miOttawa Department of Public Health

Ottawa County COVID-19 Epidemiology

April 14, 2023

Data as of April 8, 2023, unless otherwise indicated.

Executive Summary

- **Weekly reported cases in the US and in Michigan are stable and relatively low**

- **Ottawa County transmission signals may be showing decreases**
  - Last week positivity **decreased** to 7.8%, from 10% two weeks ago.
  - Weekly case counts **decreased** 36% (-19% two weeks ago), from 92 two weeks ago to 59 last week.
  - Cases among children **decreased** 20% (0% two weeks ago), from 5 two weeks ago to 4 last week.
  - COVID-19 wastewater signals in Ottawa County **are low**. In Holland/Zeeland the latest signals **have decreased and may be stabilizing**; Grand Haven/Spring Lake signals are **low and stable**, and Allendale signals are **low but mixed**.
  - Based on national data, a variety of Omicron subvariants are likely circulating.
  - Ottawa's CDC Community Level is LOW.
  - Ottawa's CDC Transmission Level is SUBSTANTIAL as of April 14, 2023.

- **Ottawa-area and regional hospitals have adequate capacity**
  - In Ottawa County, 0% of all available beds and 0% of all ICU beds are occupied by COVID-19 patients.*

- **Pediatric hospitalization rates in the US and in Michigan remain relatively low**
  - Regional COVID-19 pediatric hospitalization census remains low compared to the late 2021 and early 2022 Omicron surge.

- **Of Ottawa County residents aged 6 months and older, 61.8% have received their primary vaccine series.**

*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.

Limitations

- **Case Counts, Case Rates, and Test Positivity**

  With the widescale availability of at-home antigen tests for COVID-19, which are not reported or included in public health surveillance data, the case counts and case rates in this report underestimate the true burden of this disease. However, it is expected that increasing and decreasing trends reflect the relative amount of transmission in the community.

- **Wastewater Surveillance**

  Wastewater samples are collected from specific geographic sites in the county and may not reflect COVID-19 burden across the entire county population. However, increases and decreases in detected trends generally correlate with case rates, therefore wastewater readings are displayed alongside countywide incidence rates in this report.

Ottawa County Metrics by Week

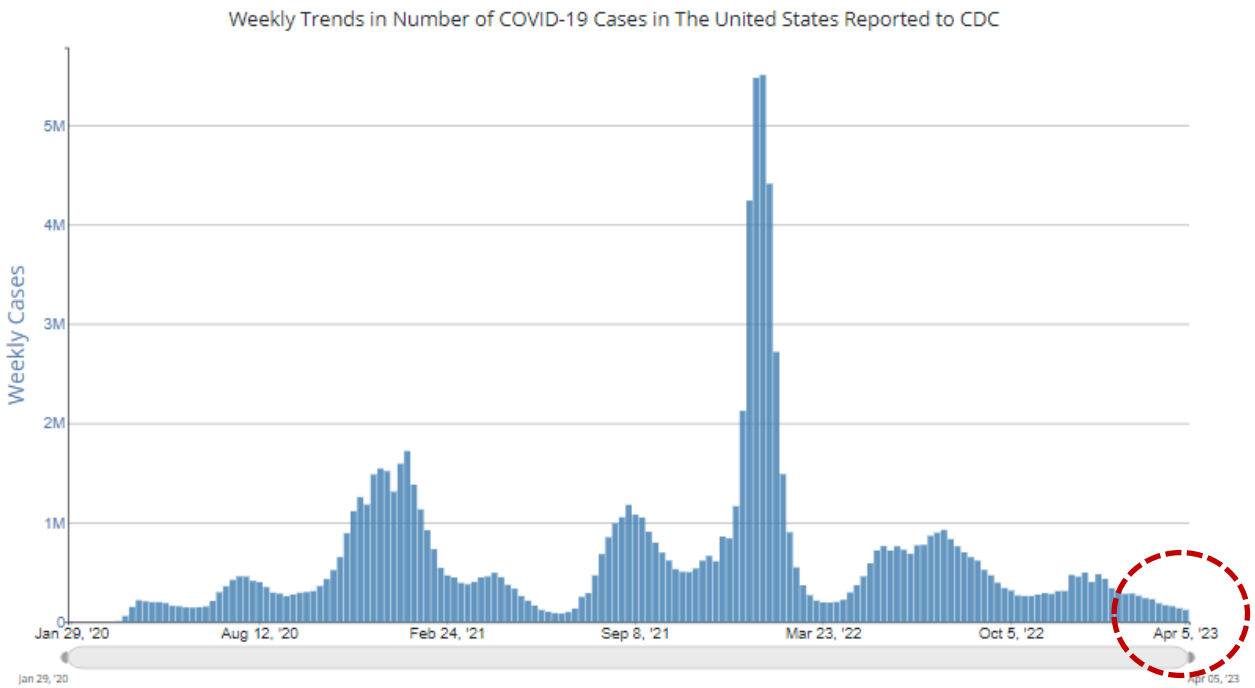
		Week Ending				
Metric	**Goal**	**11-Mar-23**	**18-Mar-23**	**25-Mar-23**	**1-Apr-23**	**8-Apr-23**
Positivity (All Ages)	NA	10.4%	14.7%	10.1%	10.0%	7.8%
Weekly Cases (All Ages)	<592	106	145	113	92	59
Weekly Cases in Children (0-17 years of age)	NA	19	10	5	5	4
Total Deaths (All Ages)	0	2	5	2	3	0
CDC COVID-19 Community Level	Low	Low	Low	Low	Low	Low

Please note that with updated CDC Community Levels, metrics and/or metric thresholds/goals may change.

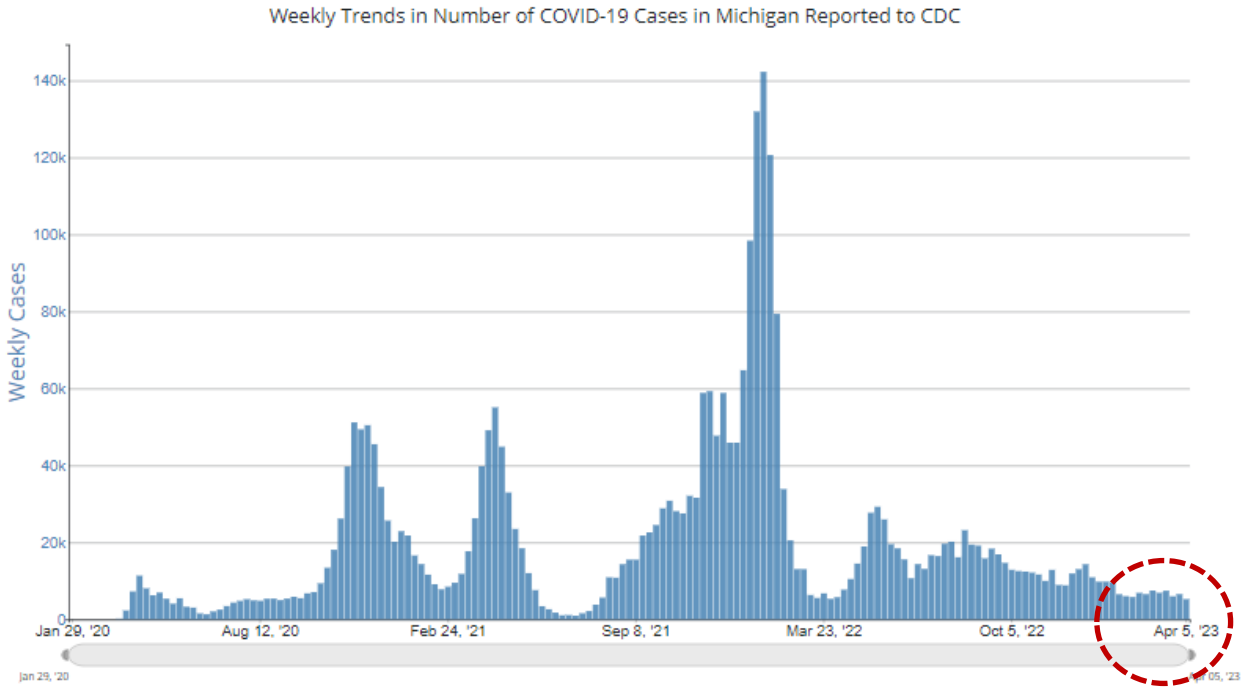
Notes: Use of at home tests likely reduces the number of positive tests reported to Public Health, resulting in an artificially lower number of cases. Hospitalization and/or death may occur after initial infection, meaning the number of hospitalizations and deaths from recent weeks may increase

Weekly Case Trends in the USA and Michigan

USA



Michigan



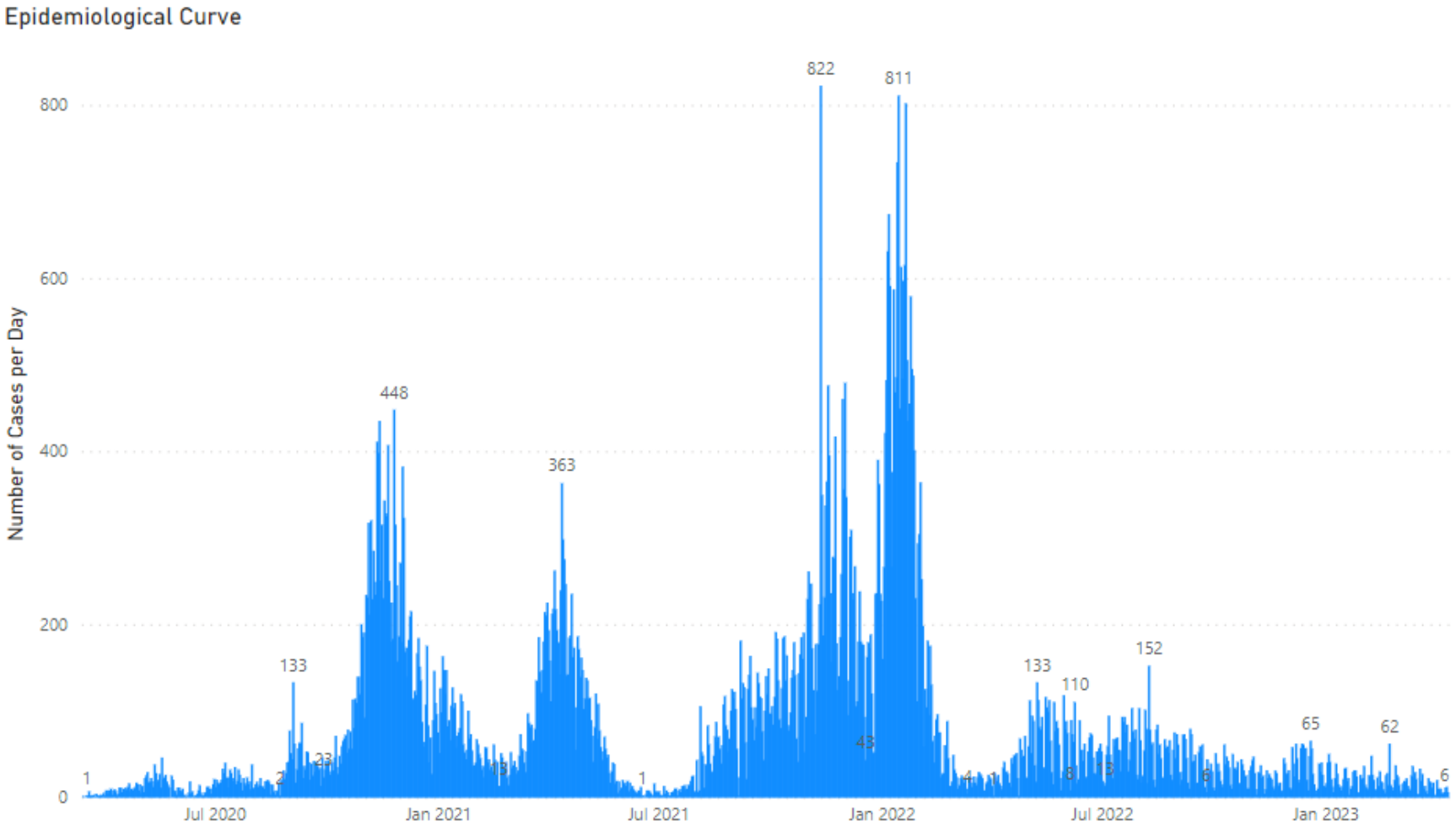
Weekly case counts in the US and Michigan remain lower than previous surges, are stable, and may be declining.

