



# Salt Lake County Annual Influenza Report

## 2022-2023 Season

### Epidemiology Bureau

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### Introduction

The 2022-2023 influenza season saw 623 confirmed influenza-associated hospitalizations reported from October 1, 2022 to April 30, 2023. The season saw a peak in late December-early January (which is exemplified in Figure 1 below). The peak also correlated with peaks of SARS-CoV-2 and RSV, being dubbed a “triple-demic”. Influenza hospitalizations then saw a steep decline and remained low through the remainder of the season. The predominant influenza subtype circulating during the season was AH3, but there was also a high number of AH1N1 cases. The subsequent graphs and charts will further examine the 2022-2023 influenza season in Salt Lake County.

Figure 1

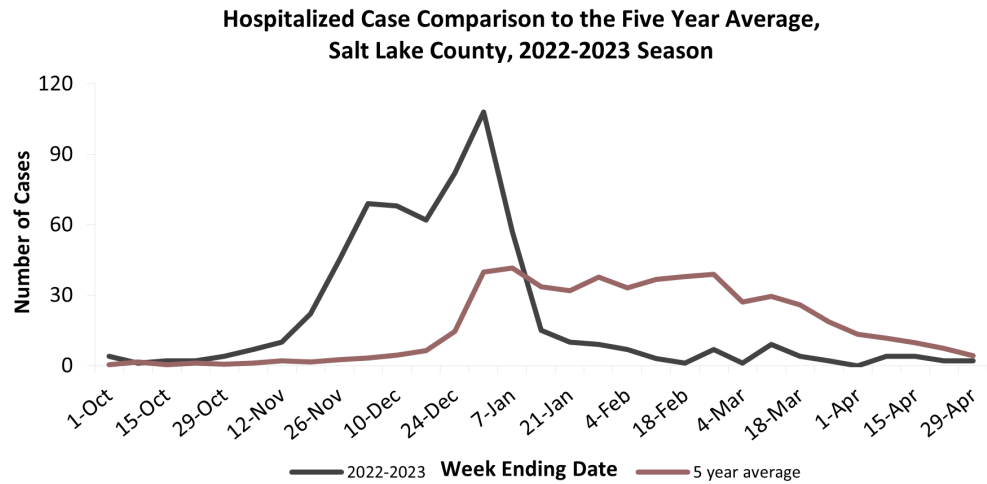
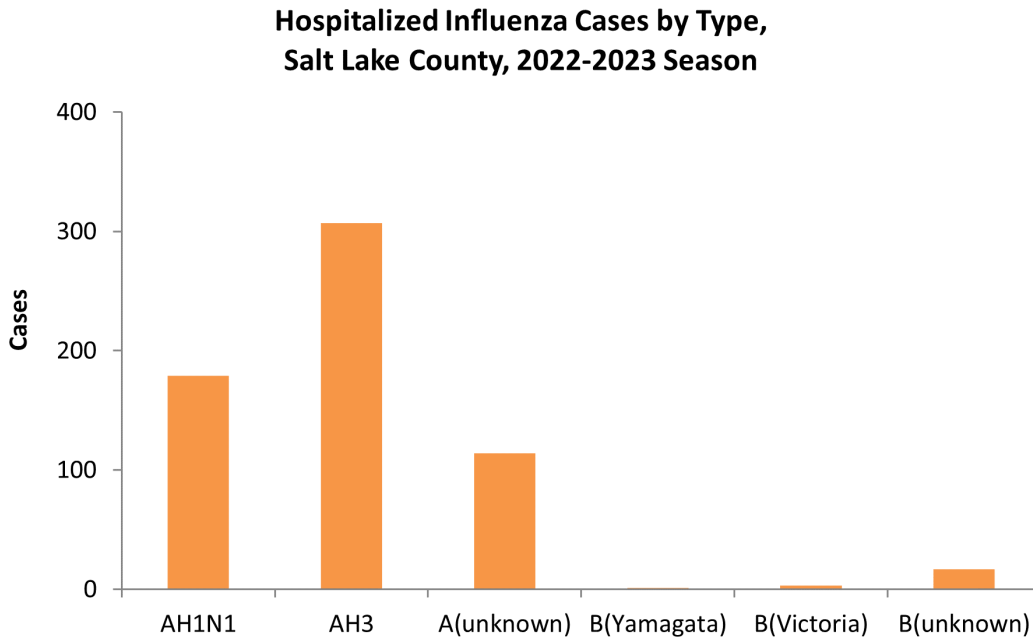


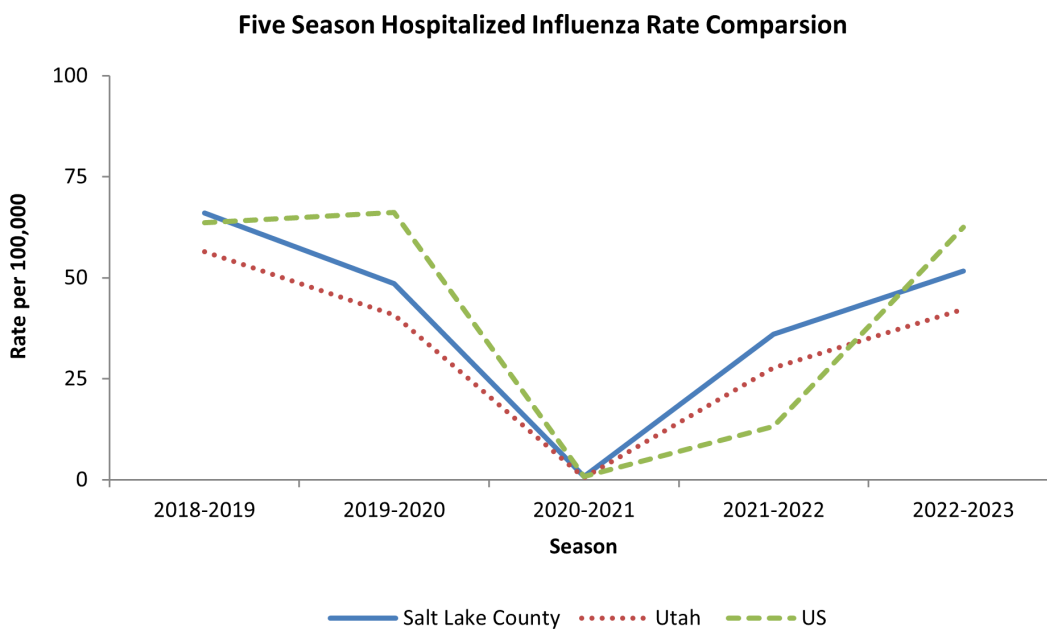
Figure 2 displays the number of hospitalized cases by influenza type. The season was primarily an AH3 season with 307 cases of influenza AH3, but with a fair number of AH1N1 cases as well (179). There were also a handful of influenza B cases.

