

2009-2010 School Absenteeism & Influenza-Like Illness Surveillance Summary

Division of Epidemiology and Data Services
January 2011



Claude-Alix Jacob
Chief Public Health Officer

CAMBRIDGE PUBLIC HEALTH DEPARTMENT



Cambridge Health Alliance

The 2009-2010 School Absenteeism and Influenza-Like Illness Surveillance Summary is published by the Division of Epidemiology and Data Services, Cambridge Public Health Department, Cambridge, Massachusetts.

The 2009-2010 School Absenteeism and Influenza-Like Illness Surveillance Summary is not copyrighted and may be used and copied without permission. Citation of the source is, however, appreciated.

Suggested citation: Cambridge Public Health Department. 2009-2010 School Absenteeism and Influenza-Like Illness (ILI) Surveillance Report. 2010.

This report was prepared by the following staff of the Division of Epidemiology and Data Services, Cambridge Public Health Department: Leanne Chiaverini, MPH, and Susan Kilroy-Ames, MPH.



School Surveillance Summary Highlights

- A school surveillance system was implemented in response to the emergence of H1N1 during the 2009-2010 school year. It was a collaborative effort by the public health department, public schools, private schools, preschools, and universities in Cambridge.
- Influenza-like illness (ILI) was elevated in public schools, private schools, and universities from October 25, 2009 (week 43) to November 21, 2009 (week 46). Although seasonal influenza historically peaks in February, H1N1 peaked in the fall of 2009-2010.
- The elevation in ILI was reflected in student absenteeism at public and private schools. However, the highest peaks in student absenteeism occurred during weeks that preceded or were followed by school vacations or holidays.
- School surveillance efforts are continuing during the 2010-2011 school year in order to monitor all communicable diseases, to identify any potential emergent health issues in the schools and universities, and to help interpret trends in student absenteeism data.

Introduction

In April 2009, an unusual influenza strain emerged, now referred to as 2009 Pandemic Influenza A (H1N1).

One of the earliest cases in Massachusetts occurred in a Cambridge university student in late April. Within a few weeks, the novel virus had sickened children in Cambridge day cares and schools. By mid-June, Cambridge Public Health Department (CPHD) nurses had followed up with Cambridge residents with confirmed H1N1, including five people who were hospitalized.

Because the state was limiting testing to seriously ill people, it was hard to know the true impact of the virus on the city. To get a rough estimate of the spread of H1N1, nursing and epidemiology staff began tracking the growing number of Cambridge school children with flu-like symptoms.

The Cambridge Public Health Department's Division of Epidemiology and Data Services implemented a school absenteeism and influenza-like illness (ILI) surveillance system in fall 2009. The system aided in tracking the extent and characteristics of the influenza burden in Cambridge schools and universities.

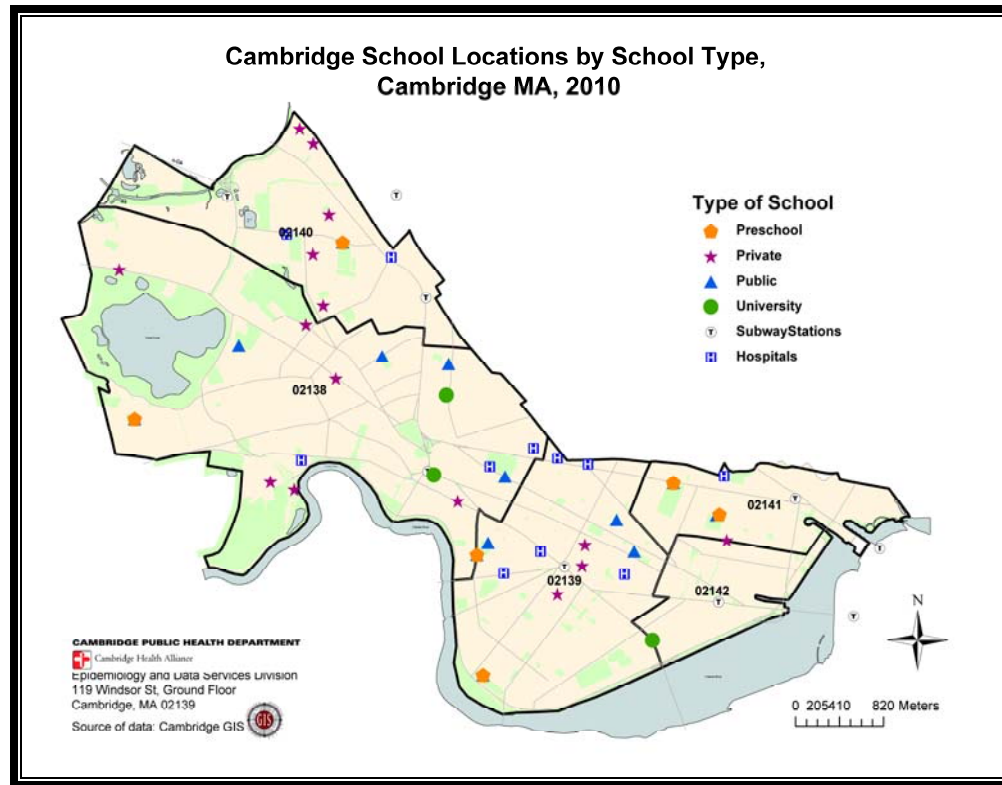
The surveillance system is a collaborative effort of CPHD epidemiologists and school nurses, Cambridge Public Schools (CPS) Management Information Systems Office, private schools in Cambridge, the Cambridge Department of Human Service Programs (DHSP) preschools, and health services at Harvard University, Lesley University, and Massachusetts Institute of Technology (MIT).

