The Good News: While H1N1 is still widespread and the incidence is much above the activity level normally seen in November, the current wave of H1N1 appears to have peaked in Kentucky: Sentinel provider ILI rates (page 3), School ILI absence rates (page 5 to 7), and School closures (page 8).

- H1N1 vaccine distribution has increased to 630,900 doses ordered in Kentucky and 531,400 shipped. 722,300 doses have been allocated to Kentucky by CDC (page 9).

Success Stories: Read about several vaccination strategies used by health departments in Kentucky to get the H1N1 vaccine into citizens (page 12).

- H1N1 Hotline continues to be HOT—Over 8,000 calls have been answered since the hotline opened in October (page 13).

- H1N1 influenza remains the predominant strain of influenza in Kentucky with >99.7% of all positive specimens typing out as H1N1 since August, 2009 (page 4).

- A total of 29 deaths have been attributed to H1N1 influenza in Kentucky—23 had significant underlying health conditions that contributed to the impact of H1N1 on the health of the patient (page 2).

Inside this issue:

- Deaths 2
- ILI Trends 3
- Virus Sub-Type Surveillance 4
- School Based Surveillance 5-8
- Vaccine Allocation and Distribution 9-11
- Local Public Health Efforts 12
- Public Hotline 13
- Pregnant Women 14
- News 15

The page also has links to CDC guidance documents.

Professional Guidance

The Kentucky Department for Public Health has prepared clinical guidance for many H1N1 topics. These documents are posted at the Health Alerts Website: http://healthalerts.ky.gov/Pages/HealthProfessionalsInfo.aspx

- **NEW!** Vaccine Adverse Event Reporting (VAERS)
- **NEW!** H1N1 Live Attenuated Influenza Vaccine (LAIV)
- Updated Clinician's Guidance Letter
- Novel H1N1 Influenza Key Points for Clinicians
- Updated Clinician's Guidance for Pediatric Prescription of Oseltamivir (Tamiflu) for H1N1 Treatment

- Novel H1N1 Vaccinator Recruitment Letter
- Recommended Modifications of Existing CDC Recommendations for Infection Control in Healthcare Settings and for Facemask and N95 Respirator Use
- Updated Clinician H1N1 Testing and Treatment Algorithm
- H1N1 Provider Enrollment Packet
- Pharmacy Only - H1N1 Pharmacy Provider Enrollment Form
- Facts About Facemasks Sheet

The page also has links to CDC guidance documents.
Laboratory Confirmed Kentucky Deaths

Twenty-nine deaths have occurred involving people with confirmed H1N1 influenza. Of these, nineteen were female, and ten were male. The median age was forty-seven, with a range of nine to eighty years. Of the twenty-nine, twenty-three had underlying medical conditions. Of the twenty-nine, seven were not in the vaccine priority groups.
ILI Sentinel Morbidity

The following graphs describe ILI reporting from the Kentucky sentinel physician network for MMWR weeks 40 to 44, that is, the week ending October 10, 1009 (40th week) to the week ending November 7, 2009 (44th week). KDPH works with a select group of physicians who provide data that KDPH uses for ILI surveillance efforts. These figures show a decreasing incidence of influenza-like illness in Kentucky over the past five weeks. The second chart is stratified by age.

Percentage of Physician Visits Reported as ILI in Kentucky Sentinel Sites from 10/11/09 to 11/17/09

![Graph showing decreasing incidence of influenza-like illness in Kentucky over the past five weeks.](image)

Percentage of Physician Visits Reported as ILI in Kentucky Sentinel Sites from 10/11/09 to 11/17/09 Stratified by Age

![Graph showing percentage of physician visits reported as ILI in Kentucky sentinel sites from 10/11/09 to 11/17/09 stratified by age](image)

CDC publishes the MMWR, the Morbidity and Mortality Weekly Report. Data in the MMWR is reported by the week of the year.
Surveillance of Virus Subtypes

KDPH works in partnership with clinicians, local health departments, and the federal Centers for Disease Control and Prevention to conduct surveillance for influenza-like illness.

The information collected by Kentucky sentinel providers is combined with other influenza surveillance data on influenza-related hospitalizations, antiviral usage, severe pediatric influenza cases and positive laboratory detections from collaborating hospital, academic and public health laboratories throughout the state to monitor the timing, location, and impact of influenza viruses year-round.