Figure 2



When compared to influenza rates for Utah and the United States, the Salt Lake County rate was higher than the Utah rate but lower than the rate nationwide for the 2022-2023 season. Salt Lake County’s hospitalized influenza rate was 52 per 100,000 population, compared with Utah at 42 and the national rate of 63 per 100,000 population. Figure 3 displays a five season comparison between Salt Lake County, Utah and the United States.

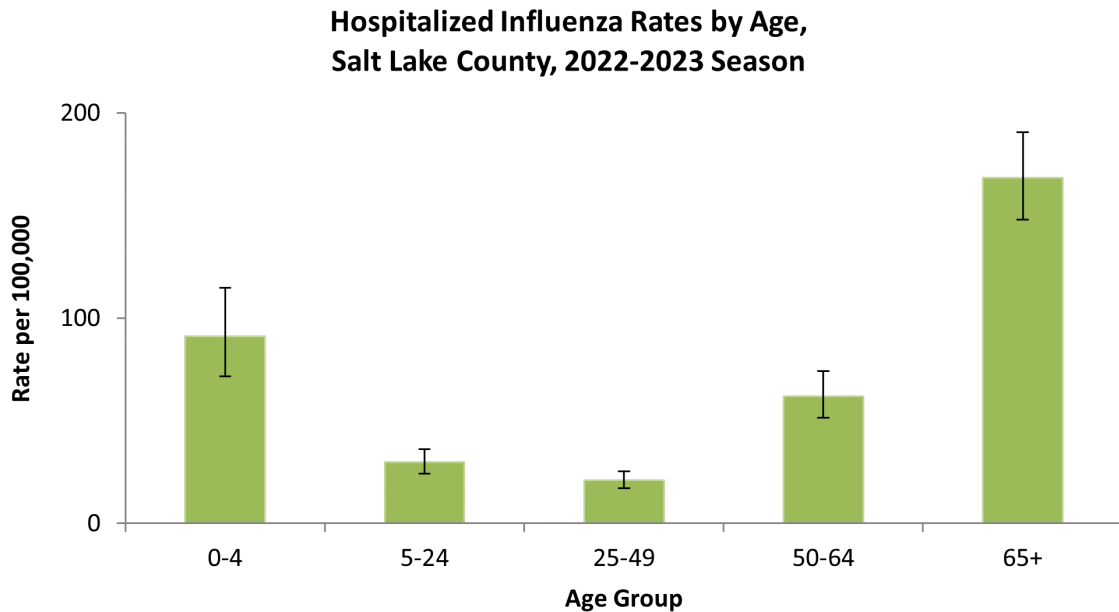
Figure 3



## Demographic Profile

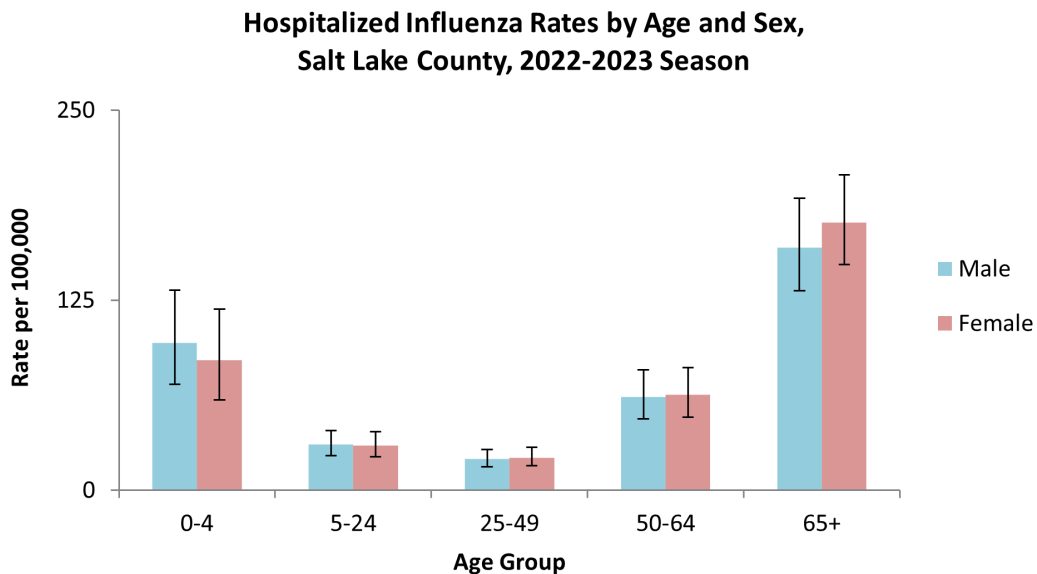
The 65+ age group was disproportionately affected by influenza compared to all other age groups, with a rate of 168 hospitalizations per 100,000 population. The lowest rate was among the 25-49 age group at 21 per 100,000 population. See figure 4.