During the 2009-2010 academic year, the Cambridge Public Health Department's Division of Epidemiology and Data Services produced and reviewed weekly reports that incorporated all components of the school absenteeism and ILI surveillance system. The reports compared data for each individual school with the average data for that type of school. Reports were distributed to schools on a monthly basis. In addition to routine reporting, CPHD developed methods to implement enhanced surveillance, if necessary.

School surveillance efforts are continuing during the 2010-2011 school year. In addition to tracking influenza, mechanisms have been put in place to monitor all communicable diseases and to identify any potential emergent health issues in the schools and universities. The broader picture of school health may provide additional insight for interpreting trends in student absenteeism data.

About the Data

This report summarizes selected surveillance data from the city's 13 public schools, six private schools (out of 15), five city-operated preschools (out of six), and three universities in Cambridge, Massachusetts.



Note: This map displays all schools and universities in Cambridge, Mass. Not all schools are included in this surveillance report. See page 11 for which schools are included.

Care must be taken in interpreting the data in this report. Readers should be aware that:

- Data not received by September 28, 2010 were considered “missing” for the purposes of this report.
- The absenteeism data in this report reflects *overall student absenteeism* (e.g., students missing school due to any type of illness, inclement weather, family vacation, or other reason).
- Private schools and preschools for which more than five weeks of data were missing were excluded from this report. The highest number of preschools that did not report in a given week was two. The highest number of private schools that did not report in a given week was three. Data were suppressed for weeks during which five or more private schools had vacation (this includes weeks 7 and 16).

Methods

A variety of methods were employed to collect information. The table below summarizes the components of the surveillance system. Although information on staff absenteeism was collected, it is not included in this report.

School System	Type of Data	Data Source and Collection Method
Public Schools	Student absenteeism	Cambridge Public Schools (CPS) data via secure data transfer site
	Staff absenteeism	School nurses via web-based CHAlliance Survey
	Nurse ILI visits	School nurses via HealthOffice
Private Schools	Student absenteeism	Private Schools via web-based CHAlliance Surveys
	Staff absenteeism	Private Schools via web-based CHAlliance Surveys
	ILI dismissals	Private Schools via web-based CHAlliance Surveys
	Phone reported ILI	Private Schools via web-based CHAlliance Surveys
DHSP Preschools	Student absenteeism	DHSP Preschools via web-based CHAlliance Surveys
	Staff absenteeism	DHSP Preschools via web-based CHAlliance Surveys
	ILI dismissals	DHSP Preschools via web-based CHAlliance Surveys
	Phone reported ILI	DHSP Preschools via web-based CHAlliance Surveys
Universities	Health center ILI visits	Excel spreadsheet via email

Terms and Definitions

Influenza- like Illness (ILI): This report contains data on ILI as defined as: fever >100.4F and sore throat and/or cough in the absence of another known cause.

Proportion of Students Absent: Absenteeism reflects the “absence of an enrolled child from a regularly scheduled school day” due to any cause. For public schools, the following absences were included: unexcused absences, excused absences, and dismissals. In public schools, percent absenteeism is calculated as the total number of absences among public school students per week out of the total number enrolled in CPS for that week; it is not an average of individual school rates.

