



Public Health

Prevent. Promote. Protect.

Northeast Ohio Public Health Partnership



Influenza Surveillance

2009-2010 Weekly Summary

MMWR week 14 (04/04/2010-04/10/2010)

Cuyahoga County Public Health Collaborative

This report is intended to provide an overview of influenza related activity occurring within Cuyahoga County while providing some general information on the state activity. It will be published on a weekly basis (every Friday) and can be found at the following web site:
http://www.ccbh.net/ccbh/opencms/CCBH/pdf/ESI_Docs/H1N1/fluupdate.pdf

Note: This data are provisional and subject to change. Updates will be included in future reports.

Ohio's Activity Level: Sporadic Activity

Small numbers of laboratory confirmed influenza cases or a single laboratory confirmed influenza outbreak has been reported, but there is no increase in cases of ILI.

Pneumonia and Influenza (P&I) Mortality

For MMWR week 14, 5.6% of all deaths reported to Cleveland Bureau of Vital Statistics were due to pneumonia (80.0% occurred in those 75 + years of age and 20.0% occurred in those 45-74 years). There were no influenza deaths reported during week 14. **(Figure 1)**

Influenza-Like Illness (ILI) Reports

ILI Sentinel Providers in Cuyahoga County reported 0.3% of patients presented with ILI. Sentinel Providers across Ohio reported 0.2% of patients had ILI signs and symptoms **(Figure 2)**. ILI is defined as a fever ($\geq 100^\circ$ F), and cough and/or sore throat.

School Absenteeism

Participating schools in Cuyahoga County report absentee data on a weekly basis during the school year. The data is divided into two main groups. One group, the sentinel sites, represent a group of schools that have reported absentee data with the health department for the past seven years. The second group represent schools that have started to report absentee information starting this year **(Figures 3a & 3b)**.

Laboratory Surveillance

Please refer to **Table 2** for a summary of influenza lab results from specimens submitted to the Ohio Department of Health Laboratory.

Influenza-Associated Hospitalizations and Influenza-Associated Pediatric Mortality

During MMWR week 14 there were no reported cases of influenza-associated hospitalization in Cuyahoga County **(Figure 4)**. In Ohio, there have been 10 reports of pediatric influenza-associated mortality, seven of these were confirmed as Pandemic Influenza A H1N1 (as of 04/13/10). Since April 2009, there have been 51 confirmed Pandemic Influenza A H1N1-related deaths in Ohio among hospitalized patients.

ED visits and Over-the-Counter Medication Sales

Two syndromic surveillance systems, RODS and EpiCenter, are being used to provide weekly tracking of over-the-counter (OTC) drugstore product sales and the number of visits to hospital emergency departments (ED) throughout Cuyahoga County, respectively. The particular OTC items were selected as products most likely to be purchased to treat the expected symptoms of influenza in children. The hospital visit data focuses on emergency department patients complaining of influenza like illness along with a fever and is stratified by age intervals. Please refer to **Figures 5 and 6**. **Figure 7** shows the trend of ED visits classified as constitutional syndrome. *Constitutional* syndrome includes (but is not limited to): body aches, generalized pain, fatigue, lethargic, weak, febrile, chills, flu, flulike, swollen glands, loss of appetite, etc..

For more information on national and world surveillance please refer to the Centers for Disease Control and Prevention at www.cdc.gov/flu/weekly.

Table 1. Summary of Cuyahoga County Influenza Data

Influenza (Flu) Indicator	Activity Compared to Previous Week	General Trend for the Season
Deaths due to influenza and pneumonia	decreased	Peaked in week 47 and had a low in week 52. Has slowly increased since week 52 with some variability.
Influenza like illness (ILI) doctor visits	decreased	Peaked in week 42 and hit a low in week 48. There was a smaller peak in week 52.
School absenteeism due to ILLNESS ONLY (among new sites recruited this year)	Cleveland: decreased Northeast: decreased Northwest: decreased Southeast: decreased Southwest: decreased	Peaked in weeks 42 and 43. Seems to be decreasing again after increasing week 3 through week 7..
School absenteeism due to ALL CAUSES – sentinel sites	decreased	Peaked in week 42. Seems to be decreasing again after a gradual increase week 2 - week 6. Currently below the 5 year median.
School absenteeism due to ALL CAUSES – new sites recruited this year	Northeast: decreased Northwest: no data Southeast: no data Southwest: no data	Peaked in weeks 42 and 43. Reporting has been poor.
Influenza associated hospitalizations	stable	Hit a peak in week 43 and has stabilized since week 50.
Emergency room visits due to influenza like illness	increased	Peaked in week 42 and hit a low in week 46. It has been fairly stable since week 50.
Sales of over-the-counter medications used to treat influenza like illness	decreased	Peaked in week 42 and hit a low in week 46. It has been fairly stable since week 47.
Emergency room visits due to constitutional syndrome	stable	Peaked in week 42 and has been fairly stable since week 46.