Note: Use of at home tests since late 2021 likely reduces the number of positive tests reported to Public Health, resulting in an artificially lower number of cases.
Source: https://covid.cdc.gov/covid-data-tracker/#trends_dailycases

Data through April 5, 2023

Case Trends in Ottawa County

COVID-19 Cases by Day, Ottawa County, March 15, 2020 – April 12, 2023



Total Number of Cases

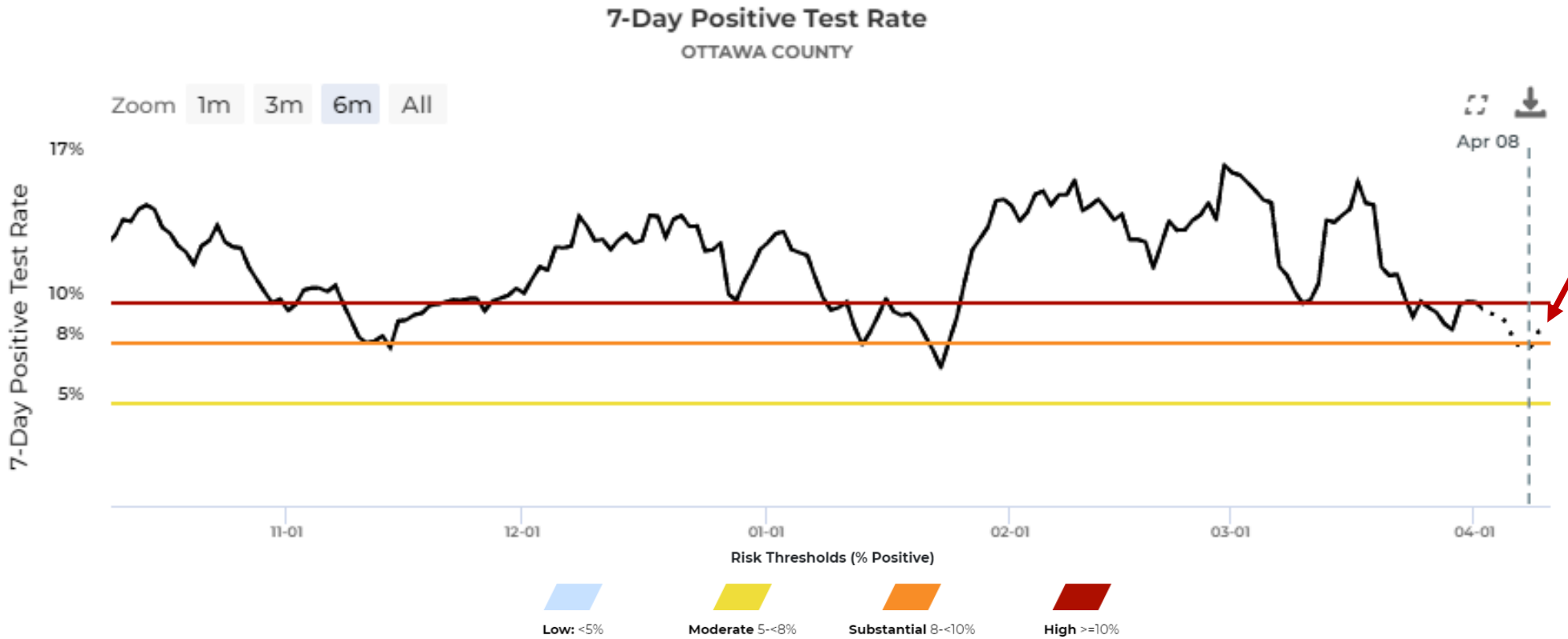
88,541

Currently, the 7-day average is approximately **8 cases per day,** a decrease from the approximately **12** cases per day seen two weeks ago.

Notes: Use of at home tests since late 2021 likely reduces the number of positive tests reported to Public Health, resulting in an artificially lower number of cases. Additionally, 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, October 1, 2022 – April 8, 2023



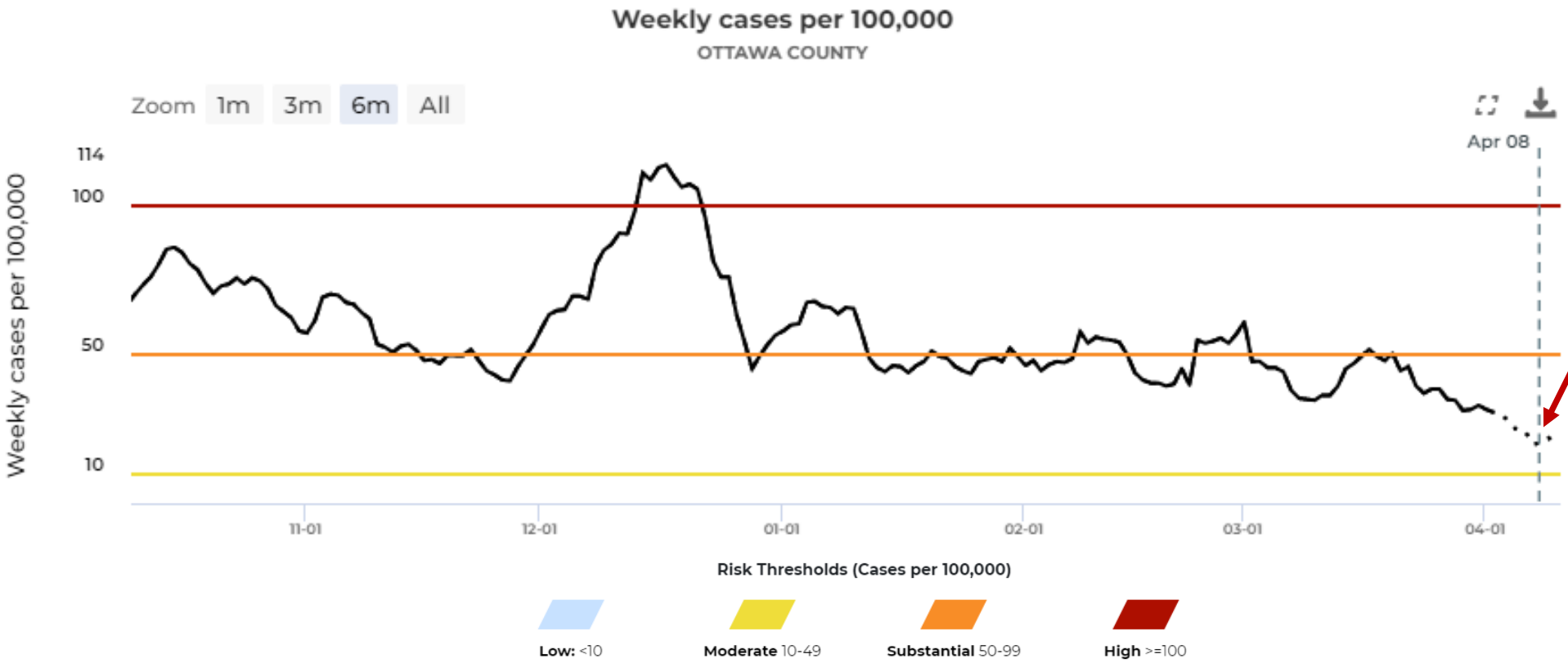
Positivity trended at **7.8%** last week, a **decrease** from **10%** the week prior.

This visualization may change as CDC Community Transmission levels, metrics and/or metric thresholds/goals change.

Note: Testing data and can be found on the MI Safe Start Map. Use of at-home tests since late 2021 likely reduces the number of positive tests reported to Public Health, resulting in an artificially lower number of cases.
Source: MI Safe Start Map-Ottawa County

Case Rates in Ottawa County – All Ages

COVID-19 Cases by Day, Ottawa County, October 1, 2022 – April 8, 2023



Case rates **trended at 20.2** cases per week per 100,000 population (**lower than the 31.5** the week prior).

This visualization may change as CDC Community Transmission levels, metrics and/or metric thresholds/goals change.

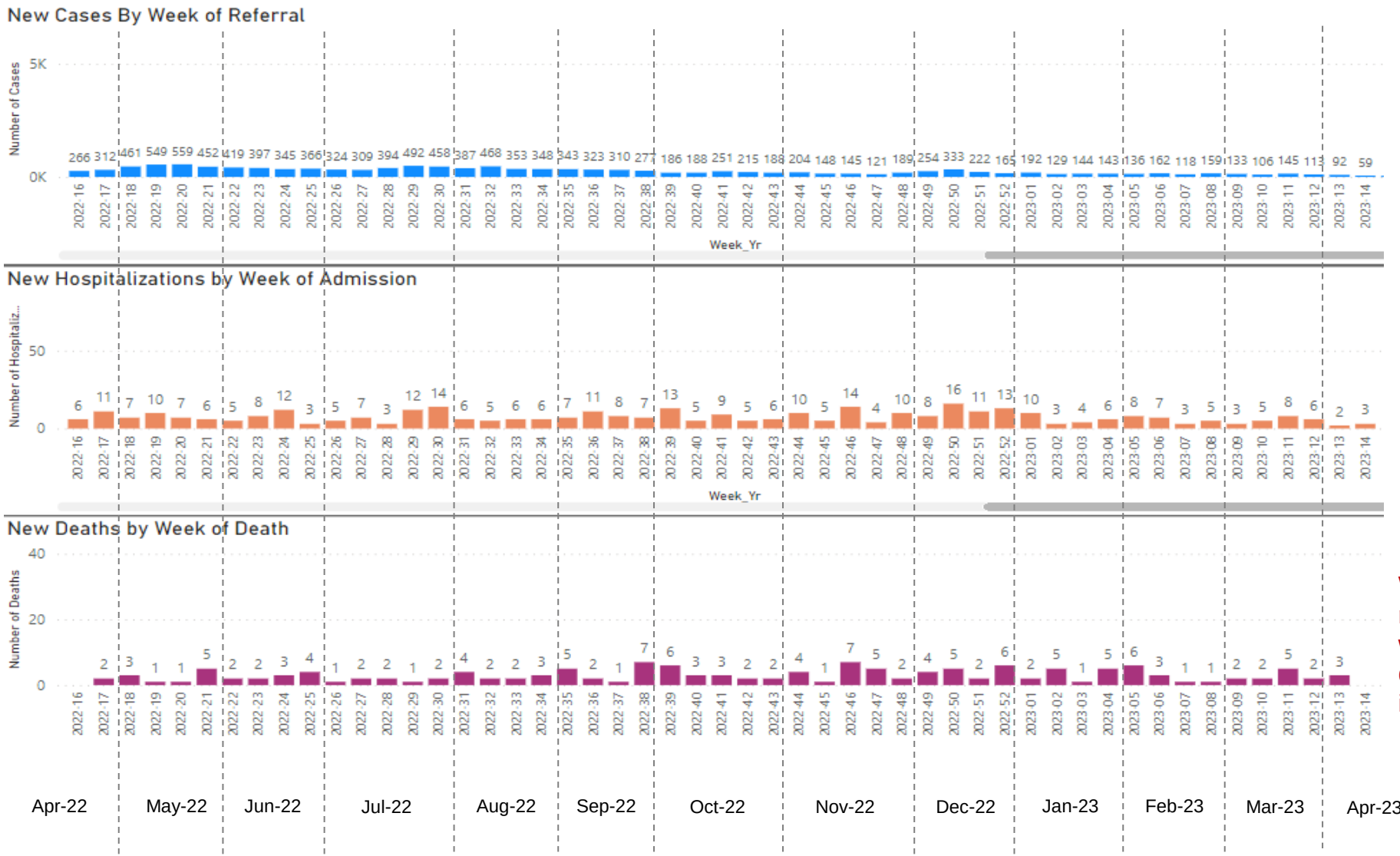
Note: Use of at home tests since late 2021 likely reduces the number of positive tests reported to Public Health, resulting in artificially lower rates.
Source: MI Safe Start Map-Ottawa County

Ottawa County Trends – Comparison of Case Rates by Year

Note: Use of at home tests since late 2021 likely reduces the number of positive tests reported to Public Health, resulting in artificially lower case rates.
Source: Internal Data

Data through April 12, 2023

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



Hospitalization data include all Ottawa County cases that have ever been hospitalized for COVID-19 or COVID-19 related complications. These data do not include Urgent Care visits, Emergency Department visits, or multiple hospitalizations for a single case.

The weekly number of **cases decreased 36%** from week 13 to week 14.

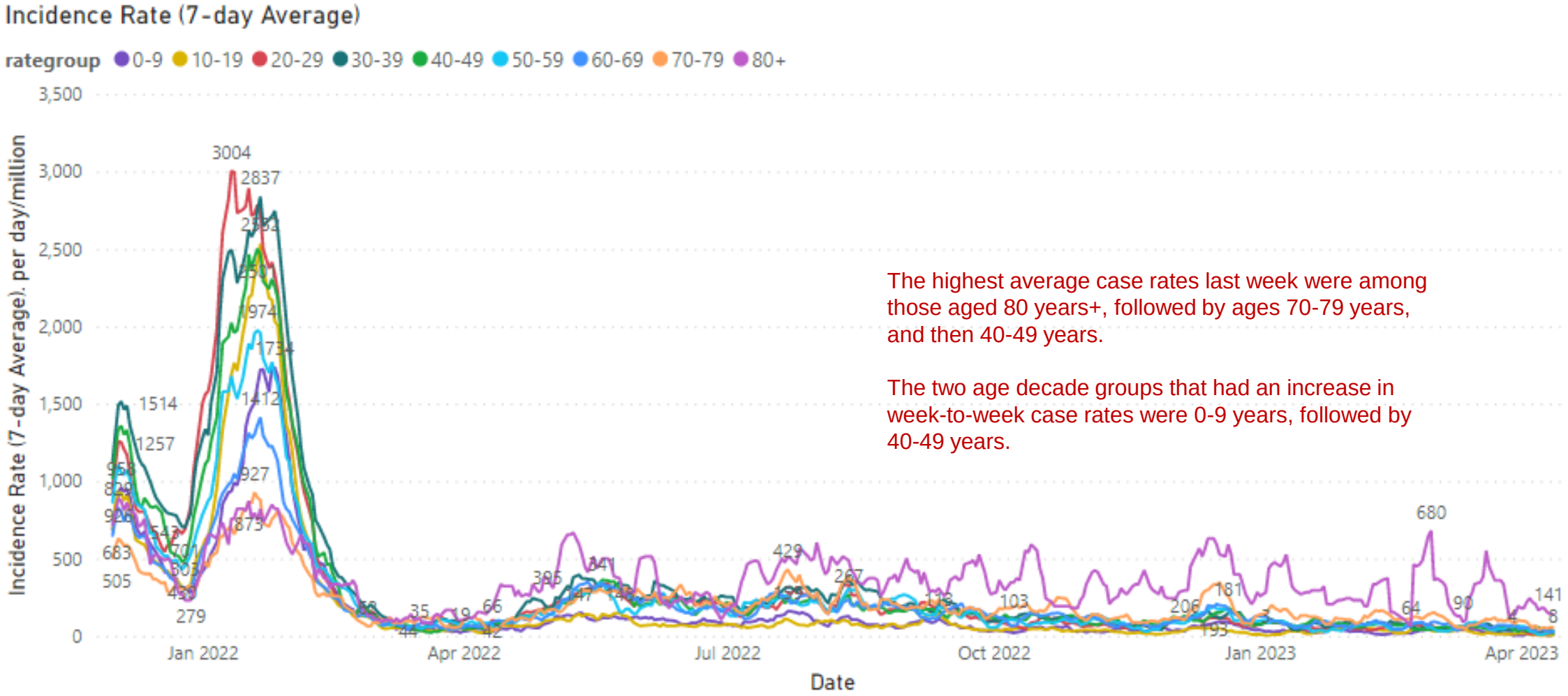
Weekly COVID-19 **deaths remain low.** The current weekly average number of deaths over the last 4 weeks is about **3 deaths per week.**

Note: Use of at home tests since late 2021 likely reduces the number of positive tests reported to Public Health, resulting in artificially lower number of cases.
Source: Michigan Department of Health and Human Services, Michigan Disease Surveillance System

Data as of April 12, 2023

Ottawa County Case Rate Trends by Age Decade

COVID-19 Case Rates by Age, December 2021 – April 12, 2023



Note: Use of at home tests since late 2021 likely reduces the number of positive tests reported to Public Health, resulting in artificially lower rates.

