Overall reported influenza cases declined in San Diego County in Week 5, however elevated activity may be expected at least for several more weeks. Influenza cases can occur throughout the year in the county. It is not too late to get vaccinated, which is the best way to prevent influenza and its potentially serious complications. Antiviral medications are also important to control influenza. Over 99% of the influenza viruses tested this season are susceptible to antiviral medications.

**Current Week 5 (ending 2/1/2020)**
- 1,702 new influenza detections reported
- 11 new influenza-related deaths reported this week
- 8% influenza-like illness (ILI) among emergency department visits
- 6% of death certificates registered with pneumonia and/or influenza

### 2019-20 FYTD Season Summary

- **13,569** Total Cases
- **50** Deaths†
- **39** Outbreaks*  

### Virus Characteristics

<table>
<thead>
<tr>
<th>Influenza Type</th>
<th>2019-20 Season</th>
<th>2018-19 Season</th>
<th>Prior 3-Year Average*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All influenza detections reported (rapid or PCR)</td>
<td>1,702</td>
<td>1,884</td>
<td>13,569</td>
</tr>
<tr>
<td>Percent of emergency department visits for ILI</td>
<td>8%</td>
<td>8%</td>
<td>5%</td>
</tr>
<tr>
<td>Percent of deaths registered with pneumonia and/or influenza</td>
<td>6%</td>
<td>9%</td>
<td>7%</td>
</tr>
<tr>
<td>Number of influenza-related outbreaks**</td>
<td>1</td>
<td>14</td>
<td>39</td>
</tr>
<tr>
<td>Number of influenza-related deaths reported*</td>
<td>11</td>
<td>7</td>
<td>50</td>
</tr>
</tbody>
</table>

† Flu deaths less than 18 years of age are reportable to CDPH.
* In a congregate living setting, outbreaks are defined as at least one laboratory-confirmed influenza case in the setting of a cluster (≥2 cases) of influenza-like illness (ILI) within a 72-hour period.

**Table 1. Influenza Surveillance Indicators.**

Influenza season is July 1 – June 30, Weeks 27-26. Previous weeks case counts or percentages may change due to delayed processing or reporting.

*Includes FYs 2016-17, 2017-18, and 2018-19.
**At least one case of laboratory-confirmed influenza in a setting experiencing two or more cases of influenza like illness (ILI) within a 72-hour period.
*Current FY deaths are shown by week of report; by week of death for prior FYs. Total deaths reported in prior seasons: 77 in 2018-19, 343 in 2017-18, and 87 in 2016-17.
Antiviral Combination May Aid Recovery from Severe Influenza

Patients with severe influenza treated with a combination of the antiviral drugs favipiravir and oseltamivir compared with oseltamivir alone had faster recoveries, according to findings published in December 2019 in The Journal of Infectious Diseases.

Chinese and British researchers conducted the first retrospective study on combination therapy for severe influenza by comparing 40 patients given favipiravir and oseltamivir and 128 patients treated with oseltamivir alone. All patients had severe lab-confirmed influenza, were hospitalized, and were symptomatic for less than 10 days.

The combination therapy group had higher rates of clinical improvement by day 14 than the monotherapy group (62.5% vs 42.2%, \( P = 0.0247 \)). The proportion of undetectable viral RNA at day 10 was higher in the combination group than in the oseltamivir group (67.5% vs 21.9%, \( P < 0.01 \)) and there were no significant differences in mortality rates in the two groups.

Oseltamivir is the most widely used neuraminidase inhibitor in flu patients, while favipiravir is a novel inhibitor of influenza RNA. No antiviral randomized controlled trials have established a treatment regimen superior to oseltamivir monotherapy in hospitalized patients with influenza due to susceptible strains, but this retrospective study may prompt such trials.

The study may be found here: Comparative Effectiveness of Combined Favipiravir and Oseltamivir Therapy Versus Oseltamivir Monotherapy in Critically Ill Patients With Influenza Virus Infection.