Table 2. Cumulative Influenza Results Reported by the Ohio Department of Health Laboratory for the 2009-2010 Influenza Season (as of 04/05/2010)¹

	# Culture Seasonal A/(H1)	# Culture B	# PCR Seasonal A/(H1)	# PCR Seasonal A/(H3)	# PCR B	# PCR Pandemic A/(H1)	# PCR Pandemic A/(H1) Inconclusive ²	# PCR Not Detected	Total Tested
Cuyahoga County	0	0	0	0	0	297	6	149	452
Ohio	0	0	1	1	0	1194	29	1808	3033

¹ Data is from tests conducted at the Ohio Department of Health Laboratory, commercial lab results are not included² These specimens have test results that are PCR positive for influenza A but positive for only one of the two H1N1 indicators (either Swine Flu A or Swine H1) OR they have mixed results after multiple tests were run (e.g. positive for Swine Flu A the first time then negative when run again).

Figure 1. Percentage of Deaths due to Pneumonia and Influenza (P&I), Cleveland 2009-2010

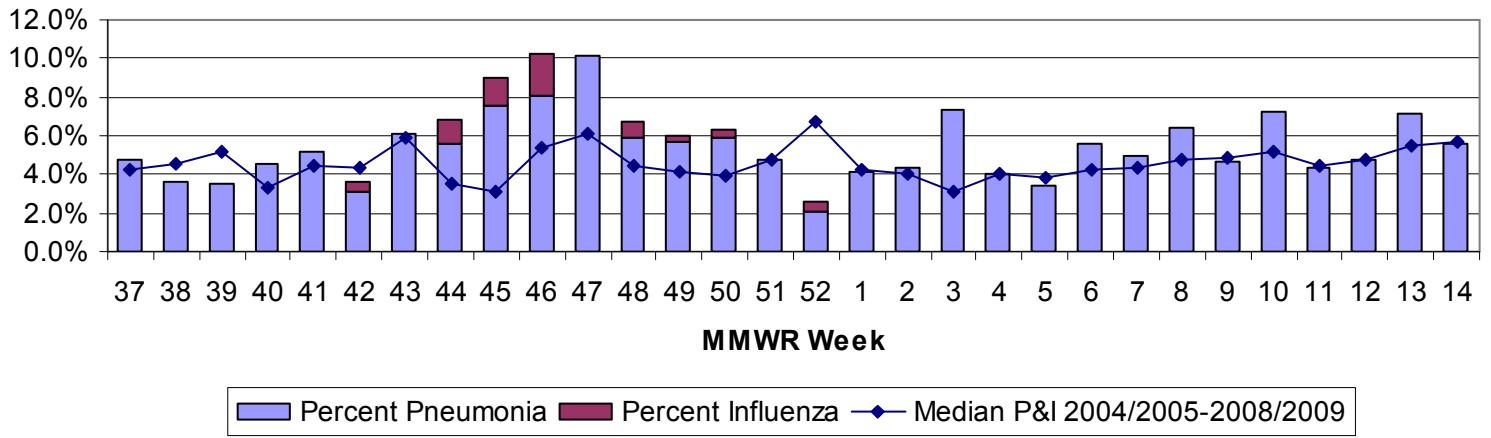


Figure 2. Percent Influenza-Like Illness (ILI) Visits, U.S. Influenza Sentinel Provider Surveillance Network, 2009-2010