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

Data as of April 12, 2023

Ottawa County Case Rate Trends by Age Decade

Daily new confirmed and probable cases per day per million by age group (daily average per week)
Week 14 (April 2, 2023 – April 8, 2023)

Small numbers of cases in some age categories may cause substantial shifts in weekly case rates and percent change.

For example, four cases among persons 0-17 years of age were reported the week ending April 8, 2023 (slide 18).

Because of these small numbers issues, interpret this data with caution.

This data may be removed in future reports if small numbers issues persist.

Age Decade (Years)	Average Daily Cases	Average Daily Case Rate	One Week % Rate Change
0-9	0.6	15.5	307%
10-19	0.1	3.2	-80%
20-29	0.6	12.6	-64%
30-39	1.0	27.9	-42%
40-49	1.4	43.1	11%
50-59	0.3	8.3	-86%
60-69	1.3	39.6	-18%
70-79	1.0	48.4	-50%
80+	2.0	179.7	0%

Age groups with highest average case rates last week:
1. 80+
2. 70-79
3. 40-49

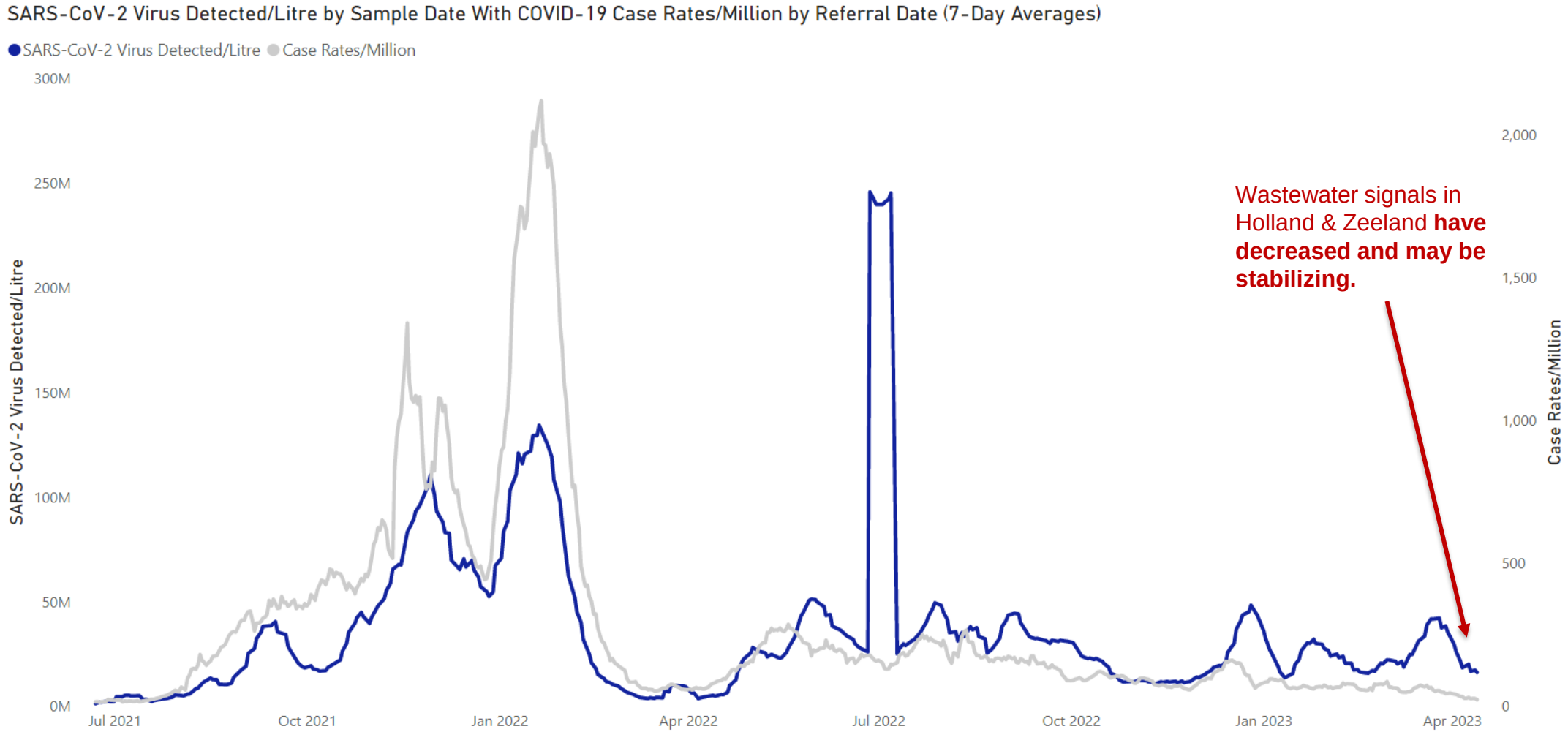
Age groups with largest week-over-week increase in case rates:
1. 0-9
2. 40-49

Notes: Average daily cases is calculated by summing the weekly total number of cases and dividing by seven. Cases counted in weeks of interest reflect referral date. Use of at home tests since late 2021 likely reduces the number of positive tests reported to Public Health, resulting in artificially lower rates.

Source: Michigan Department of Health and Human Services, Michigan Disease Surveillance System; CDC Wonder 2020 population

Data as of April 12, 2023

Holland-Zeeland Wastewater Surveillance



Data Interpretation: The **blue line** on the graph shows the 7-day average levels of SARS-CoV-2 virus (N2 markers) detected in wastewater sampled from treatment plants in Holland & Zeeland. The **gray line** on the graph represents the 7-day average COVID-19 case rates/million for all of Ottawa County by referral date.

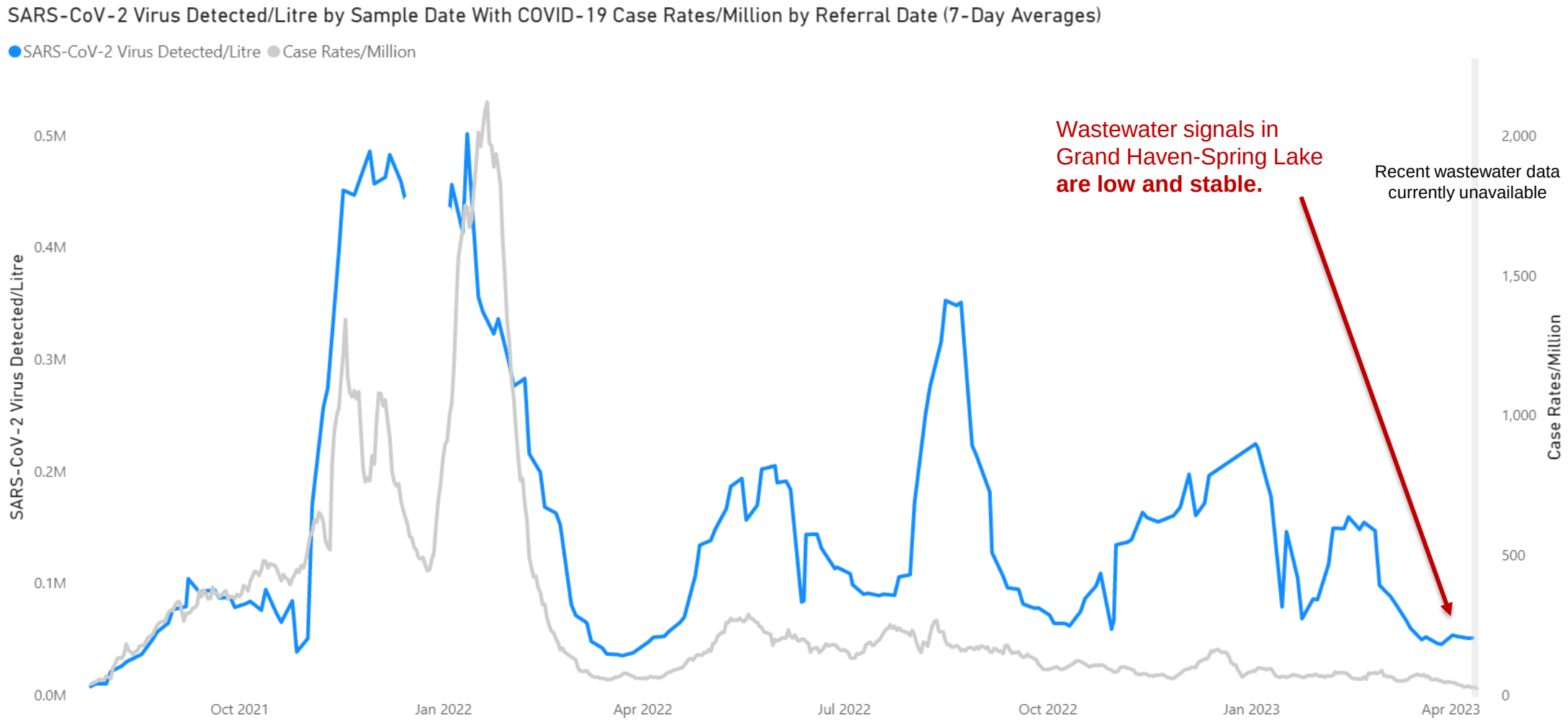
Notes: Use of at home tests since late 2021 likely reduces the number of positive tests reported to Public Health, resulting in artificially deflated case rates. Display of wastewater data may change as analytical methods are refined. A data point from Zeeland collected June 23, 2022, was removed from data analysis as an extreme outlier.

Source: Hope College Global Water Research Institute as part of the MDHHS SEWER-Network, Aaron Best, Ph.D. (best@hope.edu)

Additional Information: Michigan COVID-19 Wastewater Surveillance Pilot Project (arcgis.com), Coronavirus - Sentinel Wastewater Epidemiology Evaluation Project (SWEEP) (michigan.gov)

Data through April 13, 2023

Grand Haven-Spring Lake Wastewater Surveillance



Data Interpretation: The **blue line** on the graph shows the 7-day average levels of SARS-CoV-2 virus (N2 markers) detected in wastewater sampled from the treatment plant in Grand Haven-Spring Lake. The **gray line** on the graph represents the 7-day average COVID-19 case rates/million for all of Ottawa County by referral date.

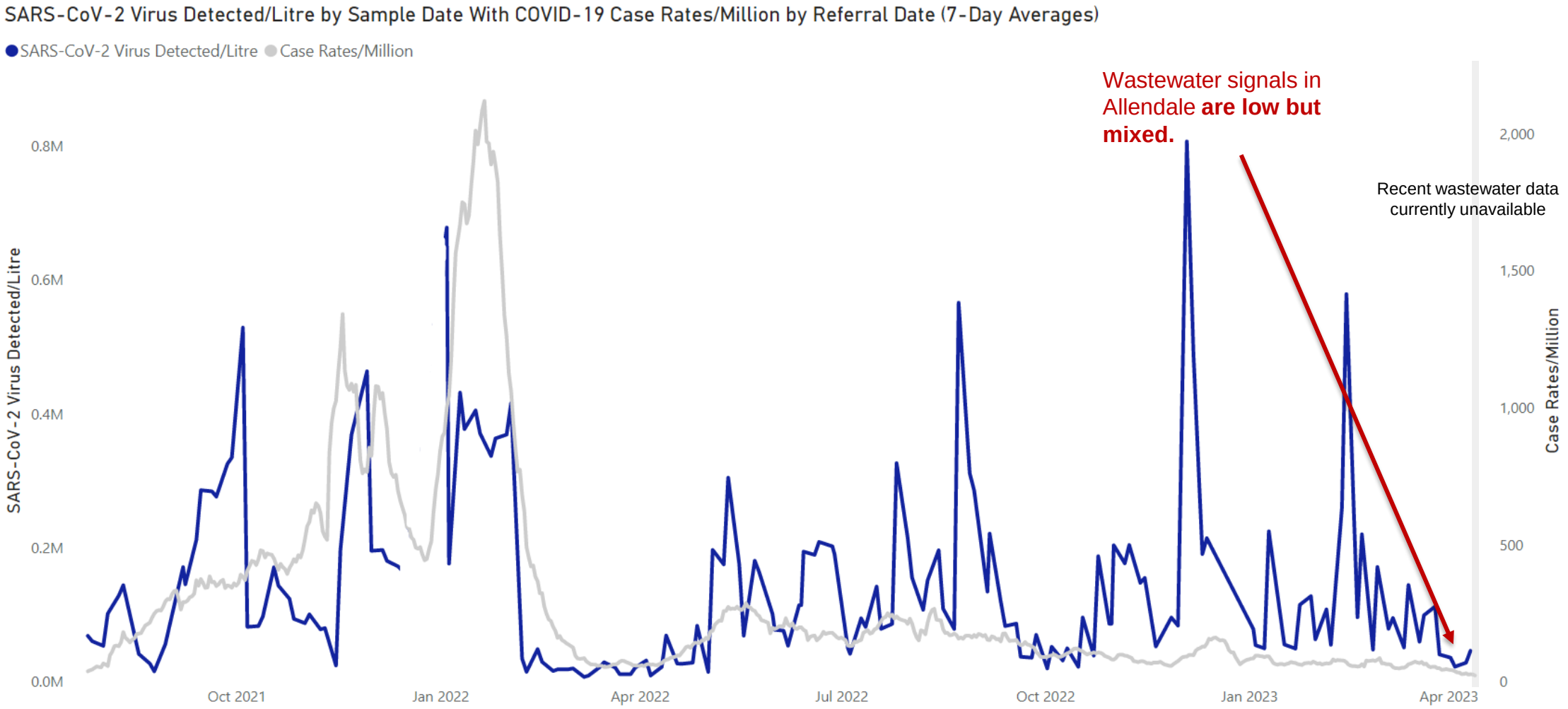
Note: Use of at home tests since late 2021 likely reduces the number of positive tests reported to Public Health, resulting in artificially deflated case rates. Display of wastewater data may change as analytical methods are refined.

