

School Traumatic Brain Injury Survey Results

August 2017

Thanks to the Vermont Agency of Education and the Brain Injury Association of Vermont for their collaboration. This study and report was supported in part by an appointment to the Applied Epidemiology Fellowship Program administered by the Council of State and Territorial Epidemiologists (CSTE) and funded by the Centers for Disease Control and Prevention (CDC) Cooperative Agreement Number 1U38OT000143-04.

Contents

Introduction.....	3
Methods	4
Results	
General	4
Baseline Screening.....	6
Sideline Evaluation and Removal from Play.....	6
Return to Play.....	7
Coach Training.....	8
Athletic Trainers	8
Parental Education	9
Teacher Education.....	9
School Policy.....	10
Data Collection	11
Coach Responses.....	12
Additional Areas for Act 68 Consideration	15
Comments	15
Areas of Action for the Health Department	16
Resources	16

Introduction

In 2013, Vermont passed legislation (Act 68) requiring schools to:

1. develop a Concussion Management Action Plan
2. provide education about concussions to coaches, athletes, and parents
3. ensure a health care provider is present at athletic events in which student athletes participate in collision sports
4. inform parents within 24 hours of a student athlete sustaining a concussion

In May 2017, the Department of Health, the Brain Injury Association (BIA) of Vermont, and the Agency of Education distributed a survey related to concussion management policies and practices in Vermont schools.

The purpose of the survey was to gather information from school administrators, athletic trainers, coaches, and nurses related to concussion policies, concussion management plans, and concussion-related data collection. The Health Department and BIA were hoping to gain a better understanding of how Act 68 is being implemented, as well as how the Health Department may better help schools to collect and manage concussion-related data.

The Agency of Education's cooperation was an integral component of this effort's success. The agency distributed the survey via their email list to all 336 schools in the state.

Why Concussions?

According to the Centers for Disease Control and Prevention, a concussion is a type of traumatic brain injury (TBI) that is caused by a bump, blow, or jolt to the head or by a hit to the body that causes the head and brain to move rapidly back and forth*. The sudden movement can cause the brain to bounce or twist around in the skull, creating chemical changes in the brain and sometimes stretching and damaging brain cells. Signs and symptoms of concussion include appearing dazed or stunned, clumsy movement, nausea or vomiting, headache, and sensitivity to light or noise. Repeated or severe TBI may result in long term problems with thinking, memory, learning, and coordination or balance.†

Concussions and TBI are of special concern among youth and high school athletes, as the adolescent brain is still developing. It is important for students, parents, health care providers, and school personnel to be aware of the signs and symptoms of concussion, and to understand how to respond appropriately should an athlete sustain a concussion. Appropriate response includes removing the athlete from play, assessment by a healthcare provider, and creation of return to learn and return to play plans.

* https://www.cdc.gov/headsup/basics/concussion_what.html

† https://www.cdc.gov/headsup/basics/severe_brain_injury.html

Methods

The survey had an extremely high response rate (98.5%), with 331 out of 336 schools at least partially completing the survey.

- 296 responses were from school nurses, athletic directors, principals, etc.
- 35 of responses were from coaches at schools, who answered a specific subset of the questions.

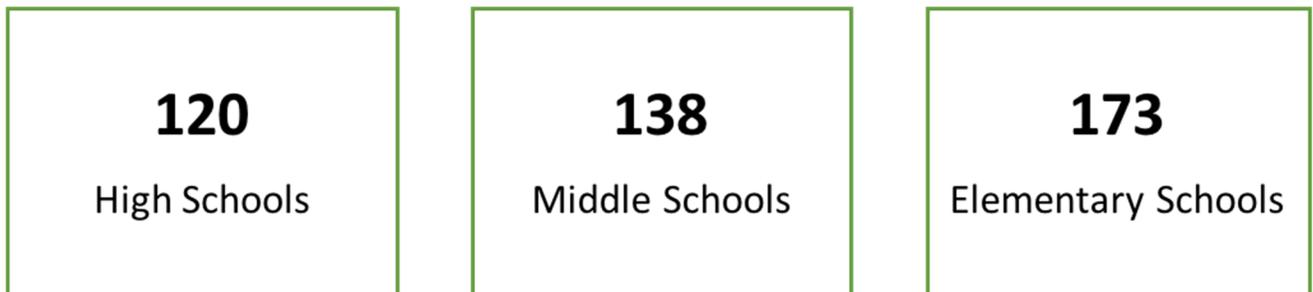
The subset of questions for coaches may explain some of the partial responses. Other reasons for partial responses may include a respondent skipping questions, or a respondent feeling that a given question did not apply to their school. Percentages included in the results were calculated based on the number of responses for a given question. Most questions had at least 200 responses.

