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Respiratory Disease Surveillance Report Jefferson County, Missouri

Week 1: December 31, 2023 – January 6, 2024

OVERVIEW: The Jefferson County Health Department (JCHD) monitors influenza and other respiratory pathogens, including COVID-19, throughout Jefferson County, Missouri. The Jefferson County Health Department conducts influenza surveillance using passive surveillance and syndromic surveillance. Although influenza illness can occur year-round, the seasonal influenza reporting begins on the Morbidity and Mortality Weekly Report (MMWR¹) Week 40 of a given year and continues through MMWR Week 20 of the following calendar year. COVID-19 surveillance began in March 2020 and has continued year-round. COVID-19 data reflects cases that are entered into Missouri's communicable disease database. *All data and information are conditional and may change as more reports are received.*

¹ Data is reported in epidemiologic weeks established by the CDC's Morbidity and Mortality Weekly Report (MMWR). The MMWR week starts on a Sunday and ends on Saturday. Values for MMWR week range from 1 to 53, although most years consist of 52 weeks.

INFLUENZA SURVEILLANCE

Passive Surveillance

Table 1. Number of Laboratory-Positive² Influenza Cases by Week, Jefferson County, Missouri

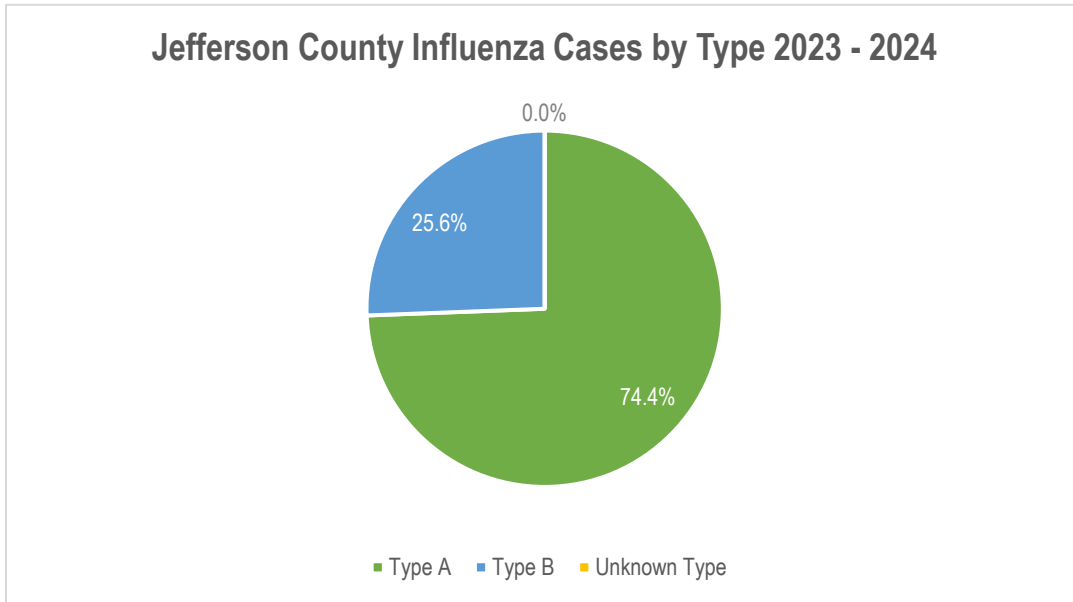
CDC Reporting Week	Week Start Date	A	B	Unknown	Total
40	10/1/2023	3	1	0	4
41	10/8/2023	5	0	0	5
42	10/15/2023	8	1	0	9
43	10/22/2023	3	1	0	4
44	10/29/2023	3	8	0	11
45	11/5/2023	4	4	0	8
46	11/12/2023	9	6	0	15
47	11/19/2023	9	5	0	14
48	11/26/2023	22	10	0	32
49	12/3/2023	33	17	0	50
50	12/10/2023	40	11	0	51
51	12/17/2023	66	23	0	89
52	12/24/2023	64	15	0	79
1	12/31/2023	71	15	0	86

