

Ottawa County COVID-19 Epidemiology

January 5, 2022

Data as of January 1, 2022, unless otherwise indicated

Executive Summary

- **Transmission in Michigan and the US is increasing**
- **Ottawa community transmission levels remain elevated**
 - Positivity increased to 25.6% last week. The goal is to be less than 8%.
 - Weekly case counts in Ottawa increased 88%, from 913 two weeks ago to 1,715 last week.
 - Cases among children increased 42%, from 149 two weeks ago to 212 last week.
 - Ottawa County was notified this week that Omicron was found in resident samples collected December 17, 2021 and later. The emergence of the Omicron variant may increase local transmission.
- **Ottawa area and regional hospitals are experiencing high numbers of COVID-19 patients**
 - In Ottawa County, 25% of all available beds and 69% of all ICU beds are occupied by COVID-19 patients.*
 - Regional healthcare systems are extremely strained and asking for the community to take preventive action.
 - Adequate staffing is a challenge for many hospitals in the region.
 - Monoclonal antibody medication may be in short supply.
- **Pediatric hospitalization rates in the US have reached the highest levels of the pandemic to date; hospitalizations among children in Michigan continue to increase and have reached pandemic highs.**
- **Of Ottawa County residents aged 5+, 60.1% are completely vaccinated**

*Some hospitals in Ottawa County immediately transfer acutely ill adults or children to regional hospitals that offer a higher level of care. This practice may reduce the proportion of beds occupied by COVID-19 patients in Ottawa and increase bed occupancy in urban centers with large hospitals, such as Kent County.

Ottawa County Metrics by Week

Metric	Goal	Week Ending				
		4-Dec-21	11-Dec-21	18-Dec-21	25-Dec-21	1-Jan-22
Positivity (All Ages)	<8%	26.4%	21.6%	18.2%	18.0%	25.6%
Weekly Cases (All Ages)	<147	2221	1538	1153	913	1715
Weekly Cases in Children (0-17 years of age)	NA	450	302	214	149	212
Total COVID-19 Hospitalizations (All Ages)	0	45	58	55	40	9
Total Deaths (All Ages)	0	20	13	13	20	13
CDC Risk Transmission Level	Moderate	High	High	High	High	High

Public Health Recommendations

- **Get vaccinated (start series or get booster)**
- **Stay home when sick & get tested**
- **Wear your mask in public indoor places**
- **November 2021 MDHHS Advisory:**

As such, on November 19, 2021, MDHHS is issuing the following advisory on the use of face masks. **This advisory takes effect immediately and remains in effect until further notice.**

All Michiganders, regardless of vaccination status, should take the following actions to protect against COVID-19 and other respiratory illnesses:

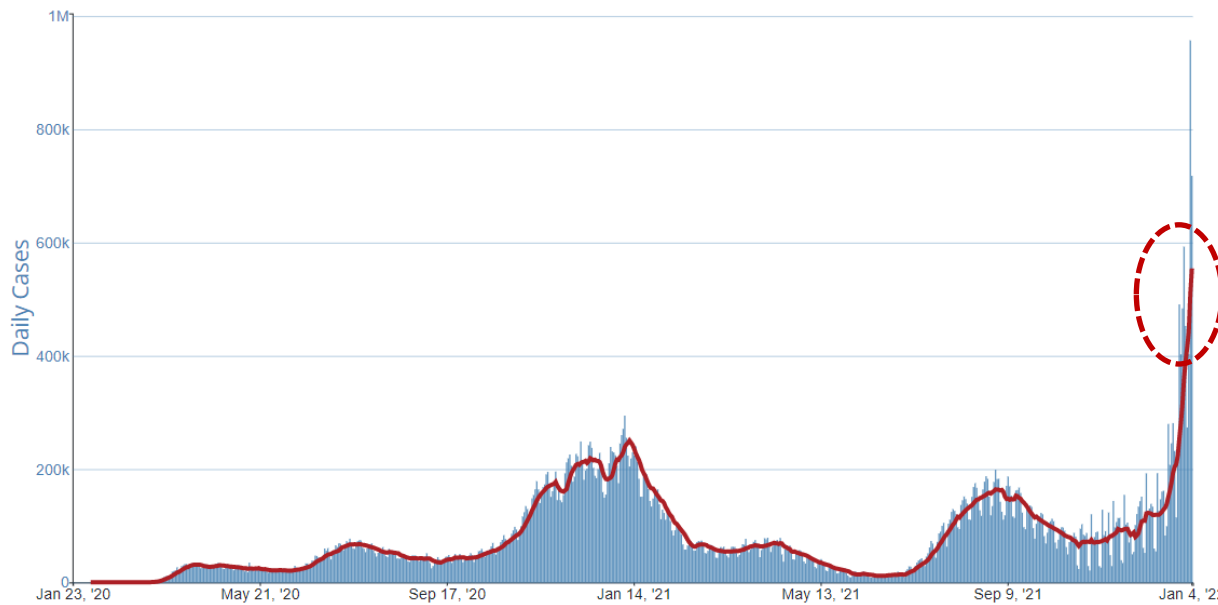
Public Health Advisory:

- (a) All persons in indoor public settings are advised to wear a face mask, regardless of their vaccination status.
- (b) Public establishments are advised to implement masking policies and encourage compliance with such policies.
- (c) Individuals who are not fully vaccinated or who are immunocompromised are advised to avoid large crowds or gatherings.

Case Trends in the USA and Michigan

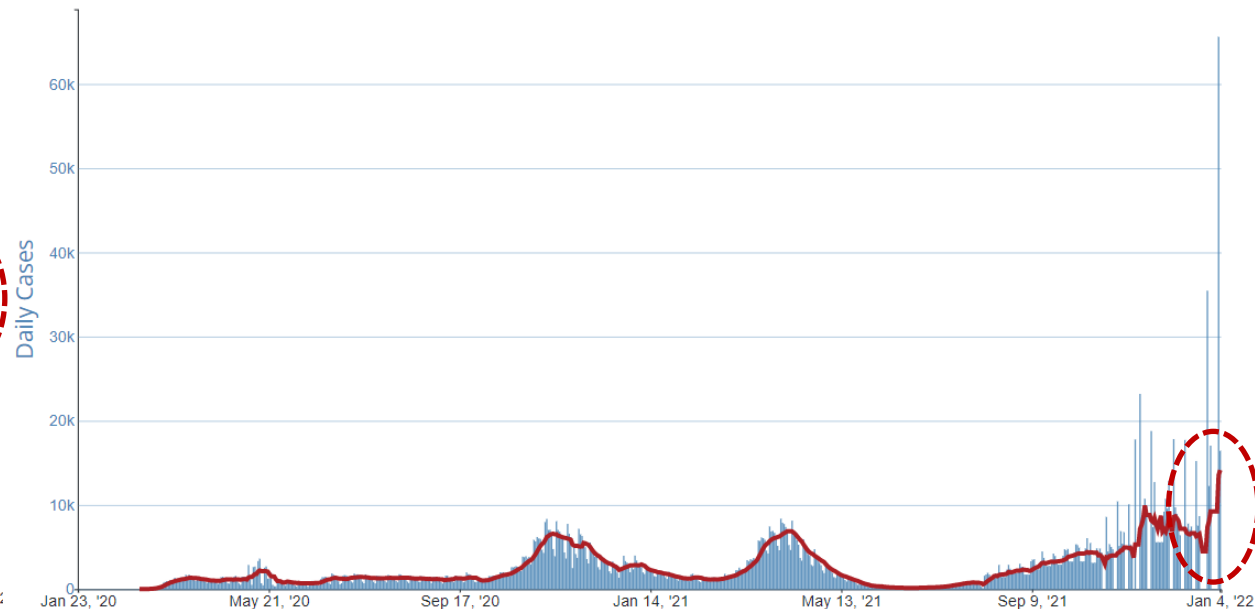
USA

Daily Trends in Number of COVID-19 Cases in The United States Reported to CDC



Michigan

Daily Trends in Number of COVID-19 Cases in Michigan Reported to CDC

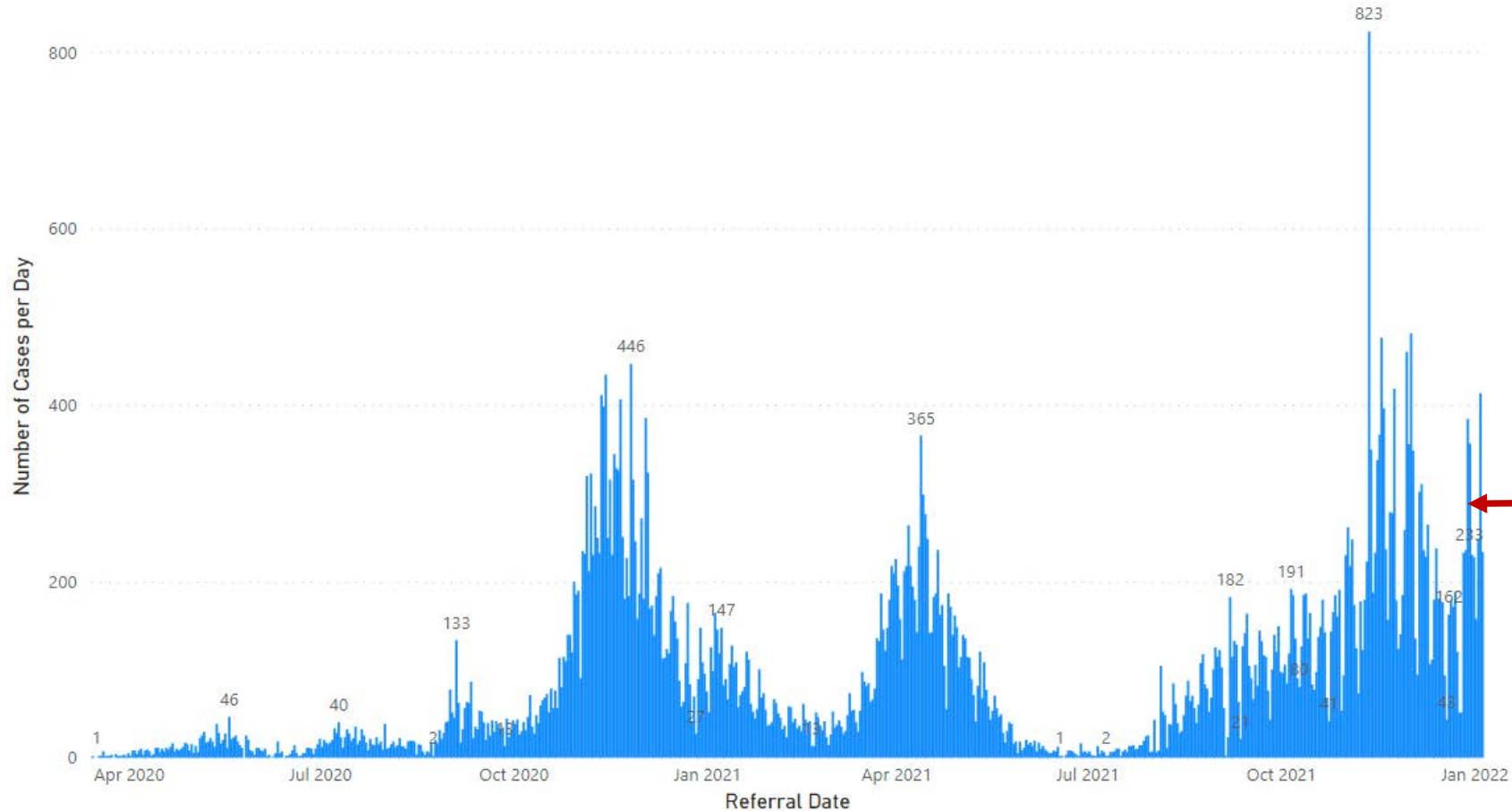


Daily case counts in Michigan and the US are increasing.

Case Trends in Ottawa County

COVID-19 Cases by Day, Ottawa County, March 15, 2020 – January 5, 2022

Epidemiological Curve



Total Number of Cases
57,639

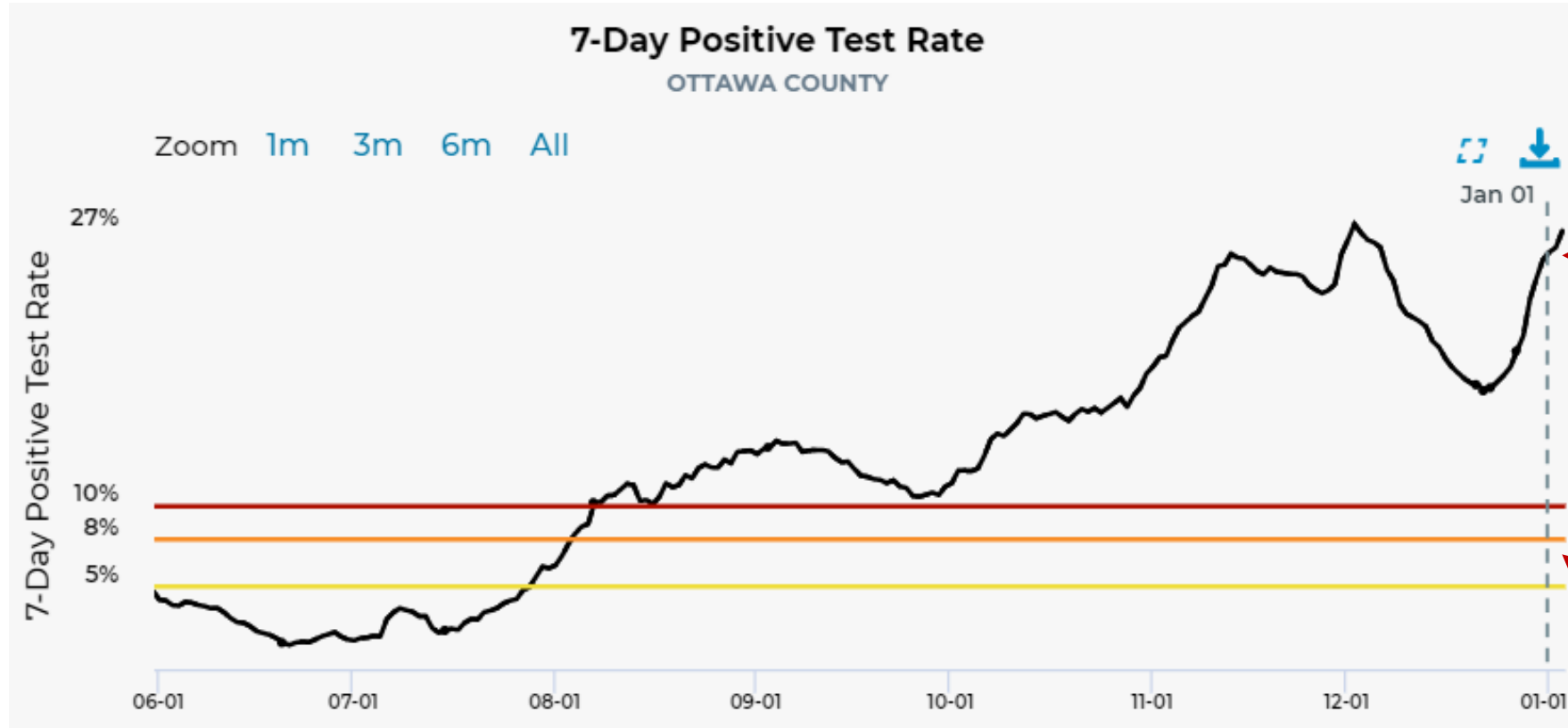
Currently the 7-day average is **266 cases per day**, much higher than the 131 cases per day seen at a similar time last week.