Results

General

Almost all schools that responded to the survey were public schools (91%), with a smaller representation (9%) from Vermont’s independent schools. Statewide representation was excellent, with responses from at least five schools in each of Vermont’s 14 counties.

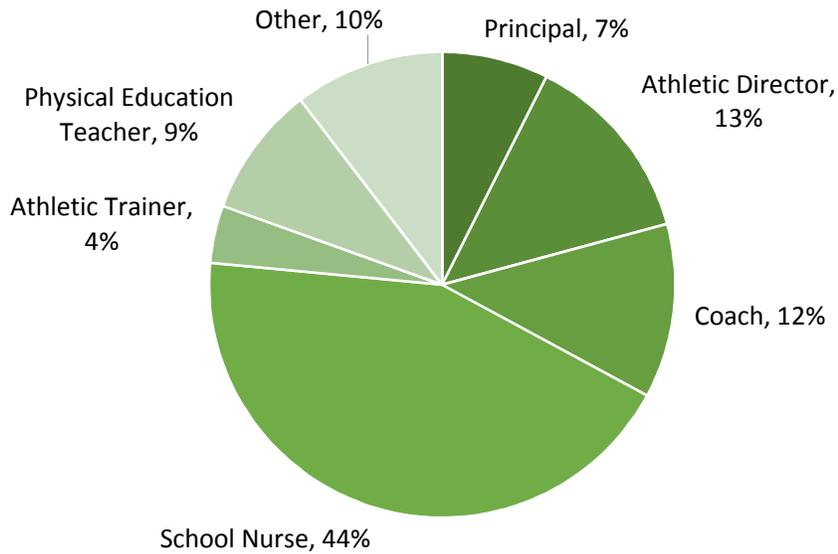
The graphic below illustrates the grade levels offered by the schools that responded. These categories are not mutually exclusive, as some schools educate students in multiple grade level categories.



The survey was completed by one representative at each school. The majority of surveys (44%) were completed by school nurses.

School Traumatic Brain Injury Survey Results • August 2017

Types of Survey Respondents



Below is a list of the types of sports offered by schools in Vermont, as well as whether the sport is offered competitively (varsity, junior varsity, etc.) or as a club team.

Type of Sport	Competitive Team	Club Team
Alpine Skiing	41	32
Baseball	131	14
Basketball	169	32
Bowling	10	12
Cheerleading/Dance	49	8
Cross Country	103	15
Field Hockey	65	1
Football	61	1
Golf	56	8
Gymnastics	22	2
Ice Hockey	46	1
Indoor Track	25	1
Lacrosse	52	5
Nordic Skiing	50	7
Outdoor Track	82	6
Rugby	3	10
Soccer	158	32
Softball	115	12
Snowboarding	28	29
Tennis	49	11
Ultimate Frisbee	20	21
Volleyball	21	8
Wrestling	31	6

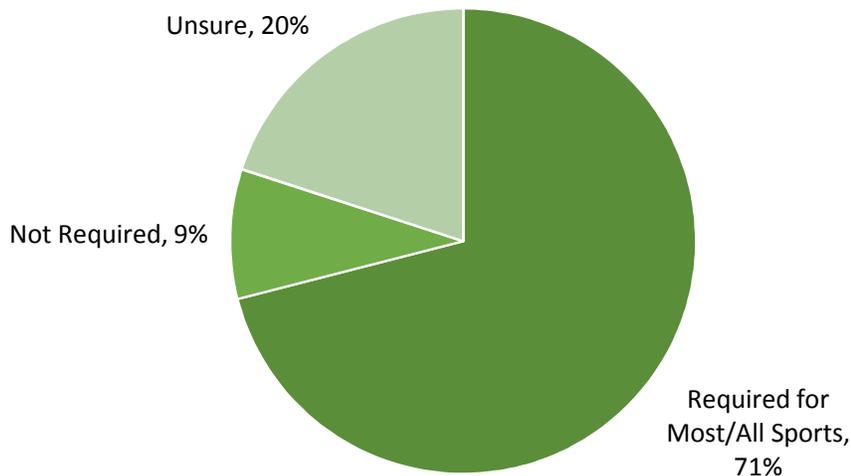
Baseline Screening

- 20% of respondents indicated that their schools require athletes to undergo baseline cognitive screening to participate in all or some school sports.
- At schools where these screenings were only required for some sports, the required sports included alpine skiing, baseball, basketball, field hockey, football, gymnastics, ice hockey, soccer, and softball.
- 61% of schools indicated that they do not require any baseline screening.