Figure 4



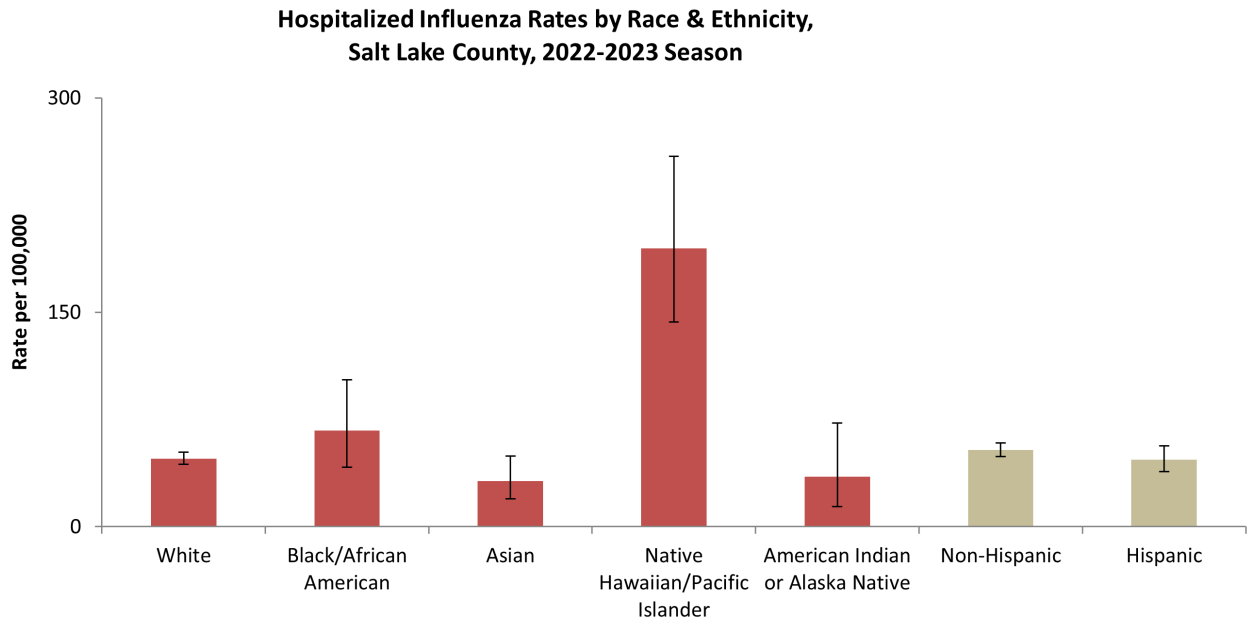
When looking at age and sex, no age groups had a significant difference between males and females. There were very similar rates between males and females in the 5-24, 25-49 and 50-64 age groups. The highest hospitalization rates were among both males and females over the age of 65 at 159 per 100,000 and 176 per 100,000 respectively. See figure 5.

Figure 5



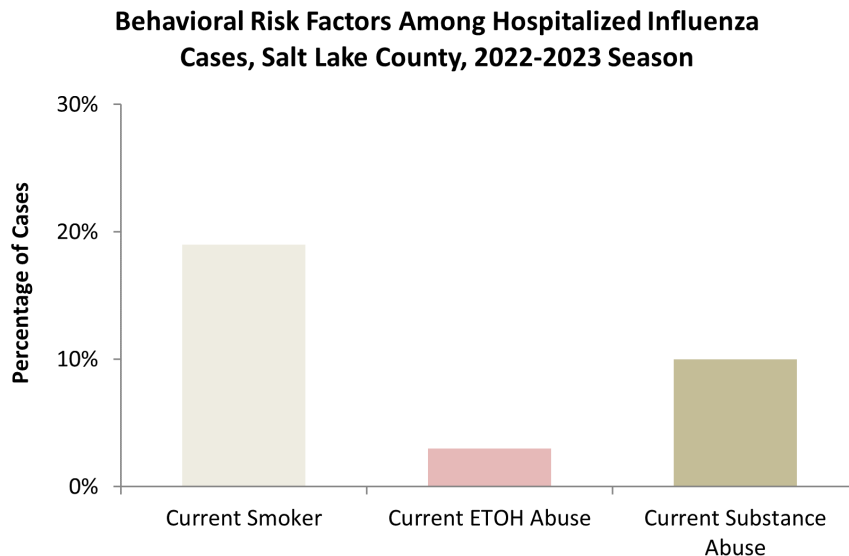
The Native Hawaiian/Pacific Islander population was disproportionately affected by influenza compared to all other races. The Native Hawaiian/Pacific Islander population saw a rate of 195 hospitalizations per 100,000 population. The lowest rate was among the Asian population at 32 hospitalizations per 100,000 population. There was no significant difference in rates between Hispanic and non-Hispanic populations. See figure 6.

Figure 6



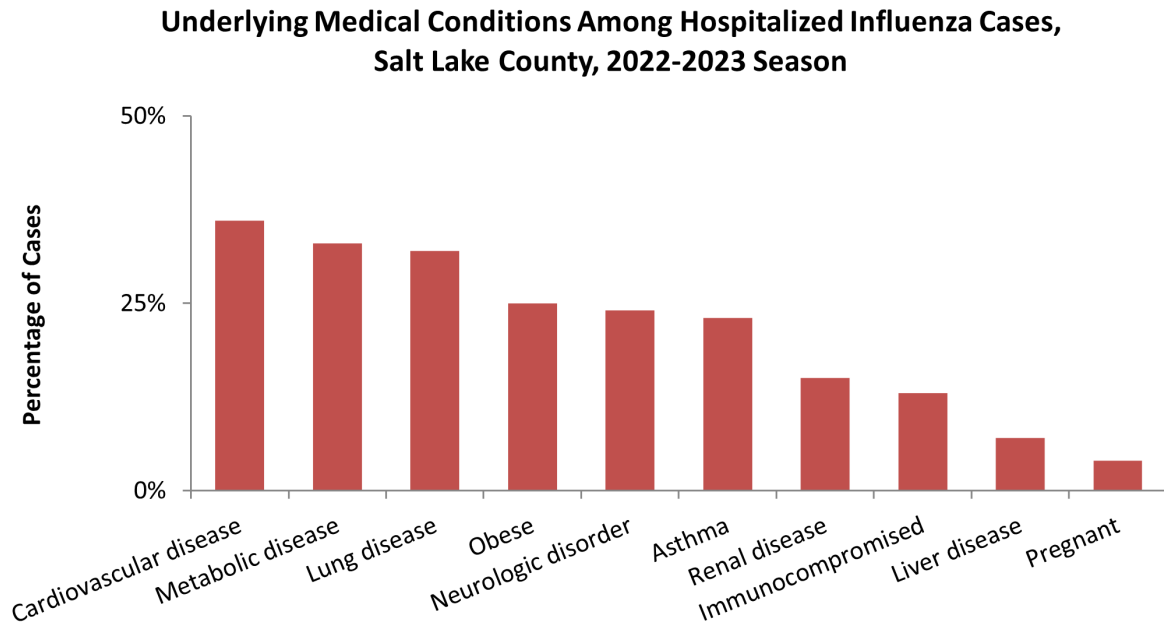
Behavioral risk factors were analyzed to identify additional conditions that may contribute to hospitalization due to influenza. Smoking was the highest risk factor, with 19% of hospitalized cases reporting current smoking habits. See figure 7.

