

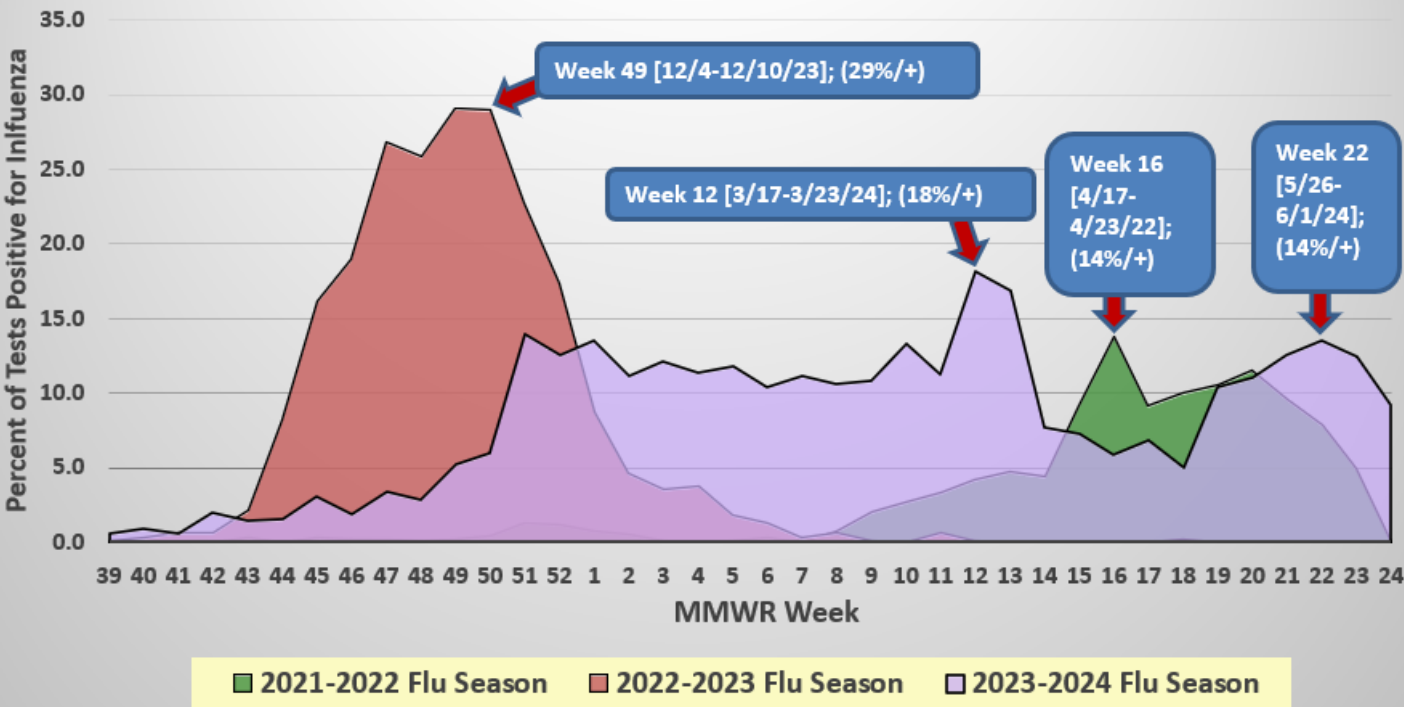
Central Oregon Public Health Quarterly

Communicable Disease Update for Crook, Deschutes, and Jefferson Counties
Second Quarter Report, 2024

24/7 Communicable Disease reporting lines:	Crook County: 541-447-5165	Deschutes County: 541-322-7418	Jefferson County: 541-475-4456
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Central Oregon Respiratory Season

Percent of Reported Flu Tests Positive by Week in Central OR, 2021-2024



Data Source for Central OR lab reporting: *National Respiratory & Enteric Virus Surveillance System (NREVSS)*, a laboratory-based system that monitors temporal & geographic circulation patterns (occurring in a certain time/place) for an array of respiratory viruses. Participating laboratories (including a few in Central OR) report the total # of weekly aggregated tests; aggregated positive tests; along with specimen type/location & week of collection.