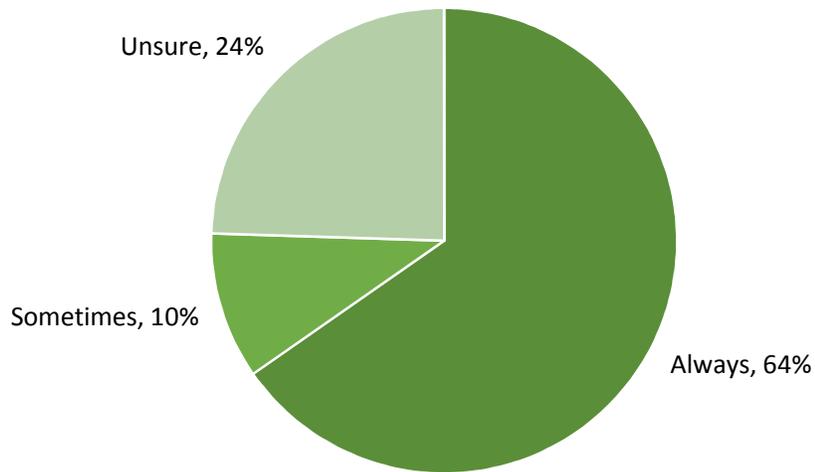
Sideline Evaluation and Removal from Play

- 47% of schools reported that they use a standard tool for sideline assessment, such as the Sport Concussion Assessment Tool (SCAT), University of Vermont’s concussion assessment guidelines, or the Centers for Disease Control and Prevention’s *Heads Up Concussion Checklist*.
- 36% of schools indicated that they always report suspected concussions sustained by visiting athletes to the visiting school’s athletic director. 47% of respondents were unsure of the frequency of this type of reporting.

Sideline Evaluation of Athletes with Suspected Concussion



Removal from Play following Suspected Concussion

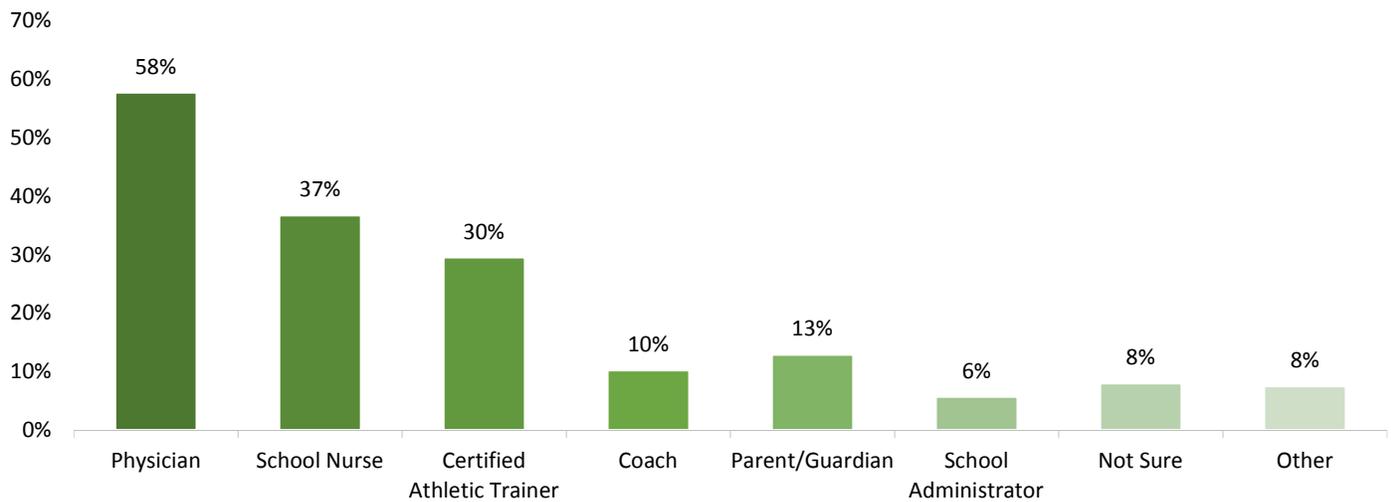


Return to Play

- 77% of schools reported that they always require an athlete with a suspected concussion to be cleared by a health care professional before returning to play.
- 19% of schools reported that they sometimes had difficulties obtaining medical clearances from health care professionals for student athletes.