Table 2. Influenza Cases Reported, 2019-2020 Season*

<table>
<thead>
<tr>
<th>Positive Test Type/Subtype</th>
<th>Week 5</th>
<th>Week 4</th>
<th>Total to Date</th>
<th>Percent to Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Influenza A, subtype unknown</td>
<td>1,172</td>
<td>1,249</td>
<td>7,506</td>
<td>55.3%</td>
</tr>
<tr>
<td>Influenza A (H1N1)pdm09</td>
<td>44</td>
<td>48</td>
<td>404</td>
<td>3.0%</td>
</tr>
<tr>
<td>Influenza A (H3)</td>
<td>1</td>
<td>2</td>
<td>103</td>
<td>0.8%</td>
</tr>
<tr>
<td>Influenza B, subtype unknown</td>
<td>470</td>
<td>551</td>
<td>5,273</td>
<td>38.9%</td>
</tr>
<tr>
<td>Influenza B/Victoria</td>
<td>0</td>
<td>0</td>
<td>167</td>
<td>1.2%</td>
</tr>
<tr>
<td>Influenza B/Yamagata</td>
<td>0</td>
<td>0</td>
<td>5</td>
<td>0.04%</td>
</tr>
<tr>
<td>Influenza, type unknown</td>
<td>15</td>
<td>34</td>
<td>111</td>
<td>0.8%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>1,702</td>
<td>1,884</td>
<td>13,569</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

*Season is July 1- June 30, Weeks 27-26.
Influenza Activity Indicator:
The activity level compares the current week’s ED ILI% (emergency department influenza-like illness, percent of all visits) to the mean and number of standard deviations above of the mean of the ED ILI% in non-influenza season weeks (CDC disease weeks 27-39) from the current and prior four seasons.

There are 10 activity levels, classified as: Minimal (levels 1-3), Low (levels 4-5), Moderate (levels 6-7), and High (levels 8-10). An activity level of 1 corresponds to when the ED ILI% is below the mean; level 2 corresponds to when the ED ILI% is less than 1 standard deviation above the mean; level 3 corresponds to when the ED ILI% is more than 1 but less than 2 standard deviations above the mean, and so on, with an activity level of 10 corresponding to when the ED ILI% is at 8 or more standard deviations above the mean.

<table>
<thead>
<tr>
<th>Level</th>
<th>Minimal</th>
<th>Low</th>
<th>Moderate</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>≥ mean and &lt;1 standard deviation above mean</td>
<td>≥1 and &lt;2 standard deviations above mean</td>
<td>≥2 and &lt;3 standard deviations above mean</td>
<td>≥6 and ≤7 standard deviations above mean</td>
</tr>
<tr>
<td>2</td>
<td>≥ mean and &lt;1 standard deviation above mean</td>
<td>≥1 and &lt;2 standard deviations above mean</td>
<td>≥2 and &lt;3 standard deviations above mean</td>
<td>≥6 and ≤7 standard deviations above mean</td>
</tr>
<tr>
<td>3</td>
<td>≥ mean and &lt;1 standard deviation above mean</td>
<td>≥1 and &lt;2 standard deviations above mean</td>
<td>≥2 and &lt;3 standard deviations above mean</td>
<td>≥6 and ≤7 standard deviations above mean</td>
</tr>
<tr>
<td>4</td>
<td>≥ mean and &lt;1 standard deviation above mean</td>
<td>≥1 and &lt;2 standard deviations above mean</td>
<td>≥2 and &lt;3 standard deviations above mean</td>
<td>≥6 and ≤7 standard deviations above mean</td>
</tr>
<tr>
<td>5</td>
<td>≥ mean and &lt;1 standard deviation above mean</td>
<td>≥1 and &lt;2 standard deviations above mean</td>
<td>≥2 and &lt;3 standard deviations above mean</td>
<td>≥6 and ≤7 standard deviations above mean</td>
</tr>
<tr>
<td>6</td>
<td>≥ mean and &lt;1 standard deviation above mean</td>
<td>≥1 and &lt;2 standard deviations above mean</td>
<td>≥2 and &lt;3 standard deviations above mean</td>
<td>≥6 and ≤7 standard deviations above mean</td>
</tr>
<tr>
<td>7</td>
<td>≥ mean and &lt;1 standard deviation above mean</td>
<td>≥1 and &lt;2 standard deviations above mean</td>
<td>≥2 and &lt;3 standard deviations above mean</td>
<td>≥6 and ≤7 standard deviations above mean</td>
</tr>
<tr>
<td>8</td>
<td>≥ mean and &lt;1 standard deviation above mean</td>
<td>≥1 and &lt;2 standard deviations above mean</td>
<td>≥2 and &lt;3 standard deviations above mean</td>
<td>≥6 and ≤7 standard deviations above mean</td>
</tr>
<tr>
<td>9</td>
<td>≥ mean and &lt;1 standard deviation above mean</td>
<td>≥1 and &lt;2 standard deviations above mean</td>
<td>≥2 and &lt;3 standard deviations above mean</td>
<td>≥6 and ≤7 standard deviations above mean</td>
</tr>
<tr>
<td>10</td>
<td>≥ mean and &lt;1 standard deviation above mean</td>
<td>≥1 and &lt;2 standard deviations above mean</td>
<td>≥2 and &lt;3 standard deviations above mean</td>
<td>≥6 and ≤7 standard deviations above mean</td>
</tr>
</tbody>
</table>
Figure 2. San Diego County Influenza Detections by Type and Week of Report, 2019-20 Season to Date (N=13,569).