Figure 7



Salt Lake County influenza cases had a variety of underlying conditions upon hospitalization. The most common conditions among cases were cardiovascular disease, metabolic disease and lung disease with 36% of cases having some form of cardiovascular disease, 33% of cases having some form of metabolic disease and 32% having lung disease. Figure 8 displays the percent of cases affected by a range of underlying conditions.

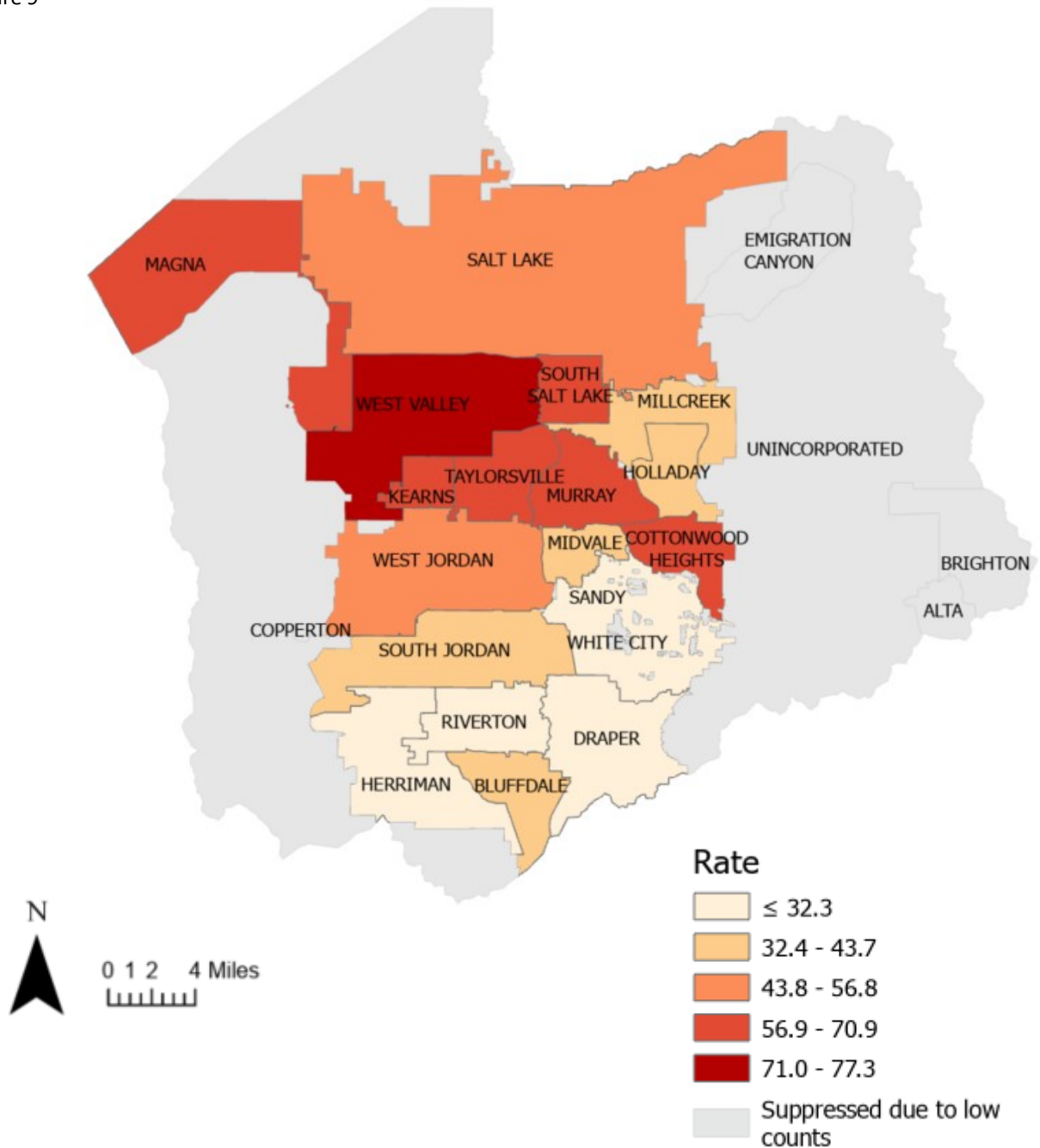
Figure 8



## 2022-2023 Influenza Season: Influenza-associated Hospitalizations in Salt Lake County (per 100,000)

Figure 9 shows the rate of hospitalized-associated influenza cases per 100,000 population by city within Salt Lake County. West Valley saw the greatest burden of influenza followed by Magna, Murray, South Salt Lake, Kearns, Taylorsville and Cottonwood Heights.