Reasons for these difficulties included: vague notes from or poor communication with doctors; different standards of practice at different health care facilities; and lack of communication between parents, school, and health care professionals.

Responsible Personnel* for Clearing Athletes to Return to Play



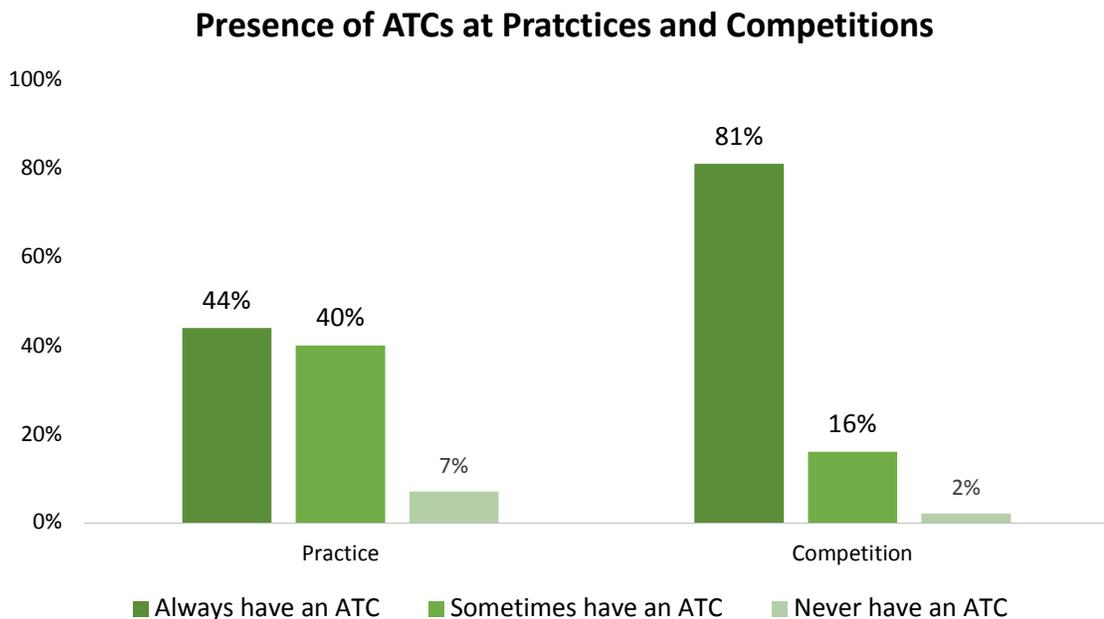
*Not mutually exclusive: schools could choose more than one category