Post-COVID19 Influenza Season Fluctuations: While pre-pandemic flu seasons operated in a more predictable fashion (*generally during the winter season in temperate locations*), recent post-pandemic seasons have been less predictable

- Current Central OR flu season was characterized by a rise in cases around week 51 (late-Dec), followed by somewhat of a steady state in (%/+s) observed throughout much of the late winter/spring [range: 10-13(%/+s)]
- Two noted (*unusual*) late season spikes occurred in MMWR weeks 12 (mid-March) & 22 (late May)

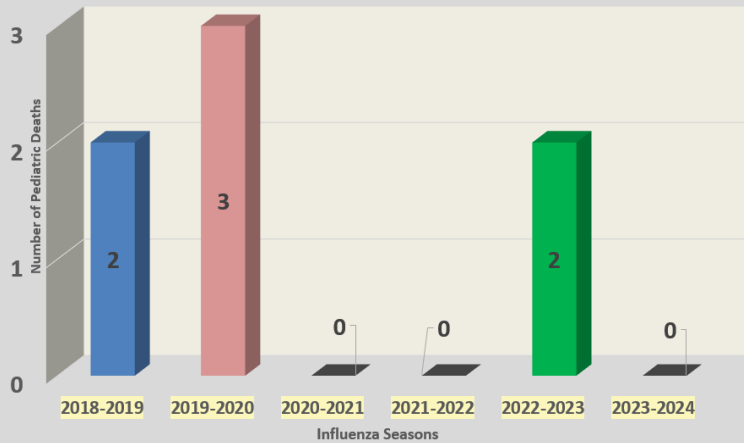
Why the unusual patterns?

- **Factors to consider:**
 - Disparities in influenza vaccine coverage (Note: evidence indicates protection from infection wanes over the course of one-season)
 - Heterogenous impact of non-pharmaceutical interventions (NPIs) (e.g. travel restrictions/masking/distancing etc)
 - Waning population immunity (*which will increase the severity of future influenza virus epidemics*)

Read more [here](#)

- **Definitions:** MMWR=Morbidity & Mortality Weekly Report; MMWR weeks represent the week of the epidemiologic year for which the *National Notifiable Diseases Surveillance System* disease report is assigned by the reporting local or state health department for purposes of MMWR disease incidence reporting/publishing. For the above, week 39 corresponds to Sept 24th-30th & week 24 corresponds to June 9th-15th.

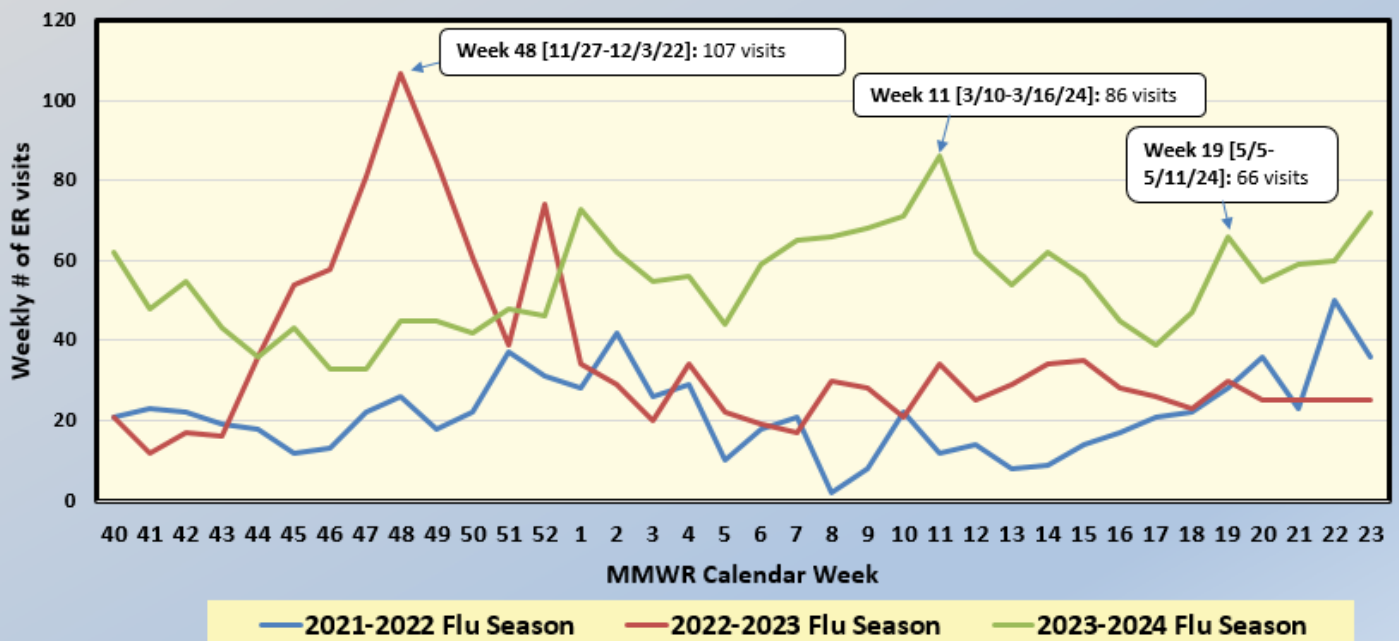
Number of Pediatric Influenza Related Deaths, OR (2018-2024)