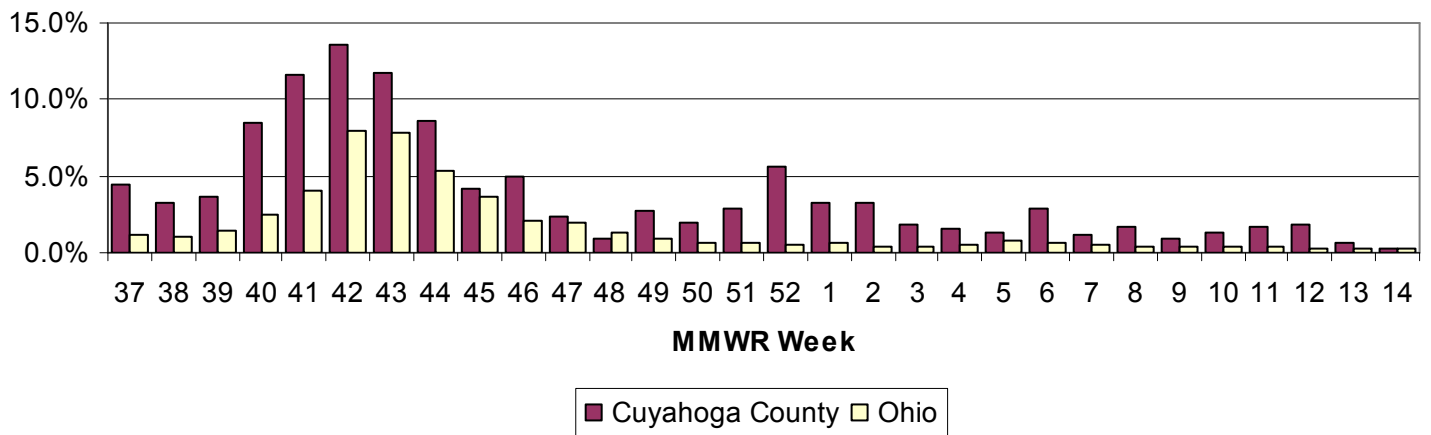
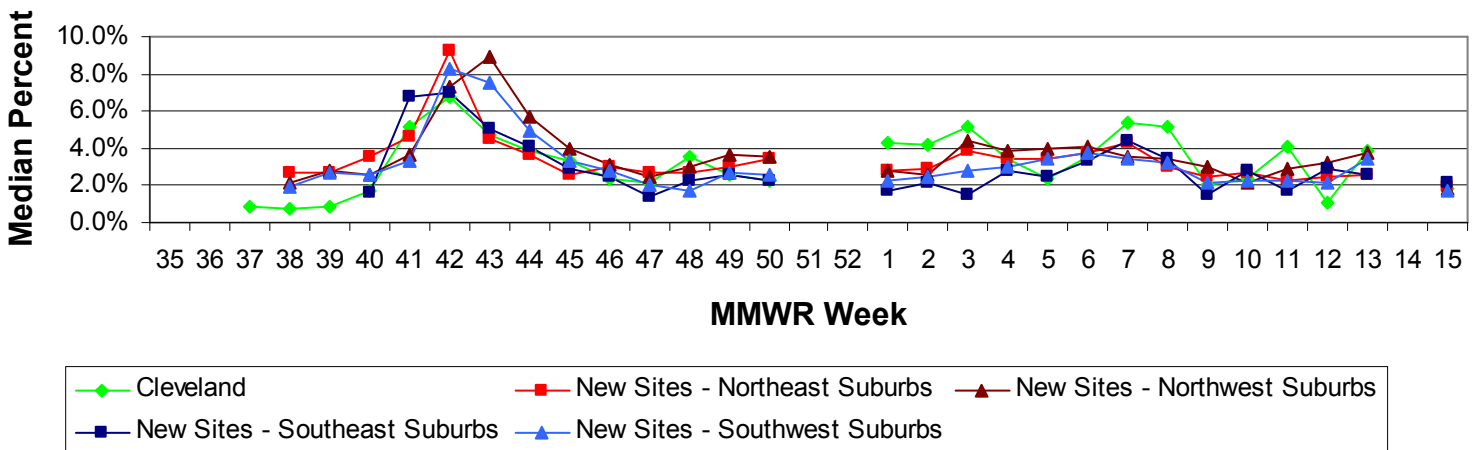
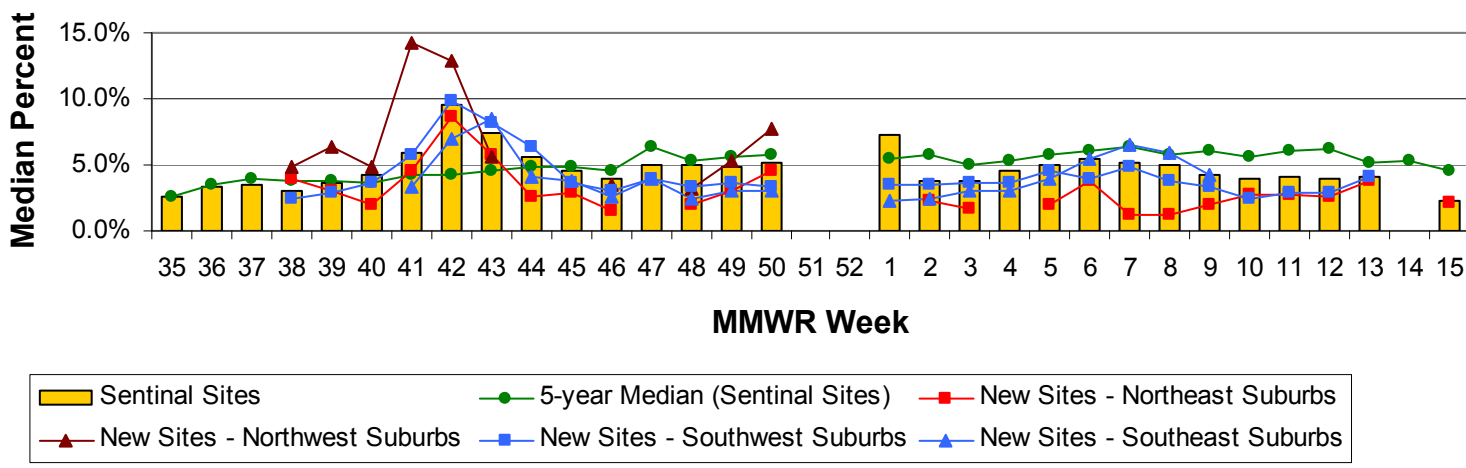