Notes: Use of at home tests likely reduces the number of positive tests reported to Public Health, resulting in an artificially deflated number of cases. Additionally, ODCPH has received reports of parents refusing COVID-19 testing for their children ill with respiratory symptoms, and hospitals forgoing confirmatory COVID-19 testing and relying on self-reported positive at-home tests to direct clinical care. On November 12, 2021, MDHHS updated their database resulting in a backlog of cases being reported in one day.

Source: Michigan Department of Health and Human Services, Michigan Disease Surveillance System

Test Positivity in Ottawa County

COVID-19 Cases by Day, Ottawa County, June 1, 2021 – January 1, 2022



Test positivity rose to 25.6% as of January 1, 2022.

The goal is to have less than 8% of tests coming back positive.

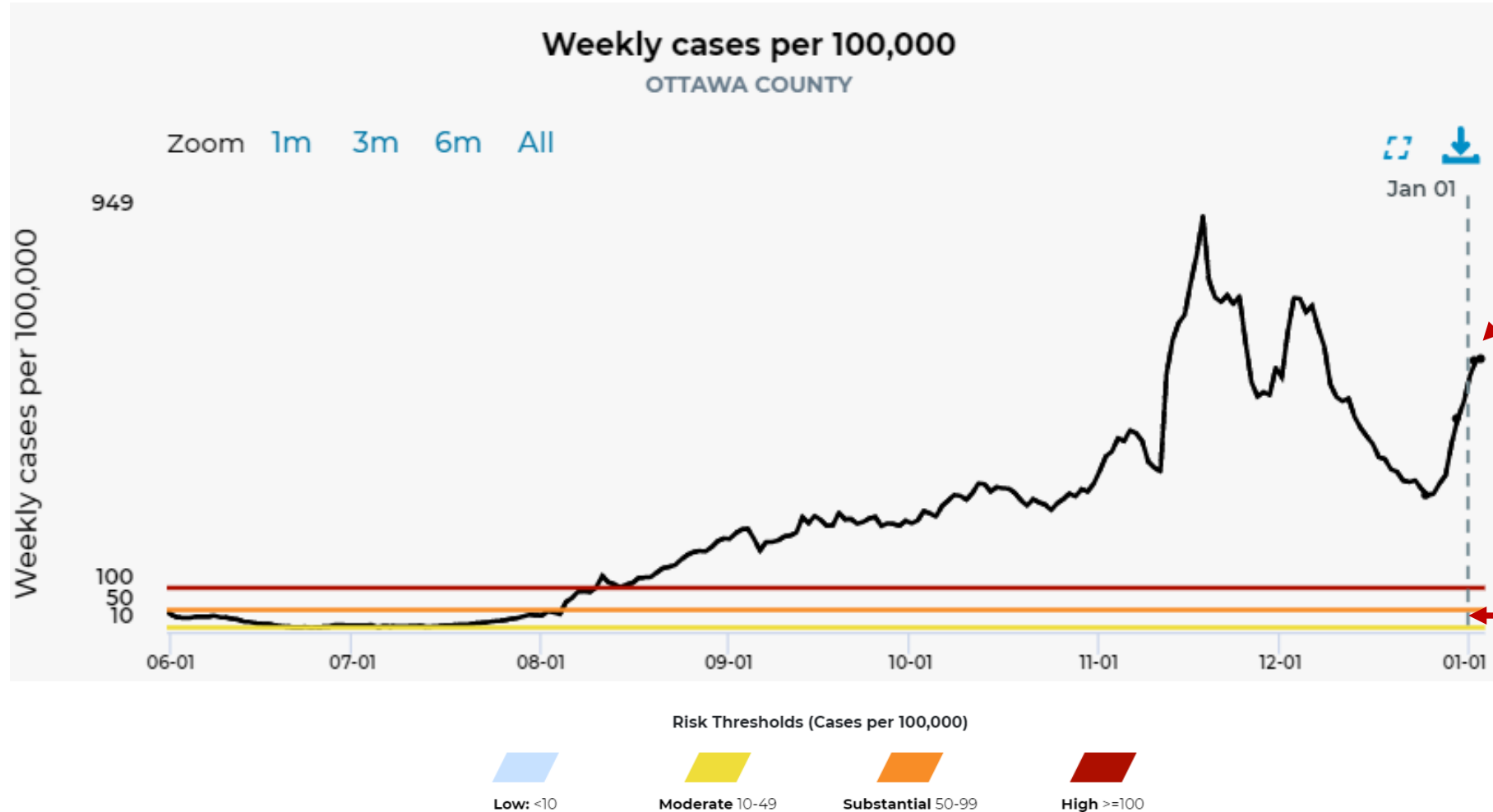


Note: Testing in Ottawa County has remained stable with at least 6000-10,000 tests each week: [Testing Results | Ottawa County Covid-19 Case Summary Data \(arcgis.com\)](#) & <https://www.mistartmap.info/mism-indicators?area=county%3Aottawa>

Source: <https://www.mistartmap.info/cdc-indicators?area=county%3Aottawa>

Case Rates in Ottawa County – All Ages

COVID-19 Cases by Day, Ottawa County, June 1, 2021 – January 1, 2022

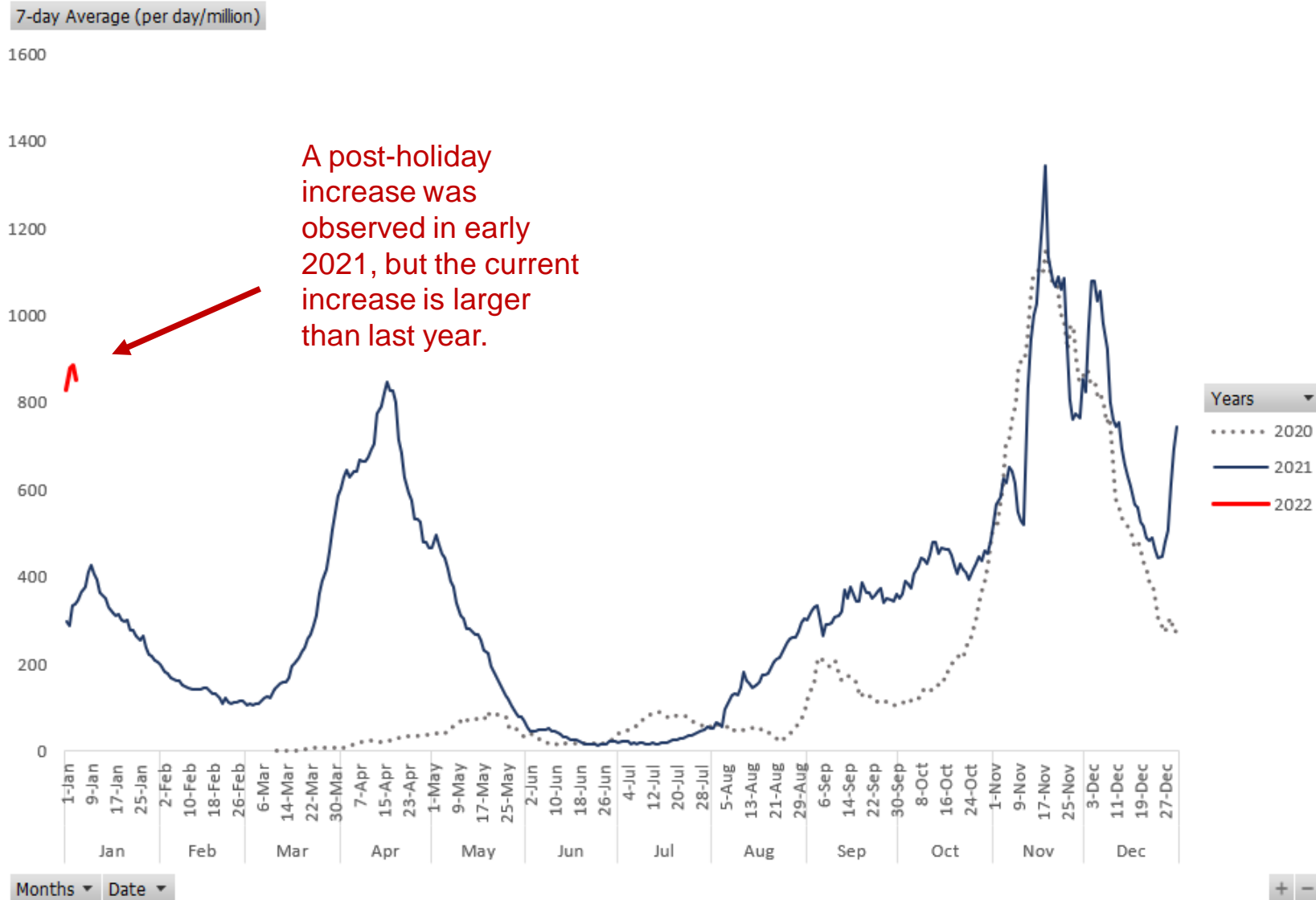


Case rates increased to 584 cases per week per 100,000 population (up from 310 the week prior).

The goal is to have less than 50 cases per week per 100,000 population. In Ottawa County, this would be about 21 cases per day or less.

Source: <https://www.mistartmap.info/cdc-indicators?area=county%3Aottawa>

Ottawa County Time Trends – Annual Comparison

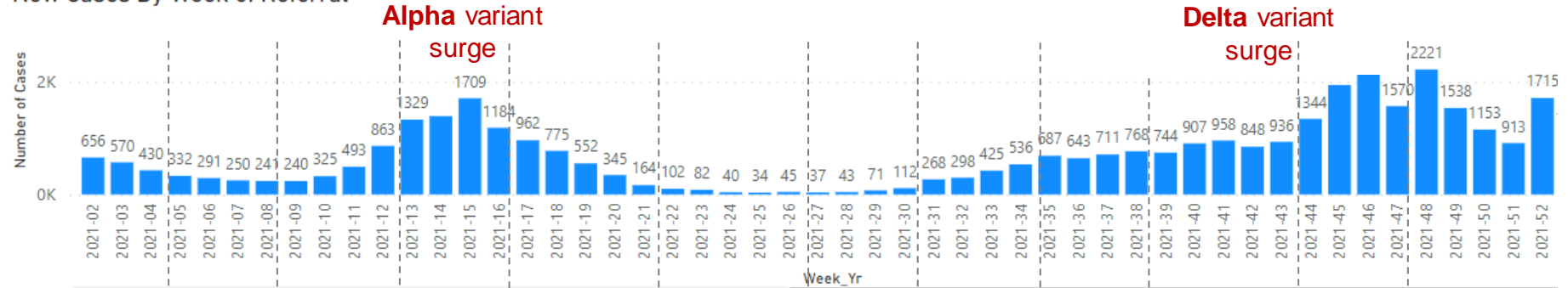


Source: Internal Data

Data through January 4, 2022

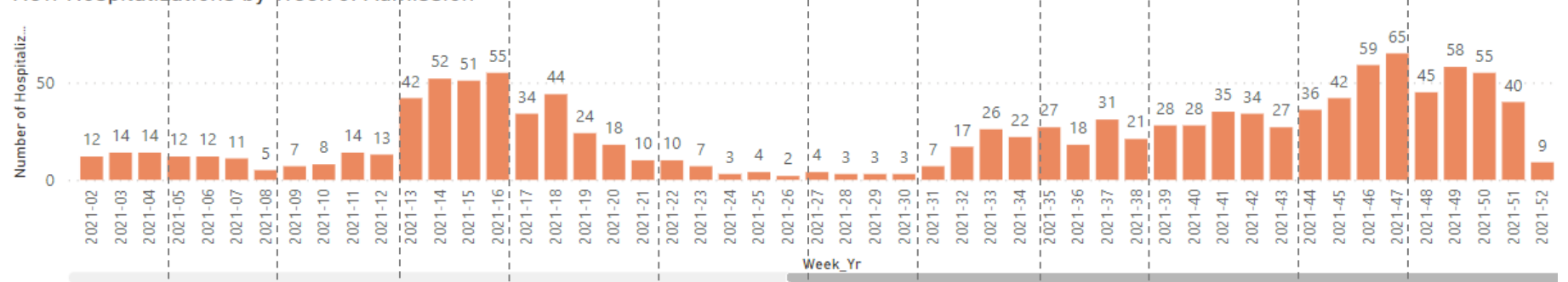
Ottawa County - Cases, Hospitalizations, & Deaths by Week, All Ages

New Cases By Week of Referral



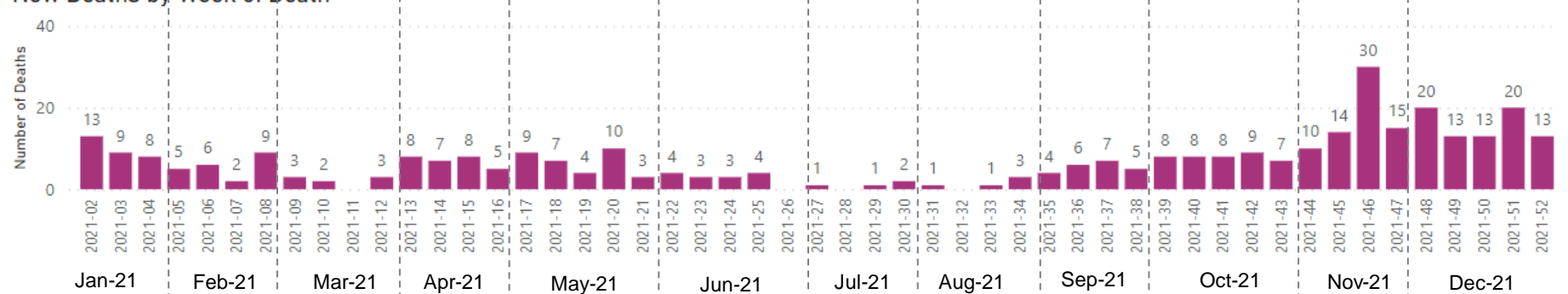
The weekly number of **cases increased 88%** from week 51 to week 52.

New Hospitalizations by Week of Admission



The weekly number of **hospitalizations** remains elevated with an average of about **41 cases hospitalized** each week over the last month.

New Deaths by Week of Death



Weekly COVID-19 **deaths** have **exceeded** levels experienced in the spring 2021 wave. Current weekly average of deaths over the last 4 weeks stands at about **15 deaths per week**.

Hospitalizations and deaths in recent weeks may increase as data is updated.

Hospitalizations are likely **underestimated** because:

- (i) Hospitalization status is obtained only by manual review, and
- (ii) Hospitalization may occur after public health interview.