Coach Training

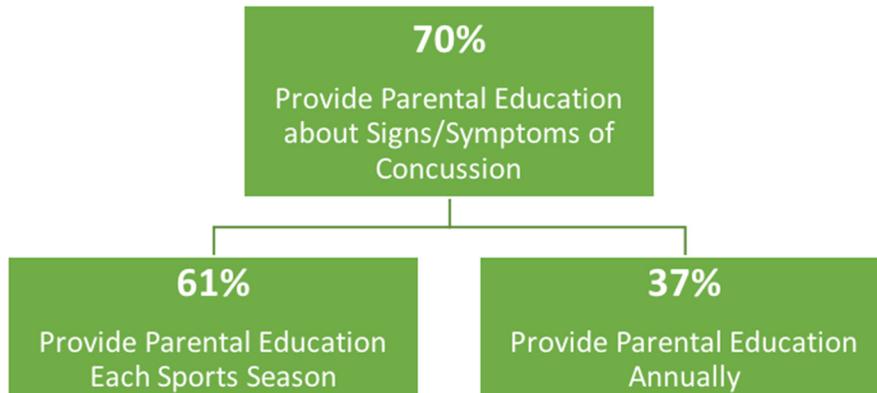


Athletic Trainers

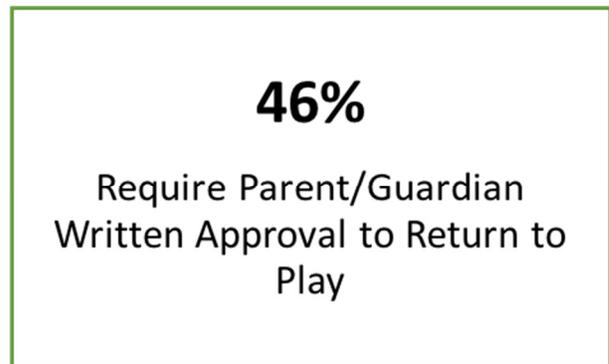
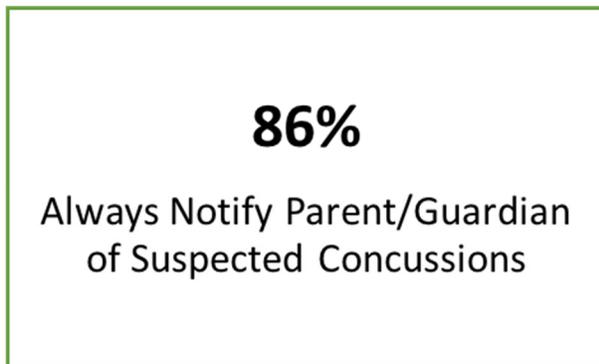
- 65% of Vermont schools do not have a Certified Athletic Trainer (ATC) on staff.
- Of the 35% of schools that do have an ATC on staff, the graph below illustrates their presence at team practices and competitions.
- 75% of schools without ATCs on staff reported that ATCs were not present at team practices, and 63% of these schools reported that ATCs were not present at games.



Parental Education



- 55% of schools have a form that parents must sign after receiving concussion education.
- 30% of schools indicated having a shared responsibility form for parents, which describes their role in the event their child sustains a concussion and indicating the severity of concussion related injuries.

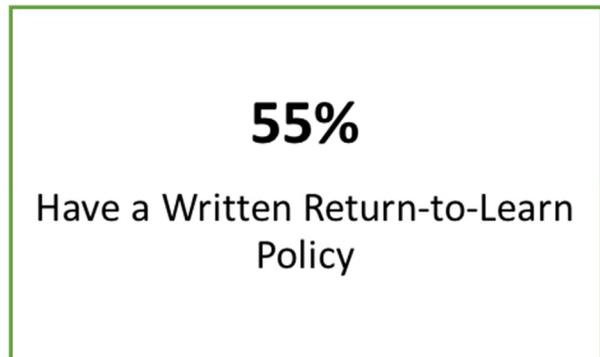
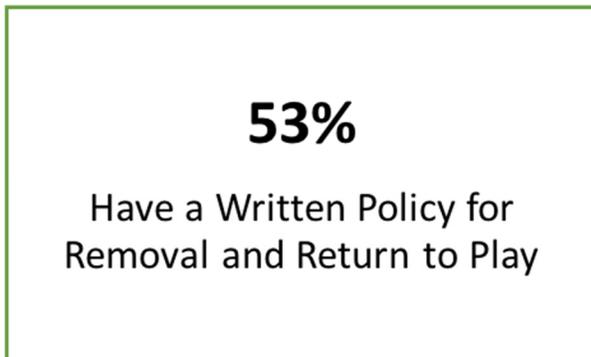


Teacher Education

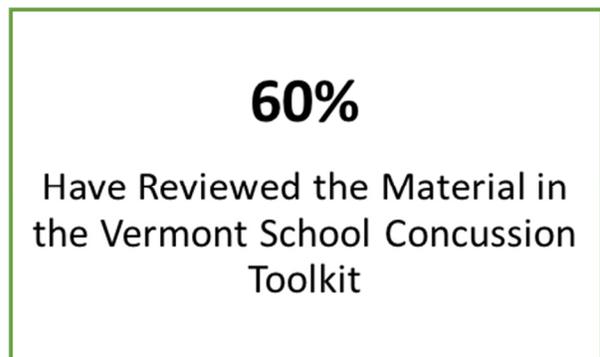
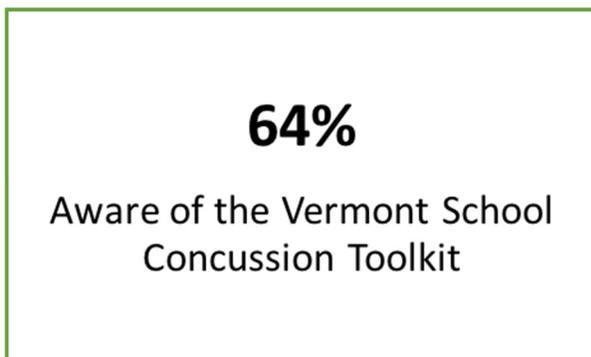
- 87% of schools notify teachers when an athlete with a suspected concussion returns to the classroom.
- 57% of schools report providing education to teachers about the signs and symptoms of concussions and return-to-learn accommodations/ management of concussions.