Proportion of Students with ILI: The proportion of students with ILI represents only students who presented with illness to a nurse/teacher/principal/school administrator or students for whom a guardian reported ILI by phone, and may not represent every student with ILI. In public schools, the percent of students with ILI is calculated as the number of ILI visits to school nurses *out of the total number of visits to school nurses*. In private schools and DHSP preschools, the percent of students with ILI is calculated as the total number of phone reported ILI and dismissals due to ILI (as reported by the designated nurse/teacher/principal/school administrator) *out of the total number of enrolled students in the school* per annual census.

MMWR Week: Data included in this report are based on Morbidity and Mortality Weekly Report (MMWR) weeks. The MMWR week is a convention utilized by the Centers for Disease Control and Prevention (CDC) for the purpose of disease incidence reporting and publishing. The MMWR week corresponds to weeks of the year.

Values range from 1 to 53, although most years consist of 52 weeks. For specific dates and their corresponding MMWR week, please see adjacent table, “2009-2010 MMWR Week Guide.”

This report contains surveillance data from September 20, 2009 (week 38) to June 13, 2010 (week 24). The last school day for public schools was June 22, 2010. The last day for private schools, preschools, and universities varies for each institution.

2009-2010 MMWR Week Guide	
MMWR Week	Date Range
38	9/20/09 - 9/26/09
39	9/27/09 - 10/3/09
40	10/4/09 - 10/10/09
41	10/11/09 - 10/17/09
42	10/18/09 - 10/24/09
43	10/25/09 - 10/31/09
44	11/1/09 - 11/7/09
45	11/8/09 - 11/14/09
46	11/15/09 - 11/21/09
47	11/22/09 - 11/28/09
48	11/29/09 - 12/5/09
49	12/6/09 - 12/12/09
50	12/13/09 - 12/19/09
51	12/20/09 - 12/26/09
52	12/27/09 - 1/2/10
1	1/3/10 - 1/9/10
2	1/10/10 - 1/16/10
3	1/17/10 - 1/23/10
4	1/24/10 - 1/30/10
5	1/31/10 - 2/6/10
6	2/7/10 - 2/13/10
7	2/14/10 - 2/20/10
8	2/21/10 - 2/27/10
9	2/28/10 - 3/6/10
10	3/7/10 - 3/13/10
11	3/14/10 - 3/20/10
12	3/21/10 - 3/27/10
13	3/28/10 - 4/3/10
14	4/4/10 - 4/10/10
15	4/11/10 - 4/17/10
16	4/18/10 - 4/24/10
17	4/25/10 - 5/1/10
18	5/2/10 - 5/8/10
19	5/9/10 - 5/15/10
20	5/16/10 - 5/22/10
21	5/23/10 - 5/29/10
22	5/30/10 - 6/5/10
23	6/6/10 - 6/12/10
24	6/13/10 - 6/19/10