A total of 3,521 specimens were submitted by providers to the state lab for testing between August 1, 2009 and November 17, 2009. Of those that tested positive for influenza, 99.77% were positive for H1N1.

The results of tests performed during the current month are summarized in the table below. Please note that the November data is not for a full month.

<table>
<thead>
<tr>
<th>Specimens Tested</th>
<th>August</th>
<th>September</th>
<th>October</th>
<th>November*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specimens positive for Flu</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>H1N1</td>
<td>114</td>
<td>358</td>
<td>855</td>
<td>342</td>
</tr>
<tr>
<td>Seasonal Flu subtype</td>
<td>2</td>
<td>0</td>
<td>2</td>
<td>0</td>
</tr>
</tbody>
</table>

*partial month, through 11/17/2009

PNEUMOCOCCAL VACCINE AND PAN FLU

According to the CDC, increases in pneumococcal disease were seen during all three of the flu pandemics that occurred in the twentieth century. A key difference is that now we have two pneumococcal vaccines that may help to prevent these infections.

All children less than 5 years of age should receive the pneumococcal conjugate vaccine (PCV7). The vaccine should be given to all infants younger than 24 months of age at 2, 4, and 6 months of age, followed by a booster dose at 12-15 months of age. In addition, the 23-valent pneumococcal polysaccharide vaccine (PPSV) should be administered to all persons 2-64 years of age with high risk conditions and everyone 65 years and older.

Special emphasis should be placed on vaccinating adults under 65 years of age who have established high-risk conditions for pneumococcal disease; PPSV coverage among this group is low and this group may be more likely to develop secondary bacterial pneumonia after a flu infection.
School ILI Absentee Trends

By implementing a syndromic surveillance system that focuses on school-aged children and youth, where infectious diseases often emerge first and spread rapidly, KDPH and Kentucky Department of Education (KDE) are working together to detect and monitor influenza outbreaks. This information will help KDPH implement timely public health prevention measures to reduce the magnitude of influenza outbreaks in the community.

This ILI surveillance project strengthens an already productive partnership with Kentucky public schools. The project was intended to ease information exchange between KDPH and KDE regarding influenza and other public health matters, support early detection of ILI by making it simple for schools to report absenteeism data and ILI, and focus public health resources in response to early detection of increased ILI and student absenteeism rates. The rates presented are per 1,000 enrolled students. The trends of ILI absences in schools appear to have peaked and have begun to decrease in recent weeks.

Rate of Absences Attributed to ILI in Public Schools, Statewide

[Graph showing the rate of absences attributed to ILI in public schools, statewide, with data points for Fall Break and Flu Season.]
School Absences

This set of maps shows the average rate of absences attributed to ILI per 1,000 students from all public schools by county. They show a progression of ILI over the past months beginning in western Kentucky and moving across the state to the east.

Average Rate of Absences Attributed to ILI in Public Schools on 09-21-2009

Average Rate of Absences Attributed to ILI in Public Schools on 10-19-2009

Average Rate of Absences Attributed to ILI in Public Schools on 11-9-2009

Legend: Rate
- Missing or Excluded
- 0.00 - 0.99
- 1.00 - 3.99
- 4.00 - 7.99
- 8.00 - 15.99
- 16.00 +
School Closures

Average Rate of Absences Attributed to ILI in Public Schools on 11-16-2009

The previous maps present the average rate of absences attributed to ILI. The average, or mean, can be distorted in a county where one school or a few schools have extreme values (for example, one school may have 85 absences per 1,000 students for ILI where most schools have only 15). Another way to present the data that avoids distortion due to extremely high rates for a few schools, is to use the median rate for each county. The median rate represents the midpoint of the various school absenteeism rates in each county (half the schools have a higher rate, and half of the schools have a lower rate); it is not influenced by extreme values in a few schools.

