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(Page 1 of 2)

EPI-NEWS

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IN THIS ISSUE: 2023-2024 INFLUENZA HOSPITALIZATION & MORTALITY REPORT

2023-2024 Washoe County Influenza Hospitalization & Mortality Report

Introduction

Influenza remains a significant public health challenge, impacting many residents in Washoe County each year.[1,2] Northern Nevada Public Health's (NNPH) Influenza Surveillance Program (now part of the broader Respiratory Virus Surveillance Program) monitors seasonal influenza activity to understand local patterns of illness severity, hospitalizations, and mortality. The 2023-2024 influenza season (October 1, 2023 - May 18, 2024) returned to more typical pre-pandemic patterns. This report provides an overview of influenza-associated hospitalizations and deaths, highlighting trends, risk factors, and areas for public health intervention for the 2023-2024 influenza season.

This annual publication, as well as past reports and additional resources, can be accessed on NNPH's Respiratory Virus Surveillance Program website: https://tinyurl.com/NNPHRespSurv

Data

Data were reported to and collected by the NNPH Epidemiology Program through laboratory reporting from local hospitals, private laboratories, and the Nevada State Public Health Laboratory (NSPHL), as well as medical record reviews from hospitals, the Nevada state immunization registry, Office of Vital Records, and the Washoe County Medical Examiner's Office.

Influenza-Associated Hospitalizations

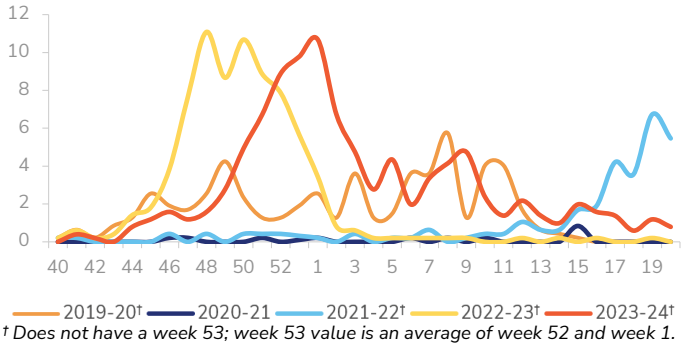
During the 2023-2024 influenza season, 453 Washoe County residents were hospitalized with influenza. Hospitalizations peaked in December 2023 and January 2024, reflecting pre-pandemic seasonal trends (Fig. 1 & 2). Most were:

- Aged 65 years or older (47.2%)
- Female (51.2%)
- White, non-Hispanic (70.0%)
- Had at least one underlying medical condition (UMC) (86.0%)
- Had no documented seasonal influenza vaccination (76.4%)

Among those hospitalized with influenza:

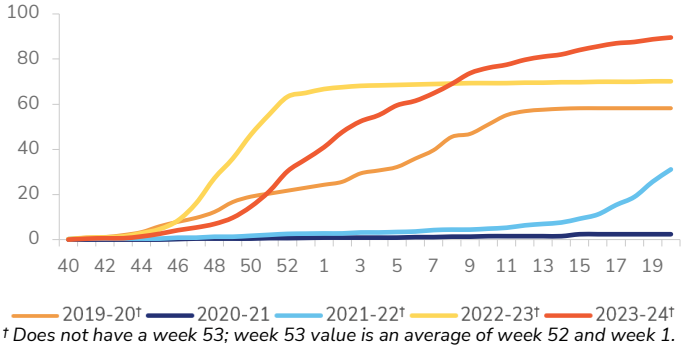
- The most frequently reported UMCs included obesity, chronic pulmonary diseases, and diabetes
- 17.9% were admitted to intensive care (ICU), and 3.5% required mechanical ventilation
- The average hospital stay was 4.9 days, longer for patients with UMCs (5.1 days) compared to those without (3.0 days)

Figure 1: Weekly Hospitalization Rate per 100k by Influenza Season, 2019-2023, by CDC Week



† Does not have a week 53; week 53 value is an average of week 52 and week 1.