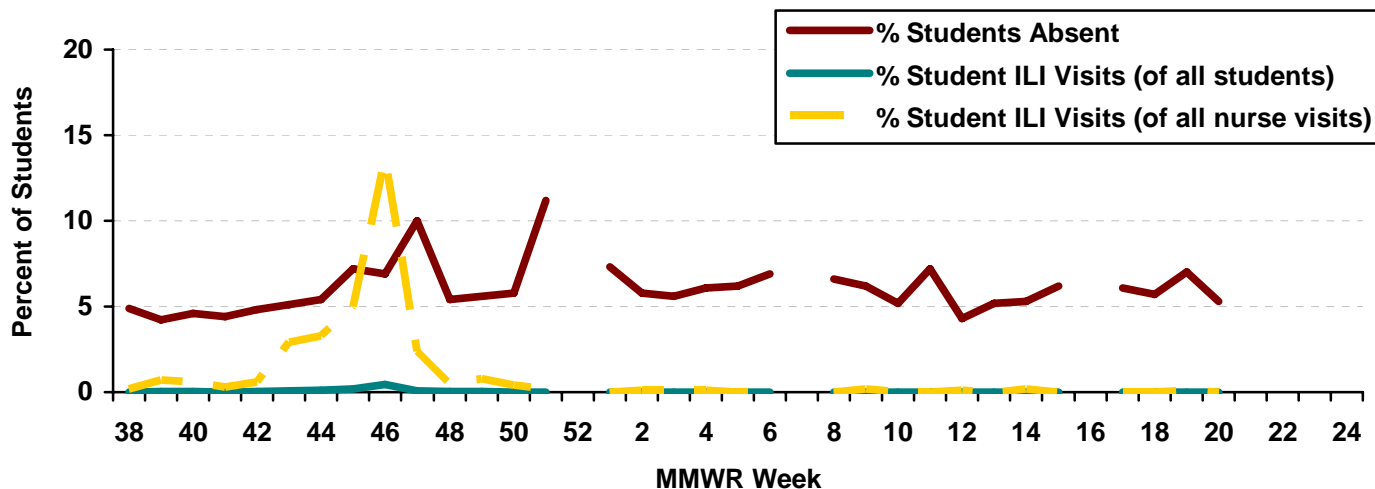


Public Schools

During the 2009-2010 school year, public school student absenteeism peaked at 11.2% during the week of December 20-26, 2009 (week 51), which preceded a school vacation week. The second highest peak (week 47) occurred during a holiday week (see Figure 1). The percent of student visits to a public school nurse for complaints of ILI (out of the total number of visits to a nurse for any reason) was elevated from October 25, 2009 to November 21, 2009 (weeks 43 to 46). A small peak in student absenteeism during weeks 45 to 46 may be a result of absences due to ILI. Despite the emergence of H1N1, student absenteeism in public schools was only slightly elevated compared to the two prior years (figure not shown). During the peak weeks of influenza activity in 2009-2010, public school absenteeism reached a high of 10%. Peaks around the same week in prior years were 9%. It should be noted that seasonal influenza historically peaks in February, while in 2009-2010, H1N1 peaked in the fall.

absenteeism in public schools was only slightly elevated compared to the two prior years (figure not shown). During the peak weeks of influenza activity in 2009-2010, public school absenteeism reached a high of 10%. Peaks around the same week in prior years were 9%. It should be noted that seasonal influenza historically peaks in February, while in 2009-2010, H1N1 peaked in the fall.

Figure 1. Public School Student Absenteeism and ILI, by Week, 2009-2010



Source: Cambridge Public Schools (all 13 schools),

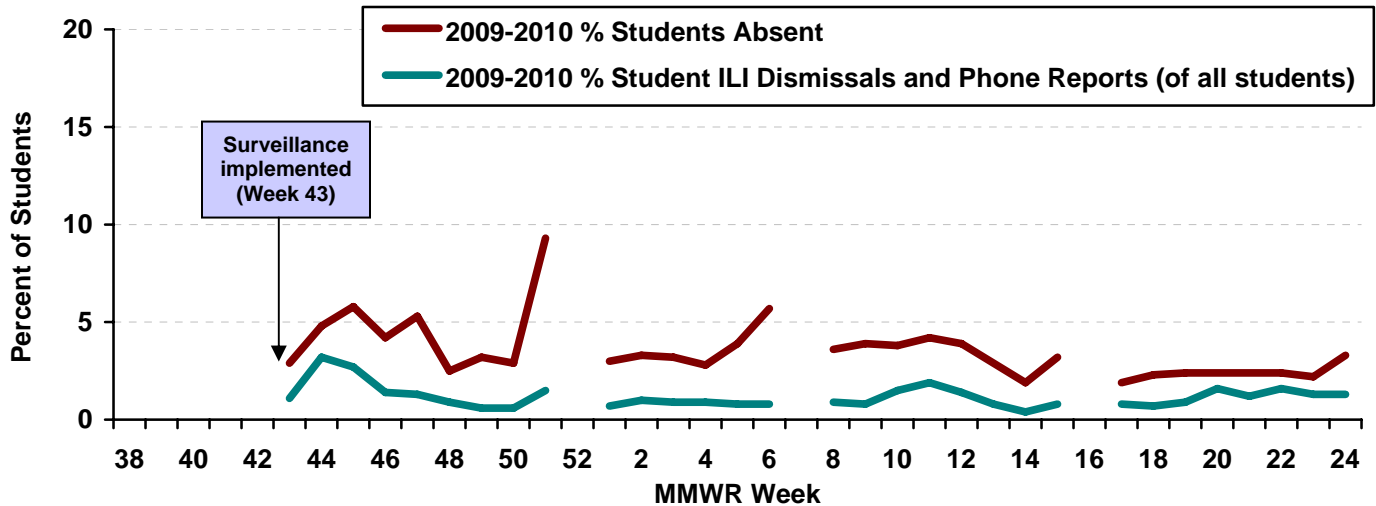
Note: Weeks without data represent school vacation weeks. The proportion of ILI visits represents only students who presented with illness to a school nurse, and may not represent every student with ILI. Absence includes unexcused absences, excused absences, and dismissals. Percent absenteeism is calculated as the total number of absences among per week out of the total number enrolled in all Cambridge public schools for that week; it is not an average of individual school absenteeism rates.