Source: Michigan Department of Health and Human Services, Michigan Disease Surveillance System

Ottawa County Weekly Case Counts and % Change, by Age

Week Ending	Adults (18+)		Children (0-17 years)		Total	
	Number	% Change from Previous Week	Number	% Change from Previous Week	Number	% Change from Previous Week
28-Aug-21	449	23%	88	47%	537	26%
4-Sep-21	553	23%	134	52%	687	28%
11-Sep-21	496	-10%	148	10%	644	-6%
18-Sep-21	547	10%	165	11%	712	11%
25-Sep-21	620	13%	149	-10%	769	8%
2-Oct-21	608	-2%	136	-9%	744	-3%
9-Oct-21	714	17%	197	45%	907	22%
16-Oct-21	765	7%	199	1%	958	6%
23-Oct-21	685	-10%	163	-18%	848	-11%
30-Oct-21	716	5%	219	34%	935	10%
6-Nov-21	991	38%	351	60%	1342	44%
13-Nov-21	1463	48%	487	39%	1950	45%
20-Nov-21	1662	14%	568	17%	2230	14%
27-Nov-21	1229	-26%	341	-40%	1570	-30%
4-Dec-21	1771	44%	450	32%	2221	41%
11-Dec-21	1236	-30%	302	-33%	1538	-31%
18-Dec-21	939	-24%	214	-29%	1153	-25%
25-Dec-21	764	-19%	149	-30%	913	-21%
1-Jan-22	1503	97%	212	42%	1715	88%

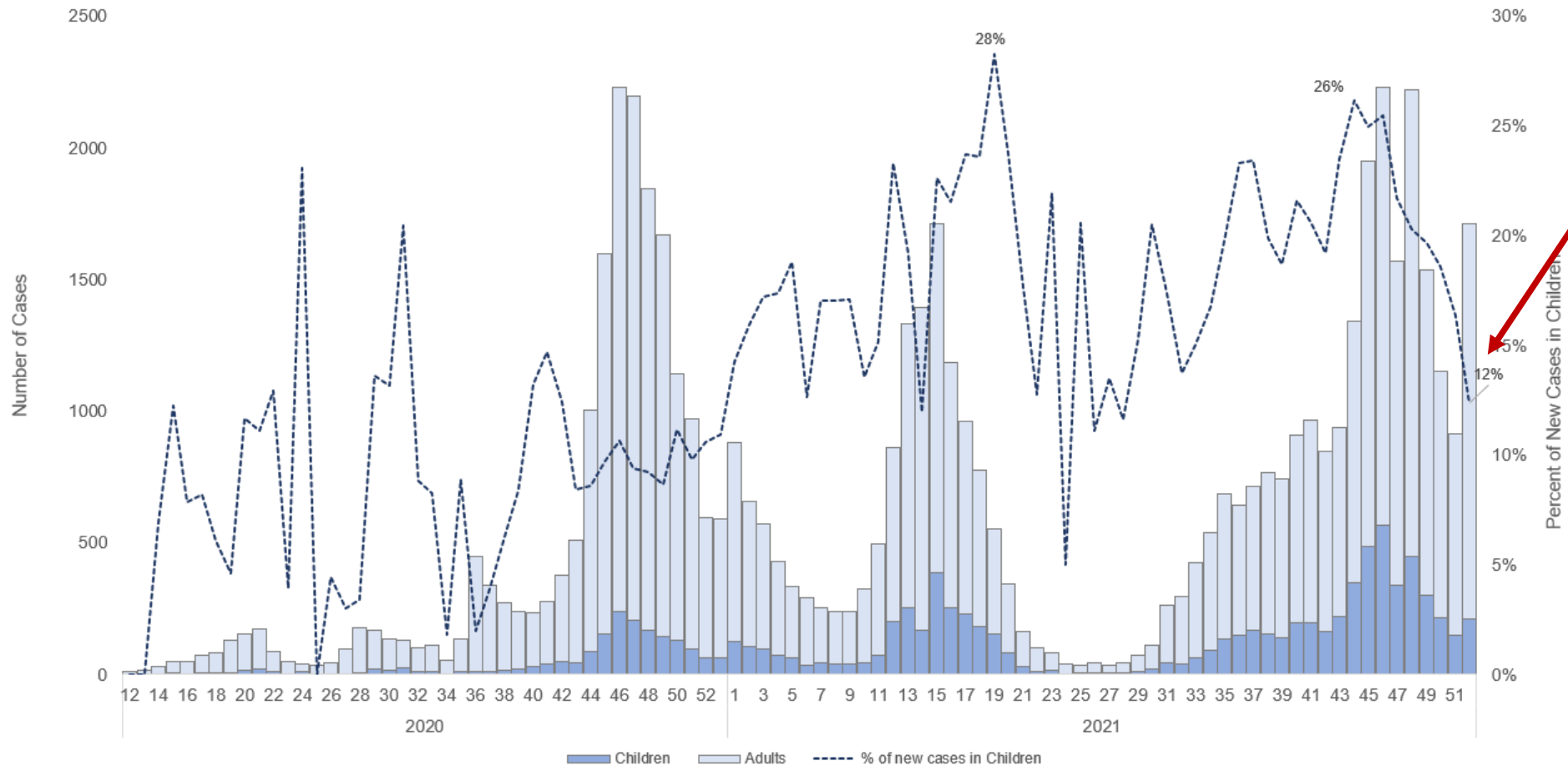
Adults

Children

Weekly case counts among children increased 42% last week, and cases in adults increased 97%.

Source: Michigan Department of Health and Human Services, Michigan Disease Surveillance System

Ottawa County Weekly Case Counts and % in Children (0-17)

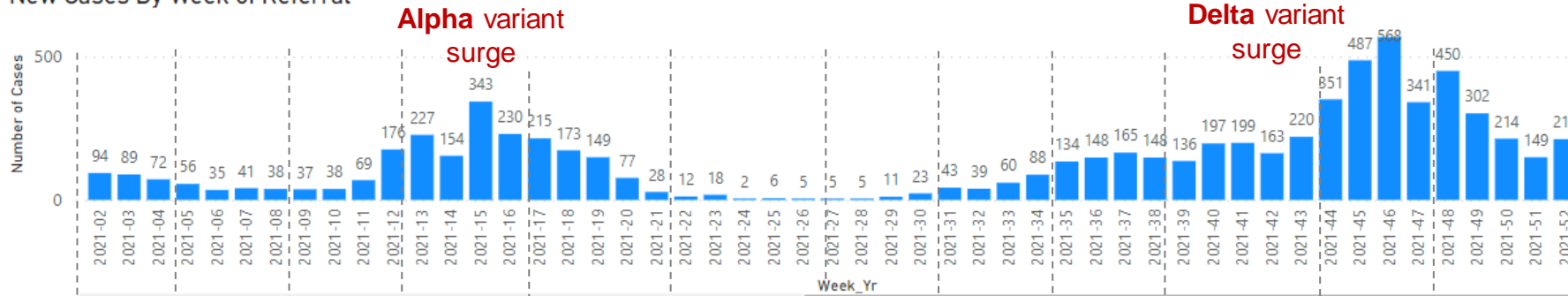


During week 52, children made up **12%** of cases reported, lower than recent highs.

For comparison, children aged 0-17 make up about **23.5%** of the population in Ottawa County.

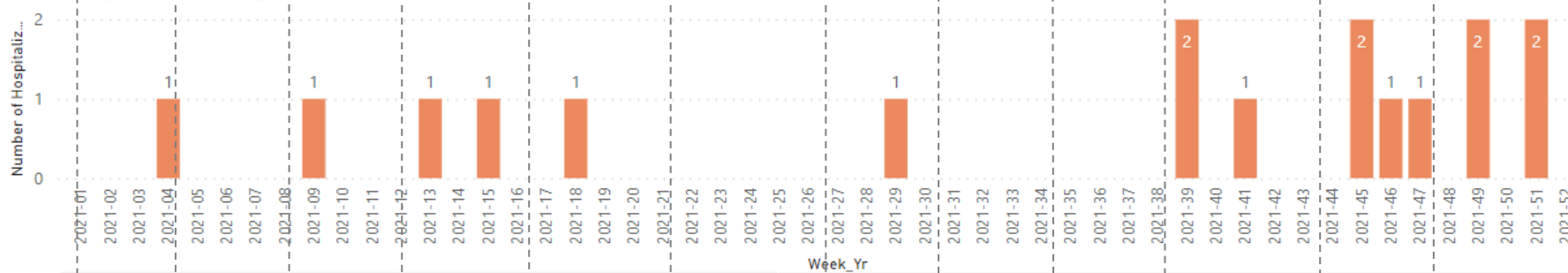
Ottawa County - Cases, Hospitalizations, & Deaths by Week Among Children (0-17 years)

New Cases By Week of Referral



The weekly number of cases among children **increased 42%** from week 51 to week 52.

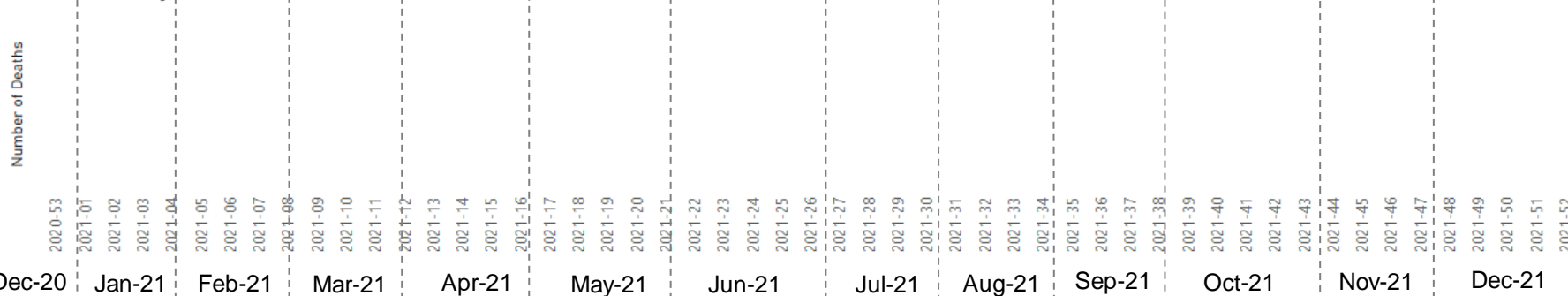
New Hospitalizations by Week of Admission



Hospitalizations are likely **underestimated** because:

- (i) Hospitalization status is obtained only by manual review, and
- (ii) Hospitalization may occur after public health interview.

New Deaths by Week of Death



Through the 2020-2021 school year nearly all school-aged children were in environments with:

- universal masking
- cohorting
- online learning
- social distancing
- mandatory quarantine for all close contacts
- testing (for high school athletes)

These mitigation strategies likely reduced case counts and hospitalizations among children.

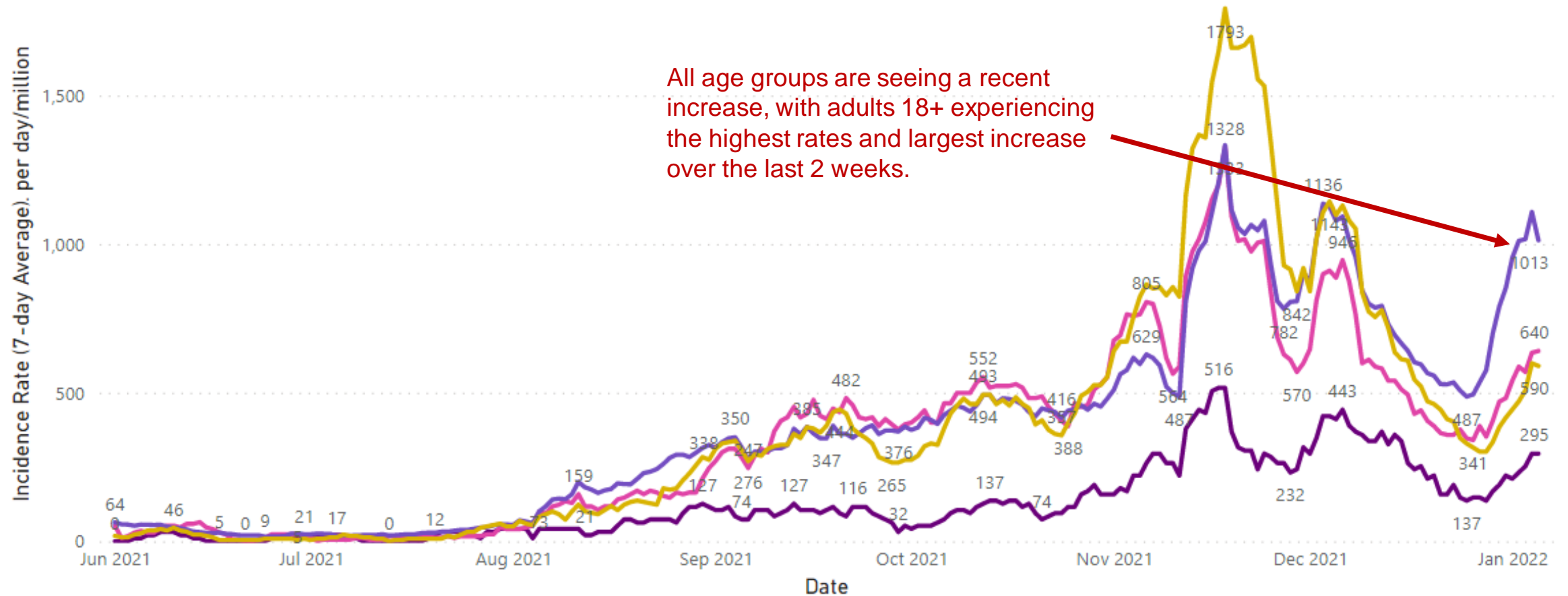
Source: Michigan Department of Health and Human Services, Michigan Disease Surveillance System