Table 2. Number of Laboratory-Positive Influenza Cases by Age Group, Jefferson County, Missouri
For Cases Reported 10/1/2023- 1/6/2024

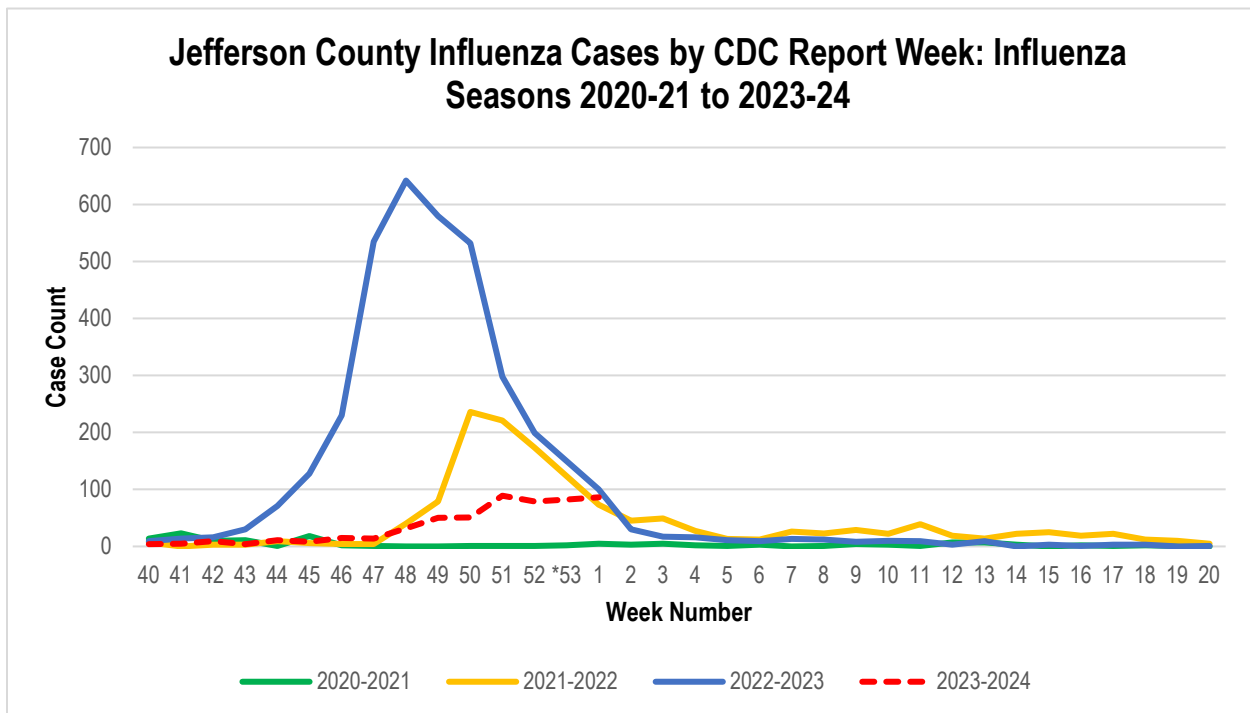
Age Group	Type A	Type B	Unknown Type	Total	% TOTAL
00 to <02	12	8	0	20	4.4%
02 to 04	14	5	0	19	4.2%
05 to 14	37	29	0	66	14.4%
15 to 24	48	16	0	64	14.0%
25 to 49	94	39	0	133	29.1%
50 to 64	81	11	0	92	20.1%
65+	54	9	0	63	13.8%
TOTAL	340	117	0	457	100.0%

² Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.