Source: Grand Valley State University Annis Water Resources Institute as part of the MDHHS SEWER-Network, Richard Rediske, Ph.D. (redisker@gvsu.edu)

Additional Information: Michigan COVID-19 Wastewater Surveillance Pilot Project (arcgis.com), Coronavirus - Sentinel Wastewater Epidemiology Evaluation Project (SWEEP) (michigan.gov)

Data through April 11, 2023

Allendale Wastewater Surveillance



Data Interpretation: The **blue line** on the graph shows the 7-day average levels of SARS-CoV-2 virus (N2 markers) detected in wastewater sampled from the treatment plant in Allendale. The **gray line** on the graph represents the 7-day average COVID-19 case rates/million for all of Ottawa County by referral date.

Note: Use of at home tests since late 2021 likely reduces the number of positive tests reported to Public Health, resulting in artificially deflated case rates. Display of wastewater data may change as analytical methods are refined.

Source: Grand Valley State University Annis Water Resources Institute as part of the MDHHS SEWER-Network, Richard Rediske, Ph.D. (redisker@gvsu.edu)

Additional Information: Michigan COVID-19 Wastewater Surveillance Pilot Project (arcgis.com), Coronavirus - Sentinel Wastewater Epidemiology Evaluation Project (SWEEP) (michigan.gov)

Data through April 11, 2023

Ottawa County Weekly Case Counts and % Change, by Age

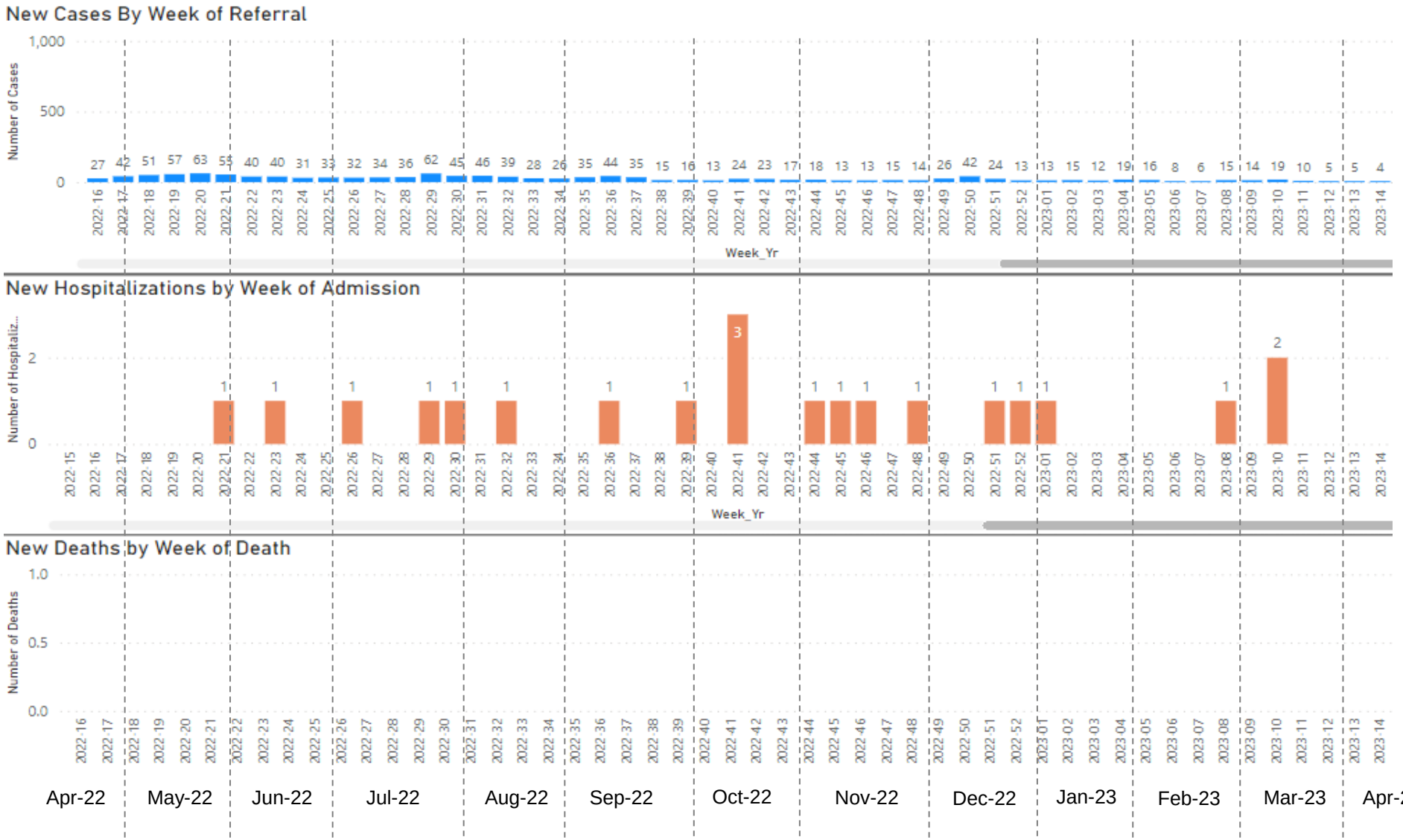
Week Ending	Adults (18+)		Children (0-17 years)		Total	
	Number	% Change from Previous Week	Number	% Change from Previous Week	Number	% Change from Previous Week
28-Jan-23	124	-6%	19	58%	143	-1%
4-Feb-23	120	-3%	16	-16%	136	-5%
11-Feb-23	154	28%	8	-50%	162	19%
18-Feb-23	112	-27%	6	-25%	118	-27%
25-Feb-23	144	29%	15	150%	159	35%
4-Mar-23	119	-17%	14	-7%	133	-16%
11-Mar-23	87	-27%	19	36%	106	-20%
18-Mar-23	135	55%	10	-47%	145	37%
25-Mar-23	108	-20%	5	-50%	113	-22%
1-Apr-23	87	-19%	5	0%	92	-19%
8-Apr-23	55	-37%	4	-20%	59	-36%

Adults **Children**

Weekly case counts among **children decreased 20%** last week, and cases in **adults decreased 37%.**

Note: Use of at home tests since late 2021 likely reduces the number of positive tests reported to Public Health, resulting in an artificially lower number of cases.
Source: Michigan Department of Health and Human Services, Michigan Disease Surveillance System

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



The weekly number of cases among children **decreased 20%** from week 13 to week 14.

There have not been any COVID-19 associated deaths in children since the first one occurred in early January of 2022 (not pictured).

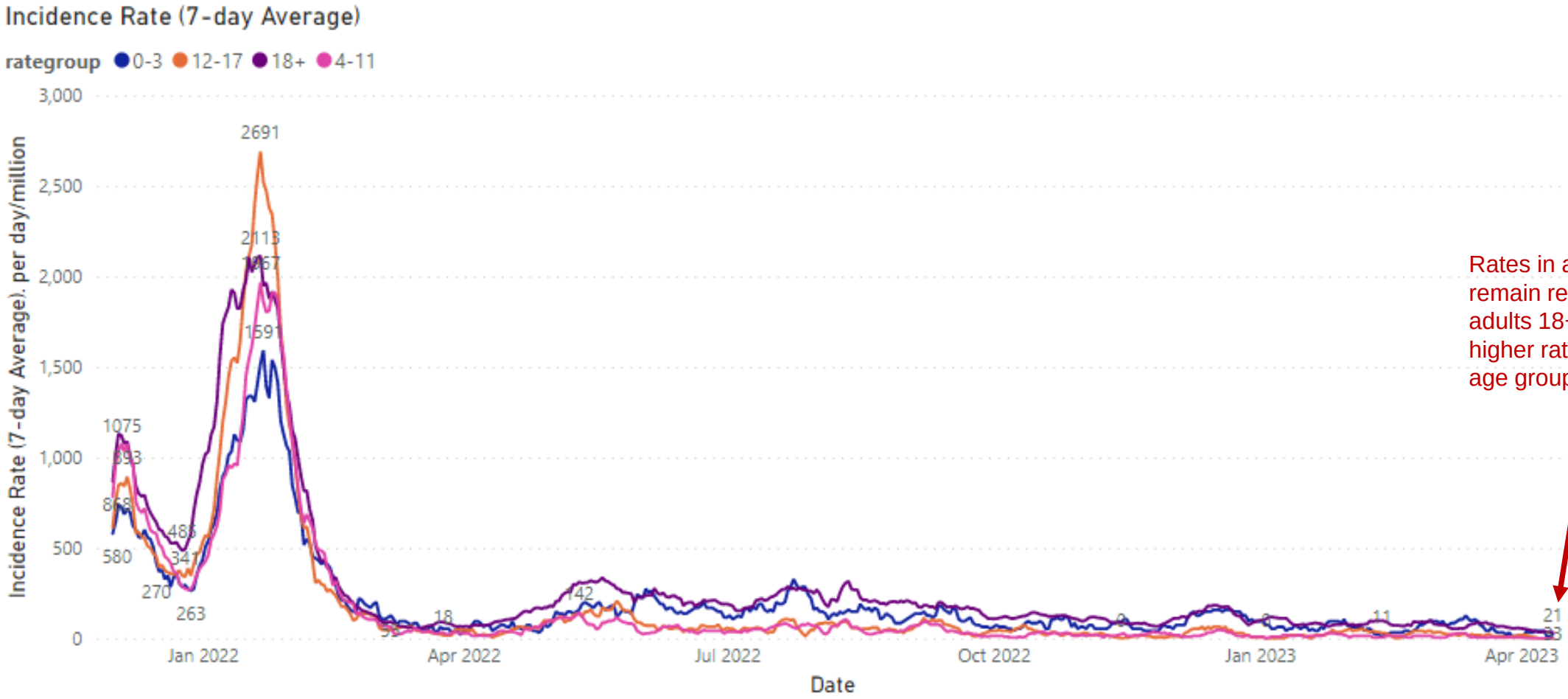
Hospitalization data include all Ottawa County cases that have ever been hospitalized for COVID-19 or COVID-19 related complications. These data do not include Urgent Care visits, Emergency Department visits, or multiple hospitalizations for a single case.

Note: Use of at home tests since late 2021 likely reduces the number of positive tests reported to Public Health, resulting in artificially deflated case counts.
Source: Michigan Department of Health and Human Services, Michigan Disease Surveillance System

Data as of April 12, 2023

Ottawa County – Case Rate Trends by Age

COVID-19 Case Rates by Age, includes School-Aged, December 2021 – April 12, 2023

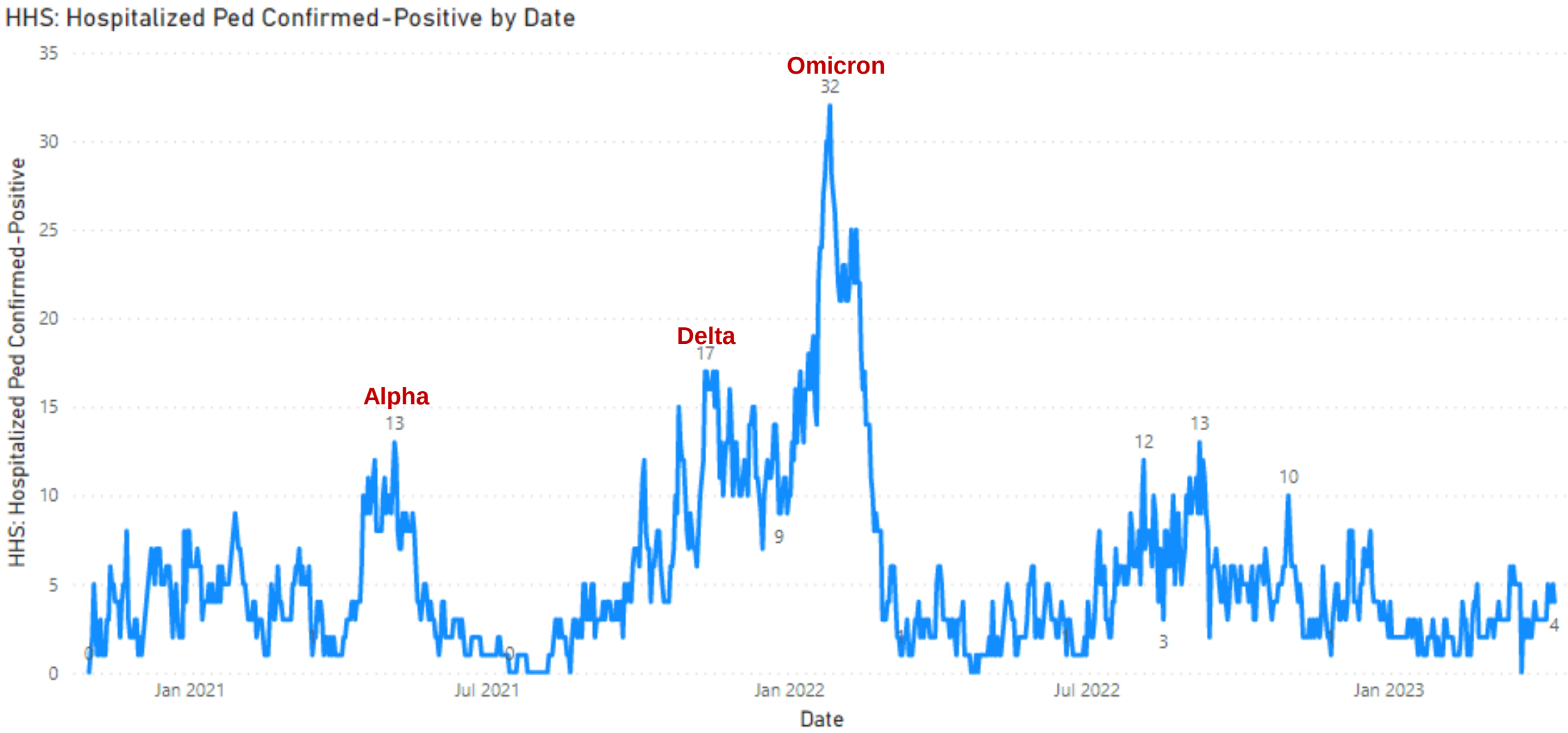


Rates in all age groups remain relatively low, with adults 18+ years having higher rates than younger age groups.