- **Pediatric Influenza Mortality Surveillance:**
 - **Oregon:** As of June 29th, 2024, no influenza-associated pediatric deaths were reported to the OR Health Authority (OHA) in the 2023-24 flu season, whereas nationwide, 184 influenza-associated pediatric deaths were reported

Emergency Room (ER) Visits in Oregon & Central Oregon Due to ILI (2021-2024 Flu Season Highlights)

Number of ER visits for influenza-like illness (ILI) by week in Central Oregon, 2021-2024

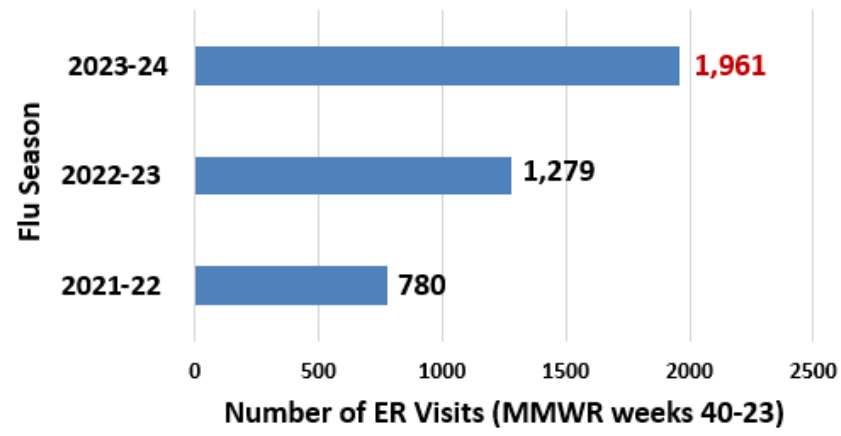


Data Source (image above & below right): ESSENCE [Electronic Surveillance System for Early Notification of Community-Based Epidemics] syndromic surveillance system. Includes visits by Crook, Deschutes, and Jefferson County residents to any emergency room (ER) across Oregon.

Total ER Visit Summary for ILI in Central OR:

- ER visits in Central OR due to ILI peaked **MMWR calendar week 11** (3/10-3/16/24): **86** visits (~4 months later than previous season); with another smaller peak at **calendar week 19** (5/5-5/11/24): **66** visits (see figure above)
- Overall ER visits for ILI were up this season compared to previous seasons: **53%** higher (vs. the 2022-23 season) & more than double the visits in the 2021-22 season

Total ER Visits in Central OR, by Flu Season (2021-2024)



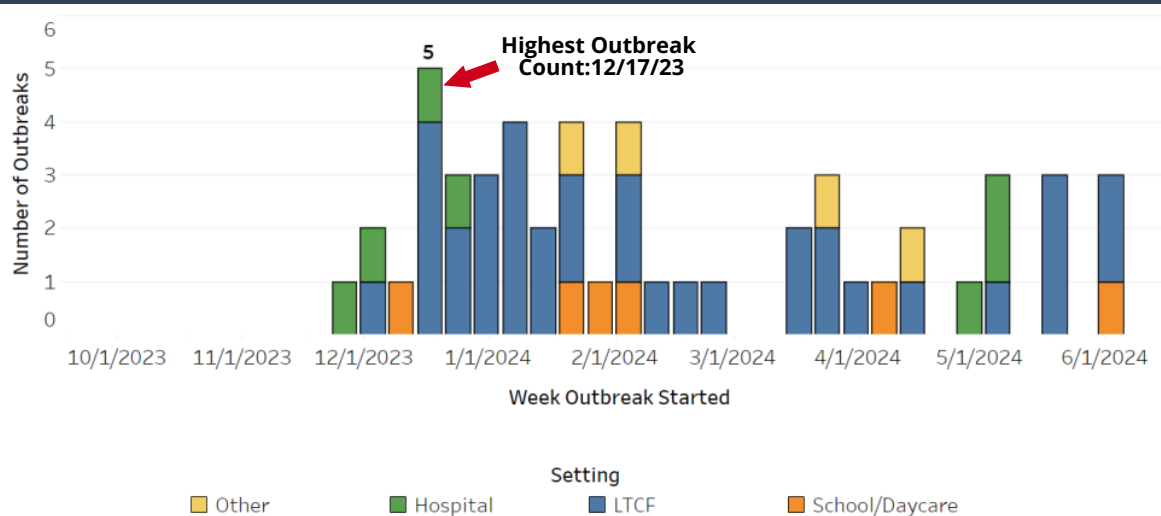
Reported influenza outbreaks during the 2023-24 flu season:

- Central OR: **11***
- Statewide (OR): **53** influenza outbreaks {with the majority occurring in long term care facilities & 'other' settings}❖

*Note: 73% of the Central OR outbreaks were categorized as influenza only; 18% involved both flu & COVID; & 1% were attributed to para-influenza [all occurred in 2024]

❖ Other outbreak settings may include (but not limited to): prisons/jails; shelters; transitional housing; home healthcare; outpatient clinics

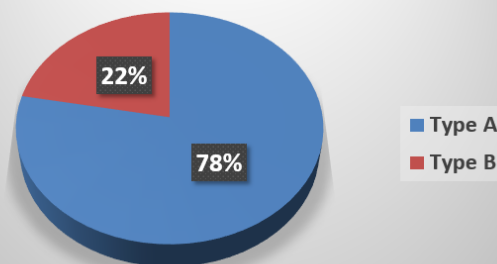
Influenza Outbreaks in Oregon by Setting Over Time



Data Source for Figure above: OHA Flu Bites [Number of influenza outbreaks during 2023-24 season]; LTCF=long term care facilities; More data available on OHA's viral outbreak dashboard [here](#).

Influenza Viral Detections by Subtype: Global & Central Oregon Trends

Total Influenza Strains from 2023-24
Flu Season in Central OR



For this past flu season in Central OR, influenza subtype **A** dominated (~80%), with the majority of **A** sub-variants within the 'unknown' (*non-typed*) category. Compared to previous season, there was a higher percent of flu Bs (~20%):

- **Influenza A (H1N1):** 8% (0%; 2022-23)
- **Influenza A (H3N2):** 5% (16%; 2022-23)
- **Influenza A (Unknown):** 65% (83%; 2022-23)
- **Influenza B:** 21% (1%; 2022-23)

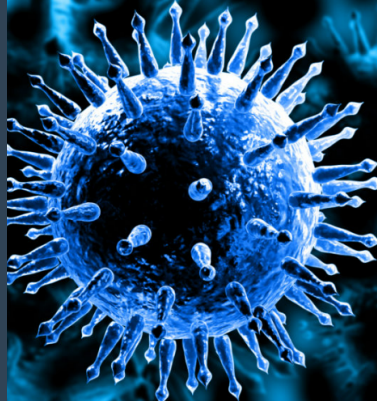




Image Source: [The influenza virus](#)

Data Source Above: National Respiratory & Enteric Virus Surveillance System (NREVSS)

 	Influenza	
	A	B
Prevalence ¹	More common	Less common
Seasonal Circulation ²	Early in season	Later in season
Spread from animals to humans ³	Yes	No
Severity in overall population	More severe	Less severe
Severity in children ⁴	Less severe	More severe
Transmitted by respiratory droplets from coughing & contact with infected persons ⁵	Yes	Yes
Can cause a pandemic	Yes ⁶	No
Mutation rate	Fast	Slow
Diversity of viral subtypes	High	Low
Subtypes ⁷ or lineages	Subtypes: 18 H; 11 N (e.g. H5N1; H1N1; H3N2)	Lineages: Victoria & Yamagata
Highly contagious	Yes	Yes
Cure?	No	No
Yearly vaccine recommended	Yes	Yes

Influenza A vs. B

Flu A characterized by different surface proteins



Hemagglutinin (H) Neuraminidase (N)

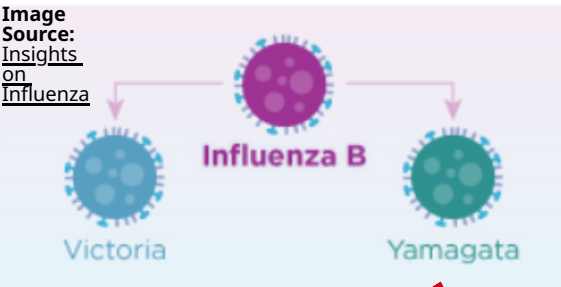


Image Source: [Insights on Influenza](#)

Flu B characterized by where virus was originally isolated



Note: There is some speculation B/Yamagata line became extinct in 2020/21 due to COVID19 pandemic measures. In 10/23, WHO concluded the Yamagata lineage was no longer necessary in the seasonal flu vaccine. For the 2024/25 N. Hemisphere flu season, the FDA has recommended removing B/Yamagata from vaccines

★ Read more on use of Trivalent Influenza vaccines [here](#).