**Figure 1. Percentage of Influenza Cases by Type,
Jefferson County, Missouri**
For Cases Reported 10/1/2023- 1/6/2024



**Figure 2. Number of Laboratory-Positive Influenza Cases by Week,
Influenza Seasons 2020-21 to 2023-24,
Jefferson County, Missouri**

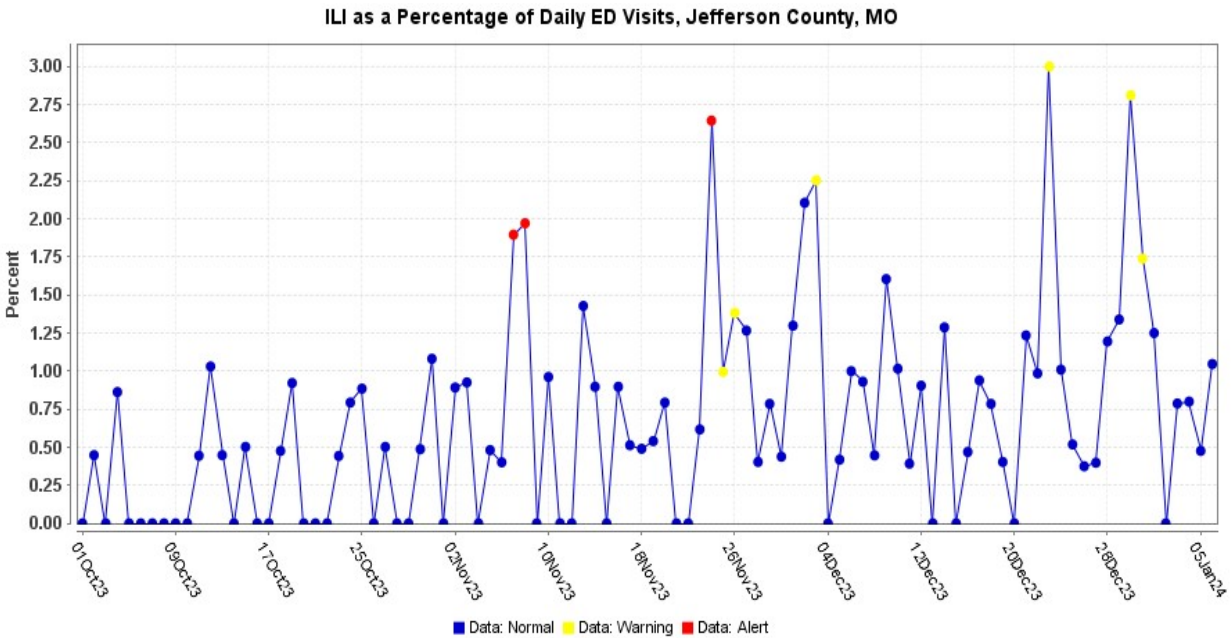


*There were 53 weeks in 2020. The estimates for the other three years' values for the weeks 53 are the averages of weeks 52 and weeks 1.

Syndromic Surveillance

As determined by ESSENCE, Influenza-Like-Illness (ILI³) accounted for 0.00% to 1.74% of daily visits to hospital emergency departments (EDs) for Jefferson County residents during Week 1. The number of visits to local hospital EDs for ILI ranged from zero to four per day during Week 1.

**Figure 3. Syndromic Surveillance for Influenza-Like-Illness (ILI)
Jefferson County, Missouri**



Jefferson County Influenza Outbreaks

No influenza outbreaks have been reported in Jefferson County as of Week 1.

Jefferson County Influenza Deaths⁴

No influenza-associated deaths have been reported in Jefferson County as of Week 1.

³ ILI is defined by ESSENCE as Emergency Department chief complaints for Influenza or (FeverPlus and (Cough or SoreThroat) and not NonILIFevers).