Median Rate of Absences Attributed to ILI in Public Schools on 11-16-2009
School Closures

Public School Closures Due to Influenza Like Illness by County
August 1 – November 18, 2009

From August 1 to November 18, 302 schools from 54 districts closed one or more days due to influenza like illness. The first reported school closure was on August 18th. This chart shows three peaks of school (not districts) closures during the time period:
- October 1—59 schools
- October 23—76 schools
- October 30—88 schools

The latest school closure occurred on November 13, 2009. There have been no closures since.
Vaccine Allocation

CDC sends states a weekly 2009 H1N1 allocation report which indicates how much of each formulation of 2009 H1N1 influenza vaccine Kentucky can order. CDC allocates vaccine based on the state’s population. KDPH then sub-allocates vaccine to counties and health districts by population. CDC’s vaccine distribution contractor ships vaccine to hospitals, clinics, doctor’s offices, health departments, and other providers three or four times per week. The chart below shows the cumulative doses of vaccine allocated to Kentucky from the CDC.

<table>
<thead>
<tr>
<th>Item</th>
<th>Current as of:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allocation</td>
<td>11/18/09</td>
</tr>
<tr>
<td>Ordered/Shippted</td>
<td>11/18/09</td>
</tr>
</tbody>
</table>

H1N1 and Pets

KDPH has had many questions about pets and H1N1. This question and answer was posted on the American Veterinary Medical Association.

Q: What are the clinical signs of 2009 H1N1 flu virus infection in pets?
A: So far, the clinical signs observed in ferrets and two cats have been respiratory problems, such as coughing, sneezing, runny nose/eyes, and possibly fever, lethargy, loss of appetite, and respiratory abnormalities (e.g., dyspnea, tachypnea). In other words, it resembles most other viral respiratory infections.

If there is a history of recent flu-like illness among the pets’ owners and the pet begins showing signs of respiratory disease, a high index of suspicion of 2009 H1N1 influenza exists.

Keep in mind that dogs currently have their own flu virus, the H3N8 influenza (canine influenza) virus, going around. So far, this flu virus has only been spread from dog to dog. Dogs infected with the canine influenza virus show the same clinical signs as dogs with kennel cough – fever, lethargy, loss of appetite, coughing, and maybe a runny nose.

Doses Shipped by Type

<table>
<thead>
<tr>
<th>Type of Vaccine</th>
<th>Ordered</th>
<th>Shipped</th>
</tr>
</thead>
<tbody>
<tr>
<td>Injection 36/48 month and older</td>
<td>343,800</td>
<td>298,300</td>
</tr>
<tr>
<td>Intranasal for 2-49 years</td>
<td>147,800</td>
<td>147,700</td>
</tr>
<tr>
<td>Injection 36/48 months and older (preservative free)</td>
<td>78,800</td>
<td>78,800</td>
</tr>
<tr>
<td>Injection 6-35 months (preservative free)</td>
<td>46,500</td>
<td>44,700</td>
</tr>
<tr>
<td>Injection &gt;= 18 years</td>
<td>14,000</td>
<td>11,900</td>
</tr>
<tr>
<td>Total</td>
<td>630,900</td>
<td>583,400</td>
</tr>
</tbody>
</table>

Provider Agreements, Enrollments, and Direct Ship Sites

The vaccine distribution system requires health care providers to sign a provider agreement with their local health department. The health care provider enrollment process collects information needed to ensure rapid shipment of vaccine and maintenance of the cold chain. Some vaccine goes to local health departments and some goes directly to health care providers at a direct ship site at the discretion of the local health department. As of 11/17/2009, there are 1,357 provider agreements, 1,326 provider enrollments, and 259 direct ship sites across Kentucky.

Antiviral Availability for Uninsured and Under-Insured Patients

One issue that is important to the clinical management of H1N1 influenza is the use of antiviral medications when indicated. These medications are very expensive: uninsured and under-insured patients who are prescribed antiviral medications may not be able to afford the prescription or even a co-pay for their insurance plan. To address this issue, the Kentucky Department for Public Health has released some of its stockpile of antiviral medications to the Kentucky Pharmacists Association to be used for these uninsured and under-insured patients.

The Kentucky Pharmacists Association has developed partnerships with over 160 community pharmacies (chain and independent pharmacies, federally qualified health centers, and hospitals) and over 30,000 courses have been distributed out into the community through these partnerships. Each county has at least one pharmacy (most have more) that has agreed to supply these antiviral medications to patients when clinicians refer their uninsured and under-insured patients to them. The list of participating pharmacies, which is accessible to local health departments, continues to grow as KPhA strives to provide access in counties across Kentucky for referral of patients. For more information on how to refer uninsured or underinsured patients to access this process, please contact your local health department.
Vaccine Distribution By Health District

When was this data updated?