Figure 3. Cumulative Influenza Cases Reported by CDC Week and Season.
Figure 4. Proportion of Influenza Cases by Age Group and Season.

<table>
<thead>
<tr>
<th>Year</th>
<th>&lt;1 year</th>
<th>1-17 years</th>
<th>18-64 years</th>
<th>65-79 years</th>
<th>80+ years</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015-16</td>
<td>100%</td>
<td>90%</td>
<td>80%</td>
<td>20%</td>
<td>10%</td>
</tr>
<tr>
<td>2016-17</td>
<td>100%</td>
<td>90%</td>
<td>80%</td>
<td>20%</td>
<td>10%</td>
</tr>
<tr>
<td>2017-18</td>
<td>100%</td>
<td>90%</td>
<td>80%</td>
<td>20%</td>
<td>10%</td>
</tr>
<tr>
<td>2018-19</td>
<td>100%</td>
<td>90%</td>
<td>80%</td>
<td>20%</td>
<td>10%</td>
</tr>
<tr>
<td>2019-20 FYTD</td>
<td>100%</td>
<td>90%</td>
<td>80%</td>
<td>20%</td>
<td>10%</td>
</tr>
</tbody>
</table>

Figure 5. Number of Influenza Vaccinations Administered* by CDC Week and Season.

Season Total
2015-2016: 526,552
2016-2017: 601,156
2017-2018: 770,058
2018-2019: 960,238
2019-2020 YTD: 1,038,886

* Influenza vaccinations administered and entered into the San Diego Immunization Registry (SDIR)
**Figure 6.** Percent of Emergency Department Visits for ILI Chief Complaint by CDC Week and Season.

![Graph showing percent of ED visits by week and season.]  
- **CDC Week and Calendar Month:** 2019-20, 2018-19, 2017-18, 2016-17

**Figure 7.** Percent of Emergency Department Visit Chief Complaints for Cough, Cold, Fever, or Respiratory Symptoms* by CDC Week, 2019-20 Season to Date.

![Graph showing percent of ED visits by week and season for cough, cold, fever, and respiratory symptoms.]  
- **CDC Week and Calendar Month:** 2019, 2020
- **Categories:** Respiratory Symptoms, Cold Symptoms, Cough, Fever

* Respiratory category includes cough, cold symptoms, influenza-like illness, and other respiratory symptoms.
Figure 8. Percent of San Diego County Emergency Department Visits for Influenza-like Illness by CDC Week and Season Compared to 5-Year Baseline and Upper 95% Threshold Values (Serfling Method).

Figure 9. Percent of San Diego County Deaths Registered with Pneumonia and/or Influenza by CDC Week and Season Compared to Prior 5-Year Baseline and Upper 95% Threshold Values (Serfling Method).
Figure 10. Influenza Deaths by Type and Season.