Private Schools

During the 2009-2010 school year, private school student absenteeism peaked at 9.3% during week 51 (December 20, 2009 to December 26, 2009), the week preceding a school vacation (see Figure 2). Other peaks in absenteeism also corresponded with school vacation weeks. The percent of student ILI dismissals and phone reports at private schools was elevated from November 1, 2009 to November 14, 2009 (weeks 44 and 45). An increase in student absenteeism during those weeks may be a reflection of absences due to ILI.

Figure 2. Private School Student Absenteeism and ILI, by Week, 2009-2010



Source: Six (out of fifteen) private schools in Cambridge via CHAlliance surveys.

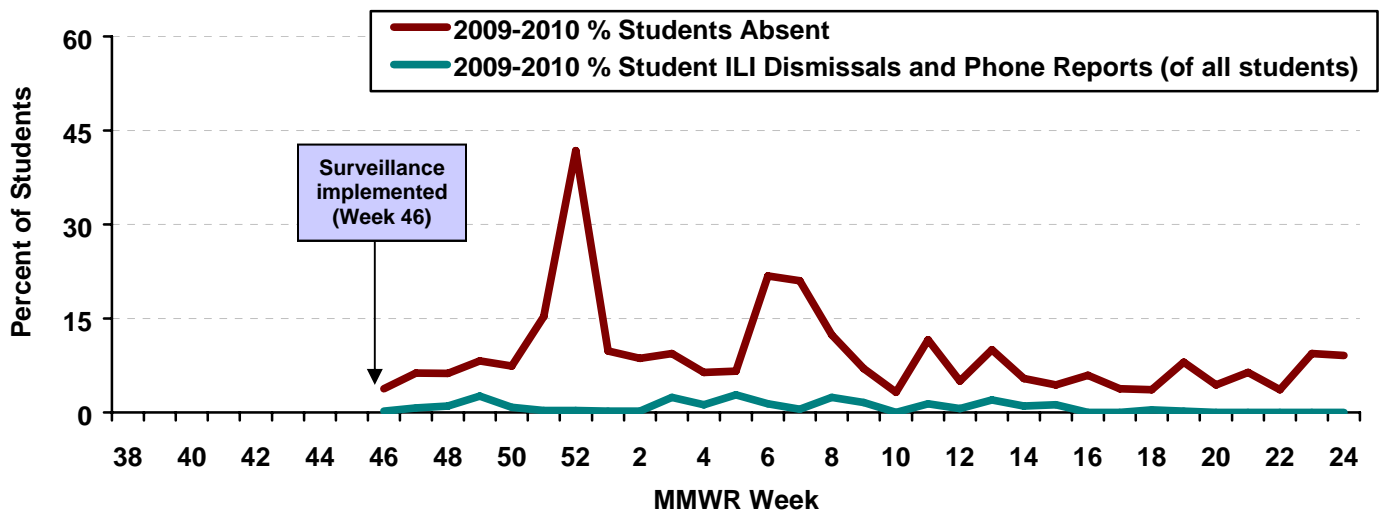
Note: Weeks without data represent school vacation weeks (for at least five schools). Percent of student ILI dismissals and phone reports (out of the total number of students) represent only students who presented with ILI to a nurse, teacher, principal, school administrator, or students for whom a guardian reported ILI by phone, and may not represent every student with ILI. Percent absenteeism is calculated as the total number of absences out of the total number enrolled in all participating private schools; it is not an average of individual school absenteeism rates.



Preschools of the Department of Human Service Programs

During the 2009-2010 school year, preschool student absenteeism peaked at 42% during week 52 (December 27, 2009 to January 2, 2010). Please note that DHSP preschools vary in their holiday and vacation schedules and may not follow the traditional public school calendar (Figure 3). It is unclear whether preschools followed the trend (of elevated student absenteeism during weeks 43 to 46) similar to public and private schools because implementation of the surveillance system in preschools did not occur until week 46. There were no distinct elevations in the percent of student ILI dismissals and phone reports.

Figure 3. DHSP Preschool Student Absenteeism and ILI, by Week, 2009-2010



Source: Five (out of six) DHHS Preschools in Cambridge via CHAlliance surveys.