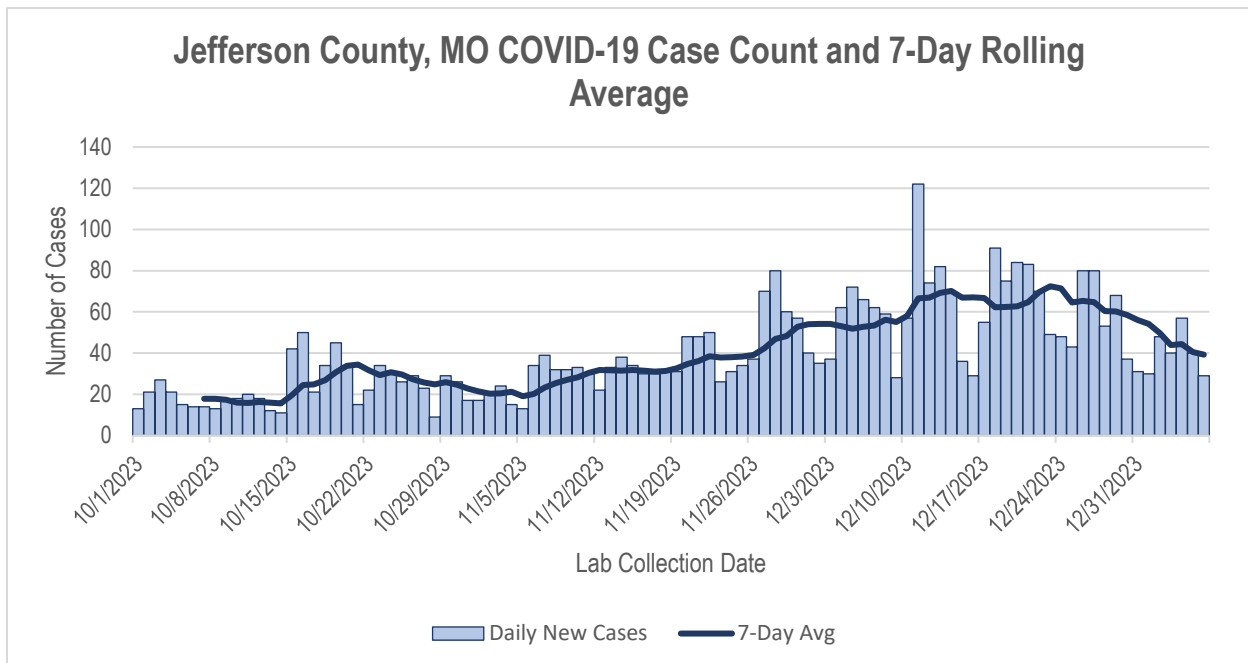
⁴ All influenza-associated deaths became reportable in Missouri in 2016.

COVID-19 SURVEILLANCE

Table 3. Number of Confirmed and Probable COVID-19 Cases by Week, Jefferson County, Missouri

CDC Reporting Week	Week Start Date	Covid-19 Cases	Cumulative Total
40	10/1/2023	125	125
41	10/8/2023	109	234
42	10/15/2023	241	475
43	10/22/2023	174	649
44	10/29/2023	149	798
45	11/5/2023	213	1011
46	11/12/2023	219	1230
47	11/19/2023	268	1498
48	11/26/2023	379	1877
49	12/3/2023	386	2263
50	12/10/2023	469	2732
51	12/17/2023	507	3239
52	12/24/2023	409	3648
1	12/31/2023	275	3923