Figure 9

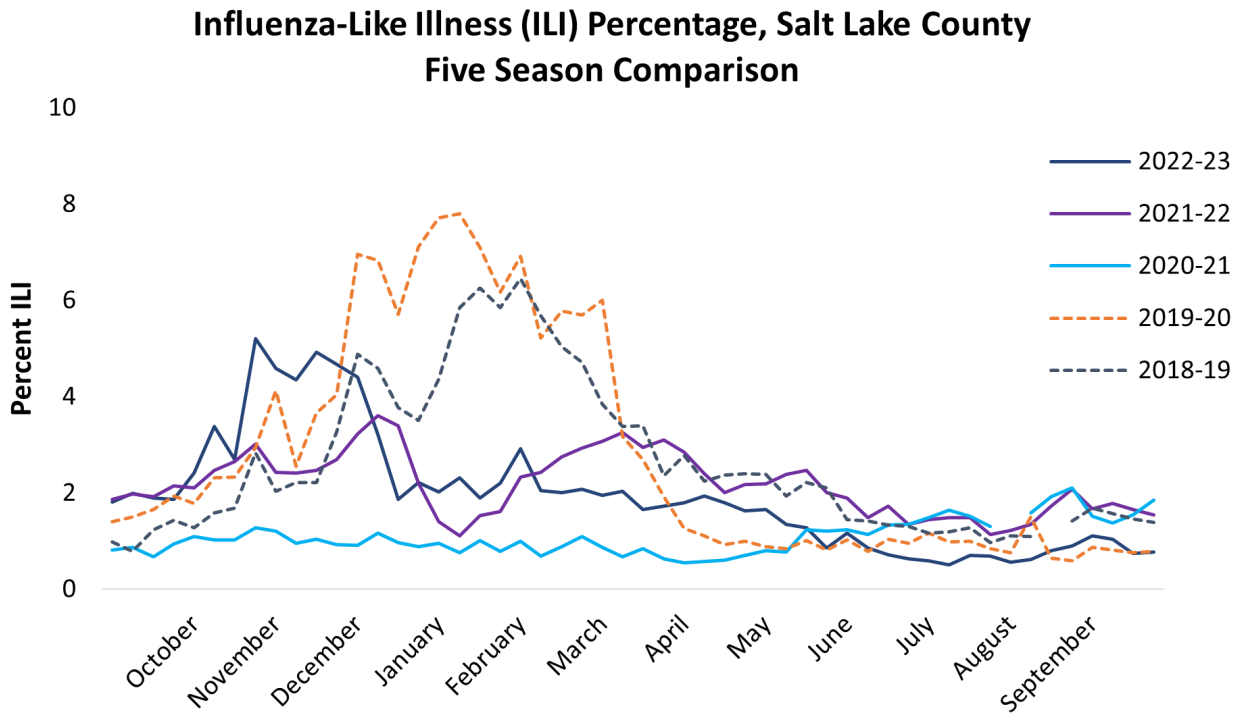


\*Rates calculated using ESRI 2022 municipality population estimates

## Outpatient Surveillance

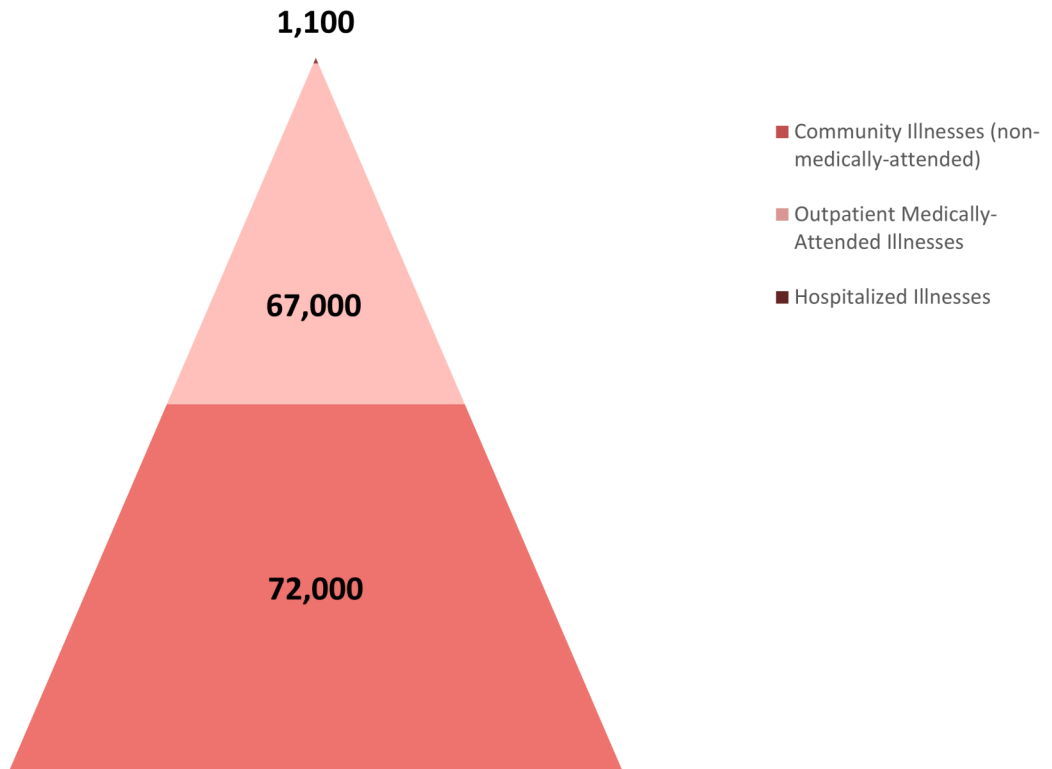
Outpatient influenza surveillance is an integral component to tracking influenza trends in Salt Lake County. Influenza-like illness (ILI) surveillance is one such tool used to monitor influenza patterns. Figure 10 shows a five season comparison of ILI trends, with the 2022-23 season showing an early peak in ILI in late November and early December. ILI then follows a slow consistent downtrend for the remainder of the season. This is contrast to the majority of seasons included on this graph, in which the ILI peak most often falls in late January to early March. The exception being the 2020-2021 season, in which ILI remained low through the entire season, as influenza circulation was extremely low during the beginning of the COVID-19 pandemic.