- Globally, this past flu season was dominated by varieties of influenza A (83%); & B (17%)
- Of subtyped **flu A's**: 64% (H1N1); 36% (H3N2)
- **Flu B's**: 100% (Victoria lineage)

❖ Read more on global trends [here](#).

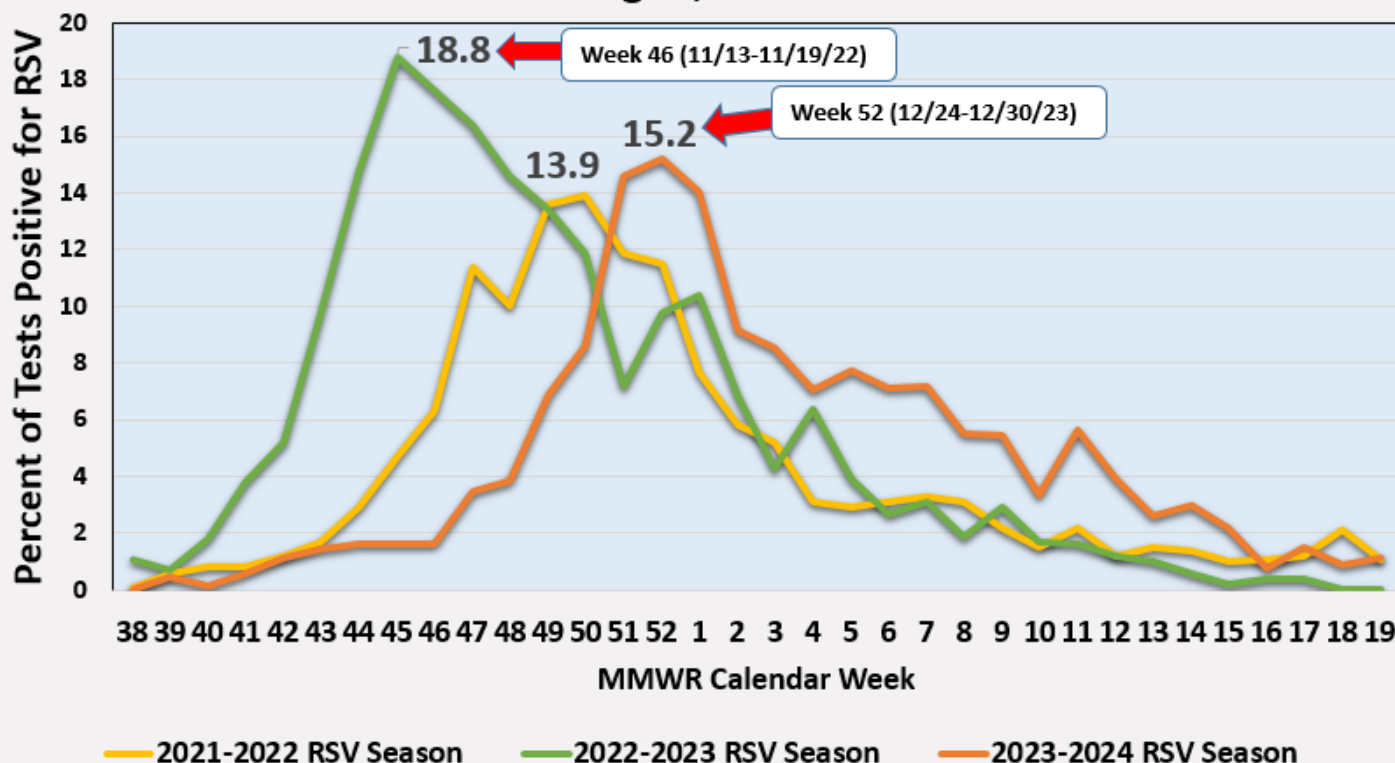
1. Influenza A viruses are responsible for ~75% of confirmed flu cases; influenza B (~25%)
2. Influenza A tends to circulate earlier in flu seasons, whereas influenza B circulates later. Note: While flu activity often begins in October (with peak activity occurring between December & February)--since the start of the COVID pandemic, the timing & duration of flu activity has been less predictable.
3. While influenza B generally only affects humans, influenza A can infect an array of animals (e.g. birds & pigs)
4. Researchers have suggested that most adults have considerable immunity against type B influenza--which may explain why type B influenza is less common in adults than type A (& when it occurs, less severe). Children, however, have been found to develop more severe disease following influenza type B infection. A 2016 study found that influenza B was more likely to cause death in hospitalized children (<16yrs).
5. Respiratory droplets can be transmitted when an infected person coughs, sneezes, or talks. A person can also become infected by touching surfaces contaminated with virus, then touching their face. Note: flu is most contagious the first 3-4 days after onset of illness, although some otherwise healthy adults may be able to infect others beginning one day before symptoms develop & up to 5-7days *after* becoming sick
6. In addition to causing the majority of illnesses during flu season, influenza A has the potential to lead to pandemics due to its dynamic, fast changing nature & large range of hosts. Note: Pandemics occur when a new & different influenza A virus emerges that has the ability to spread efficiently & amongst people with little to no immunity.
7. Influenza A subtypes are based on two surface proteins (hemagglutinin or H & neuaminidase or N). In general, the naming of influenza viral strains includes: type (A, B, C, D); species of origin (if isolated in an animal); geographic origin; strain #; year in isolation; H or N subtype. Influenza B: In recent years, flu B/Yamagata viruses have circulated much less frequently vs. flu B/Victoria viruses globally.
8. Getting a vaccine is the most important step in preventing flu each year. Note: The flu vaccine has been shown to reduce flu related illnesses and risk of flu complications that result in hospitalization or death.