Ottawa County - Case Rate Trends – by Age

COVID-19 Case Rates by Age, includes School-Aged, June 2021 – January 5, 2022

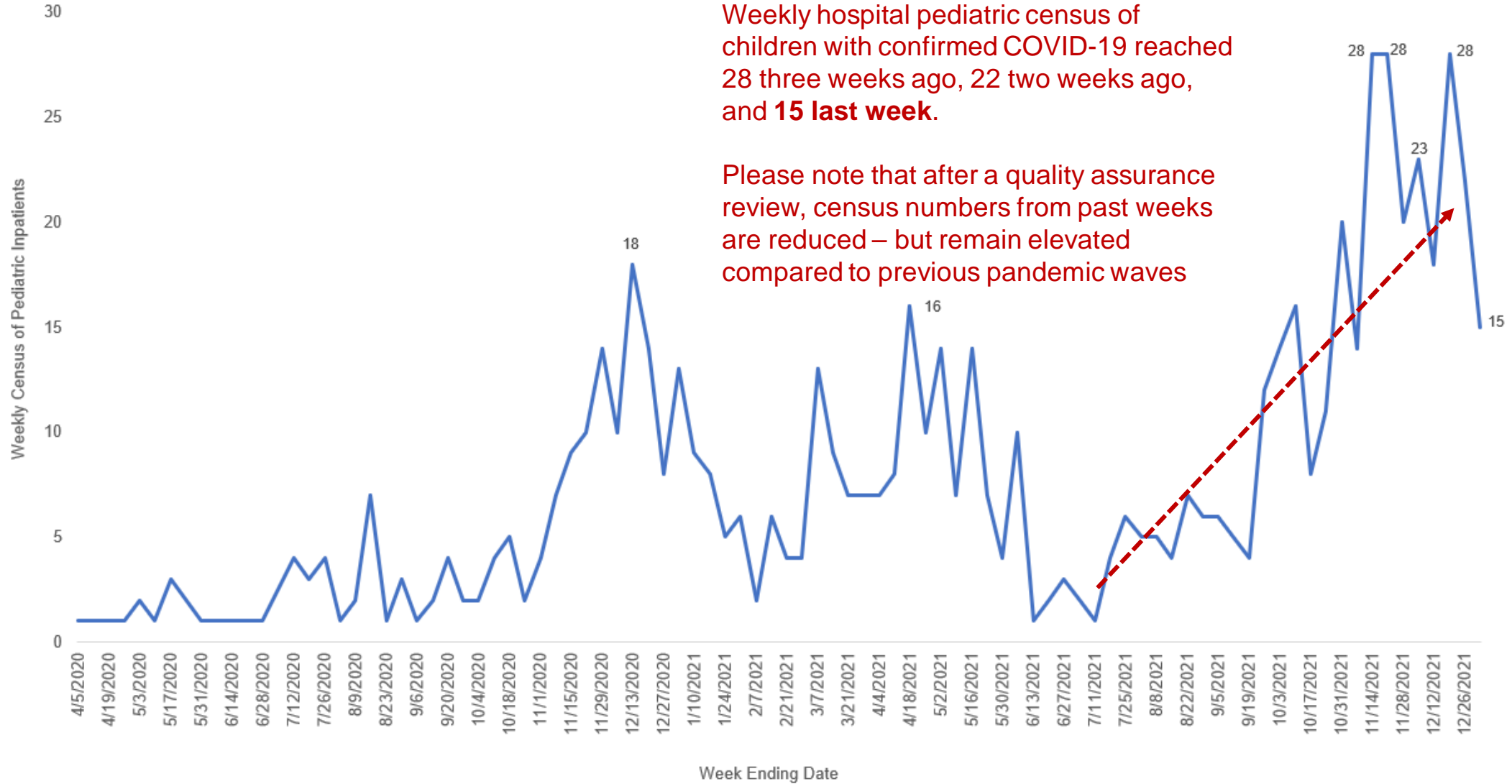
Incidence Rate (7-day Average)

rategroup ● 0-3 ● 12-17 ● 18+ ● 4-11



Source: Michigan Department of Health and Human Services, Michigan Disease Surveillance System

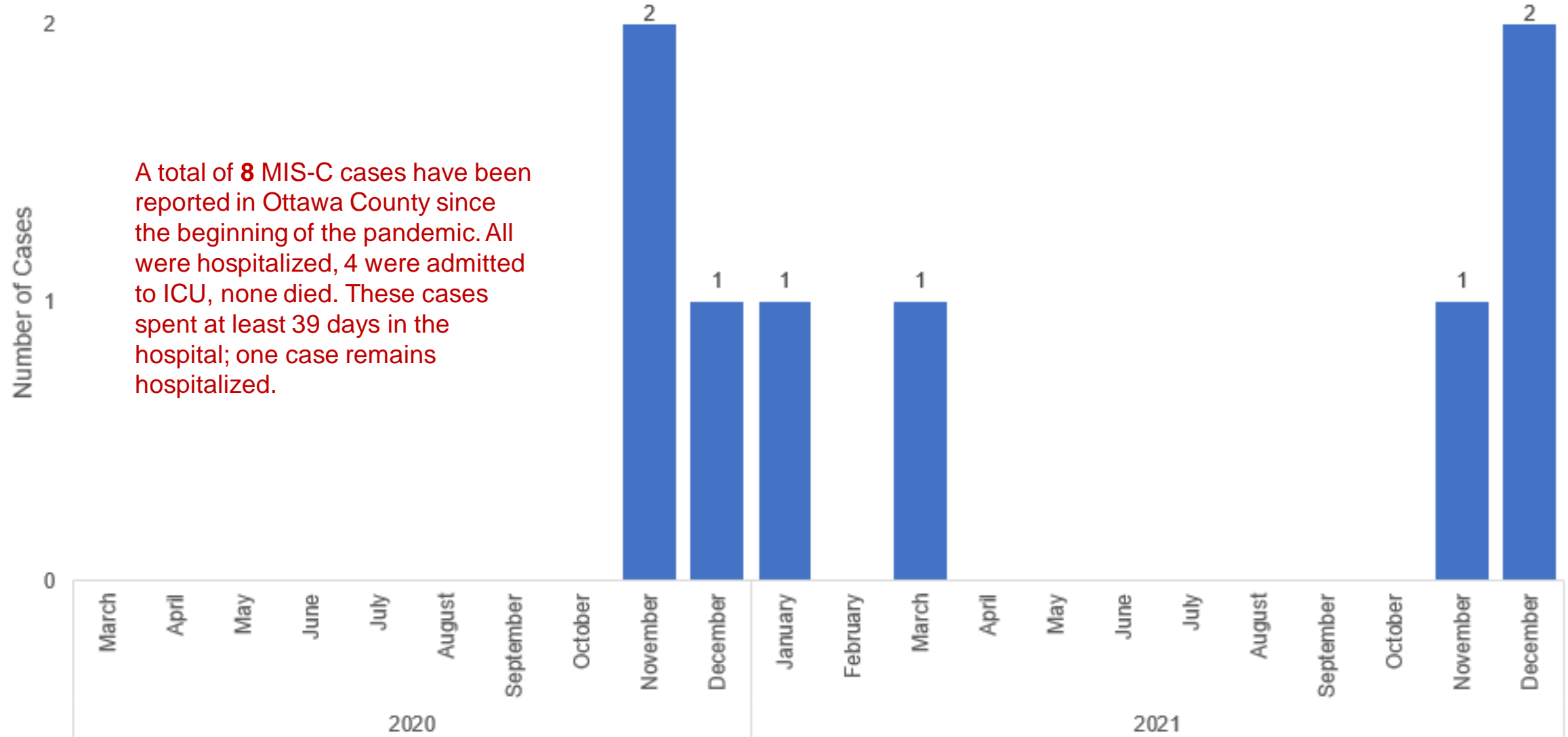
Weekly Hospital Pediatric Census – A Regional Healthcare System



Note: Data above includes persons younger than 18 years of age with confirmed COVID-19 hospitalized at a large regional healthcare system. Patients may be listed in more than one week. Data may change as information is updated. Includes patients that reside in counties across the region, including Ottawa County.

Data through January 2, 2022

Ottawa County MIS-C Cases by Month



A total of **8** MIS-C cases have been reported in Ottawa County since the beginning of the pandemic. All were hospitalized, 4 were admitted to ICU, none died. These cases spent at least 39 days in the hospital; one case remains hospitalized.

Notes: Includes confirmed and probable cases. For more details on MIS-C please visit: <https://www.cdc.gov/mis/index.html>

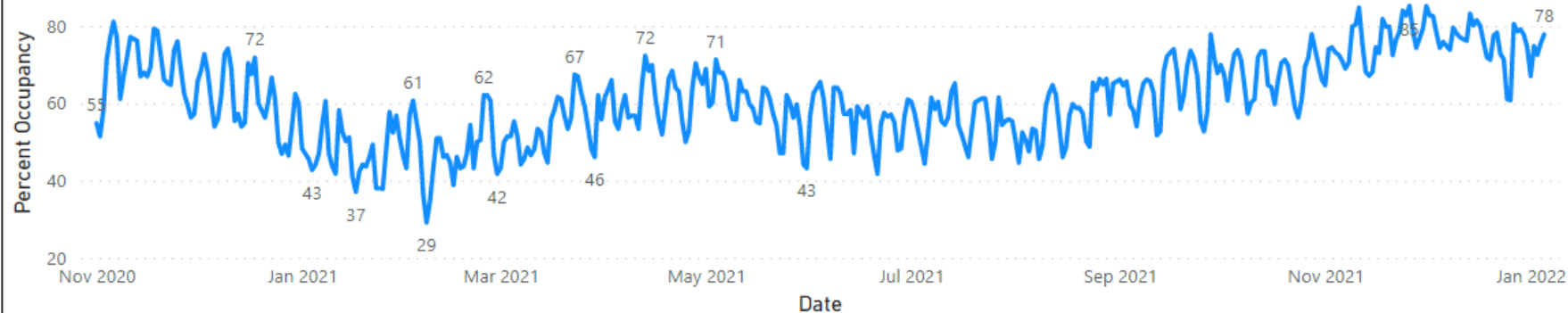
Data through January 4, 2022

Ottawa County Hospital Capacity – All Beds

Total Inpatient Bed Occupancy (All Patients, COVID and Non-COVID)

Percent Occupancy by Date and County

County ● Ottawa



COVID Inpatient Bed Occupancy (COVID Patients Only, Confirmed and Suspected)

Percent Occupancy by Date and County

County ● Ottawa



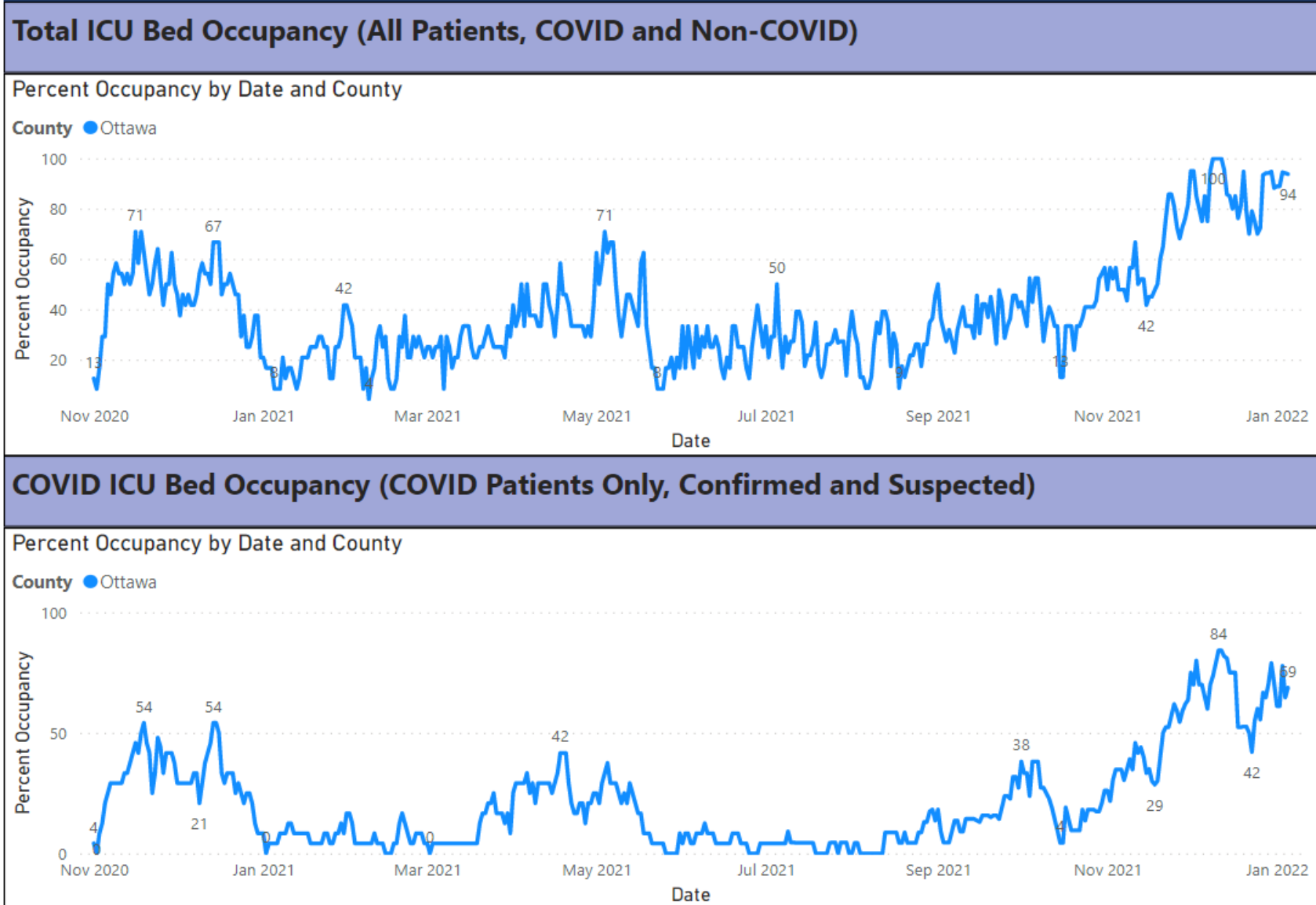
Total hospital bed occupancy **may be plateauing but remains elevated**, as is the proportion of beds occupied by COVID-19 patients.

Currently **25%** of all inpatient beds are occupied by COVID-19 patients.

Source: EMResources

Data through January 5, 2022

Ottawa County Hospital Capacity – ICU Beds



Overall ICU bed occupancy **remains elevated (94%)**.

The proportion of ICU beds occupied by COVID-19 patients also **remains elevated**. Currently, **69%** of all ICU beds are occupied by COVID-19 patients.

Source: EMResources

Data through January 5, 2022

USA & MI

Spread

Children

Hospitalizations

Vaccinations

Variants

Risk Levels

Other

Media

Science Roundup

Spectrum Health Hospitalized COVID-19 Patients

Spectrum Health COVID-19 Hospitalizations



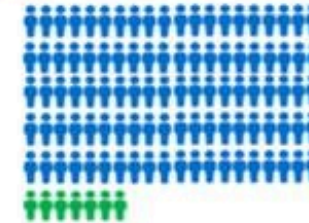
December 28, 2021

Spectrum Health currently has 386 hospitalized COVID-19 patients. Of these, 323 (84%) are unvaccinated and 63 are vaccinated*.

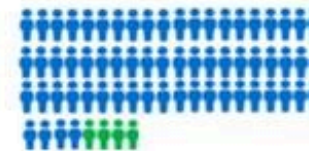
*Vaccinated patients are, on average, 4 years older (62 vs 58) and have an average of 4 co-morbidities compared to 2 for unvaccinated patients.



Of those 386 patients, 107 are currently in the ICU. Of these, 100 (93%) are unvaccinated and 7 are vaccinated.



Of those 107 ICU patients, 68 are on ventilators. Of these, 64 (94%) are unvaccinated and 4 are vaccinated.