Note: Use of at home tests since late 2021 likely reduces the number of positive tests reported to Public Health, resulting in artificially deflated case rates.
Source: Michigan Department of Health and Human Services, Michigan Disease Surveillance System

Data as of April 12, 2023

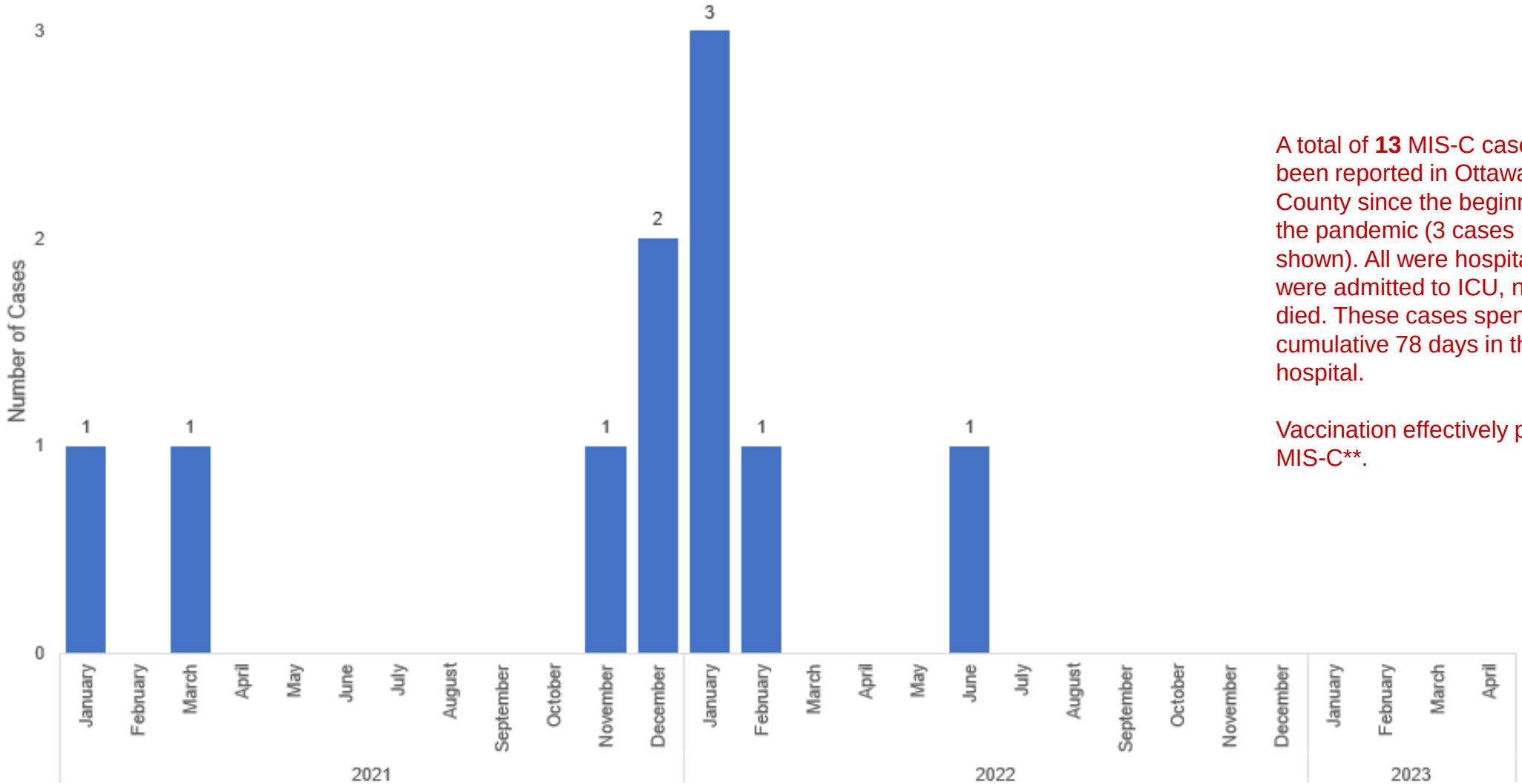
Daily Hospital Pediatric Census – West Michigan



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

Data through April 12, 2023

Ottawa County MIS-C* Cases by Month



A total of **13** MIS-C cases have been reported in Ottawa County since the beginning of the pandemic (3 cases not shown). All were hospitalized, 6 were admitted to ICU, none died. These cases spent a cumulative 78 days in the hospital.

Vaccination effectively prevents MIS-C**.

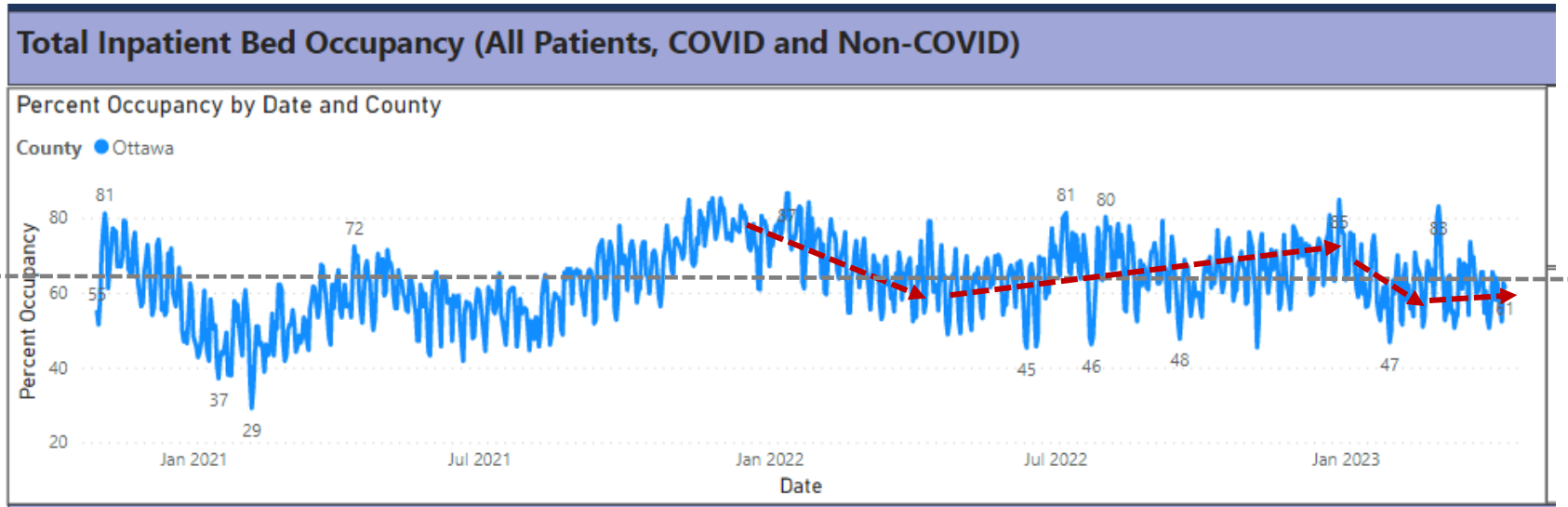
Notes: Includes confirmed and probable cases.
*MIS-C is a rare but serious condition affecting children, associated with recent COVID-19 infection. For more details on MIS-C please visit: https://www.cdc.gov/mis/index.html
**Sources: MMWR & The Lancet

Data through April 12, 2023

Ottawa County Hospital Capacity – All Beds

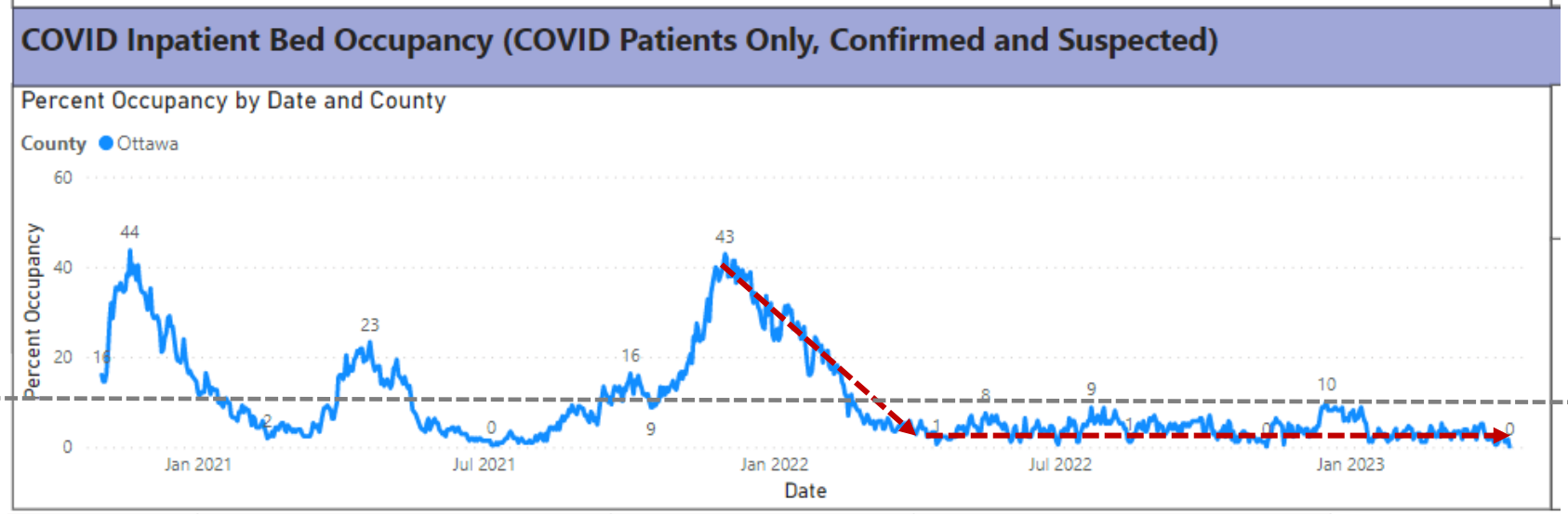
Pandemic Average

63%



Total hospital bed occupancy is currently **below the pandemic average.**

10%

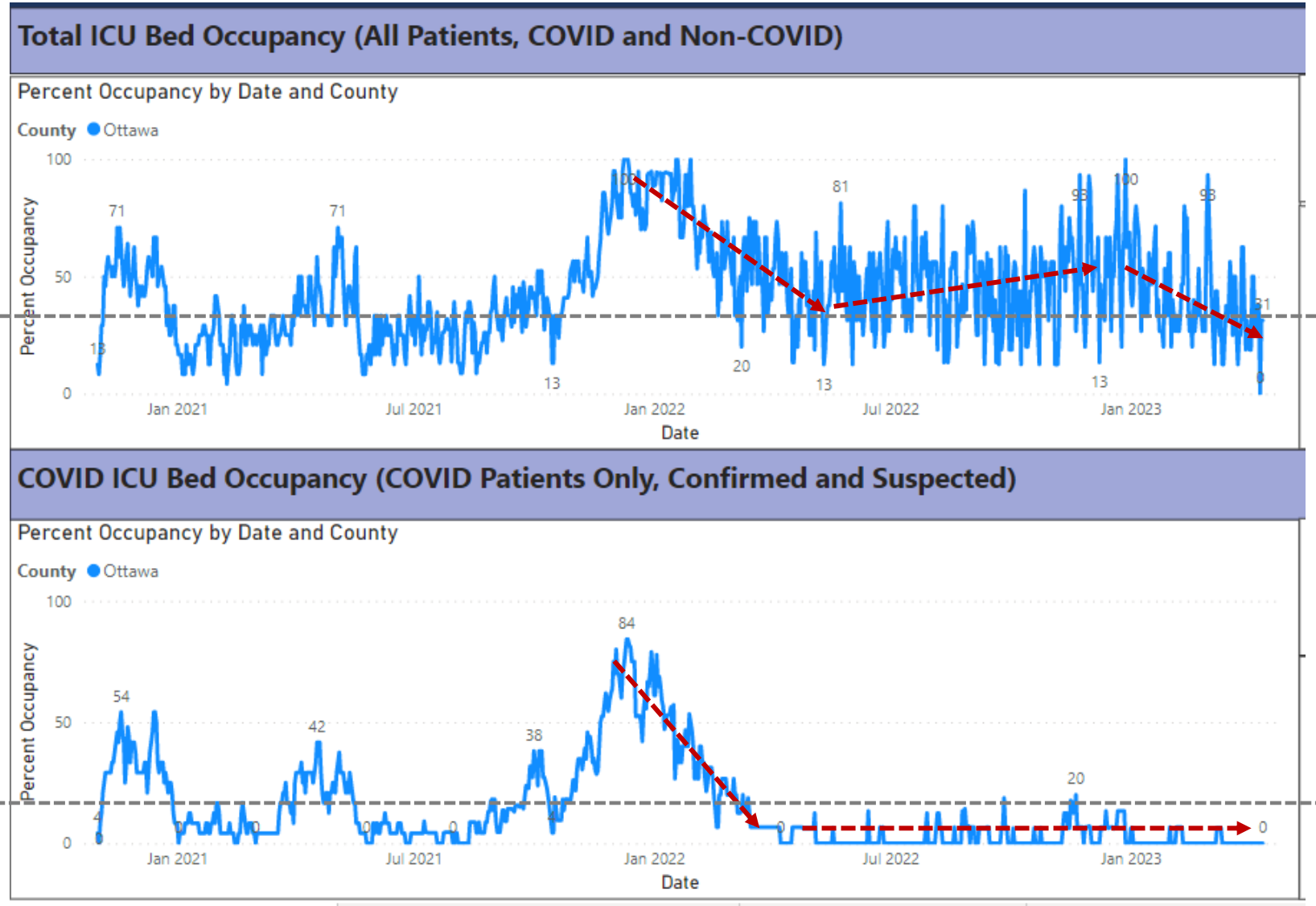


Currently **0%** of all inpatient beds are occupied by COVID-19 patients.