✳ Information above collated from data provided by [CDC](#) & the following [article](#).

- For the 2023-24 season, *pediatric* influenza vaccine-effectiveness (VE) was 59–67% in outpatient settings & 52–61% effective against influenza-associated hospitalization. Interim *adult* influenza VE was 33–49% in outpatient settings and 41–44% against influenza-associated hospitalization.
- Read more in CDC MMWR [here](#).

Respiratory Syncytial Virus (RSV) Highlights, 2021-2024

Percent of Reported RSV Tests Positive by Week
in Central Oregon, 2021-2024



Data Source for Central OR lab reporting: *National Respiratory & Enteric Virus Surveillance System (NREVSS)*, a laboratory-based system that monitors temporal & geographic circulation patterns (occurring in a certain time/place) for an array of respiratory viruses. Participating laboratories (including a few in Central OR) report the total # of weekly aggregated tests; aggregated positive tests; along with specimen type/location & week of collection. **Note:** For 2020-21 season, 0 cases of RSV were recorded in NREVSS in Central OR

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- Late Start in Central OR:** Compared to previous two seasons, this RSV season (2023-24) occurred later in the year (in this past season, a noted peak occurred the last week of Dec. vs. the (2022-23) season, where a dramatic peak in (%/+) occurred mid-Nov.)
- RSV Subtypes:** No distinct RSV subtypes were observed this past season with 100% of cases+ categorized in the *unknown* category. During the previous season, conversely, ~30% of cases fell in the RSV subtype A category (~70% of *unknown* subtype)

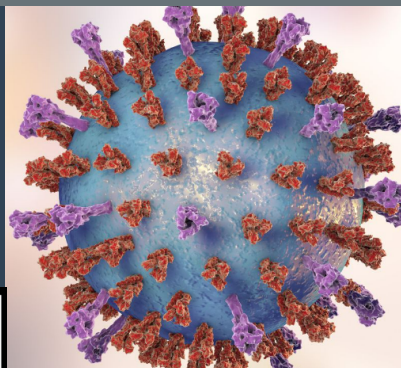
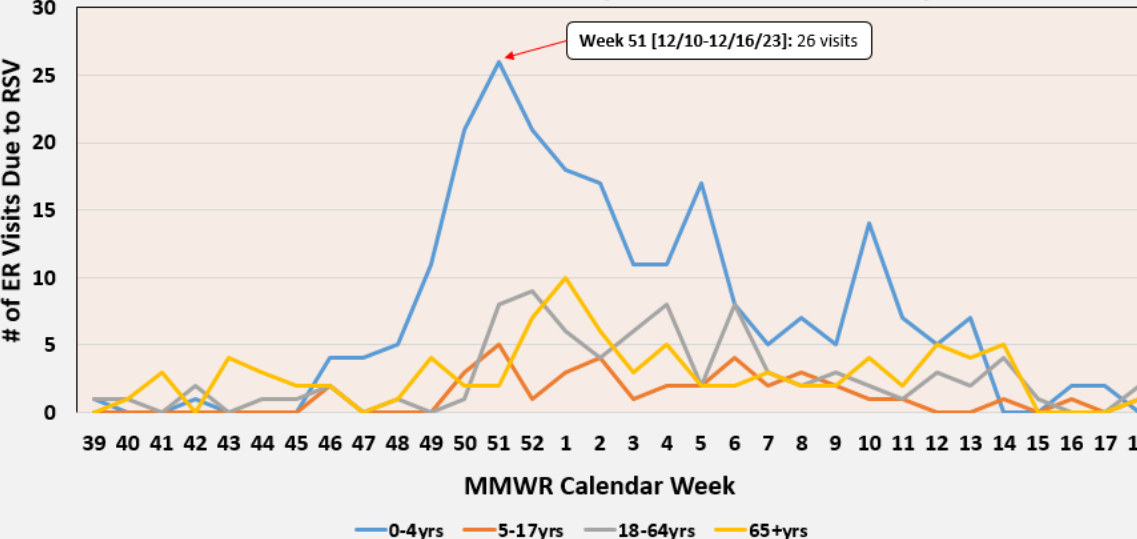