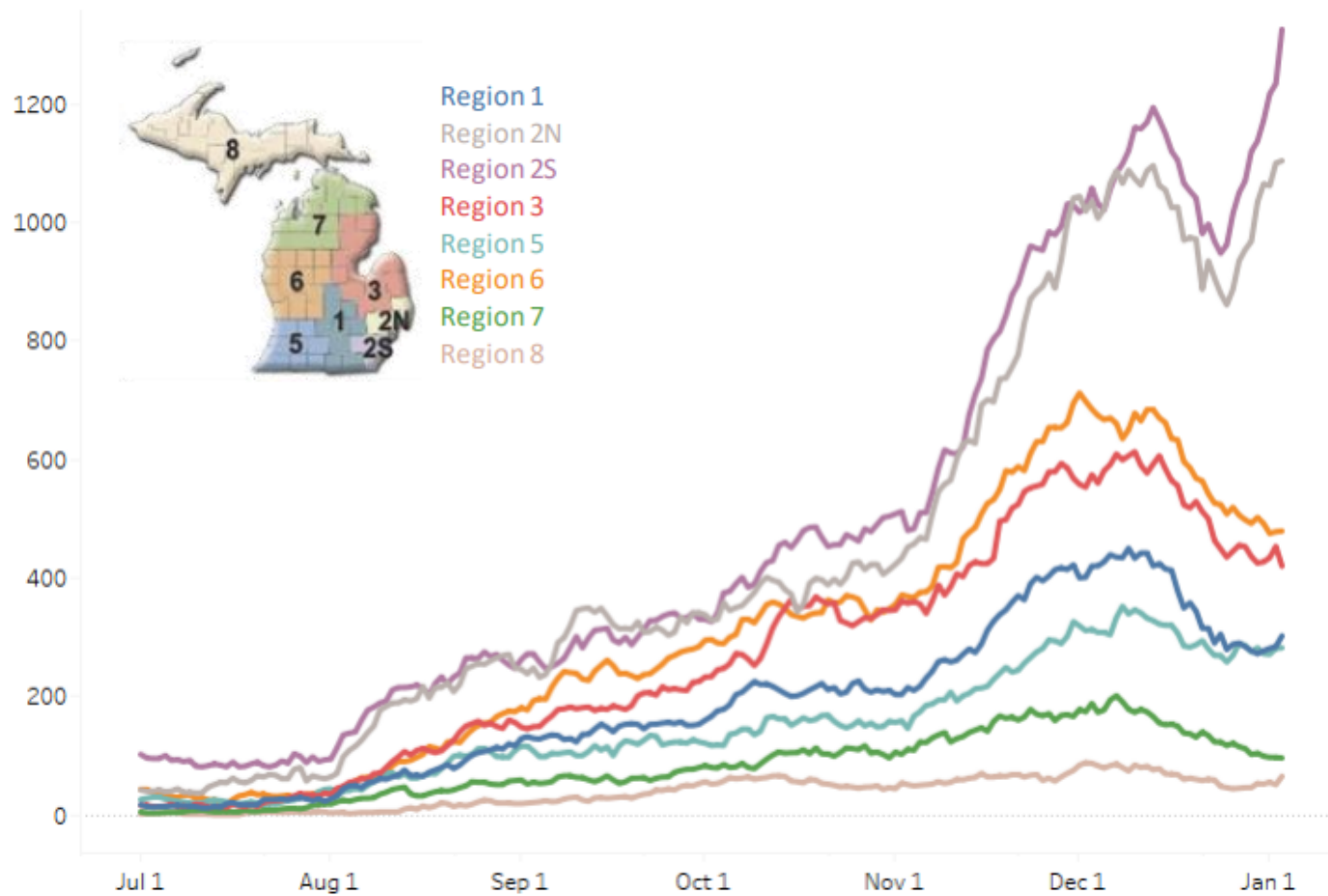


Data includes pediatric and adult COVID-19 positive inpatients across all Spectrum Health Hospitals. *Vaccinated = 2 weeks after receipt of the second dose in a 2-dose series, such as the Pfizer or Moderna vaccines, or a single-dose vaccine, such as Johnson & Johnson's Janssen vaccine.

Source: [\(3\) Facebook](#)

Statewide Hospitalization Trends: Regional COVID+ Census

Hospitalization Trends 6/1/2021 – 1/3/2022
Confirmed Positive by Region



Growth has been focused in Regions 2S and 2N although Regions 1 and 8 also show growth in the most recent days. Regions 3, 5, 6, and 7 show decreasing trends this week.

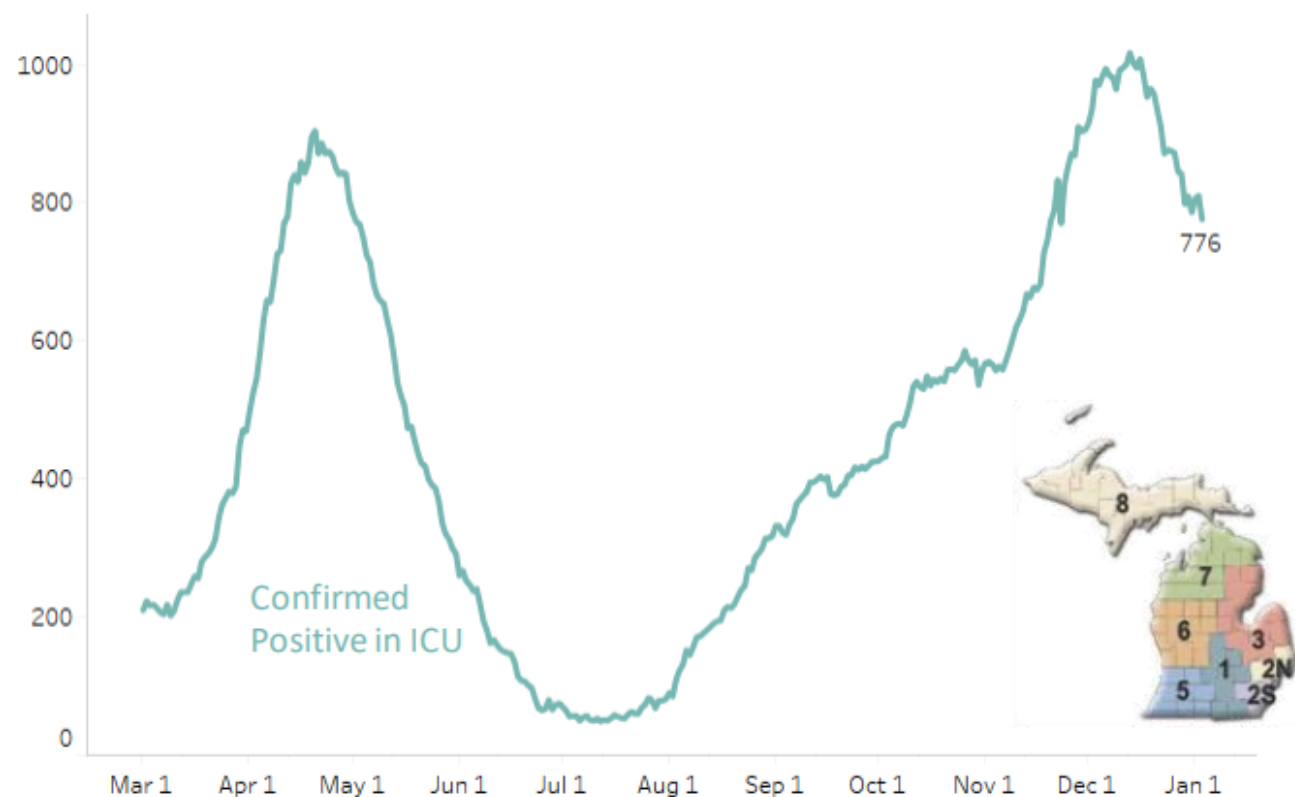
Regions 2N and 2S have greater than 400/Million Population hospitalized and Region 2S is over 500/Million population hospitalized.

Region	COVID+ Hospitalizations (% Δ from last week)	COVID+ Hospitalizations / MM
Region 1	302 (4%)	279/M
Region 2N	1104 (18%)	499/M
Region 2S	1326 (26%)	595/M
Region 3	420 (-8%)	370/M
Region 5	282 (-2%)	296/M
Region 6	479 (-5%)	327/M
Region 7	96 (-17%)	192/M
Region 8	65 (44%)	209/M

Source: MDHHS Data and Modelling: https://www.michigan.gov/documents/coronavirus/20220104_Data_and_modeling_update_vMEDIA_744906_7.pdf

Statewide Hospitalization Trends: ICU COVID+ Census

Hospitalization Trends 3/1/2021 – 1/3/2022
Confirmed Positive in ICUs



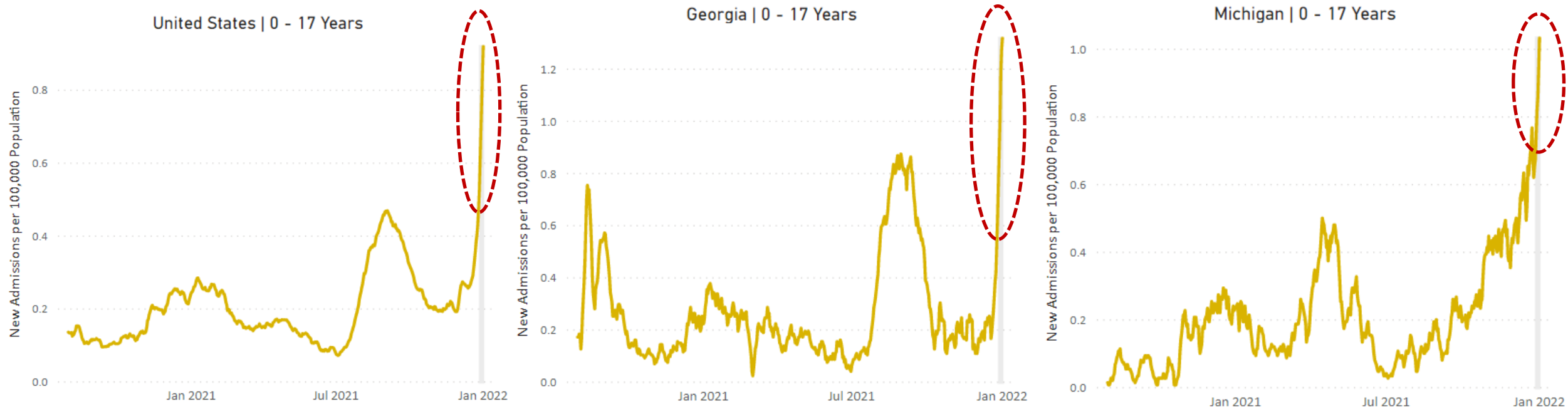
Overall, the census of COVID+ patients in ICUs has decreased 8% from last week. Census in ICUs has decreased in all regions except for Regions 1 and 8.

Regions 1 and 3 have ICU occupancy greater than 85%. Regions 1, 2S, 3, and 6 have more than 30% of ICU beds occupied by COVID patients.

Region	Adult COVID+ in ICU (% Δ from last week)	Adult ICU Occupancy	% of Adult ICU beds COVID+
Region 1	68 (10%)	92%	34%
Region 2N	150 (-5%)	77%	27%
Region 2S	223 (-4%)	84%	32%
Region 3	117 (-18%)	91%	36%
Region 5	41 (0%)	80%	27%
Region 6	128 (-7%)	86%	45%
Region 7	33 (-43%)	81%	24%
Region 8	16 (7%)	71%	25%

Source: MDHHS Data and Modelling: https://www.michigan.gov/documents/coronavirus/20220104_Data_and_modeling_update_vMEDIA_744906_7.pdf

Pediatric Hospitalization Rates – USA, Georgia, Michigan

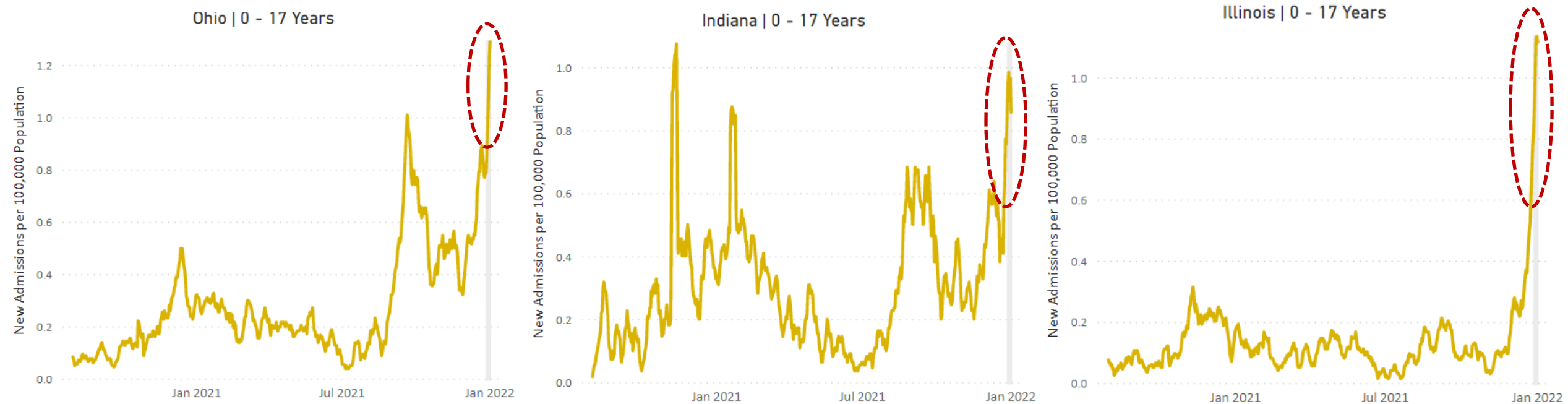


Pediatric hospitalization rates across the US, in Georgia, and in Michigan have reached the highest levels of the pandemic to date.

Source: <https://covid.cdc.gov/covid-data-tracker/#new-hospital-admissions>

Accessed January 6, 2022

Pediatric Hospitalization Rates – Select Midwest States

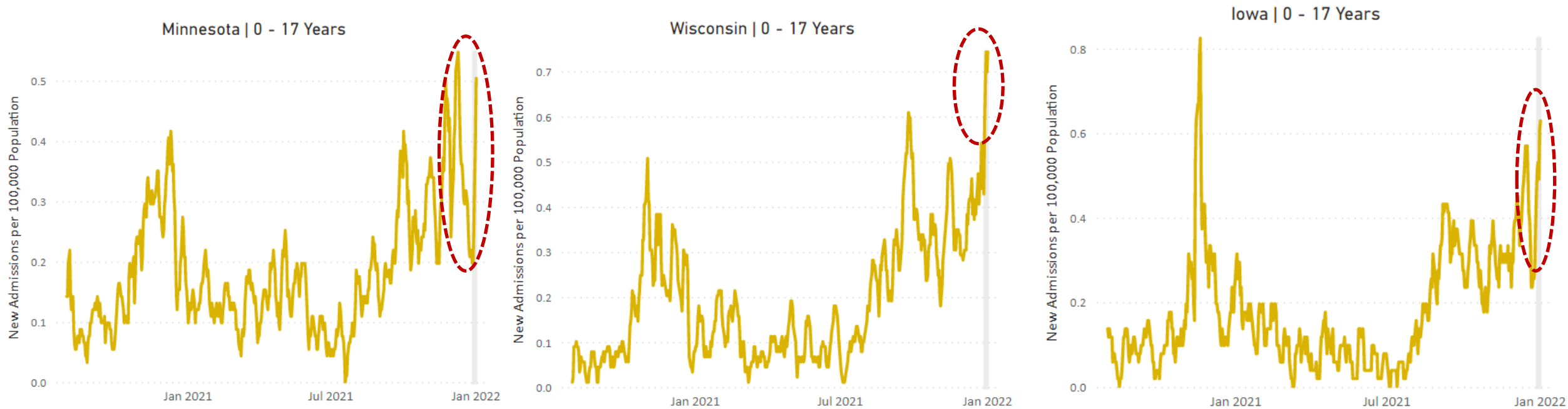


Ohio, Indiana, and Illinois are all experiencing substantial increases in pediatric hospitalization. **Illinois and Ohio have reached pandemic highs.**