- Influenza A, subtype unknown
- Influenza A(H1N1)pdm09
- Influenza A(H3)
- Influenza B, all subtypes
- Influenza, type unknown
- Both influenza A and influenza B

Figure 11. Percent of Influenza Deaths by Age Group, Vaccination Status, and Underlying Medical Condition, 2019-20 Season.

- < 18 years
  - N=0
  - 0%
  - Vaccinated*
  - Underlying Medical Condition
- 18-64 years
  - N=14
  - 14%
  - 86%
- 65+ years
  - N=36
  - 50%
  - 97%
- All Flu Deaths
  - N=50
  - 40%
  - 94%

* known to be vaccinated
Influenza Reporting in San Diego County

Individual influenza cases are now reportable to Public Health as of October 1, 2019. Please report laboratory-positive influenza results to the County Epidemiology Program by FAX (858) 715-6458 using a Confidential Morbidity Report Form, or an Influenza Case Report Form, and/or a copy of the laboratory results. Also, please indicate if the patient died and/or is a resident of a congregate living facility (if known).

Influenza specimens may be sent to Public Health Laboratory (PHL) for confirmation and subtyping. Please contact PHL at (619) 692-8500 before submitting or for questions and use the current PHL Test Request Form found at https://www.sandiegocounty.gov/hhsa/programs/phs/phs_laboratory/. Contact the Epidemiology Program by telephone (619) 692-8499 or email (EpiDiv.HHSA@sdcounty.ca.gov) with questions about influenza data. Influenza outbreaks should be reported by telephone to (619) 692-8499.

Resource Links
- County of San Diego Epidemiology Program www.sdepi.org
- County of San Diego 2018-19 Influenza Season Summary
- Influenza Watch Slide Deck – A slide version of this report for presentations
- County of San Diego Immunization Program (SDIZ) www.sdiz.org
- San Diego Regional Immunization Registry (SDIR) http://www.sdiz.org/CAIR-SDIR/index.html
- California Department of Public Health (CDPH) Influenza Update
- Centers for Disease Control and Prevention (CDC) Influenza Surveillance

Influenza Watch Data Sources

The following sources of data are used to produce this report:

- **Influenza case reports**: Medical providers and laboratories report individual cases of confirmed influenza via fax or electronic laboratory reporting (ELR) to Public Health Services Epidemiology Program (Epidemiology).
- **Influenza deaths**: Hospital infection control professionals report influenza-related deaths. Pediatric flu deaths (under 18 years of age) are legally reportable in California; however, San Diego County requests that all influenza-related deaths be reported for surveillance purposes. Influenza-related deaths are also identified through death certificate registration. The County Office of Vital Records notifies Epidemiology when a new death is registered with influenza listed as a cause of death or underlying condition. In addition, influenza case reports are compared to death data for San Diego County, and matches are evaluated to determine if their influenza infection was related to the cause of death.
- **Percent pneumonia and influenza deaths**: The percentage of all deaths registered that had either pneumonia and/or influenza listed as a cause of death is obtained directly from the Vital Records VRIS data system on a weekly basis.
- **Influenza-like illness (ILI)**: Electronic emergency department (ED) visit data is submitted to Epidemiology daily, and the number of all ILI chief complaints and total visits are used to calculate the ED ILI percentage for each week. ILI is defined as fever (>100°F or 37.8°C) and cough and/or sore throat, in the absence of a known cause.
- **Influenza outbreaks**: In a congregate living setting, outbreaks are defined as at least one laboratory-confirmed influenza in the setting of a cluster (≥2 cases) of influenza-like illness (ILI) within a 72-hour period. Influenza outbreaks are reportable in California. Epidemiology identifies outbreaks when facilities call to report. Other potential outbreaks are identified when multiple cases share an address or have a residential address that matches a skilled nursing or long-term care facility.
- **Number of vaccines**: The San Diego Immunization Registry (SDIR) provides weekly updates on the number of flu vaccinations given based on the number of flu vaccinations registered by participating providers.

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.