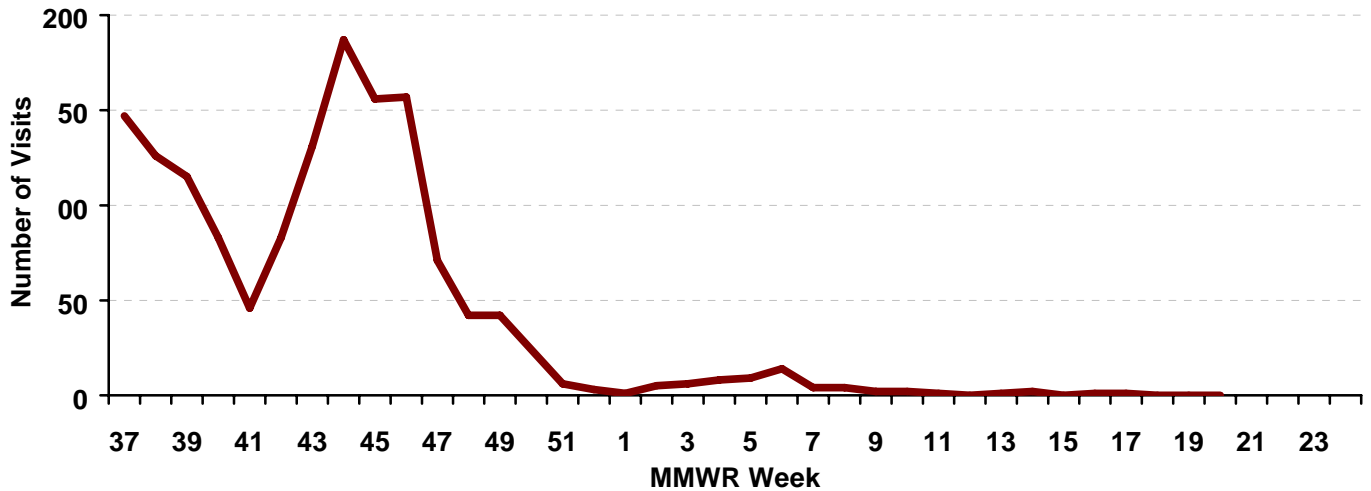
Note: Data are preliminary and subject to change. The percent of student ILI dismissals and phone reports (out of the total number of students) represents only students who presented with ILI to a nurse, teacher, principal, school administrator, or students for whom a guardian reported ILI by phone, and may not represent every student with ILI. Percent absenteeism is calculated as the total number of absences per week out of the total number enrolled in all participating preschools; it is not an average of individual school absenteeism rates.



Universities

University health centers in Cambridge experienced an elevated number of visits due to ILI during the beginning of the school year, particularly from October 25, 2009 to November 21, 2009 (weeks 43 to 46). (Figure 4.) Very few ILI visits occurred after week 51, which ended December 26, 2009.

Figure 4. ILI Visits to University Health Centers, by Week, 2009-2010



Source: University health centers in Cambridge, Mass.

Note: This includes visits to health centers at the three universities in Cambridge (Harvard University, Lesley University, and Massachusetts Institute of Technology).

Thank You!

Publication of this report would not have been possible without the contributions of:

- **Cambridge Public Schools Management Information Systems Office**
- **School Nurses at Cambridge Public Schools:** Amigos School, Maria L. Baldwin School, Cambridge Rindge & Latin School, Cambridgeport School, Fletcher-Maynard Academy, Graham & Parks, Haggerty School, Kennedy-Longfellow School, King Open School, Dr. Martin Luther King, Jr. School, Morse School, Andrew Peabody School, and John M. Tobin/Tobin Montessori School
- **Private Schools:** Buckingham, Browne & Nichols School, Benjamin Banneker Charter School, Cambridge Montessori, Cambridge Friends School, Shady Hill School and Saint Peter School
- **Cambridge Department of Human Service Programs**
Preschools: East Cambridge Preschool, Haggerty Preschool, Dr. Martin Luther King, Jr. Preschool, Morse Preschool, and Peabody Preschool
- **Universities:** Harvard University Health Services, Massachusetts Institute of Technology (MIT) Health Services and Lesley University Health Services

Thank you to the other Cambridge schools who provided surveillance information at designated times during the school year. Even though the names of your respective institutions may not be reflected in this particular report, your valuable contributions have been noted.

Contact Information

Division of Epidemiology and Data Services
Cambridge Public Health Department
Cambridge, Massachusetts
epidept@challiance.org