Figure 10



Below is a model that assesses influenza burden throughout Salt Lake County by accounting for the underreporting of hospitalized influenza cases. By accounting for this underreporting, the model allows for the projection of how many cases of influenza were attended to in an outpatient clinic and how many individuals were sick with influenza in Salt Lake County but never received medical care. During the 2022-2023 season in Salt Lake County, it is projected that 1,100 cases may have been hospitalized, 67,000 residents may have been sick with influenza and sought medical care and 72,000 residents may have been sick with influenza and did not seek care. See figure 11.

Figure 11

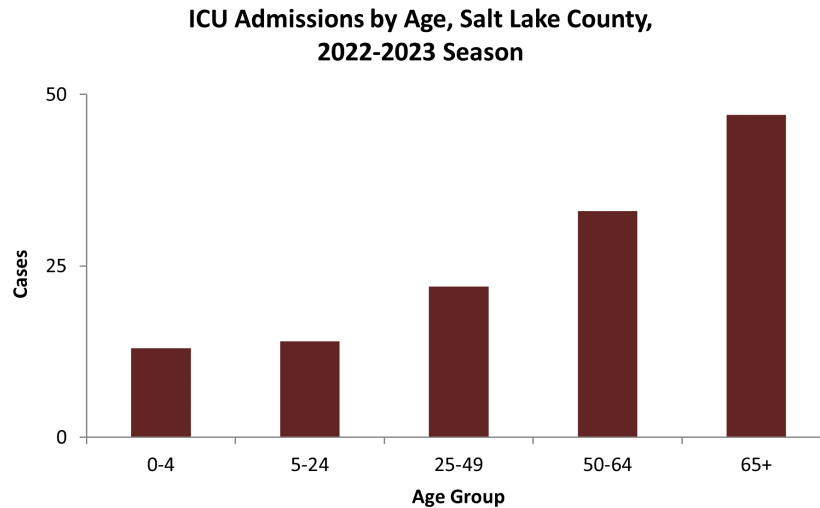




## Severity

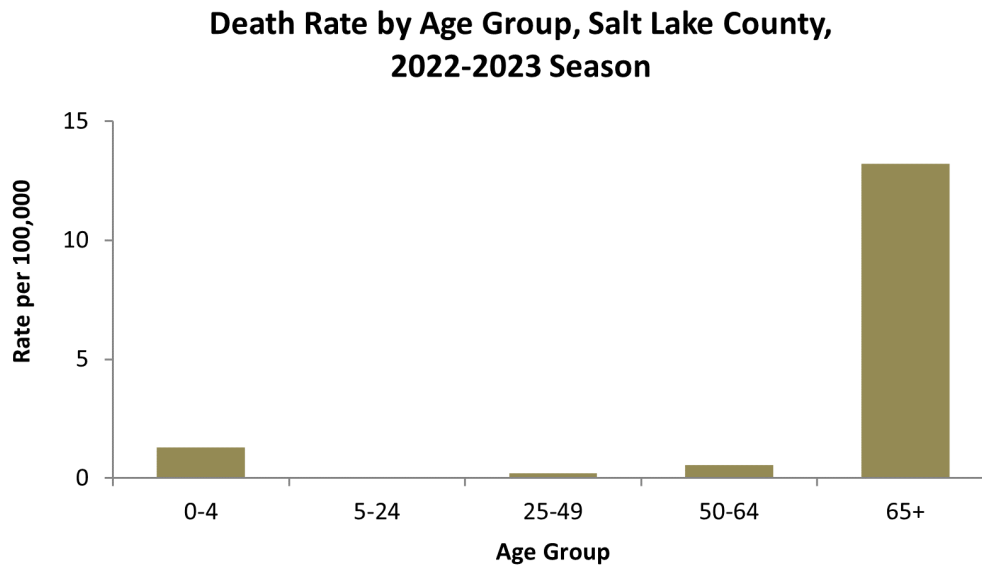
Twenty-one percent of hospitalized influenza cases during the 2022-2023 season were admitted to an intensive care unit (ICU). This is on trend with most pre-pandemic influenza seasons. The 50-64 age group had the highest number of cases admitted to an ICU. Figure 12 shows the ICU distribution by age among all hospitalized cases.

Figure 12



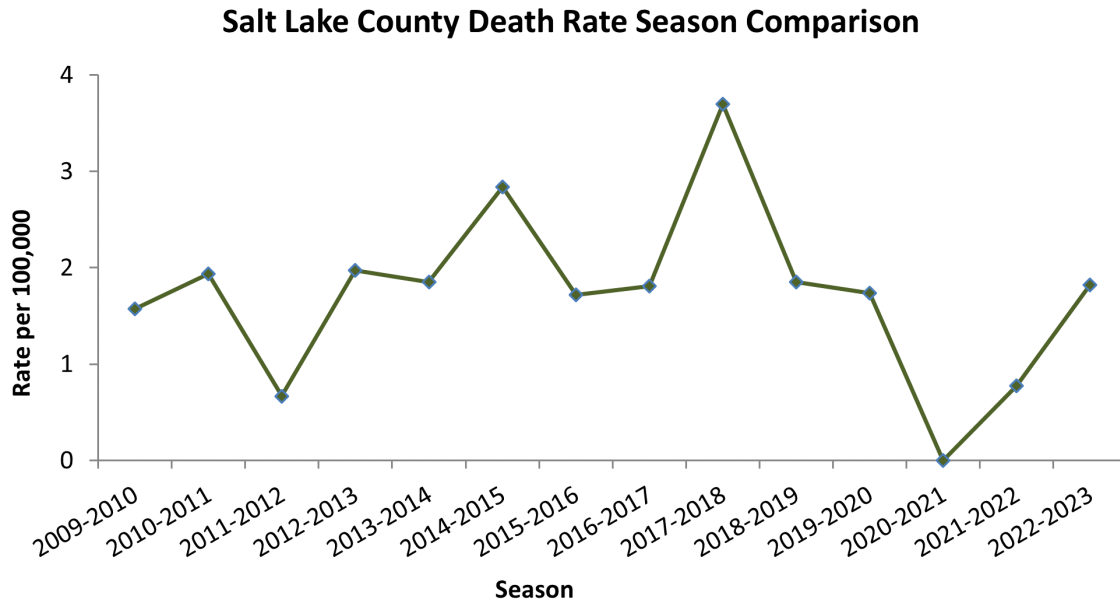
There were 22 influenza-related deaths during the 2022-2023 season. The highest death rate was among the 65+ age group with 13 per 100,000 population. No deaths were seen among the 5-24 age group. Figure 13 displays the death rates that occurred by age.