Source: <https://covid.cdc.gov/covid-data-tracker/#new-hospital-admissions>

Accessed January 6, 2022

Pediatric Hospitalization Rates – Select Midwest States

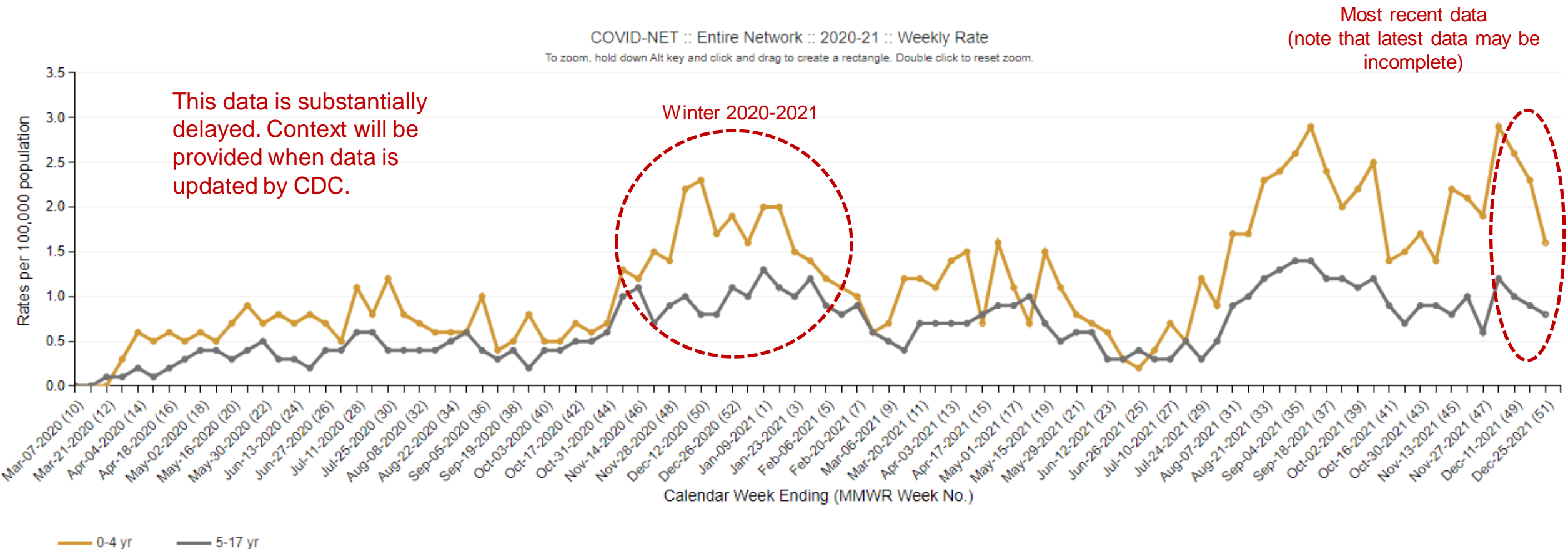


Pediatric hospitalization rates in Minnesota, Wisconsin, and Iowa remain elevated; and these three states have reached some of the highest levels of the pandemic.

Source: <https://covid.cdc.gov/covid-data-tracker/#new-hospital-admissions>

Accessed January 6, 2022

Pediatric Hospitalization Rates by Age Group – USA

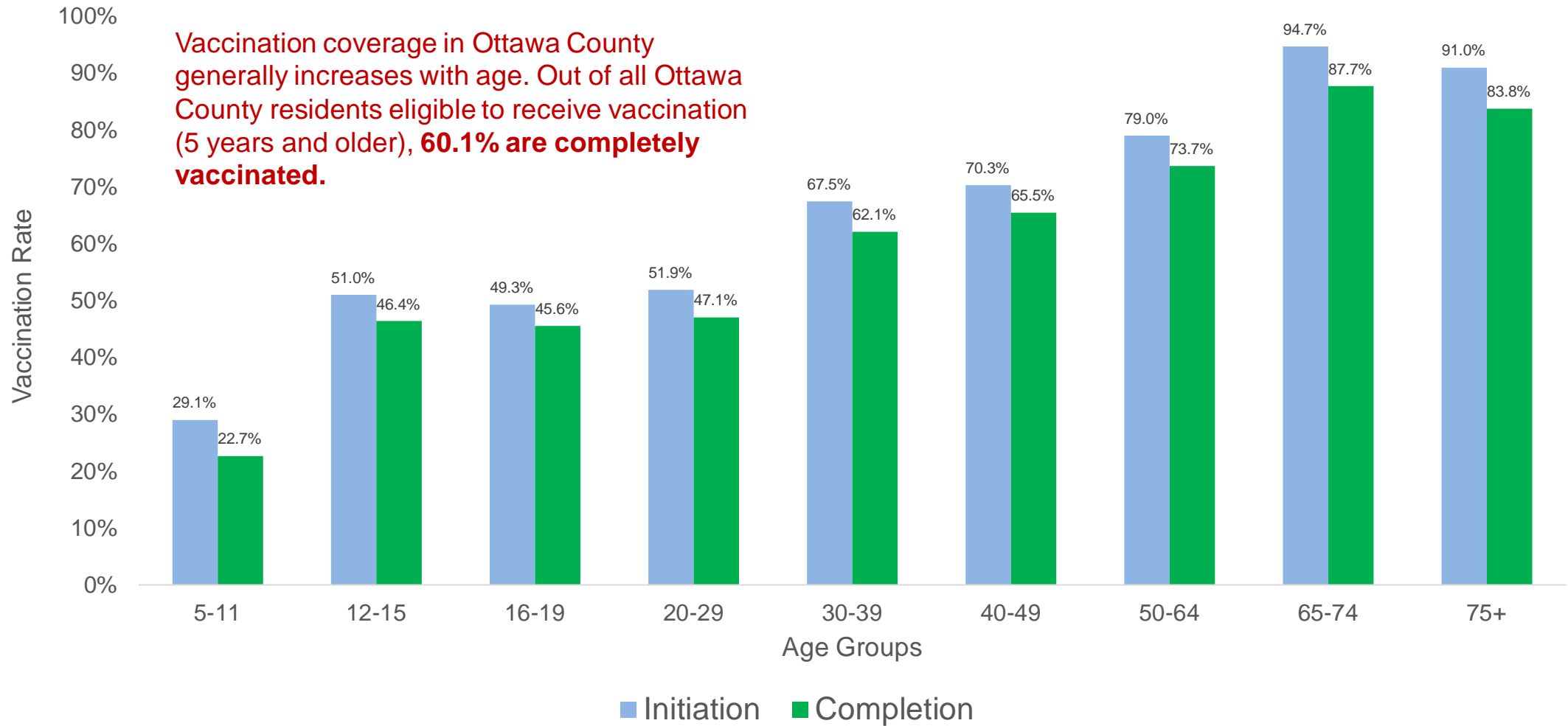


The Coronavirus Disease 2019 (COVID-19)-Associated Hospitalization Surveillance Network (COVID-NET) hospitalization data are preliminary and subject to change as more data become available. In particular, case counts and rates for recent hospital admissions are subject to lag. As data are received each week, prior case counts and rates are updated accordingly. COVID-NET conducts population-based surveillance for laboratory-confirmed COVID-19-associated hospitalizations in children (less than 18 years of age) and adults. COVID-NET covers nearly 100 counties in the 10 Emerging Infections Program (EIP) states (CA, CO, CT, GA, MD, MN, NM, NY, OR, TN) and four Influenza Hospitalization Surveillance Project (IHSP) states (IA, MI, OH, and UT). Incidence rates (per 100,000 population) are calculated using the National Center for Health Statistics' (NCHS) vintage 2019 bridged-race postcensal population estimates for the counties included in the surveillance catchment area. The rates provided are likely to be underestimated as COVID-19 hospitalizations might be missed due to test availability and provider or facility testing practices.

Source: <https://covid.cdc.gov/covid-data-tracker/#covidnet-hospitalization-network>

Accessed January 6, 2022

Vaccination Coverage by Age



Note:

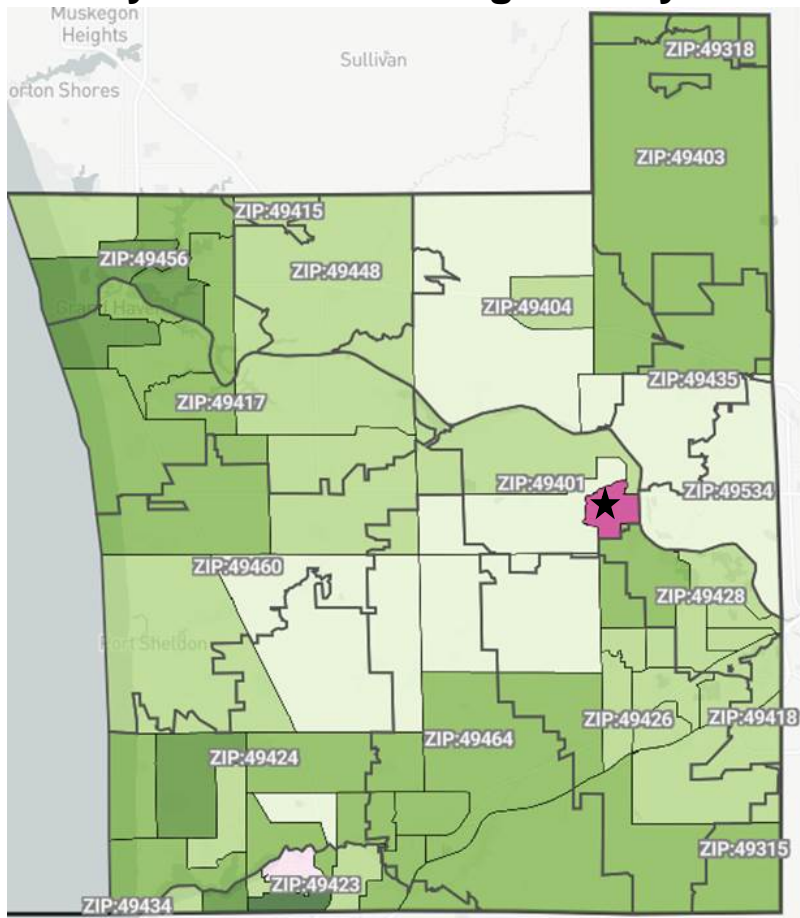
Completion is the percentage of people receiving 2 doses of Pfizer or Moderna or 1 dose of J&J.

Source: https://www.michigan.gov/coronavirus/0,9753,7-406-98178_103214_103272-547150--,00.html

Data through January 4, 2022

Vaccination Coverage by Place of Residence

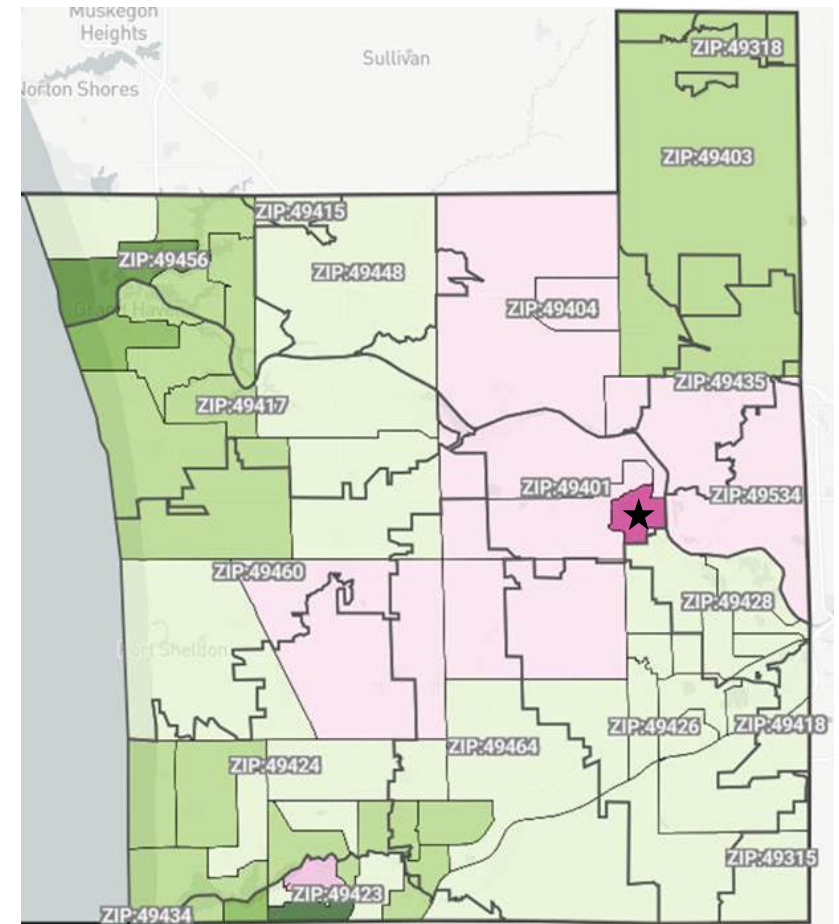
Fully vaccinated: % Ages 16+ years



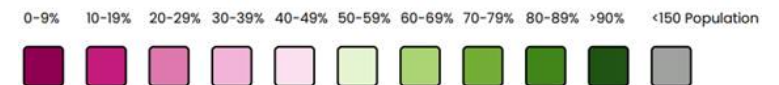
Color coded by: Fully Vaccinated (% Ages 16+)



Fully vaccinated: % Total Population



Color coded by: Fully Vaccinated (% Population)



Vaccination rates vary across Ottawa County, but most areas have at least 50% of the population aged 16+ completely vaccinated (left).

When considering the entire population (not just those aged 16+), there are pockets of the county with much higher and much lower vaccination rates (right).

★ The vaccination rate for this census tract is likely underestimated because census estimates in this tract may be inflated by seasonal students at a large university.