School Policy

- 66% of schools have a concussion management action plan, and 66% have a designated person for concussion management to assist student athletes when they return to school.
- Of the schools that reported having such a person, the majority listed this person as the school nurse. Other common answers included the athletic director or an athletic trainer.
- 88% of respondents felt that all school activities, not just sports, should be required to follow school concussion policies.

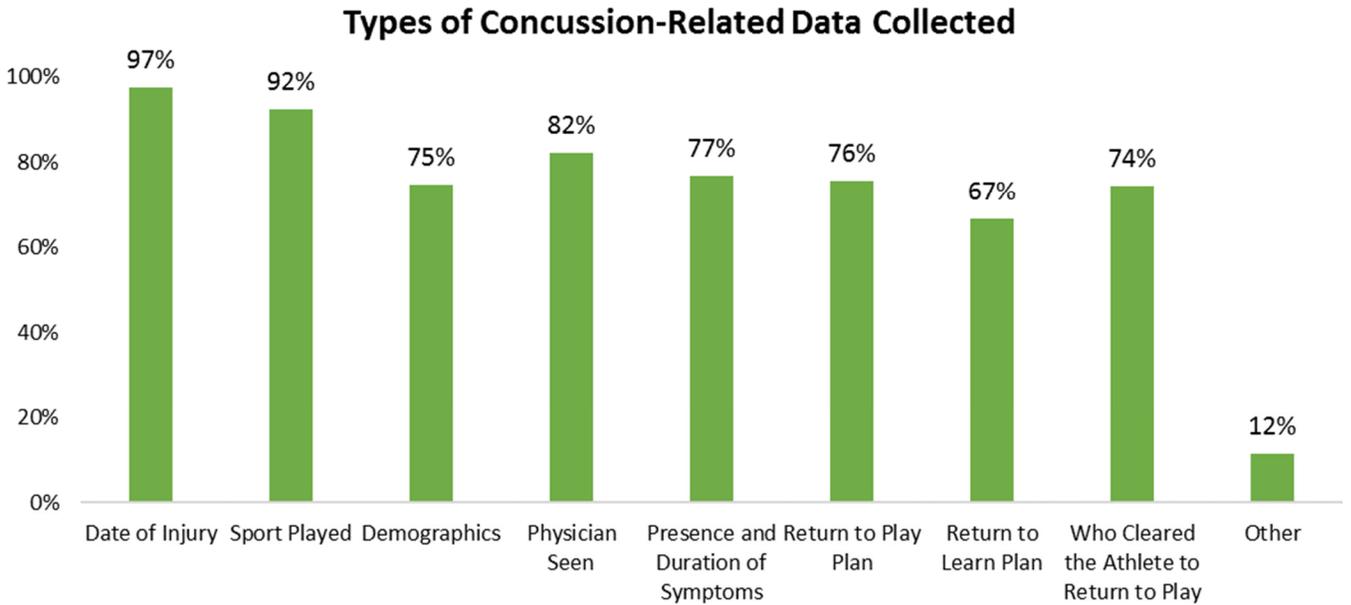


- 62% of respondents felt that their school had adequate capacity to fully implement concussion management guidelines.