Figure 3a. School Absenteeism Due to any Illness - Cuyahoga County, 2009-2010*



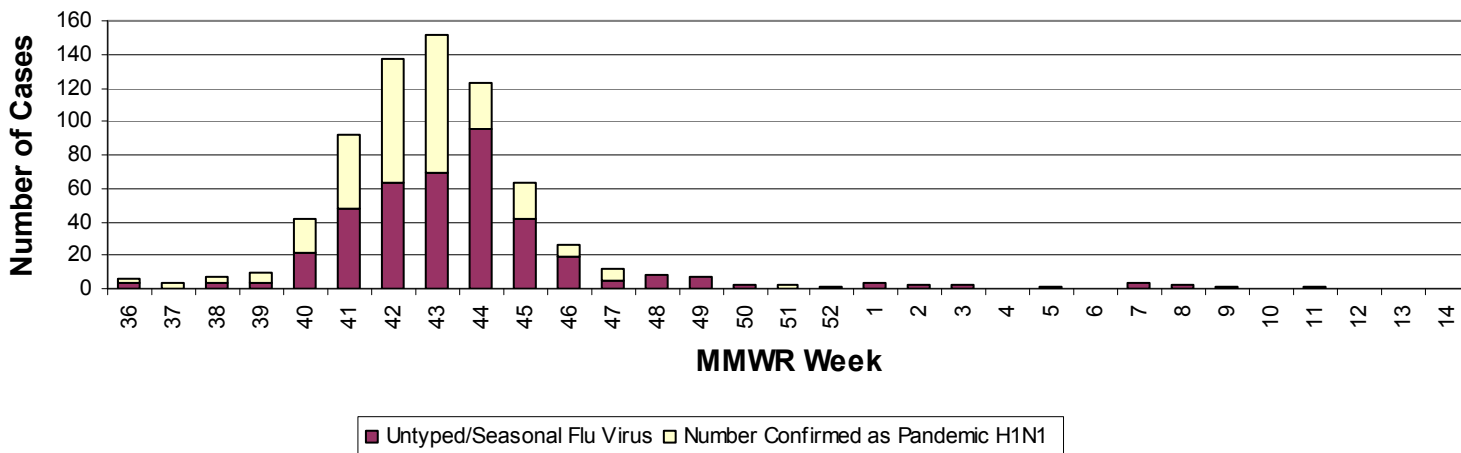
* Absentee data from new reporting sites are available for the current MMWR week. All other data in this report is for the previous MMWR week.

Figure 3b. Total School Absenteeism (i.e. due to any reason) - Suburban Cuyahoga County, 2009-2010*



* Absentee data from new reporting sites are available for the current MMWR week. All other data in this report is for the previous MMWR week.

Figure 4. Number of Influenza-Associated Hospitalizations in Cuyahoga County (using date reported to health department), 2009-2010*



* The yellow represents hospitalizations that are confirmed as Pandemic A H1N1 by PCR testing. Purple represents hospitalizations with any positive test for flu including specimens that are not typed and ones that are typed as seasonal flu viruses. A large number of specimens are never typed; therefore, a significant portion of the purple may represent Pandemic A H1N1.