Source: EMResources

Data through April 12, 2023

Ottawa County Hospital Capacity – ICU Beds



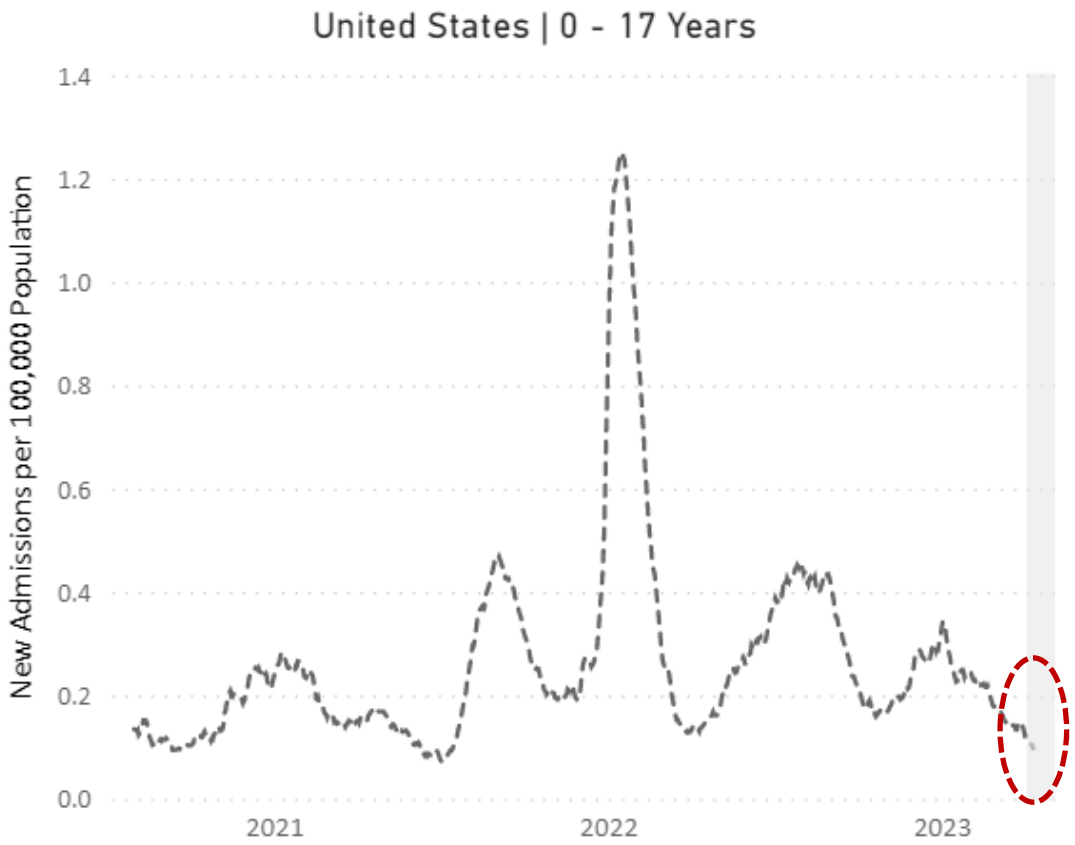
Total ICU bed occupancy varies considerably by day. Lately, ICU bed occupancy is **below the pandemic average**

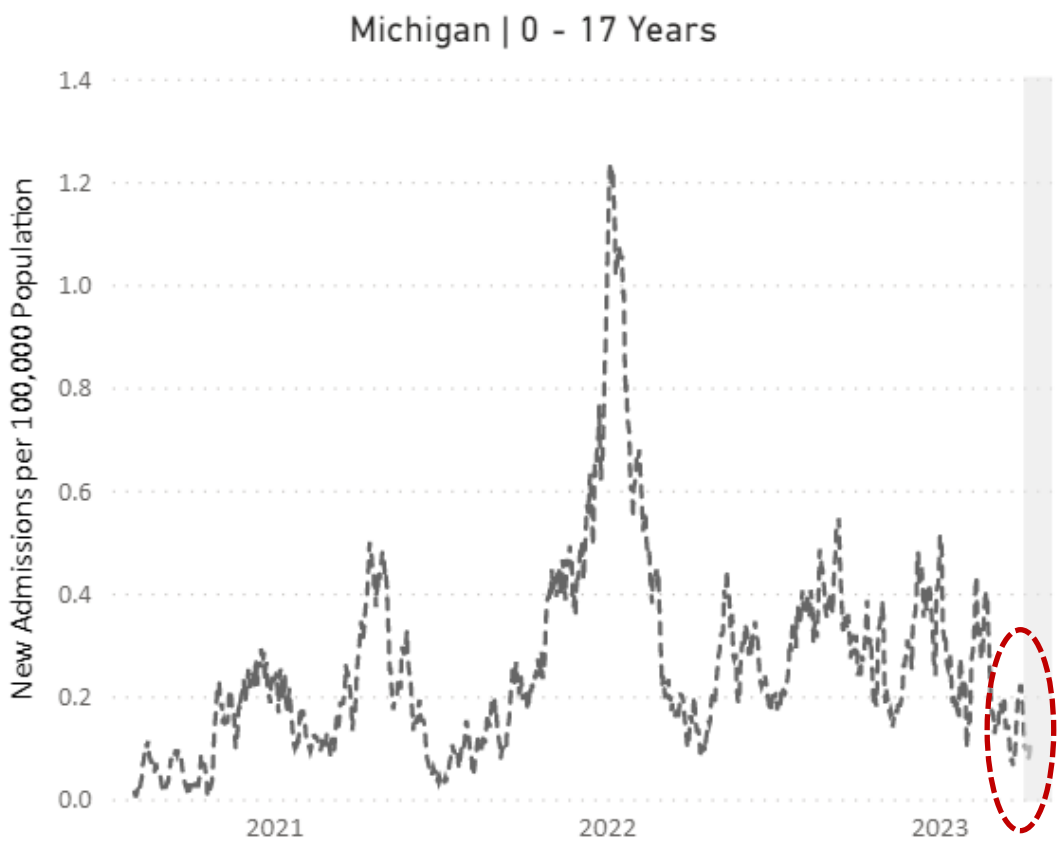
The proportion of ICU beds occupied by COVID-19 patients **is below the pandemic average.** Currently, **0%** of ICU beds occupied by COVID-19 patients.

Source: EMResources

Data through April 12, 2023

Pediatric Hospitalization Rates – USA, Michigan



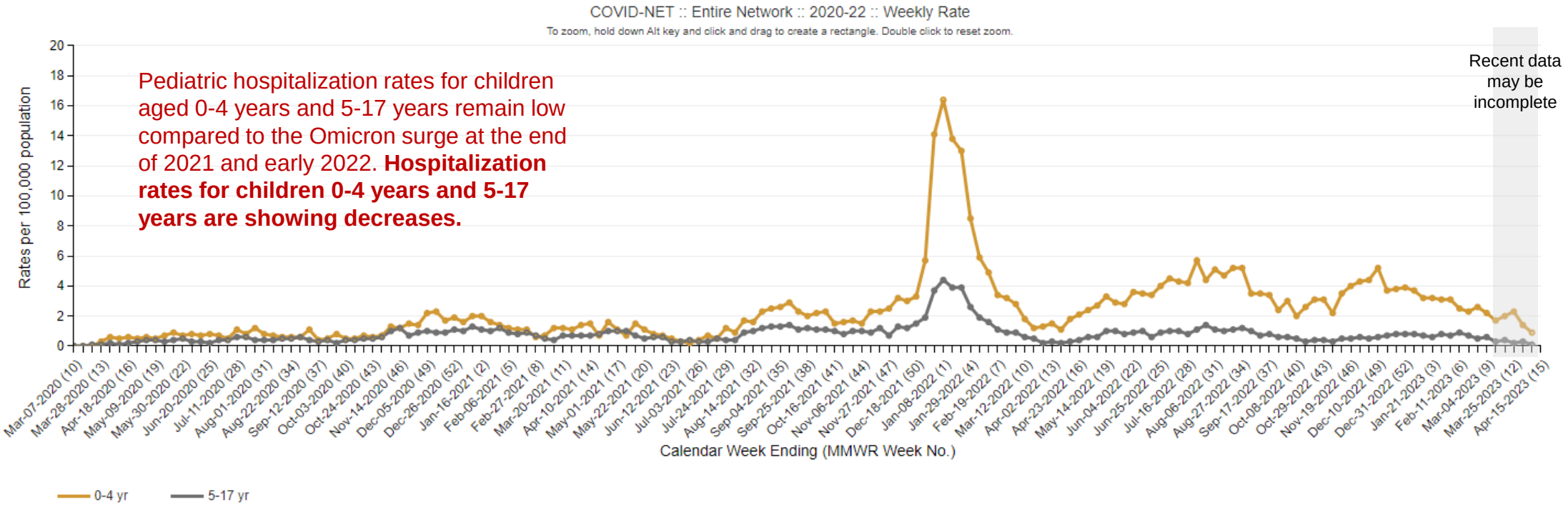


Pediatric COVID-19 hospitalization rates across the US and Michigan are relatively low.

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

Accessed April 13, 2023

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. Lag for COVID-NET case identification and reporting might increase around holidays or during periods of increased hospital utilization. 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 [March 2020-May 2022], MI, OH, and UT). Incidence rates (per 100,000 population) are calculated using the National Center for Health Statistics' (NCHS) vintage 2020 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. The NCHS bridged-race data used for the denominator for race data provides population data for children ages 0–1 year. To calculate rates of hospitalization among children ages <6 months and 6 months to <12 months, the population for children ages 0–1 year is halved.

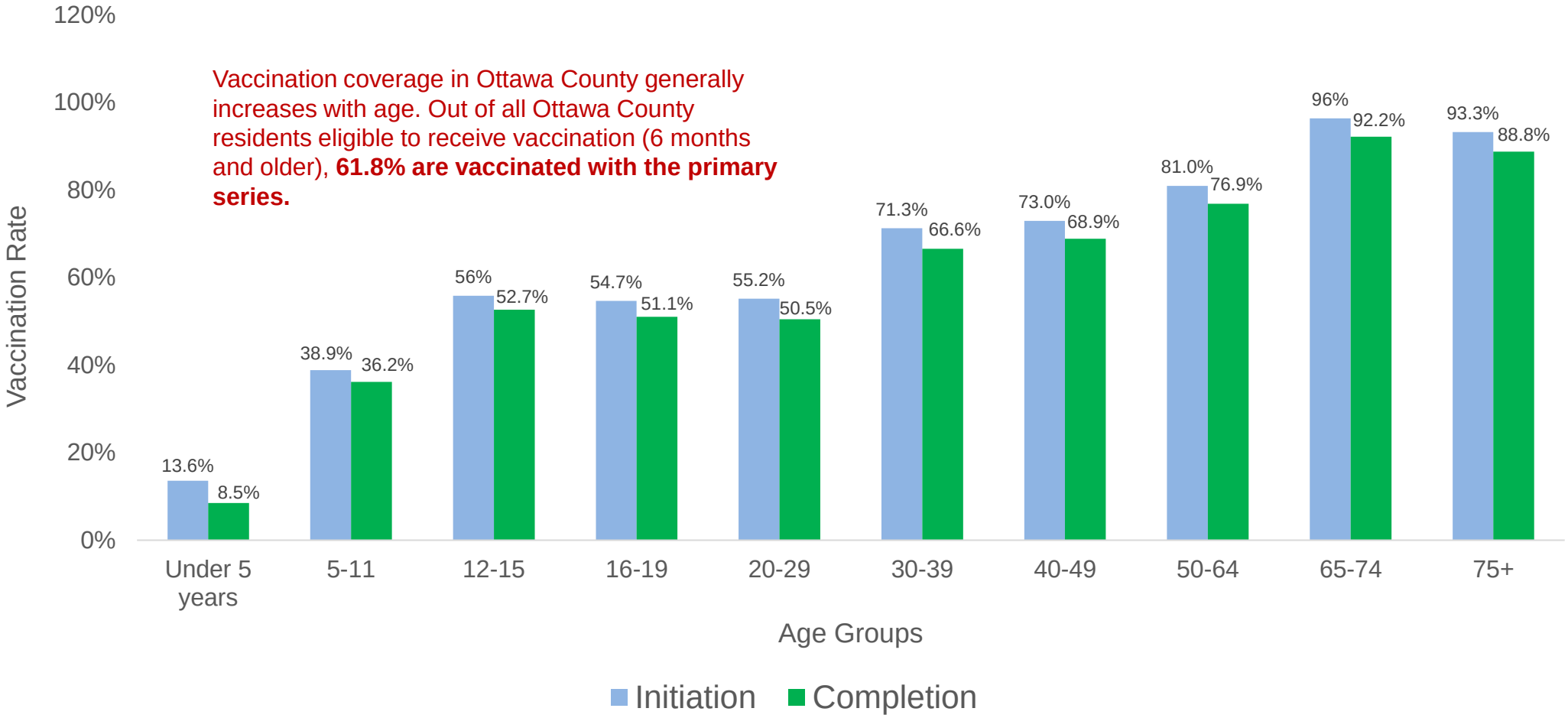
Starting MMWR week 22 of 2022, IA data are removed from weekly rate calculations.