<table>
<thead>
<tr>
<th>Item</th>
<th>Current as of:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Providers</td>
<td>11/17/09</td>
</tr>
<tr>
<td>Process</td>
<td>11/04/09</td>
</tr>
</tbody>
</table>

Vaccine Distribution Process (simplified)

From the manufacturing of vaccine to its delivery to the public takes many steps. This flowchart shows the steps of this distribution process involving KDPH and LHDs.

1326 H1N1 Providers Approved
Totals By Districts as of Nov 17, 2009

105,180 H1N1 Doses Shipped
Totals By Districts as of Nov 17, 2009
Public Health Works

The Ten Essential Services provide a working definition of public health and a guiding framework for the responsibilities of the public health system. Every day the state, district and local health departments in Kentucky put the essential services to work in their efforts to prevent, promote and protect. The H1N1 response highlights below show how public health works.

Public Health Works by Linking People to Needed Services

The Hopkins County Health Department formed “Power Hour” teams and sent them to 13 schools sites to help school nurses administer H1N1 vaccinations. Each team consisted of two nurses who administered either injectable or nasal vaccine to students whose parent or legal guardian consented. The nurses were well prepared and trained because they usually work in the health department’s other programmatic areas, such as the WIC, HANDS and Community Health Education programs. The team would stay at each school for approximately one hour and then move to another school and repeat the process. Hundreds of vaccinations were given during the days that Hopkins County had the “Power Hour” teams in the schools, and as of November 13th approximately 3,000 school-age children in Hopkins County had received an H1N1 vaccination.

The Martin County Health Department offers ongoing walk-in H1N1 vaccination clinics as supplies last for the following target groups: patients who are eligible for the nasal spray vaccine; pregnant women; and children between the ages of six months and thirty-five months. As vaccine has become more readily available, they have started offering mass H1N1 vaccination clinics. The clinics are open to the public, and articles are placed in the local newspaper emphasizing targeted groups. The mass H1N1 vaccination clinics were offered on October 28th, November 4th, and November 12th. In a November 4th letter to the editor in the Mountain Citizen, a resident compliments the organization of the clinics, “The staff at the health department remained professional and courteous…The staff did an excellent job moving everyone through as quickly and smoothly as possible.” As of November 12th, a total of 1,097 individuals have received the H1N1 vaccination from the Martin County Health Department.

The Lexington-Fayette County Health Department provided approximately 1,600 H1N1 shots during a special clinic for kids with chronic health conditions on October 31st at Henry Clay High School, and more than 6,000 vaccinations given for other high-risk groups on November 7th at Paul Laurence Dunbar and Bryan Station high schools. Even though the lines were long – about 3 hours at its peak at Dunbar – the vast majority of patients had positive things to say about the department’s staff and services, including:

- “We went to Dunbar. Got there before 6 AM. They opened the doors for us at 8. We were out of there by 8:30. Very well organized. Everyone very professional & friendly. Kudos to the Fayette County Health Dept. who couldn’t have done any better job!! Thanks.” (Lexington-Herald Leader Web site)
- “We received our shot today at Bryan Station HS and I was so impressed with the smoothness of the whole thing. Your staff was super nice, parking was easy, the line kept moving; it was just an over all positive experience. Thanks again for this service.” (Lexington-Fayette County Health Department Web site)
On October 5, 2009 KDPH established a telephone hotline to answer questions from the public. The hotline averages about 160 calls a day. As of 11/18/2009, it has received 8,052 calls. The most common questions are noted in the chart below. The flu hotline is staffed by nurses and administered by Kosair Children’s Hospital, a part of Norton Healthcare. The flu hotline will be active through at least the end of December.

The hotline number is 1 (877) 843-7727. It is available from 8 a.m.-10 p.m. daily.
Pregnant Women and H1N1

Pregnancy and H1N1
A pregnant woman who gets any type of flu has a greater chance for serious health problems. Compared with people in general who get swine flu, pregnant women with swine flu are more likely to be admitted to hospitals and are also more likely to have serious illness and death from swine flu. Research has found that pregnant women who had a flu shot get sick less often with the flu than do pregnant women who did not get a flu shot. Babies born to mothers who had a flu shot in pregnancy also get sick with flu less often than do babies whose mothers did not get a flu shot.