Figure 13



When looking at a multi-season comparison, the 2022-2023 season death rate has returned to pre-pandemic rates at 1.8 influenza-related deaths per 100,000 population. See figure 14.

Figure 14



Severity thresholds assess the severity of an influenza season, by categorizing a season as low, moderate, high and very high severity. Severity in Salt Lake County is assessed real-time and an overall seasonal assessment is provided at the end of the season. Immediate assessments allow for situational awareness and planning in real-time compared to other modalities of influenza reporting. This allows the Salt Lake County Health Department to communicate with community partners in order to assist in planning and allocating resources in the midst of the season.

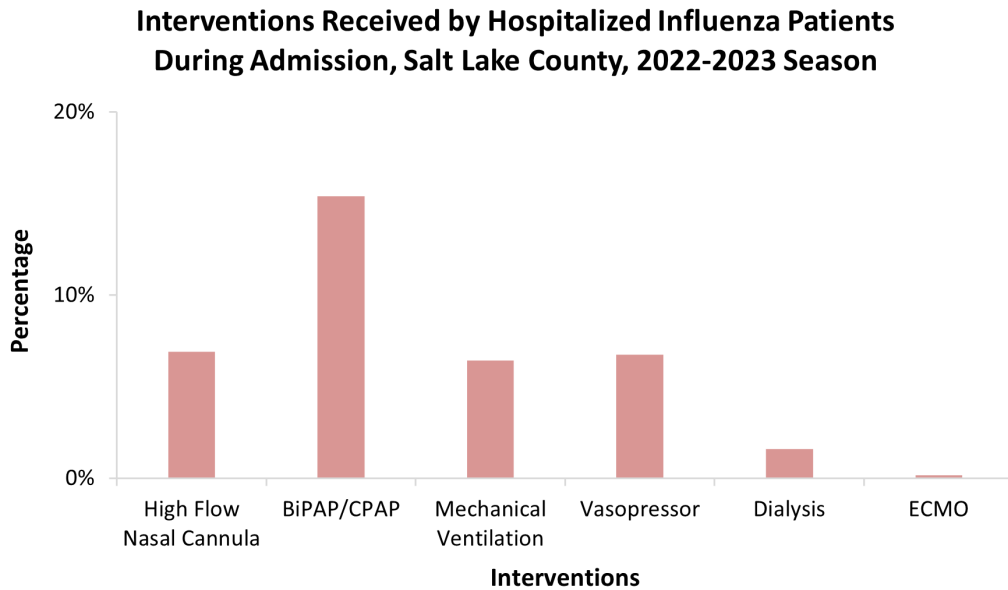
According to Salt Lake County’s severity thresholds, the 2022-2023 season was categorized as a **high** severity season. (Utah and the United States assessments are not available for the 2022-2023 season). Table 1 displays a comparison of the overall severity for the past six seasons in Salt Lake County, Utah and the United States. See table 1.

Table 1

	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23
Salt Lake County	High	Moderate	Moderate	Low	Low	High
Utah	High	High	N/A	N/A	N/A	N/A
United States	High	Moderate	Moderate	Low	Low	N/A

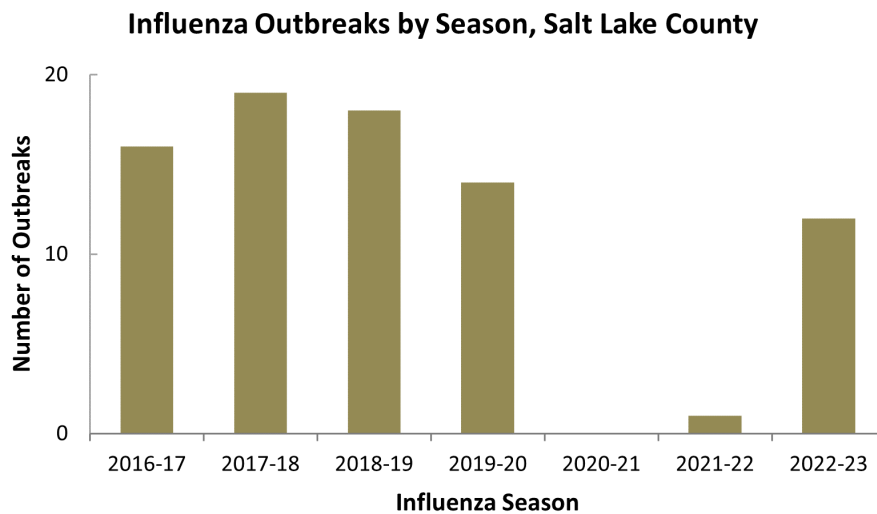
Figure 15 displays a variety of interventions that occur during hospitalization that may indicate disease severity. The most frequent intervention was receiving BiPAP/CPAP support, with 15% of hospitalized influenza patients receiving BiPAP/CPAP support in the emergency department or upon admission.

