The purpose of the weekly Influenza Watch is to summarize current influenza surveillance in San Diego County. Please note that reported weekly data are preliminary and may change due to delayed submissions and additional laboratory results.

**Current Week 5 (ending 2/4/2017)**

- 361 new influenza detections reported: *Elevated*
- 5% influenza-like-illness (ILI) among emergency department visits: *Expected level*
- 6 influenza-related deaths reported this week
- 8% of deaths registered with pneumonia and/or influenza: *Expected level*

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**Virus Characteristics**

2,762 Total Cases

57 ICU Cases

39 Deaths

21 Outbreaks

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**Table 1. Influenza Surveillance Indicators**

<table>
<thead>
<tr>
<th>Indicator</th>
<th>FY 2016-17*</th>
<th>FY 2015-16</th>
<th>Prior 3-Year Average**</th>
</tr>
</thead>
<tbody>
<tr>
<td>All influenza detections reported (rapid or PCR)</td>
<td>Week 5 361</td>
<td>Week 4 287</td>
<td>FYTD 5 2,762</td>
</tr>
<tr>
<td>Percent of emergency department visits for ILI</td>
<td>5% 5%</td>
<td>4% 5%</td>
<td><strong>5% 7%</strong></td>
</tr>
<tr>
<td>Percent of deaths registered with pneumonia and/or influenza</td>
<td>8% 8%</td>
<td>7% 9%</td>
<td>8% 9%</td>
</tr>
<tr>
<td>Number of influenza-related deaths reported^</td>
<td>6 3</td>
<td>12 10</td>
<td>39 11</td>
</tr>
</tbody>
</table>

* FYTD=Fiscal Year To Date (FY is July 1 - June 30, Weeks 27-26). Total deaths reported in prior years: 68 in 2015-16, 97 in 2014-15, and 70 in 2013-14.

* Previous weeks case counts or percentages may change due to delayed processing or reporting.

** Includes FYs 2013-14, 2014-15, and 2015-16.

^ Current FY deaths are shown by week of report; by week of death for prior FYs.
Holidays May Influence Influenza Dynamics

The seasonality of influenza is thought to vary according to environmental factors and human behavior. During winter holidays, potential disease-causing contact and travel deviate from typical patterns, and a recent study published online in the *Journal of Infectious Diseases* investigated the impact of holidays on age-specific and spatial flu transmission.

Researchers from Georgetown University and the National Institutes of Health examined the changes to transmission and epidemic trajectories among children and adults in a spatial context before, during, and after the winter holidays among aggregated physician medical claims in the United States from 2001 to 2009. They also used an epidemiological model to simulate flu epidemics with and without holiday-associated behavioral changes to contact and travel patterns.

The researchers found that winter holidays reduced flu transmission and delayed the trajectory of flu season epidemics. The holiday period is marked by a shift in relative risk of disease from children towards adults. Model results indicated that holidays delay epidemic peaks and synchronize incidence across locations. Contact reductions from school closures rather than age-specific mixing and travel produce these observed holiday flu dynamics.

The researchers concluded that winter holidays delay seasonal influenza epidemic peaks and shift disease risk towards adults due to changes in contact patterns. An implication of these findings is that influenza information and vaccination campaigns may be targeted during holiday periods, especially to encourage those who have not previously been vaccinated to get their flu shots as soon as possible.

The full article may be found here: [Contact, travel, and transmission: The impact of winter holidays on influenza dynamics in the United States](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5901895/).

Anyone who has not gotten a flu shot this year can go to the [San Diego Immunization Program website](https://www.san-diego.ca.us/health) for some locations in the county where vaccine is currently available.

<table>
<thead>
<tr>
<th>Positive Test Type/Subtype</th>
<th>Week 5</th>
<th>Total To-Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Influenza A†</td>
<td>324</td>
<td>2,323</td>
</tr>
<tr>
<td>Influenza A(H1N1) Pandemic 2009</td>
<td>1</td>
<td>12</td>
</tr>
<tr>
<td>Influenza A (H3) Seasonal</td>
<td>23</td>
<td>243</td>
</tr>
<tr>
<td>Influenza B†</td>
<td>9</td>
<td>140</td>
</tr>
<tr>
<td>Influenza B/Victoria</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Influenza B/Yamagata</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Influenza A/B†</td>
<td>4</td>
<td>44</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>361</td>
<td>2,762</td>
</tr>
</tbody>
</table>

* FY is July 1 - June 30.
† No further characterization performed, or results were not yet available at time of publication.

Note: Totals may change due to further laboratory findings.
Figure 1. Percent of Emergency Department Visits for Influenza-like Illness by Week and FY

Figure 2. San Diego County Influenza Detections by Type and Week of Report, 2016-17 (N=2,762)
Figure 3. Percent of Reported Influenza Cases by Age Group and Season, 2011-12 to 2016-17 YTD

Figure 4. Cumulative Influenza Case Reports by Week & Season
Figure 5. Percent of San Diego County Emergency Department Visits for Influenza-like Illness by Week and FY Compared to 5-Year Baseline & Upper 95% Threshold Values (Serfling Method)

Figure 6. Percent of San Diego County Deaths Registered with Pneumonia and/or Influenza by Week and FY Compared to Prior 5-Year Baseline & Upper 95% Threshold Values (Serfling Method)
**Figure 7. Influenza Deaths by Type, and Season**

- **Influenza A/B, Type Unknown**
- **Influenza B**
- **Pandemic H1N1**
- **Influenza A/H3**
- **Influenza A, No Subtype**

**Figure 8. Influenza Deaths by Age and Season**

- **<1 yr**
- **1-17**
- **18-34**
- **35-64**
- **65+**
Influenza Reporting in San Diego County

Local providers are encouraged to report laboratory positive influenza detections to the County Epidemiology Program by FAX (858) 715-6458. Please fax a Case Report Form and/or a printed laboratory result, and indicate if the patient was admitted to ICU or died, and/or is a resident of a congregate living facility.

For questions regarding sending specimens to Public Health Laboratory (PHL), call (619) 692-8500. Click here for the updated PHL PCR Test Request Form. Contact the Epidemiology Program with any questions at (619) 692-8499 or by email to: EpiDiv.HHSA@sdcounty.ca.gov.

Resources
San Diego County Influenza Surveillance Weekly Slide Deck - presentation version of this report
County of San Diego Immunization Program www.sdiz.org
California Department of Public Health Influenza
Centers for Disease Control and Prevention Influenza Surveillance Weekly Report