



Influenza (Flu)

How CDC Classifies Flu Severity

In 2017, CDC adopted and outlined a new methodology for determining flu season severity. Based on data from past flu seasons, CDC researchers used key flu indicator data to develop intensity thresholds (ITs) to classify the severity of flu seasons. This methodology was published in the [American Journal of Epidemiology](#) in October 2017.

Based on the intensity thresholds, CDC researchers classified seasonal severity from 2003-2004 through the 2015-2016 flu seasons. Overall, four seasons were classified as low severity, seven as moderate, two as high, and none as very high.

In addition to assessing the severity of seasonal flu seasons, this methodology can also be used to determine severity during a flu pandemic.

Web Table 1. Influenza Season Severity Classifications, by Season and Age Group, United States, 2003–04 to 2015–16 influenza seasons.

Season	Child	Adults	Older Adults	Overall
2003-04	Very High	Moderate	High	High
2004-05	Low	Moderate	Moderate	Moderate
2005-06	Low	Low	Low	Low
2006-07	Low	Low	Low	Low
2007-08	Moderate	Moderate	Moderate	Moderate
2008-09	Low	Low	Low	Low
2009-10	Very High	Moderate	Low	Moderate
2010-11	Moderate	Moderate	Moderate	Moderate
2011-12	Low	Low	Low	Low
2012-13	Moderate	Moderate	High	Moderate
2013-14	Moderate	Moderate	Moderate	Moderate
2014-15	Moderate	Moderate	High	High
2015-16	Low	Moderate	Low	Moderate
2016-17	Moderate	Moderate	Moderate	Moderate
2017-18	High	High	High	High

FAQs

How does CDC track flu activity?

CDC [tracks flu activity](#) through key flu indicators, including the percentage of influenza-like illness (ILI) visits to outpatient clinics, the rates of influenza-associated hospitalizations, and the percentage of deaths resulting from pneumonia or flu.

How does CDC define “severity”?

CDC began using a new approach published in 2017 to define flu season severity. CDC first calculates intensity thresholds [ITs] for three key flu indicators using data from past flu seasons. CDC then classifies the severity of individual flu seasons by determining whether the indicator values during the peak of each flu season crossed their respective ITs.

What did researchers do to classify the severity of flu seasons in this study?

Flu severity is assessed using the following data :

1. the percentage of visits to outpatient clinics for ILI,
2. the rates of influenza-associated hospitalizations, and
3. the percentage of deaths resulting from pneumonia or influenza that occurred during each season.

The Moving Epidemic Method is then used to translate the data into standardized intensity thresholds (ITs) for each indicator. The peak value of an indicator is compared to the respective IT for that indicator to arrive at a severity classification.

- Severity is classified as “low” if at least 2 of 3 indicators for the overall population peak below the respective systems’ lowest ITs.
- Severity is classified as “moderate” if at least 2 indicators for the overall population peak between the respective systems’ lowest and mid-range ITs.
- Severity is classified as “high” if at least 2 indicators for the overall population peak between the respective systems’ mid-range and high ITs.
- Severity is classified as “very high” if at least 2 indicators for the overall population peak above the respective systems’ highest ITs.
- Severity was also assessed by age group.

What are intensity thresholds and why are they important?

An intensity threshold is a value developed using data from past flu seasons that helps assess the chance that a system will go above a certain threshold. In this instance, intensity thresholds (ITs) are important because they help researchers classify flu severity based on the level of flu activity at the peak of the season. For this study, ITs were developed for the overall population and further separated into three age groups: children, adults, and older adults. The ITs used in the paper correspond to a 50% (1 in 2), 10% (1 in 10) and 2% (1 in 50) chance of exceedance during an influenza season. These threshold values were used to classify flu severity into low, moderate, high, and very high categories and then applied to U.S. seasons from 2003–04 through the 2015–16, including the 2009 pandemic.

Has the method used to define “severity” changed?


Before this methodology was adopted in 2017, CDC used various criteria to subjectively determine severity, including visits to outpatient clinics, the number of flu-positive respiratory specimens, hospitalizations, and deaths. By contrast, intensity thresholds give researchers the ability to determine flu season severity systematically.

What were the results of applying the new methodology retroactively to 2003-2004?

Of the 13 influenza seasons overall, four were classified as low severity, seven as moderate severity, and two as high severity (2003–04 and 2014–15). No seasons were classified as very high severity.

Seasonal severity also varied by age group. Older adults (65 years and older) experienced the greatest number (3) of seasons that were classified as high severity (2003–04, 2012–13, and 2014–15) while children (0-17 years) were the only age group to experience two seasons that were classified as very high severity (2003–04 and the 2009 pandemic). Adults (18-64 years) did not experience any seasons that were classified as high or very high severity.

Why is it important to assess flu season severity?

By measuring the severity of influenza seasons, CDC can use key flu indicator data to guide public health actions, such as targeting prevention and treatment messages to appropriate audiences and make recommendations designed to prevent flu illnesses and death. See [systematic assessment](#) .

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