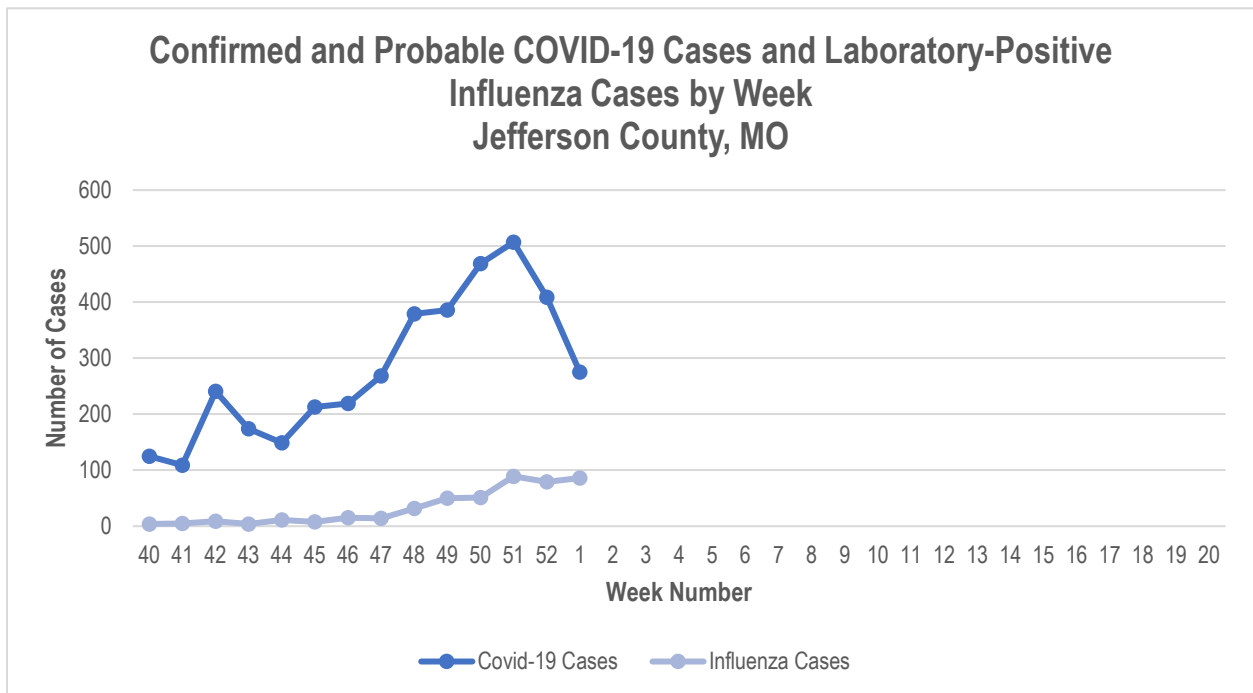
Figure 4. Confirmed and Probable COVID-19 Cases by Day and 7-Day Average, Jefferson County, Missouri
For Cases Reported 10/1/2023- 1/6/2024



Jefferson County COVID-19 Deaths

Twenty-one COVID-19 associated deaths have been reported in Jefferson County as of Week 1.

Figure 5. Simultaneous Circulation of COVID-19 and Influenza by Week, Jefferson County, Missouri



ADDITIONAL DATA SOURCES AND INFORMATION

Missouri Department of Health and Senior Services, Interactive Statewide Influenza Dashboard:
<https://health.mo.gov/living/healthcondiseases/communicable/influenza/dashboard.php>

Missouri Department of Health and Senior Services, Statewide Influenza Data and Statistical Reports: <https://health.mo.gov/living/healthcondiseases/communicable/influenza/reports.php>

Centers for Disease Control and Prevention, National Influenza Surveillance:
<https://www.cdc.gov/flu/weekly/>

The National Respiratory and Enteric Virus Surveillance System (NREVSS):
<https://www.cdc.gov/surveillance/nrevss/>

World Health Organization, International Influenza Surveillance:
<https://www.who.int/teams/global-influenza-programme/surveillance-and-monitoring/influenza-surveillance-outputs>

Passive Surveillance

Influenza is a reportable condition in the state of Missouri. JCHD conducts passive influenza surveillance by collecting and aggregating data on all laboratory-positive influenza tests in Jefferson County residents. Passive surveillance provides information on the true burden of influenza illness in Jefferson County but is limited by variations in testing and reporting practices. If diagnostic tests are not conducted on patients presenting to health care providers with influenza-like-illness, or if test results (e.g., of rapid influenza tests) are not reported to JCHD, those persons will not be included in the passive surveillance data. Thus, passive surveillance is likely an underestimate of the true burden of influenza illness in Jefferson County. Passive surveillance helps the health department to keep track of the incidence of influenza cases in the community and facilitates early detection of potential outbreaks.

Syndromic Surveillance

JCHD uses the ESSENCE system to conduct syndromic surveillance for Influenza-Like-Illness (ILI) at Missouri hospital emergency departments (EDs). ESSENCE captures data on all ED visits in persons with chief complaints (rather than final diagnoses or positive laboratory tests) of ILI. ILI chief complaints are those which include the word “influenza” or those that the ESSENCE system parses to [fever and (cough or sore throat)]. The syndromic surveillance data presented above include all ED visits for ILI from those with a Jefferson County residential address. Data from private physicians, clinics, or urgent care centers are not included in ESSENCE. Syndromic surveillance contributes to our understanding of the burden of influenza experienced by the health care system, as well as demonstrating the relative impact over time of influenza with respect to other illnesses.