Cumulative Cases by Vaccination Status, Ottawa County, January 15, 2021 – January 1, 2022

Fully Vaccinated People (163,811)		
Cases	Hospitalizations	Deaths
Percent of Cases in People Not Fully Vaccinated (28,020 / 36,536) 76.7%	Percent of Hospitalizations in People Not Fully Vaccinated (974 / 1221) 79.8%	Percent of Deaths in People Not Fully Vaccinated (219 / 316) 69.3%
Total Cases Not Fully Vaccinated 28,020	Total Hospitalized Not Fully Vaccinated 974	Total Deaths Not Fully Vaccinated 219
Total Breakthrough Cases 8,516	Total Breakthrough Hospitalizations 247	Total Breakthrough Deaths 97
Percent of Fully Vaccinated People who Developed COVID-19 (8,516 / 163,811) 5.199%	Percent of Fully Vaccinated People who were Hospitalized for COVID-19 (247 / 163,811) 0.151%	Percent of Fully Vaccinated People who Died of COVID-19 (97 / 163,811) 0.059%
Percent of Cases who were Fully Vaccinated (8,516 / 36,536) 23.3%	Percent of Hospitalizations who were Fully Vaccinated (247 / 1221) 20.2%	Percent of Deaths who were Fully Vaccinated (97 / 316) 30.7%
Total Cases 36,536	Total Hospitalizations 1221	Total Deaths 316

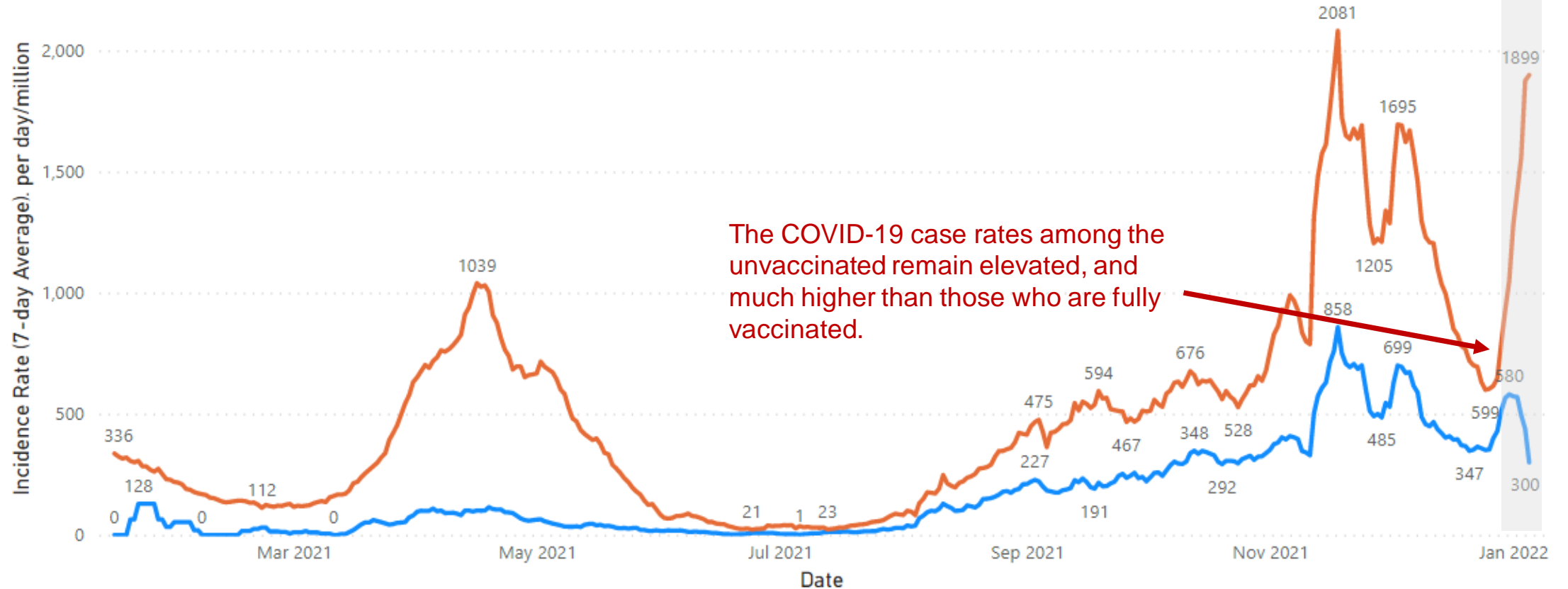
Sources:
Michigan Department of Health and Human Services, Michigan Disease Surveillance System
MDHHS COVID-19 Dashboard: https://www.michigan.gov/coronavirus/0,9753,7-406-98178_103214_103272-547150--,00.html

Ottawa County COVID-19 Vaccination Breakthrough Case Trends

Incidence Rate (7-day Average)

rategroup ● Fully Vaccinated ● Unvaccinated

Recent data may be incomplete



The COVID-19 case rates among the unvaccinated remain elevated, and much higher than those who are fully vaccinated.

Method:

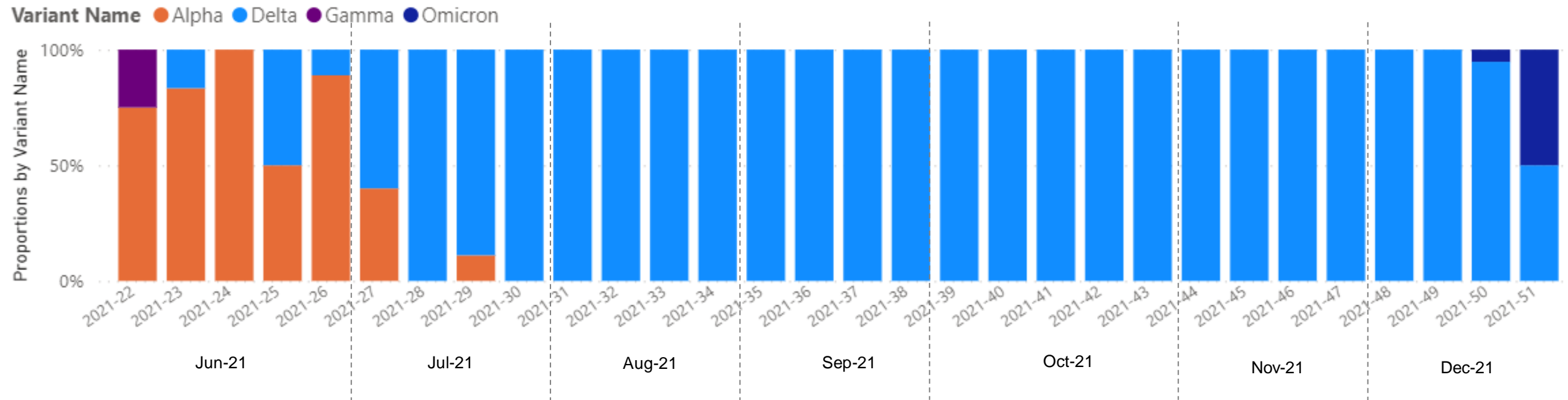
Daily case counts were obtained from the MDSS and summarized by referral date. Cases were compared to data from the State of Michigan immunization database to confirm COVID-19 vaccination status. Counts of persons completely vaccinated in Ottawa County were compiled from the Michigan COVID-19 vaccination dashboard. The total population denominator was obtained from CDC Wonder; the 2019 population estimate was used. Daily COVID-19 case rates were calculated and averaged over the previous 7 days; a rate of cases per day per million population was used. Cases ineligible for vaccination are included in this data. On December 22, 2021 this figure was updated to compare fully vaccinated and unvaccinated persons, to align more closely with [CDC data](#); partially vaccinated persons were excluded.

Sources:

Michigan Department of Health and Human Services, Michigan Disease Surveillance System
 MDHHS COVID-19 Dashboard: https://www.michigan.gov/coronavirus/0,9753,7-406-98178_103214_103272-547150--,00.html

Variants – Clinical Samples from Ottawa County Residents

Variant Proportions by Week

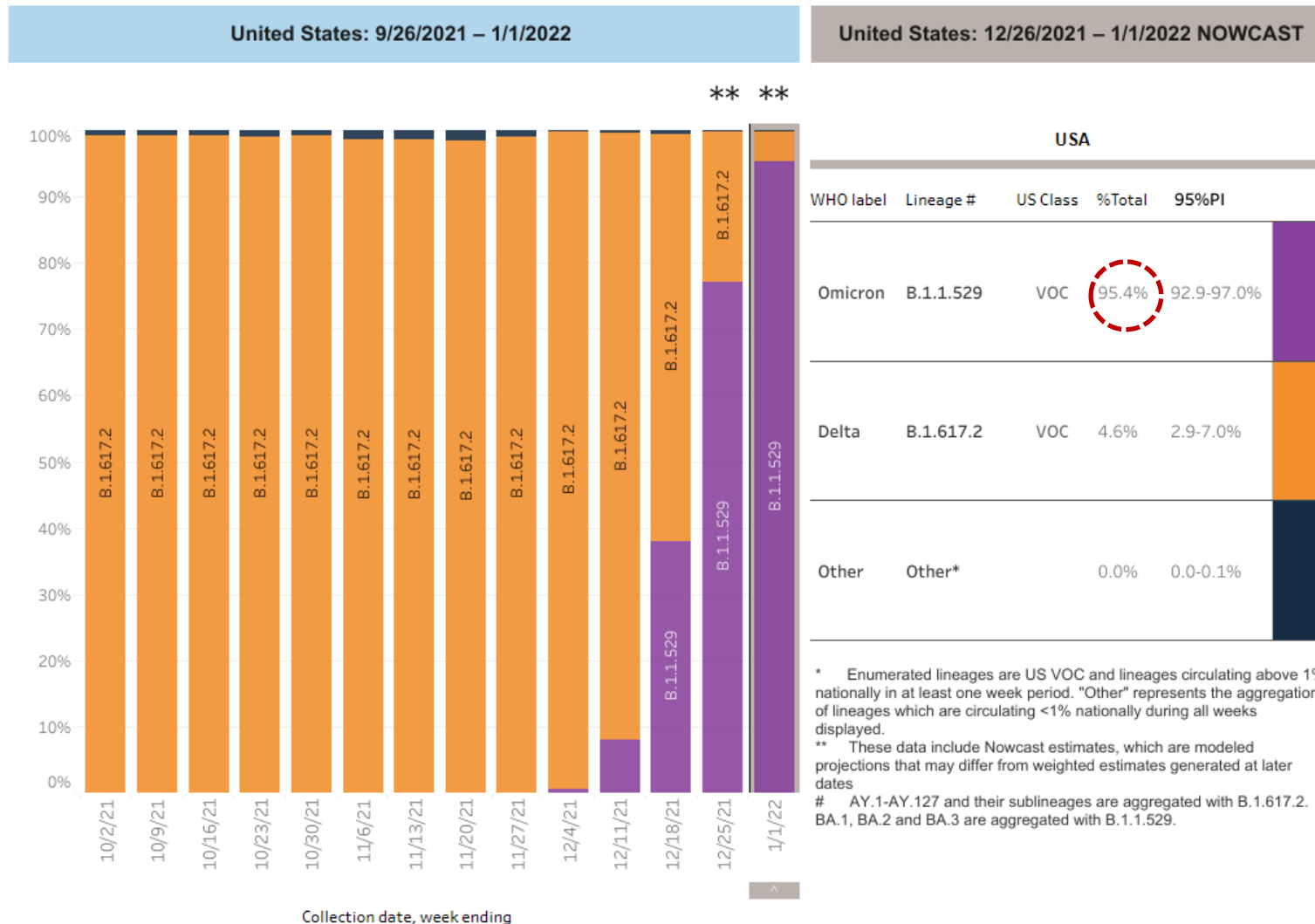


In June of 2021, most clinical samples* submitted for variant testing came back as the **Alpha** variant. By the end of July 2021, all clinical samples tested were returned as the **Delta** variant. From late July through early December 2021 all clinical samples submitted for variant testing came back positive for the **Delta** variant. In mid-December 2021, the first **Omicron** positive samples were collected in an Ottawa County resident, suggesting that **Omicron** is emerging as a contributor to local transmission.

* Swabs from Ottawa County residents that tested positive for COVID-19 by PCR; only a small proportion of all COVID-19 positive tests are tested for variants.

Source: Michigan Department of Health and Human Services, Michigan Disease Surveillance System

Variants – Clinical Samples from Across the USA



The **Omicron** variant is estimated to account for as much as **95.4%** of clinical samples collected in the United States as of January 1, 2022.

CDC Community Risk Transmission Levels & Metrics

Indicator - If the two indicators suggest different transmission levels, the higher level is selected	Low Transmission Blue	Moderate Transmission Yellow	Substantial Transmission Orange	High Transmission Red
Total new cases per 100,000 persons in the past 7 days	0-9.99	10-49.99	50-99.99	≥ 100
Percentage of NAATs ¹ that are positive during the past 7 days	0-4.99%	5-7.99%	8-9.99%	≥ 10.0%

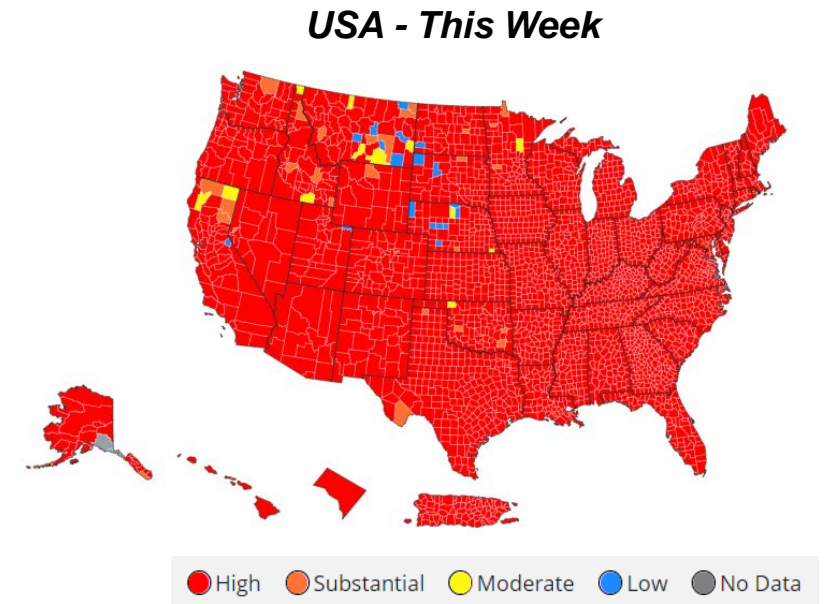
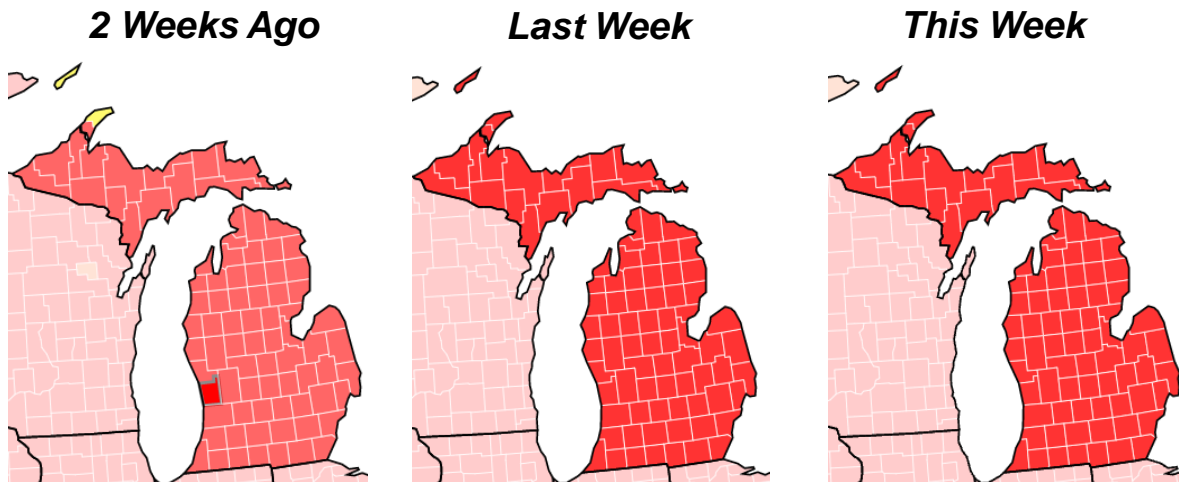
Ottawa's goal is to be in the Moderate category*