Figure 5. Visits to Cuyahoga County Hospital Emergency Departments for Influenza-Like and Fever Symptoms By Age Groups, 2009-2010

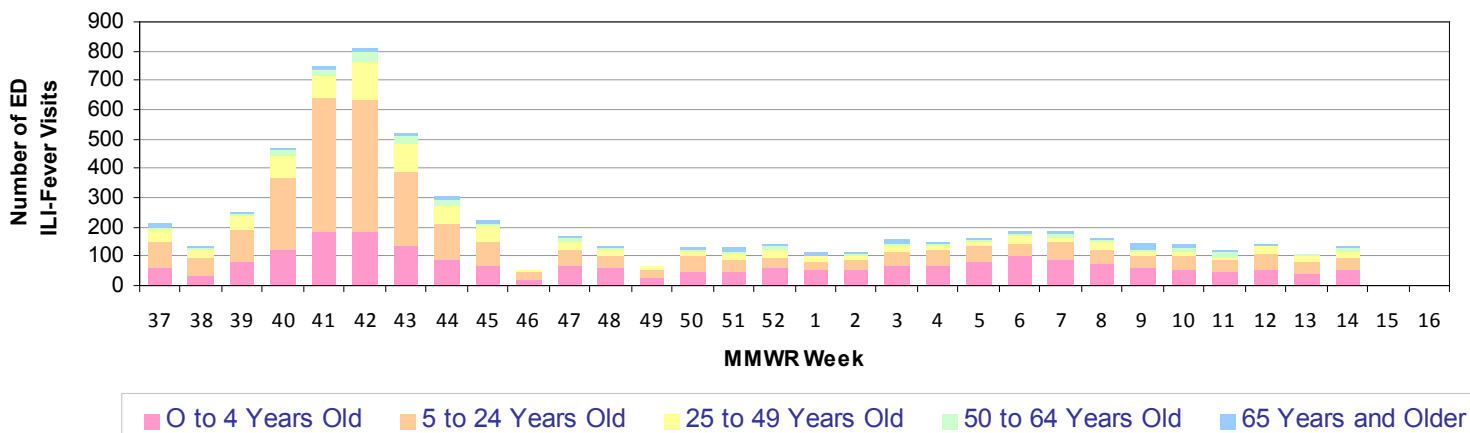


Figure 6. Average Weekly Sales of Cuyahoga County Drugstore Over-the-Counter (OTC) Products by Selected Products, 2009-2010