Figure 2: Cumulative Hospitalization Rate per 100k by Influenza Season, 2019-2023, by CDC Week



† Does not have a week 53; week 53 value is an average of week 52 and week 1.

Influenza-Associated Deaths

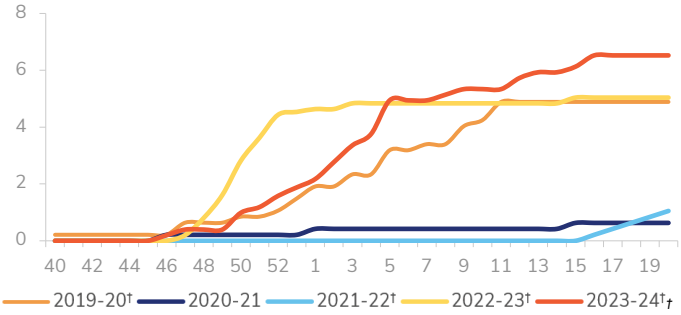
There were 33 influenza-associated deaths during the 2023-2024 season (Fig. 3). Most were:

- Aged 65 years or older (75.6%)
- Male (51.5%)
- White, non-Hispanic (72.8%)
- Had at least one underlying medical condition (97.0%)
- Had no documented seasonal influenza vaccination (69.7%)

Among those who died:

- The most frequently reported UMCs included chronic pulmonary diseases, diabetes, and obesity
- 60.6% were hospitalized prior to death, with ICU admission (85%) and mechanical ventilation (55%) common among hospitalized decedents
- Non-hospitalized decedents frequently had a prior "healthcare touch" (61.5%), indicating potential missed opportunities for early diagnosis and antiviral treatment

Figure 3: Cumulative Death Rate per 100k by Influenza Season, 2019-2023, by CDC Week



Does not have a week 53; week 53 value is an average of week 52 and week 1.

Key Findings & Recommendations

1. **Seasonality-** Influenza activity peaked in December and January, returning to typical pre-pandemic patterns. Healthcare systems and public resources should consider preparing for normal peak flu activity periods in future seasons to manage increased patient loads effectively.
2. **Risk Factors & Underlying Medical Conditions-** Severe outcomes were often associated with UMCs, particularly chronic respiratory conditions, obesity, and diabetes. Older adults (≥65 years) experienced the most severe illness and mortality. High-risk groups, particularly older adults and those with underlying health conditions, should be prioritized for vaccination and targeted public health interventions.
3. **Vaccination & Immunity-** A significant majority (76.4%) of hospitalized cases and nearly 70% of deaths were among unvaccinated individuals. Individuals with waning or limited immunity showed increased severity of illness. Future efforts should focus on strengthening community influenza vaccination campaigns, emphasizing early-season vaccination. Further, increasing public education regarding additional preventive actions, including the importance of early treatment and basic infection control measures such as handwashing and avoiding contact with sick individuals, is warranted to better protect both vaccinated, who may have waning immunity later in the season, and unvaccinated populations.
4. **Testing & Treatment-** Nearly 40% of deaths occurred without hospitalization, however, most of these (61.5%) did have a prior healthcare interaction prior to death due to their illness. Among these who had a "healthcare touch" prior to death, only 50% were tested for influenza, and fewer received appropriate antiviral treatment (25%). There needs to be increased awareness and enhanced clinical practices for prompt influenza testing and early antiviral therapy, particularly in outpatient settings, to reduce severe outcomes.

Acknowledgements

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References

1 Centers for Disease Control and Prevention. Influenza (Flu). About Influenza. Accessed April 2025 https://www.cdc.gov/flu/about/index.html
2 Northern Nevada Public Health. Respiratory Virus Surveillance Program. Accessed April 2025 https://www.nnph.org/programs-and-services/ephp/communicable-diseases-and-epidemiology/programs/viral-respiratory-surveillance.php