Ottawa is in the High category right now

Source: <https://covid.cdc.gov/covid-data-tracker/#county-view>

CDC Community Transmission Risk Levels – Ottawa County

- Current Risk Level in Ottawa – **HIGH** (for last **20+** weeks)
- Current Data:
 - Positivity = 25.62%
 - Case Rate = 608.92 cases per week per 100,000

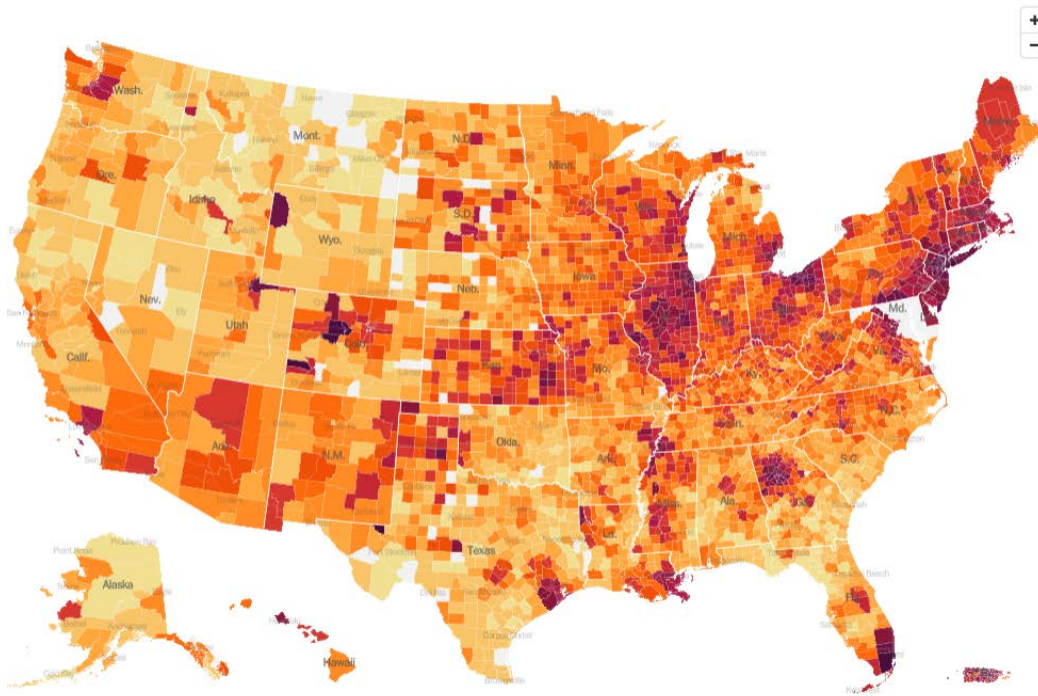


Data through January 2, 2022 for positivity and January 4, 2022 for case rates

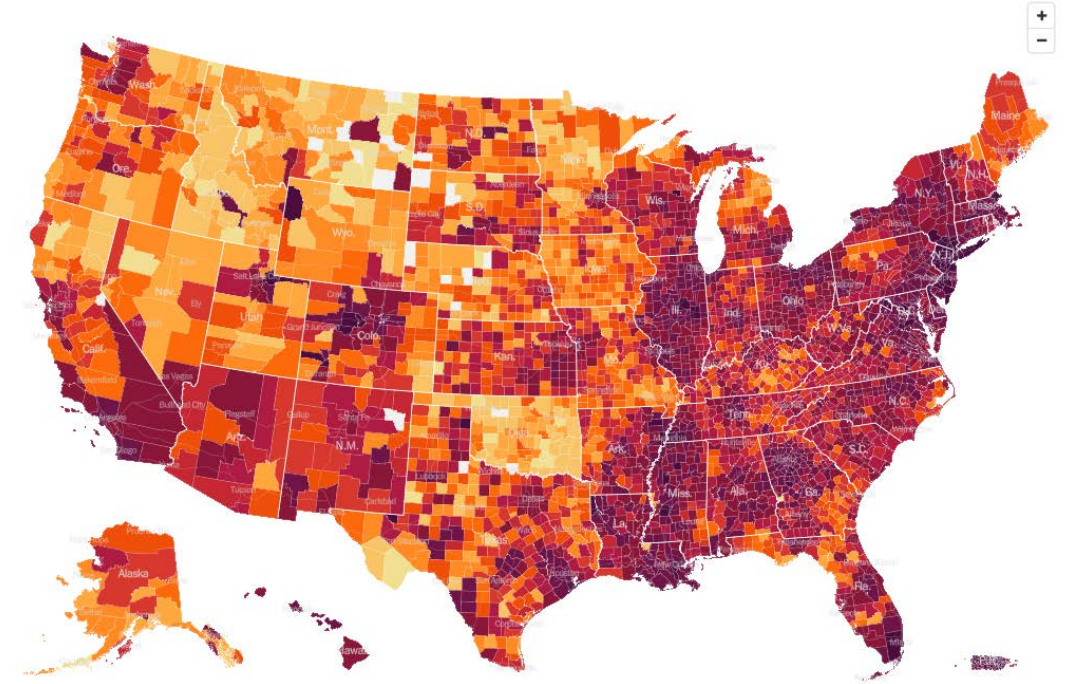
Source: <https://covid.cdc.gov/covid-data-tracker/#county-view>

COVID-19 Case Rates by County Across the US

Last Week



This Week



Case rates are worsening across the nation. Almost every state has seen a recent increase in case rates.

Source: <https://www.nytimes.com/interactive/2021/us/covid-cases.html>

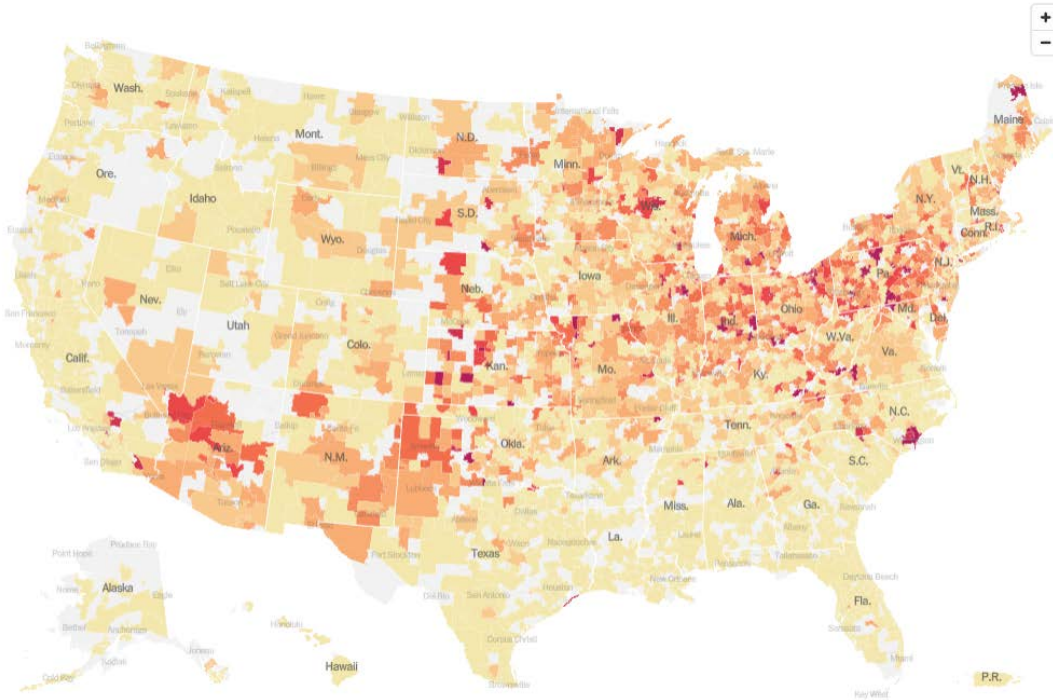
Accessed January 5, 2022

COVID-19 Hospitalization Rates by County Across the US

Last Week

Current hospitalizations

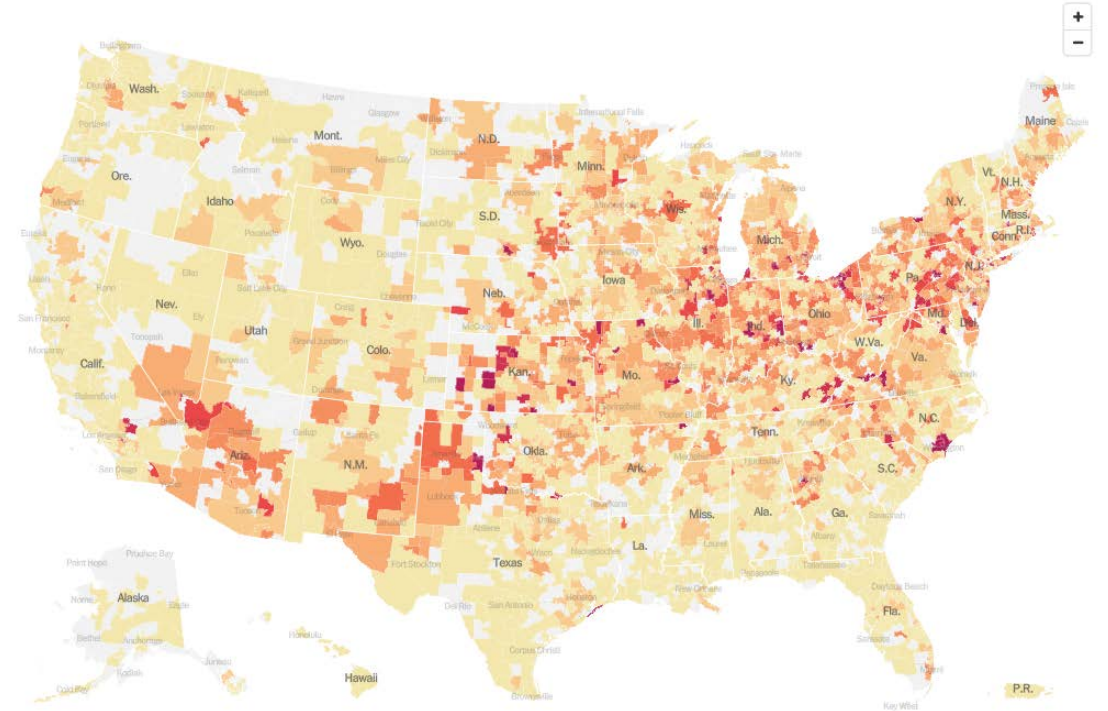
COVID-19 PATIENTS PER 100,000 PEOPLE
20 30 40 50 60 70 80 NO DATA



This Week

Current hospitalizations

COVID-19 PATIENTS PER 100,000 PEOPLE
20 30 40 50 60 70 80 NO DATA



Hospitalization rates remain lower in the South, while some western and midwestern states are experiencing elevated hospitalization rates. Pennsylvania continues showing high hospitalization rates. The possibility remains that the recent surge in cases could translate into more hospitalizations across the nation.

Source: <https://www.nytimes.com/interactive/2021/us/covid-cases.html>

Accessed January 5, 2022

USA & MI

Spread

Children

Hospitalizations

Vaccinations

Variants

Risk Levels

Other

Media

Science Roundup

States and Michigan Counties with School Masking Requirements

- **States/Districts (18):** California, Connecticut, Delaware, Hawaii, Illinois, Louisiana, Maryland, Massachusetts, New Mexico, New Jersey, New York, Nevada, Oregon, Pennsylvania, Rhode Island, Virginia, Washington, & Washington D.C.
- **Michigan Counties (12):**
 - **PreK/K-6:** Marquette
 - **K-12:** Antrim, Benzie, Charlevoix, Emmet, Ingham, Leelanau, Oakland, Otsego, St. Clair*, Washtenaw, and Wayne
- **Rescinded County Mask Mandates (10):**
 - Allegan, Barry, Berrien, Eaton, Iron, Dickinson (rescinded October 2021)
 - Kalamazoo, Genesee (rescinded December of 2021)
 - Ottawa, Kent (rescinded January of 2022)
- **Ottawa County School Districts Retaining Mask Rules (5):**
 - Holland Public, West Ottawa Public, Black River, Grand Haven Public, & Spring Lake Public

Note: Lists may not be comprehensive.

*St. Clair issued a K-12 mask mandate on December 29, 2021, which lasts through January 28, 2022 ([source](#)).

COVID-19 News Headlines

Omicron variant identified in Allegan County

<https://www.hollandsentinel.com/story/news/coronavirus/2021/12/28/omicron-variant-identified-allegan-county/9032969002/>

Michigan sets pandemic record with 7-day average of 8,402 new, reported COVID-19 cases

<https://www.mlive.com/public-interest/2021/12/michigan-sets-pandemic-record-with-seven-day-average-of-new-reported-covid-19-cases.html>

'It is a crisis situation we're in right now': Spectrum Health adds more beds in anticipation of continued COVID-19 surge

<https://www.wzzm13.com/article/news/local/it-is-a-crisis-situation-were-in-right-now-spectrum-health-adds-more-beds-in-anticipation-of-continued-covid-19-surge/69-7a0d9bb4-b729-4b9b-9964-641123d707d4>

Michigan officials say masks in schools 'critical' in letter to superintendents

<https://www.detroitnews.com/story/news/local/michigan/2021/12/30/masks-schools-critical-michigan-department-of-education-health-department/9054958002/>

Omicron variant confirmed in Ottawa County, health department announces

<https://www.hollandsentinel.com/story/news/coronavirus/2022/01/05/omicron-variant-confirmed-ottawa-county/9101488002/>

Pandemic strife put Michigan health departments on life support. Can it heal while COVID surges?

<https://www.mlive.com/coronavirus/2021/12/pandemic-strife-put-michigan-health-departments-on-life-support-can-it-heal-while-covid-surges.html>

Science Roundup

Interim Estimate of Vaccine Effectiveness of BNT162b2 (Pfizer-BioNTech) Vaccine in Preventing SARS-CoV-2 Infection Among Adolescents Aged 12–17 Years — Arizona, July–December 2021

https://www.cdc.gov/mmwr/volumes/70/wr/mm705152a2.htm?s_cid=mm705152a2_w



A small CDC study conducted in Arizona showed that full vaccination with Pfizer offered 92% effectiveness to adolescents aged 12-17. Also nested in this study is the observation that adolescents who tested positive for COVID-19 reported a lower percentage of time wearing a mask in school.

Receipt of COVID-19 Vaccine During Pregnancy and Preterm or Small-for-Gestational-Age at Birth — Eight Integrated Health Care Organizations, United States, December 15, 2020–July 22, 2021

https://www.cdc.gov/mmwr/volumes/71/wr/mm7101e1.htm?s_cid=mm7101e1_w



A large CDC study found that COVID-19 vaccination during pregnancy was not associated with preterm birth or the infant being born small (birthweight 10th percentile or less).

The U.S. COVID-19 Vaccination Program at One Year: How Many Deaths and Hospitalizations Were Averted?

[The U.S. COVID-19 Vaccination Program at One Year: How Many Deaths and Hospitalizations Were Averted? | Commonwealth Fund](#)



Although not peer-reviewed, a brief published by The Commonwealth Fund estimated that without a COVID-19 vaccination program there would be 1.1 million additional deaths and 10.3 million additional hospitalizations in the US by November 2021.