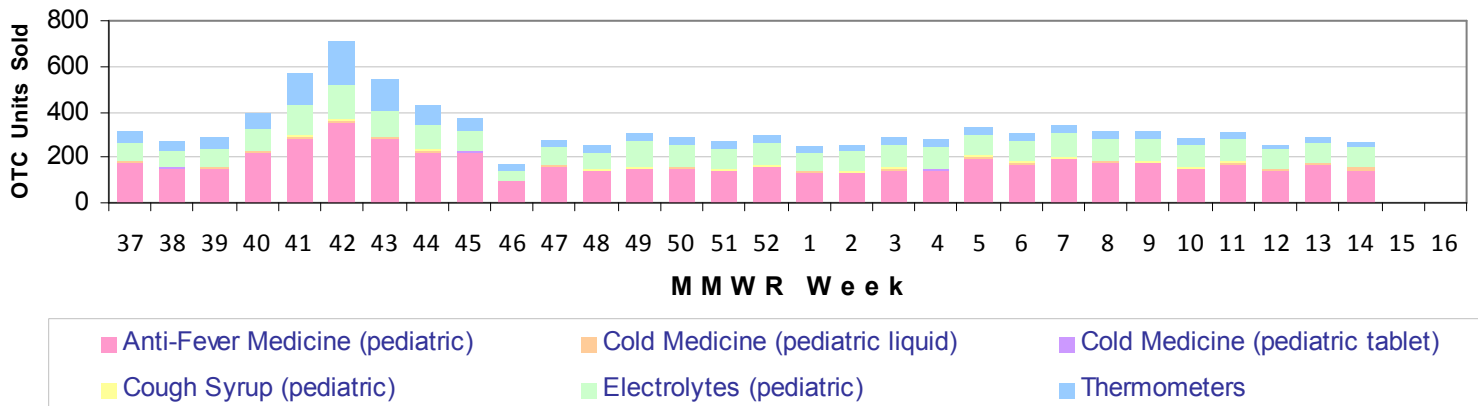
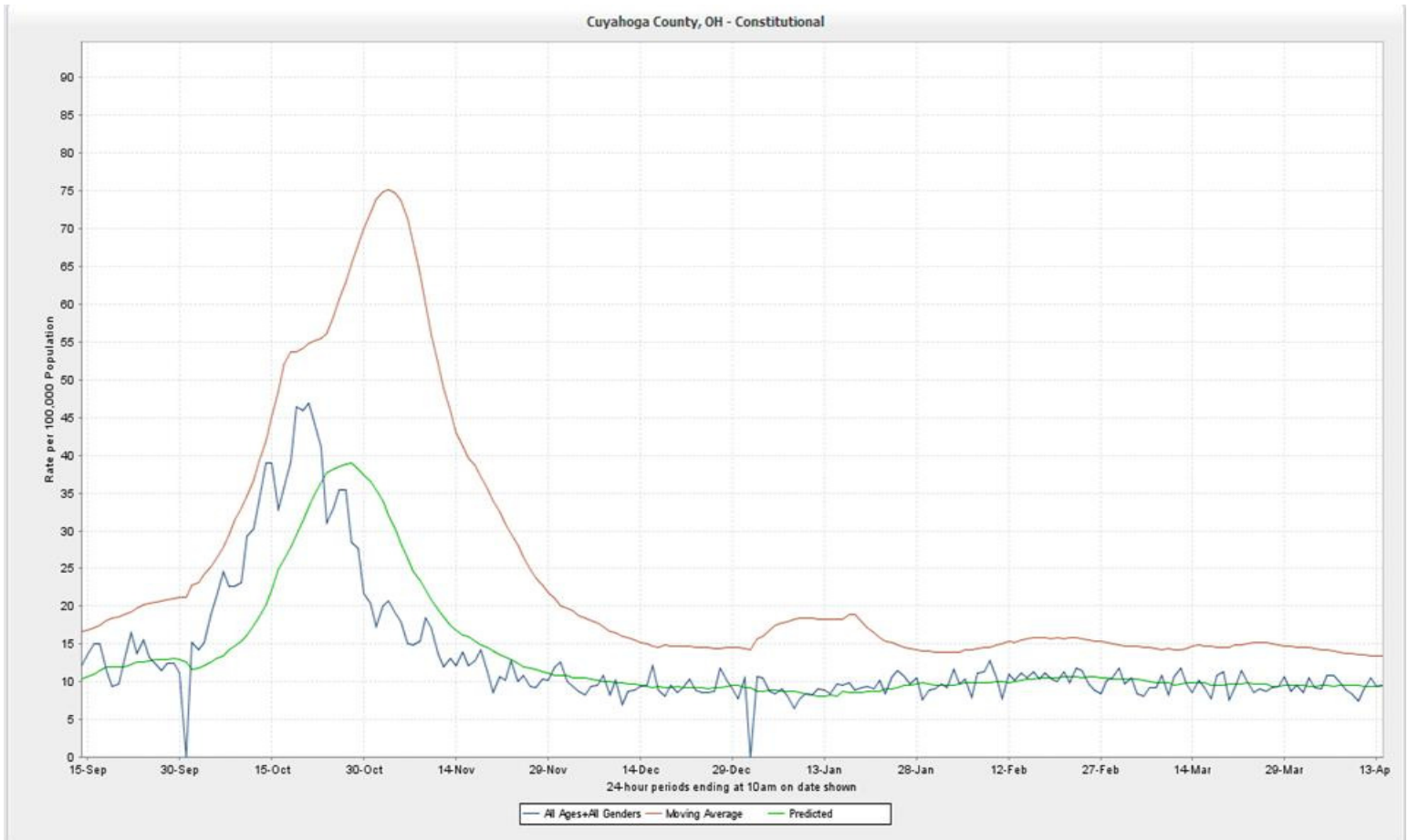


Figure 7. Emergency Department Visits due to “Constitutional Syndrome”, Cuyahoga County 9/14/09-4/14/10



The predicted value is the **expected number of cases** for a particular time period given what was observed in the recent past and appears as a green line on the chart. The **threshold** is predicted by the *Moving Average* algorithm and appears as the red line four standard deviations above the predicted count. The **total counts** are the actual number of ED registrations for Cuyahoga County and shown as a blue line.