Figure 15



The 2022-2023 season saw 12 influenza outbreaks. An outbreak is defined as two or more individuals with illness onset within 72 hours of each other, with at least one having been laboratory-confirmed for influenza. This appears to show a return to a pre-pandemic number of outbreaks. The majority of outbreaks occurred in homeless resource centers and residential treatment facilities. All facilities were educated about proper hygiene, disinfection and the importance of vaccination. Figure 16 shows the number of outbreaks reported to or identified by Salt Lake County in each respective influenza season over the past 7 seasons.

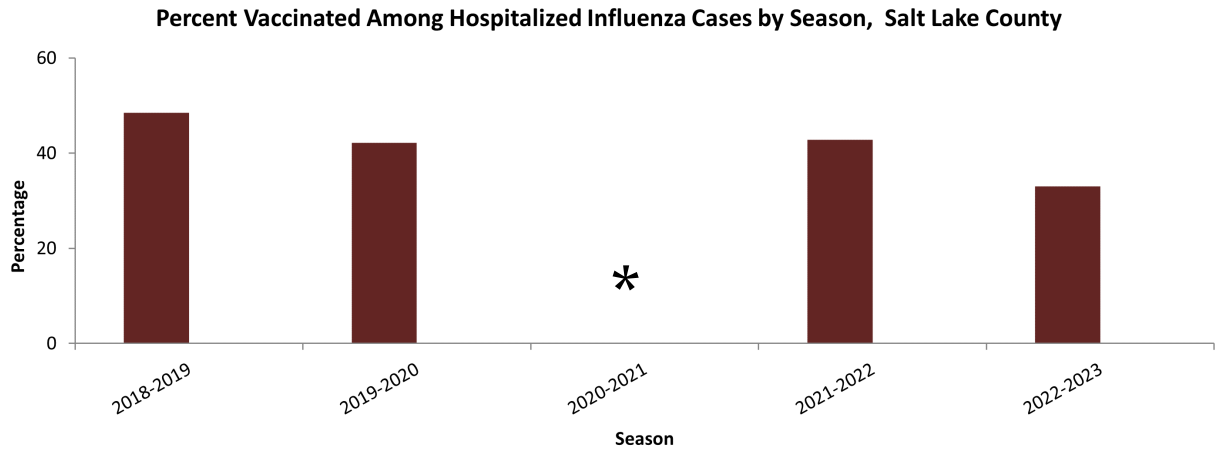
Figure 16



## Vaccine

A five season comparison shows that the percent vaccinated has remained fairly steady over the past five seasons. The 2022-2023 season saw a slight dip in vaccination coverage, with thirty-three percent of cases vaccinated during the season. See figure 17.

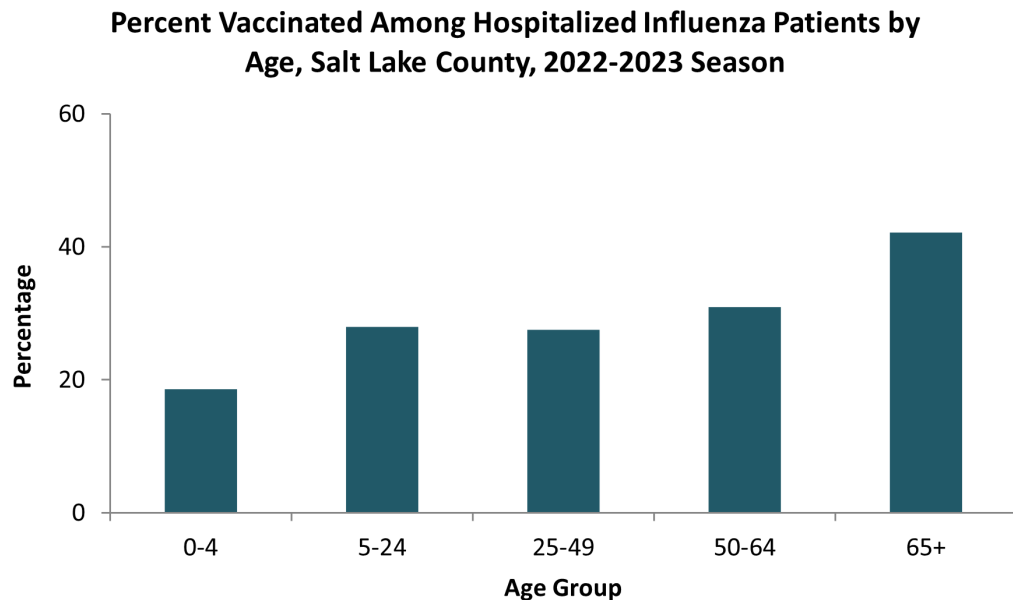
Figure 17



\*2020-2021 data suppressed due to low flu counts during the beginning of the COVID-19 pandemic

When divided by age, the 65+ age group had the highest percent vaccinated at 42%, with the lowest vaccine coverage being seen in those aged 0-4 at 19%. See figure 18.

Figure 18



## Conclusion

The 2022-2023 influenza season saw 623 influenza-related hospitalizations. This case count was higher than has been seen in Salt Lake County since the 2018-2019 influenza season. This season saw a peak around late December and early January. It was considered a high severity season, compared to the prior two seasons which were classified as low severity. The 2022-2023 season saw primarily influenza AH3 circulation, but also with a significant amount of influenza AH1N1. There were a few, sporadic influenza B cases as well. Salt Lake County saw a slightly lower hospitalization rate than the United States, but did see a higher rate than Utah.

Significant disparities were found among the Native Hawaiian/Pacific Islander community, with a statistically significant elevation in hospitalization rate when compared with all other races. The 65+ age group was disproportionately affected by influenza compared to all other age groups. When broken down by age and sex, there was no significant difference in rates between males and females.

The 2022-2023 season saw an increased death rate compared to the 2021-2022 season and has now rebounded to pre-pandemic levels. The 65+ age group saw the highest mortality rate. Vaccination coverage was lower than in the previous five influenza seasons with 33% of cases reported as vaccinated. Salt Lake County is preparing for a return to pre-pandemic influenza levels with high hospital burden due to co-circulation of influenza, RSV and SARS-CoV-2 virus.