't have accurate information due to parents not completing information on the HAR-3.
- It is very difficult for nurses to have an accurate number for uninsured students due to parents not completing information on the HAR-3. Many of the schools did not have this information.

Districts requested assistance from the CSDE in a number of areas related to student health. Respondents most frequently identified the following needs:

- Increased funding to support evidence-based staffing ratios would be incredibly valuable in resource-challenged districts such as New Haven.
- School nurses need to be able to better assess and treat mental health disorders. We need more education and to be respected partners by the psychiatric community.
- More funding for School based health programs.
- Outside agency involvement in educational presentations to students on social/emotional problems.
- Ask what professional development topics nurses would like to access to improve their ability to care for students.

III. Health Coordination/Education

Although many districts supported having more nursing involvement in collaborating in health curriculum development in recent years, comments varied as to the levels of involvement. It was suggested by several respondents that school-based health clinics should be provided at the high school level to accommodate the growing demand for physical and psychological health services that families may not otherwise obtain. Results also indicated that staff would like to see CSDE communicate more directly with Pediatricians at local and state levels to address more direct ways to improve student health. Many nurses indicated that they create opportunities to provide teaching time to students in their offices. Concerns considered the most relevant included: the increasing population of medically complex students requiring more direct nursing intervention, without additional nursing staff to support the need; inconsistency of delivery of health curricula across different districts; the time demands of increasing documentation; and underrepresentation of school psychologists in many districts. Survey results suggested that the most consistent teaching topics among respondents included injury prevention and safety, emotional and mental health, and physical activity and fitness. Topics less frequently taught included HIV prevention, pregnancy prevention, and STD prevention.

IV. Staffing of Health Services in Districts:

The need for increased staffing levels in order to address ongoing growing health concerns that require nursing attention, as well as emerging issues such as concussion awareness, and emphasis on school-based health clinics, has been consistently identified by survey respondents in 2014-2015.

Districts requested assistance from the CSDE primarily regarding increased staffing support in the following areas:

- Enforce a mandate that there be one nurse for every 699 students and at least 2 nurses for every 700 or more students.
- Hire health aides and screeners for proper assistance with care since the number of medically/emotionally complex children has increased.
- Provide more behavioral health services. The community services are limited and turnover is great, leaving families without support.
- We need help getting SNAP set-up. We would have a lot more data to contribute if we had an appropriate person entering the data.
- Support and advocacy for better ratios of licensed nurses to students is essential. Closer examination of health acuity in public schools should be addressed.

All open-ended comments are available to the CSDE upon request.

Data Strengths and Limitations

This report summarizes data collection efforts developed and implemented to present a comprehensive picture of status of school health services in public and non-profit schools in Connecticut.

To this end, the data collection effort has the following strengths:

- Highly accurate data collected from the School Health Services Survey;
- Data received from a variety of types of schools including public and private non-profit schools, schools in each DRG, and urban, rural and suburban schools;
- A good response rate of 82.2 percent;
- Twelve years of data collection.

However, as with any research study, data collection and the use of data have some limitations. These limitations include:

- Differential response rates per question and a high percentage of questions with missing da- ta. Specifically, districts often skip a question if the answer is "0". However, missing data cannot be assumed to be zero. The percentage of districts that do not enter 0 into the appropriate box may lead to the data being skewed in a positive direction.
- Use of one survey data collection tool. There is no supporting data available from focus groups, interviews or other triangulated data collection methods.
- Changes in the data collection tool on a yearly basis to reflect the changing needs and interests of the CSDE and participating districts. As a result of changes, some data can be tracked longitudinally. However, some data are not available for each of the eleven years of data collection.

Conclusions

Overall, school health services staffs express a broad range of perceptions regarding the status of health services in Connecticut districts. As in previous years, survey respondents were generally positive as indicated by the quantitative survey results and the number of constructive comments on the survey. The CSDE and EDUCATION CONNECTION staff examined data resulting from the eleventh year of survey administration.

That examination resulted in the following conclusions regarding school health services in Connecticut:

- Optional services provided by participating districts to public school students generated between 13,000-14,000 referrals to outside providers. These numbers indicate a continued need for, and interest in screenings in these areas;
- In general, nurse-to-student ratios decrease as grade levels increase. At the secondary school level, fewer respondents in 2014-15 indicated that one nurse represented more than the national guideline of a maximum of 750 students than in the prior year, from 24% in 2013-14, to 15.6%;
- Districts employ wide ranges of health care specialists. The most common specialists continue to include mental health consultants and assistive technology specialists;
- Connecticut school districts are caring for children with increasingly complex physical, developmental, behavioral and emotional conditions;
- Connecticut districts have over 16,000 students with documented food allergies/conditions including primarily peanut, milk, tree nut allergies and diabetes;
- Districts regularly prescribe emergency medications as needed including glucagon, diastat and epinephrine;
- In 2014-2015, Connecticut nurses spend an average of 25.4 hours per week on routine nursing interventions;
- Districts are requesting more state support in funding mental health services/providers to help students at risk succeed in school;
- During 2014-2015, 1,451 9-1-1 calls were made for students in reporting public and private, non-profit schools. For staff and other adults, 359 9-1-1 calls were tracked by public and private, non-profit schools;
- In responding districts, 9,695 public school students and 84 private school students were uninsured during 2014-2015;
- Connecticut districts use a wide variety of software to collect and record school health information. 47 percent of responding public districts and 24.1 percent of private, non-profit districts reported using SNAP, while 51.7 percent of private schools reported using no school health-related software;
- A majority of Connecticut school health staff members report involvement in teaching topics that most often include: injury prevention, emotional and mental health promotion, and physical activity and fitness. Some school health staff report collaborating with teachers to facilitate health-related topics;
- Districts provided a wide range of suggestions for services that would increase district satisfaction with the provision of health services to students. Suggestions included expanding school-based health clinics, improving communication with state agencies, clinicians and parents, and increased training in protocols for student mental/emotional health support.

Recommendations for Future Data Collection

A number of specific recommendations for the CSDE to consider for future survey administration are as follows:

- Survey data collection provided excellent information regarding a wide range of issues related to school health services. However, ongoing concerns remain among respondents regarding the time necessary to complete the survey, and the need to ensure that data collected generates positive change to individual schools throughout the state.
- The use of numeric data regarding numbers of students and referrals requires the districts to provide information in each category allowing for accurate calculations of percentages be- tween categories. To maximize the accuracy of the information provided, it is critical that a high response rate be achieved for survey completion and that respondents complete each question on the survey. For 2014-2015, an 82.2 percent overall response rate was achieved; down slightly from the prior year. Missing data for individual items continues to potentially cause bias in the resulting data. The recommendation for future data collection includes activities designed to increase the overall survey response rate and ensure that districts complete all survey questions.