Image Source (above): [The RSV virus](#)

Number of ER Visits for RSV-like illness by Age Group Among
Central OR Residents* (2023-24 RSV Season)

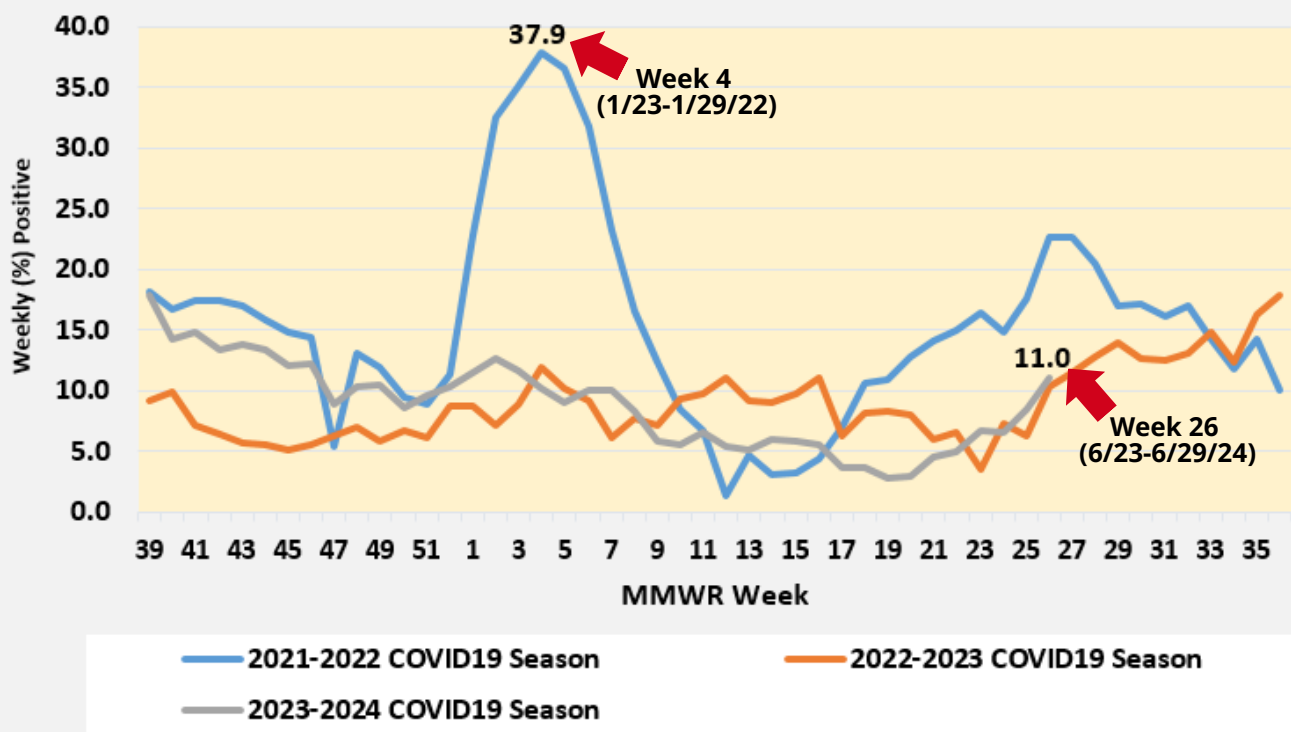


- The majority of ER visits for RSV-like illness this past season occurred in young children (52%), with a peak in visits around mid-Dec (wk 51) (& 2 lesser peaks in late Jan (week 5) & early Mar (week 10))
- Outbreaks:** 2 RSV-related outbreaks occurred in Central OR (30 in the state overall) this past season (9/23-6/24)
- * OHA respiratory outbreaks dashboard available [here](#).