Vaccines for Pregnant and Post-Partum Women
Public health officials from CDC and the Kentucky Department for Public Health advise pregnant women to get flu shots either with or without thimerosal (a mercury preservative in vaccine that comes in multi-dose vials). There is no evidence that thimerosal is harmful to a pregnant woman or a fetus. However, because some women are concerned about thimerosal during pregnancy, vaccine companies are making preservative-free seasonal flu vaccine and swine flu vaccine in single-dose syringes for pregnant women and small children. There are no adjuvants (agents that are sometimes added to a vaccine to make it more effective) in any of the seasonal flu or swine flu vaccines. The nasal spray influenza vaccine is safe for women after they have delivered their baby, even if they are nursing. In addition, it is safe for a pregnant woman to be around a family member or another close contact who has received nasal spray flu vaccine.

Health care providers are encouraged to give the seasonal and novel H1N1 influenza vaccinations to their patients who are pregnant. The seasonal flu shot has been given to millions of pregnant women over many years. Flu shots have not been shown to cause harm to pregnant women or their babies. The swine flu vaccine is being made in the same way and at the same manufacturing sites as the seasonal flu vaccine.

Surveillance of Vaccinations
Several health departments in the state have volunteered to be sentinel sites for collecting an additional data set that tracks the uptake of H1N1 vaccination within their jurisdiction among pregnant women, caregivers of children less than 6 months old, and healthcare workers. As of November 18, 2009, sentinel regions have sent in reports on 55,271 people vaccinated. This is a significant underestimate of the true number of doses administered to date based on the lag time in reporting and incomplete reporting by providers. However, it does give us a picture of the distribution of vaccination among the target groups for H1N1 influenza vaccination. Among the reports of those vaccinated were 1,922 pregnant women (3.48% of total), 2,599 caregivers of children less than 6 months (4.70% of total), and 12,649 healthcare workers (22.89% of total). These categories may include duplicate reporting.

Surveillance of Hospitalizations
KDPH has begun collecting information on women who are pregnant (up to 6 weeks post-partum) and hospitalized with any confirmed type of influenza. We will be collecting this information prospectively as well as going back and gathering the same information on this group of cases since August 2009. This effort is in response to a request by the CDC aimed at a high-risk group of women, those receiving care in a hospital, in order to work toward finding ways to prevent serious outcomes for pregnant women and their babies.
Vaccine Adverse Event Reporting

As part of our public health surveillance system, healthcare providers help monitor the safety of all licensed vaccines--- including the novel H1N1 influenza vaccine--- by promptly and accurately reporting any clinically significant adverse events that follow vaccination. Reports of adverse events subsequent to any vaccination are reported to the Vaccine Adverse Event Reporting System (VAERS). VAERS is co-managed by the Centers for Disease Control and Prevention (CDC) and the Food and Drug Administration (FDA) and is the front-line monitoring system for collecting and analyzing voluntary reports of adverse events following vaccination. The CDC and FDA analyze VAERS reports to identify potential vaccine safety concerns that may warrant further study or public health action.

Clinically significant adverse events are those events that are of concern to providers or vaccinated patients or their caregivers, even if it is not clear that the vaccine caused the adverse event. Reporting to VAERS is open to anyone including medical providers, patients, and public health personnel. While anyone can report to VAERS, vaccinated patients or their caregivers are encouraged to seek the help of their health care provider in filling out a VAERS form.

There are three ways to report an adverse event to VAERS:
1) Submit online via a secure website at http://vaers.hhs.gov/esub/index
2) Fax a completed VAERS form to 877-721-0366, or
3) Mail a completed VAERS form to VAERS, P.O. Box 1100, Rockville, MD 20849-1100.

In addition, to ensure that the Kentucky Immunization Program is made aware of vaccine adverse events occurring in Kentucky, we ask that people reporting adverse events make a copy of the completed VAERS form and mail it to:

Kentucky Department for Public Health
Immunization Program
275 East Main Street, HS2E-B
Frankfort, KY 40621

The VAERS reporting form can be downloaded from the VAERS website at http://vaers.hhs.gov/esub/index. Alternatively, a VAERS form may be requested by sending an email to info@vaers.org, by calling toll-free 800-822-7967, or by sending a faxed request to 877-721-0366.

For additional information on VAERS or vaccine safety, visit the VAERS website at vaers.hhs.gov/index or call 800-822-7967.