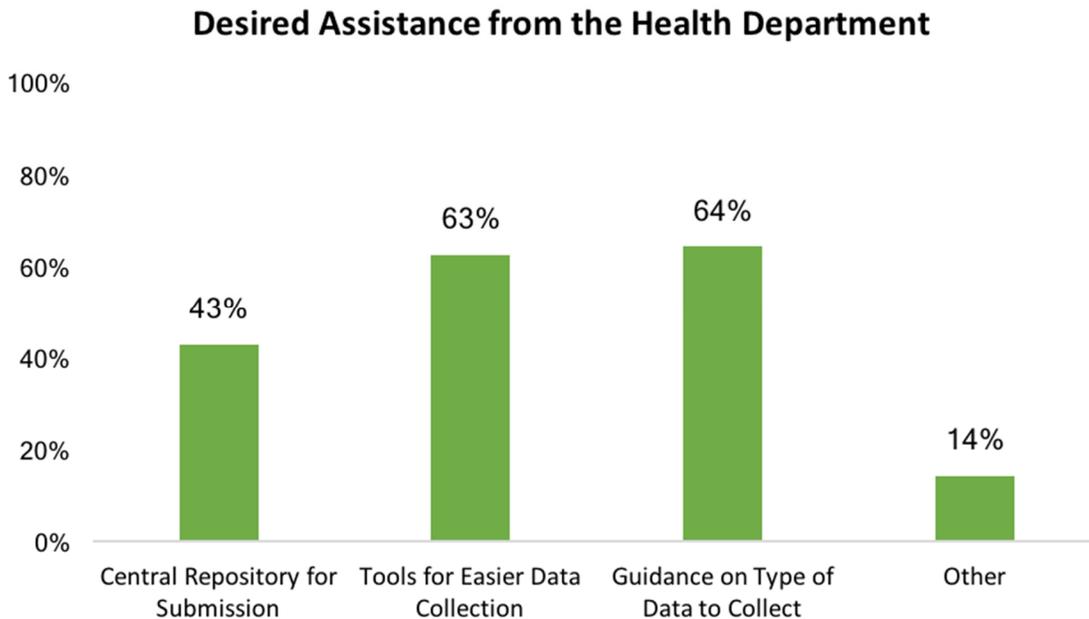


Data Collection

- 41% of schools track concussion among student athletes.
- 21% of schools report beginning to track concussion as a result of the Act 68 legislation.



The Health Department asked schools if there was a way it could help facilitate easier data collection. Responses can be found in the chart below.



Examples of “other” desired assistance include: financial assistance for electronic injury management tracking software; integration of SNAP data program; promotion of

School Traumatic Brain Injury Survey Results • August 2017

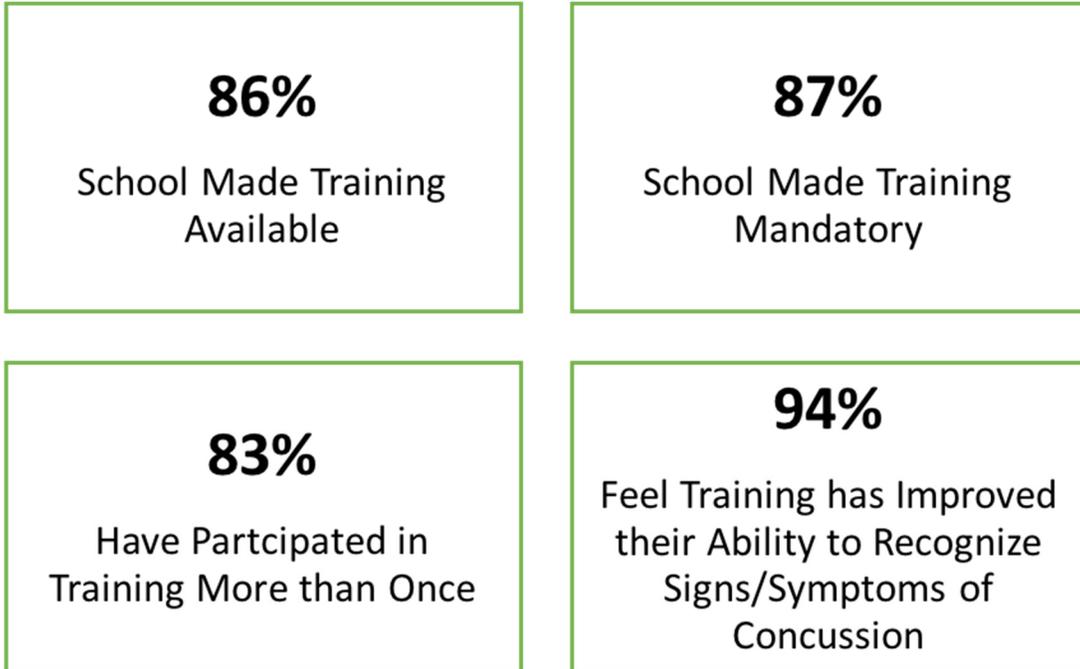
communication between athletic directors, coaches, physical education teachers, and school nurses; mandating school nurse involvement with return-to-learn protocols; and providing a format for non-sports related concussions (those sustained at recess, in physical education class, other activities). Some respondents also indicated that the Health Department should stay out of this process, as they felt they already do enough reporting.

Coach Responses

Below is a list of the types of sports coached by the 35 coaches who responded to the survey, as well as whether they coached a competitive (varsity, junior varsity, etc.) or a club team.