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

Accessed April 13, 2023

Vaccination Coverage by Age (Primary Series Only)

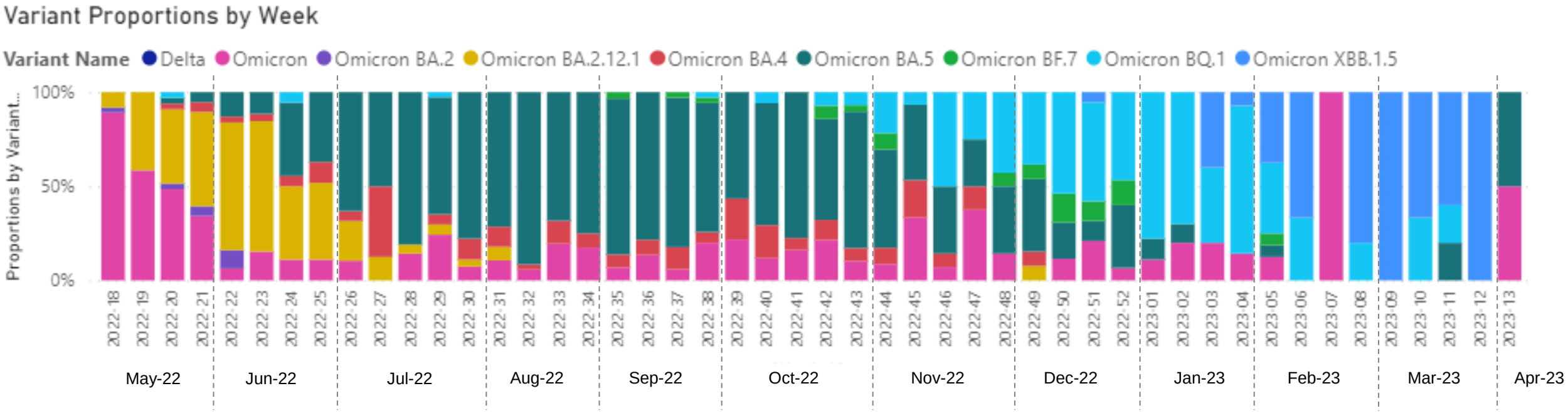
Vaccination coverage in Ottawa County generally increases with age. Out of all Ottawa County residents eligible to receive vaccination (6 months and older), **61.8% are vaccinated with the primary series.**



Notes: Completion is the percentage of people receiving at least 2 doses of Pfizer or Moderna or 1 dose of J&J. NovaVax doses are not included here.
Source: https://www.michigan.gov/coronavirus/resources/covid-19-vaccine/covid-19-dashboard

Data through April 12, 2023

Variants – Clinical Samples from Ottawa County Residents



By the end of July 2021 through early December 2021, all clinical samples* tested were identified as the **Delta** variant (data not displayed here).

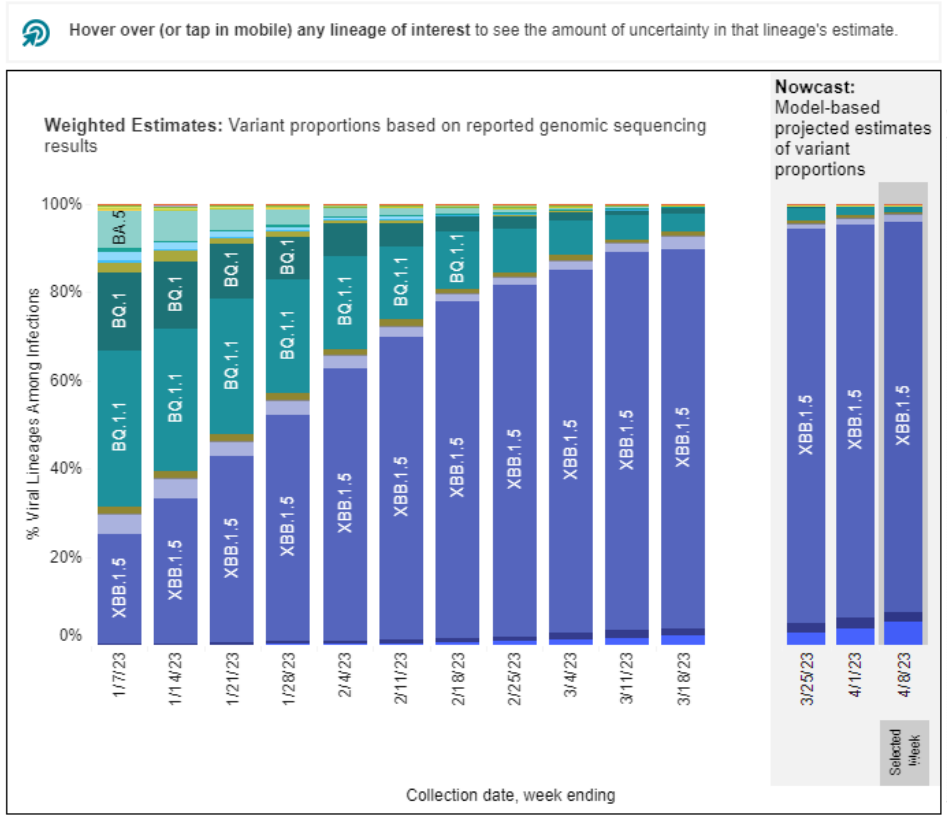
In mid-December 2021, the first **Omicron** positive sample was collected in an Ottawa County resident (data not displayed here), and **Omicron** continues to be detected into 2023, with more recent additions of the **Omicron subvariants** such as BQ.1 and XBB.1.5. Additional **Omicron subvariants** may be detected in clinical samples in the months ahead.

***** 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

Weighted and Nowcast Estimates in United States for Weeks of 1/1/2023 – 4/8/2023



Nowcast Estimates in United States for 4/2/2023 – 4/8/2023

USA

WHO label	Lineage #	US Class	%Total	95%PI
Omicron	XBB.1.5	VOC	88.3%	85.9-90.3%
	XBB.1.9.1	VOC	5.1%	4.0-6.5%
	XBB.1.5.1	VOC	2.4%	1.9-3.1%
	XBB	VOC	1.9%	1.2-3.0%
	BQ.1.1	VOC	1.4%	1.0-2.1%
	CH.1.1	VOC	0.4%	0.3-0.6%
	BQ.1	VOC	0.2%	0.1-0.3%
	BA.2	VOC	0.1%	0.0-0.6%
	BN.1	VOC	0.0%	0.0-0.1%
	BA.5	VOC	0.0%	0.0-0.0%
	BF.7	VOC	0.0%	0.0-0.0%
	BA.2.75	VOC	0.0%	0.0-0.0%
	BA.5.2.6	VOC	0.0%	0.0-0.0%
	BA.2.75.2	VOC	0.0%	0.0-0.0%
	BF.11	VOC	0.0%	0.0-0.0%
	BA.1.1	VOC	0.0%	0.0-0.0%
	B.1.1.529	VOC	0.0%	0.0-0.0%
	BA.4.6	VOC	0.0%	0.0-0.0%
	BA.4	VOC	0.0%	0.0-0.0%
Delta	B.1.617.2	VBM	0.0%	0.0-0.0%
Other	Other*		0.1%	0.0-0.1%

* Enumerated lineages are US VOC and lineages circulating above 1% nationally in at least one week period. "Other" represents the aggregation of lineages which are circulating <1% nationally during all weeks displayed.
# BA.1, BA.3 and their sublineages (except BA.1.1 and its sublineages) are aggregated with B.1.1.529. Except BA.2.12.1, BA.2.75, XBB and their sublineages, BA.2 sublineages are aggregated with BA.2. Except BA.2.75.2, CH.1.1 and BN.1, BA.2.75 sublineages are aggregated with BA.2.75. Except BA.4.6, sublineages of BA.4 are aggregated to BA.4. Except BF.7, BF.11, BA.5.2.6, BQ.1 and BQ.1.1, sublineages of BA.5 are aggregated to BA.5. Except XBB.1.9.1, XBB.1.5 and its sublineages, sublineages of XBB are aggregated to XBB. Except XBB.1.5.1, sublineages of XBB.1.5 are aggregated to XBB.1.5. For all the other lineages listed, their sublineages are aggregated to the listed parental lineages respectively. Previously, XBB.1.9.1 was aggregated to XBB. Lineages BA.2.75.2, XBB, XBB.1.5, XBB.1.5.1, XBB.1.9.1, BN.1, BA.4.6, BF.7, BF.11, BA.5.2.6 and BQ.1.1 contain the spike substitution R346T.

The **Omicron** variant and it's subvariants are estimated to account for more than 99% of all clinical samples collected in the United States the week ending April 8, 2023.

The BQ.1.1 subvariant has been supplanted by other Omicron subvariants, predominately XBB.1.5.

Source: CDC: https://covid.cdc.gov/covid-data-tracker/#variant-proportions

Accessed April 12, 2023

COVID-19 Community Levels

TABLE 1. COVID-19 Community Levels, Indicators, and Thresholds

New COVID-19 Cases Per 100,000 people in the past 7 days	Indicators	Low	Medium	High
Fewer than 200	New COVID-19 admissions per 100,000 population (7-day total)	<10.0	10.0-19.9	≥20.0
	Percent of staffed inpatient beds occupied by COVID-19 patients (7-day average)	<10.0%	10.0-14.9%	≥15.0%
200 or more	New COVID-19 admissions per 100,000 population (7-day total)	NA	<10.0	≥10.0
	Percent of staffed inpatient beds occupied by COVID-19 patients (7-day average)	NA	<10.0%	≥10.0%

The COVID-19 community level is determined by the higher of the *new admissions* and *inpatient beds occupied* metrics, based on the current level of *new cases per 100,000 population in the past 7 days*.

Please note that the Community Levels indicators for hospital admission and occupancy shown here apply to COVID-19 patients only.

While Ottawa County COVID-19 admissions and hospital occupancy have remained <10% for many months, reducing infections and preventing hospitalizations for/with COVID-19 is important to ensure capacity in local hospitals that may face substantial occupancy challenges from RSV, influenza, and other conditions.

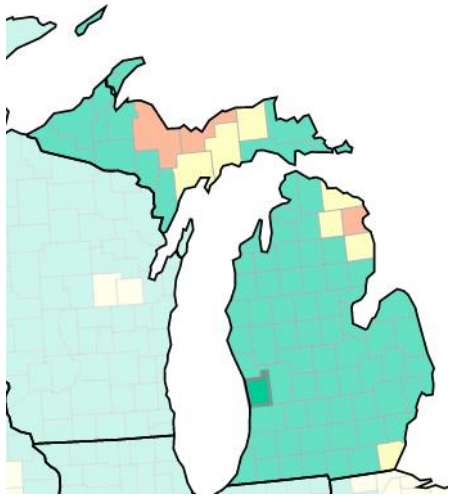
Source: https://www.cdc.gov/coronavirus/2019-ncov/science/community-levels.html

CDC Community Levels – Ottawa County

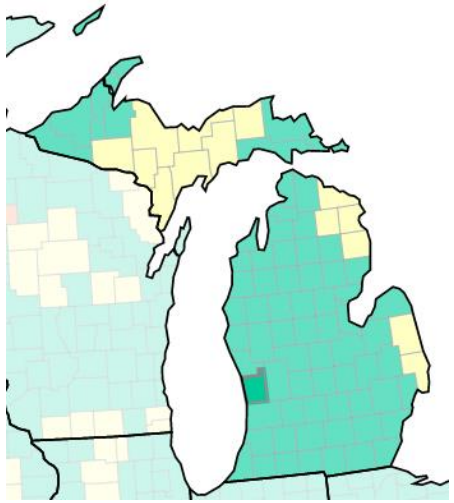
- Current Community Level in Ottawa – LOW
  - Ottawa and Michigan's CDC Community Levels can be viewed on the CDC website and on the MI Safe Start Map.

  Current Data:
  - New COVID-19 Hospital Admissions (per 100K pop 7-day total) = **1.5**
  - Percent of staffed inpatient beds in use by patients with COVID-19 (7-day average) = **1.3%**

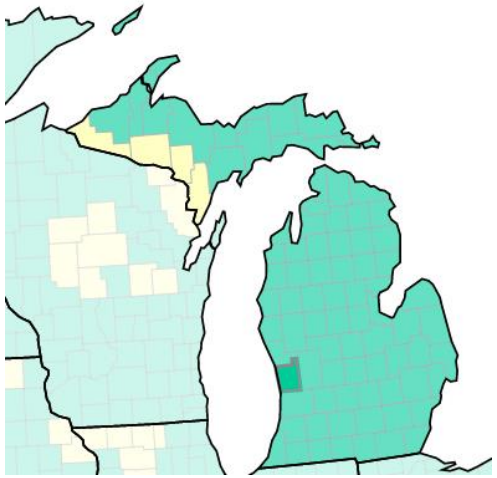
4 Weeks Ago



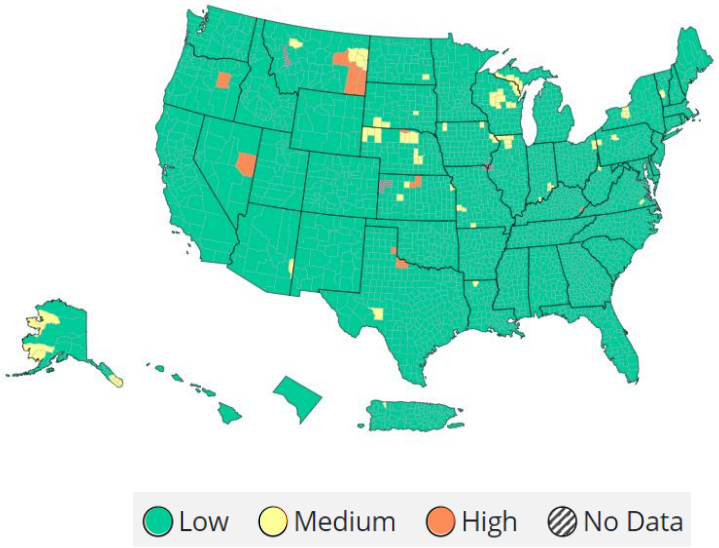
2 Weeks Ago



This Week



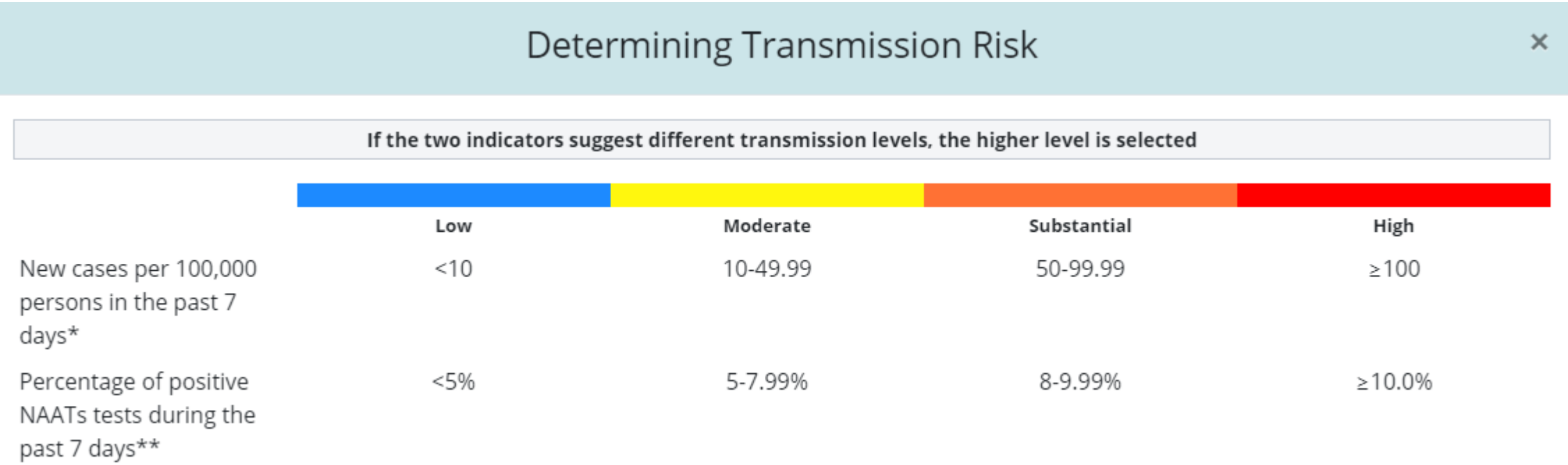
USA - This Week



Source: CDC COVID Data Tracker: Community Levels

Data updated by CDC on April 14, 2023
Ottawa Hospitalization data as of April 11, 2023

