

# National Surveillance for Health-Related Workplace Absenteeism, United States 2017-18

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## Objective

To describe the methodology of the National Institute for Occupational Safety and Health (NIOSH) system for national surveillance of health-related workplace absenteeism among full-time workers in the United States and to present initial findings from October through July of the 2017–2018 influenza season.

## Introduction

During an influenza pandemic, when hospitals and doctors' offices are—or are perceived to be—overwhelmed, many ill people may not seek medical care. People may also avoid medical facilities due to fear of contracting influenza or transmitting it to others. Therefore, syndromic methods for monitoring illness outside of health care settings are important adjuncts to traditional disease reporting. Monitoring absenteeism trends in schools and workplaces provide the archetypal examples for such approaches.

NIOSH's early experience with workplace absenteeism surveillance during the 2009–2010 H1N1 pandemic established that workplace absenteeism correlates well with the occurrence of influenza-like illness (ILI) and significant increases in absenteeism can signal concomitant peaks in disease activity. It also demonstrated that, while population-based absenteeism surveillance using nationally representative survey data is not as timely, it is more valid and reliable than surveillance based on data from sentinel worksites [1].

In 2017, NIOSH implemented population-based, monthly surveillance of health-related workplace absenteeism among full-time workers.

## Methods

Each month, NIOSH updates an influenza season-based time series of health-related workplace absenteeism prevalence among full-time workers with the previous month's estimate (i.e., with a 1-month lag).

Data for this surveillance system come from the Current Population Survey (CPS), a monthly national survey of approximately 60,000 households administered by the Bureau of Labor Statistics. The CPS collects information on employment, demographics and other characteristics of the noninstitutionalized population aged 16 years or older.

A full-time worker is defined as an employed person who reports that they usually work at least 35 hours per week. Health-related workplace absenteeism is defined as working fewer than 35 hours during the reference week due to the worker's own illness, injury, or other medical issue. Because the CPS questions refer to one week of each month, absenteeism during the other weeks is not measured. These one-week measures are intended to be representative of all weeks of the month in which they occur.

Monthly absenteeism prevalence estimates for the current influenza season are compared to an epidemic threshold defined as the 95% upper confidence limit of a baseline established using data from the previous five seasons aggregated by month. Point estimates that exceed the epidemic threshold signal surveillance *warnings*; estimates whose lower 95% confidence limits exceed the epidemic threshold generate surveillance *alerts*. Estimates of total absenteeism are calculated as are estimates stratified by sex, age group, geographic region (HHS service regions), and occupation.

All analyses are weighted using the CPS composite weight and estimates of all standard errors are adjusted to account for the complex design of the CPS sample.



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## Results

During the period October 2017 through July 2018, the prevalence of health-related workplace absenteeism among full-time workers began at 1.7% (95% CI 1.6–1.8%) in October, increased sharply beginning in November, peaked in January at 3.0% (95% CI 2.8–3.2%), and declined steadily thereafter to end at a low of 1.4% (95% CI 1.3–1.5%) in July. The January absenteeism peak significantly exceeded the epidemic threshold, signaling a surveillance alert. Absenteeism remained elevated in February, but not significantly, signaling a surveillance warning. (Figure 1) Peak absenteeism in the 2017-2018 influenza season exceeded that of all of the five previous seasons except the 2012-2013 season. (Figure 2)

Analyses stratified by sex generated surveillance alerts for male workers in January and February. Surveillance alerts were also signaled for the following strata: workers aged 45–64 years in January and February; workers in HHS Region 6 in January and February and Region 9 in December and March; and workers in management, business, and financial occupations and installation, maintenance, and repair occupations in January and in production and related occupations in February.

Unlike surveillance alerts, the numerous surveillance warnings generated in stratified analyses are not reported due to small sample sizes in several strata.

## Conclusions

Results of initial analyses for the 2017–2018 influenza season indicate that, among full-time workers in the United States, the prevalence of health-related workplace absenteeism began to increase in November, peaked in January and was significantly higher than the average of the previous five seasons. These findings are consistent with official characterizations of 2017–2018, based on traditional ILI, hospitalization, and virologic surveillance data, as a high severity season that accelerated in November and peaked in January and February [2,3].

Analyses further suggest that male workers; workers aged 45–64 years; workers living in HHS Regions 6 and 9; and those working in management, business, and financial; installation, maintenance, and repair; and production and related occupations may have been especially impacted.

While not timely enough to serve as an early warning system, population-based workplace absenteeism is, nevertheless, a useful syndromic measure of a pandemic's impact on the working population. It also provides information that can be used to maintain health situational awareness during the inter-pandemic period, to evaluate the impact of pandemic control measures, and to inform future pandemic preparedness and response planning. Absenteeism surveillance can provide an important supplementary measure of a pandemic's overall impact because morbidity and mortality statistics may not fully reflect the disruption caused to the social and economic life of the community. This is especially true when disease makes people too sick to work but not sick enough to seek medical care.

## References

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Figure 1



Figure 2