Data Source (image above): OR ESSENCE [Electronic Surveillance System for Early Notification of Community-Based Epidemics] syndromic surveillance system. Includes visits by Crook, Deschutes, and Jefferson County residents to any emergency room (ER) across Oregon during the weeks 39 [9/24-9/30/23] to 18 [4/28-5/4/24]

COVID-19 Highlights, 2021-2024

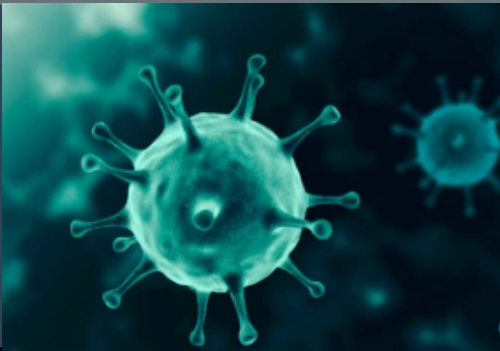
Percent of Reported COVID19 Tests Positive by Week
in Central Oregon, 2021-2024



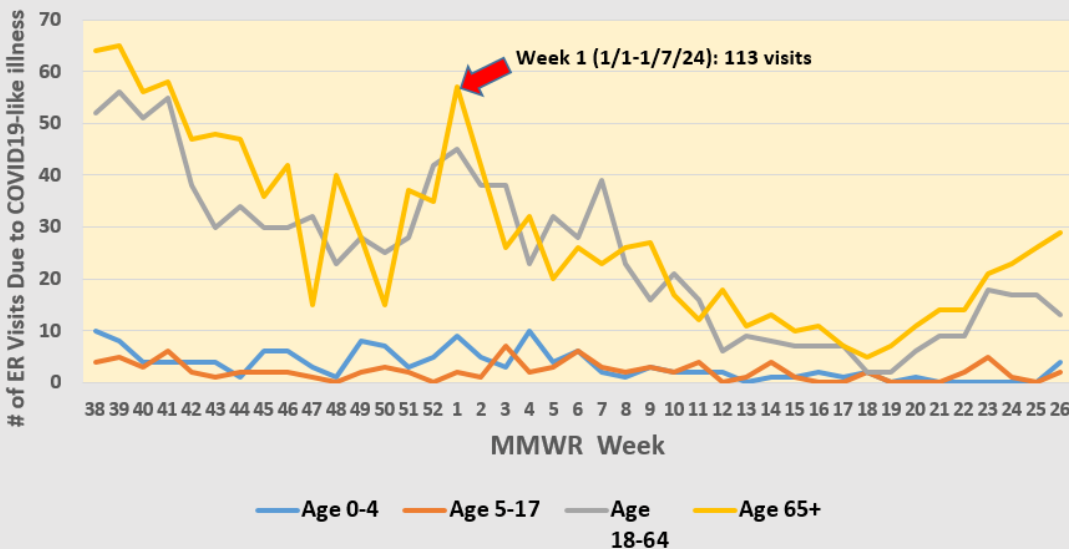
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- Overall Trends:** This past season, COVID19 (%/±s) ranged from **3%** (week 19; 5/5-5/11/24) to **18%** (week 39; 9/24-9/30/23), & as of late June (2024), (%/±) cases were trending up (11%/±); The overall trend the previous season was similar, although (%/±) cases did not fall below 5% [week 45 (11/13-11/19/22)] (see orange & grey lines above)
- For both the 2022-23 & 2023-24 seasons, higher (%/±) cases occurred in the Sept. time frame, with the absence of a more extreme peak as observed in the 2021-22 season (in the late Jan. 2022 timeframe (see blue line above))



Number of ER Visits for COVID19-like illness by Age Group
Among Central OR Residents (2023-24 season)



COVID19 Image Source: Shutterstock free image

- The majority of ER visits for COVID19-like illness this past season occurred in older adults (65+ yrs; 48%) [followed by middle aged adults 18-64 yrs; 42%], with higher visits occurring in the late September (weeks 38/39) & early January (week 1) timeframes

- Outbreaks:** 60 COVID19-related outbreaks occurred in Central OR (924 in the state overall) this past season (9/1-6/24/24)



***** As of June 25th, 2024, the current SARS-CoV-2 Omicron variants KP.2; KP.3; & PB.1 have the highest US prevalence. Read more [here](#).

Data Source (image above): ESSENCE [Electronic Surveillance System for Early Notification of Community-Based Epidemics] syndromic surveillance system. Includes visits by Crook, Deschutes, and Jefferson County residents to any emergency room (ER) across Oregon during the weeks 38 [9/17-9/23/23] to 26 [6/23-6/29/24]