Type of Sport	Competitive Team	Club Team
Alpine Skiing	4	3
Baseball	8	2
Basketball	12	1
Cross Country	2	0
Field Hockey	1	0
Football	5	0
Golf	2	0
Ice Hockey	2	0
Indoor Track	1	0
Lacrosse	2	0
Nordic Skiing	3	0
Outdoor Track	5	0
Rugby	0	1
Soccer	9	2
Softball	3	0
Snowboarding	2	0
Tennis	1	0
Wrestling	0	2

Coaches reported participating in concussion training provided by their school, concussion training provided by another organization, and concussion training provided online.



- 69% of coaches indicate that school policies/procedures have helped their ability to coach.
- Only 6% indicated that such policies have added difficulties to their position as a coach.

EXAMPLES:

I appreciate the structure of concussion evaluation...all kids suspected of a concussion are evaluated by the trainer and only released to play after they have completed concussion protocols.

Established procedures are good.

I'm able to recognize and treat any possible head trauma I see.

I want my athletes to be healthy!

It allows me to rest a player without parental harassment to get the player back on the field.

It is straight forward so everyone understands. It forces you to follow proper protocols to guarantee the student athlete is ready to return to play. It eliminates the guesswork/gray area.

- 77% of coaches reported knowing their school's policy on removal and return to play for athletes with suspected concussions.
- 69% of coaches reported that an athlete they coached suffered a concussion or was suspected of suffering a concussion while playing the sport that they coach.

School Traumatic Brain Injury Survey Results • August 2017

Sports played included basketball, football, baseball, soccer, Nordic skiing, lacrosse, swimming and ice hockey.



- 14% of coaches reported the parents of an athlete with a suspected concussion trying to have their child return to play without a doctor's clearance.
- 57% of coaches indicated that they are always or sometimes notified when a student athlete suffers a concussion in another school sport.
- 43% of coaches indicated that they are always or sometimes notified when an athlete suffers a concussion in a non-school sanctioned activity or sport.
- 77% of coaches were aware of a return-to-learn protocol being in place at their school.

Other Areas for Act 68 to Consider

- Concussions do not always occur while playing a sport: recess, physical education class. Staff who cover recess should be trained in concussion signs and symptoms.
- Clarification regarding who is able to medically clear a student to return to play/learn.
- Emotional impact on sidelined athletes (depression, anxiety).
- Encourage greater communication between health care providers, schools, and parents.
- Provide resources for concussion management: funding for ATCs, concussion clinics, improved data collection.
- Have a list of Vermont Principals Association-approved organizations throughout the state for smaller schools who can't afford a full time ATC, but would like to have one on a per diem basis.
- Educate physicians on latest recommendations for concussion management.
- Start educating parents when their children are in youth sports, don't wait until middle or high school.
- Invite all relevant stakeholders (nurses, Athletic Directors coaches, physical education teachers) to the table when decisions are being made.

Comments

General:

- Concussion isn't taken seriously enough by the population at large, nor are other injuries.
- Act 68 has raised awareness around an important topic, and this survey helped me identify areas for improvement at my school.
- As a result of taking the survey, I will work with the person who is organizing weekend club basketball to provide concussion training to volunteer parent coaches.
- Expectations for middle schools are unclear, especially when their resources are less than high schools.
- Management policies need to be easy to implement, many schools are short staffed and have few resources.

Health Care Provider:

- Return to play plans need to be more specific to each child. Notes that say they can return “as tolerated” are not helpful.
- Physicians are unfamiliar with the law and give parents inaccurate/confusing instructions. Standards of care need to be uniform.

Other:

- Concern about parents who coach their child’s team sending their own kids back into a game after a head injury.
- It would be helpful if there was a team of people willing to hold trainings for schools.

Areas of Action for the Health Department

1. Explore ways to increase the presence of ATCs or other medical professionals at team practices and competitions. This will ensure appropriate sideline evaluation of athletes with suspected concussions.
2. Encourage increased communication between school personnel (athletic directors, coaches, nurses) and parents around concussion management. This may involve developing a checklist that schools can use to ensure the appropriate steps are followed as an athlete returns to learn and play.
3. Explore options for data collection tools, such as a formatted spreadsheet or EpiInfo form.

Resources

Health Department Injury Prevention: www.healthvermont.gov/emergency/injury

Brain Injury Association’s Concussion Toolkit: www.biavt.org/learn-more/concussion-toolkit.html