COVID-19 Community Transmission Levels



Determining Transmission Risk

If the two indicators suggest different transmission levels, the higher level is selected

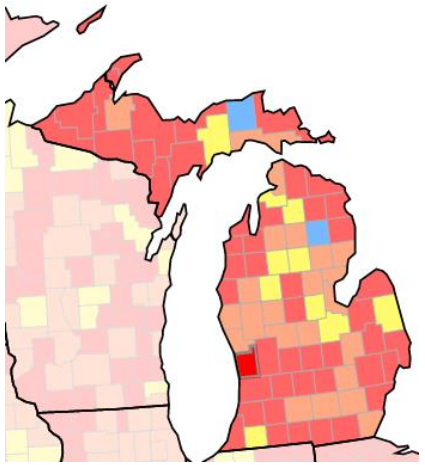
	Low	Moderate	Substantial	High
New cases per 100,000 persons in the past 7 days*	<10	10-49.99	50-99.99	≥100
Percentage of positive NAATs tests during the past 7 days**	<5%	5-7.99%	8-9.99%	≥10.0%

Source: https://covid.cdc.gov/covid-data-tracker/#county-view?list_select_state=all_states&data-type=Risk

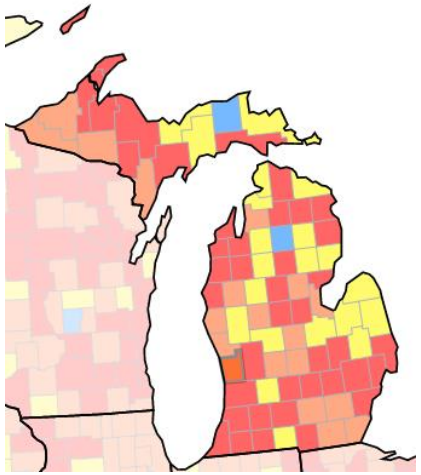
CDC Community Transmission Levels – Ottawa County

- Current Community Transmission Level in Ottawa – SUBSTANTIAL
  - Ottawa and Michigan's CDC Community Transmission Levels can be viewed on CDC's website and on the MI Safe Start Map.
- Current Data:
  - Case Rate (per 100k pop 7-day total) = **17.5**
  - Percent Test Positivity (last 7 days) = **9.2%**

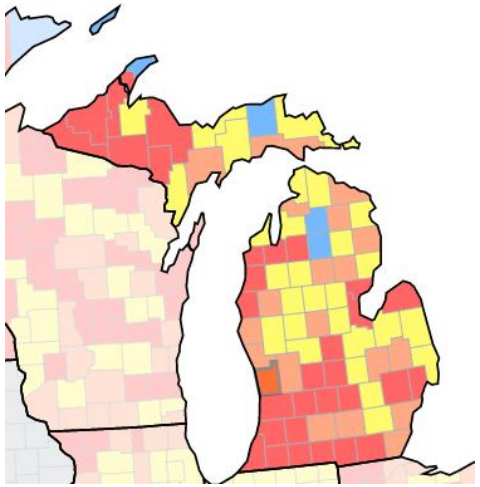
4 Weeks Ago



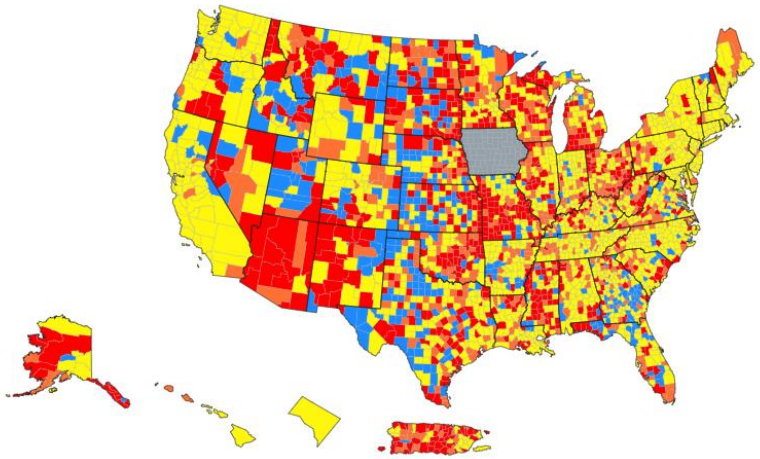
2 Weeks Ago

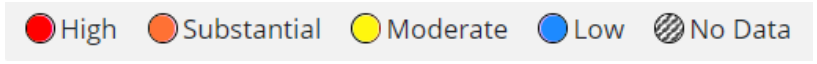


This Week



USA - This Week



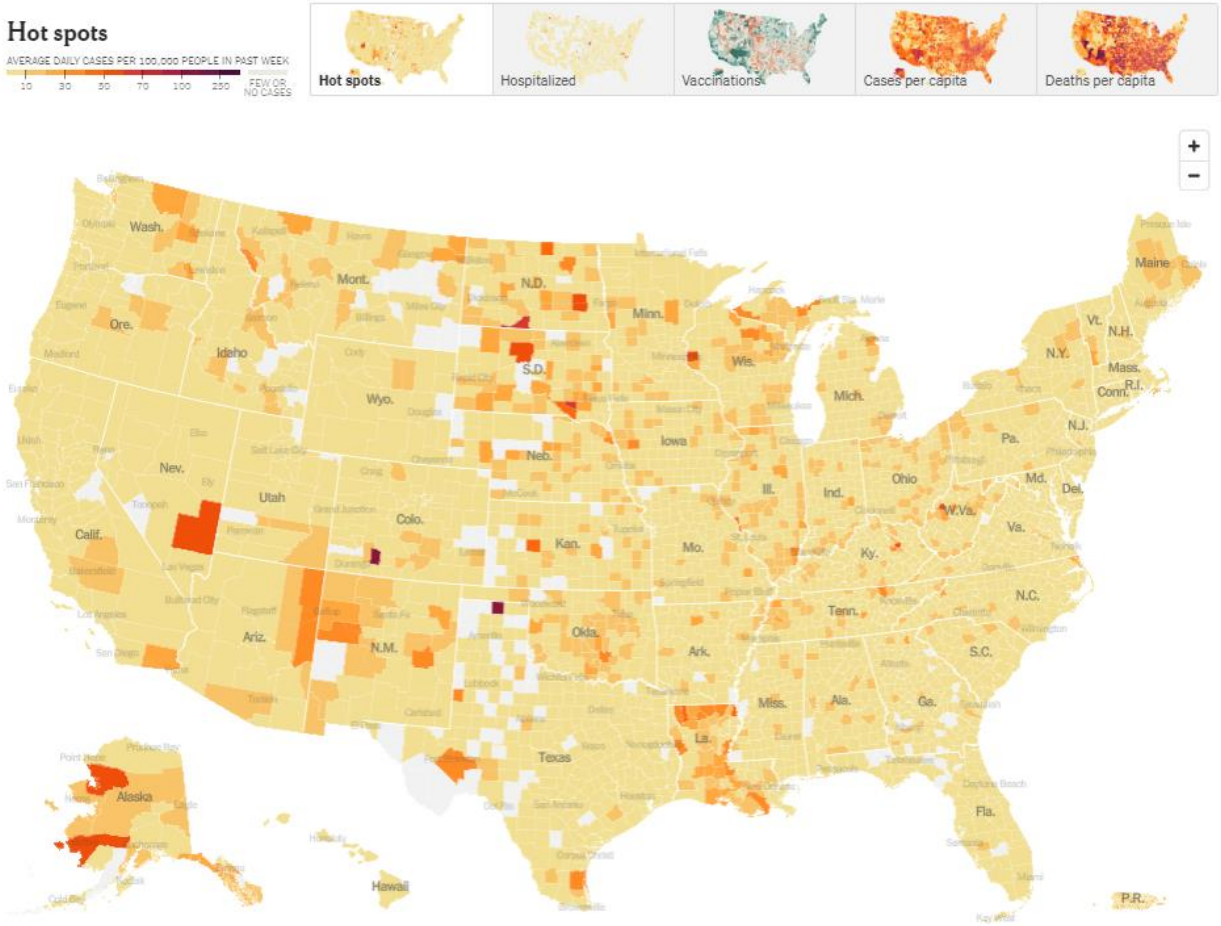


Source: CDC COVID Data Tracker: Community Transmission

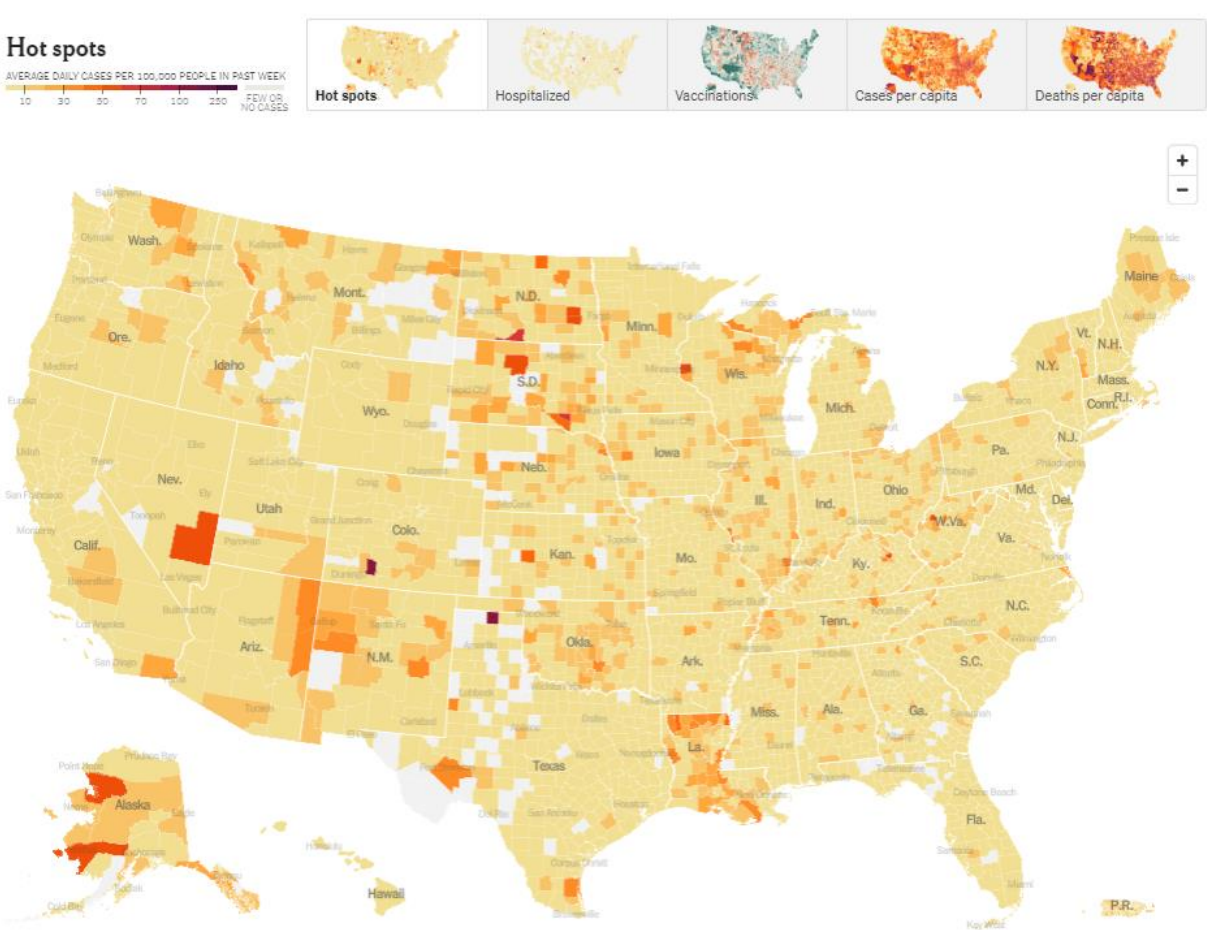
Data updated by CDC on April 14, 2023
Rate data for Ottawa as of April 12, 2023
Positivity data for Ottawa as of April 10, 2023

COVID-19 Case Rates by County Across the US

Two Weeks Ago



This Week



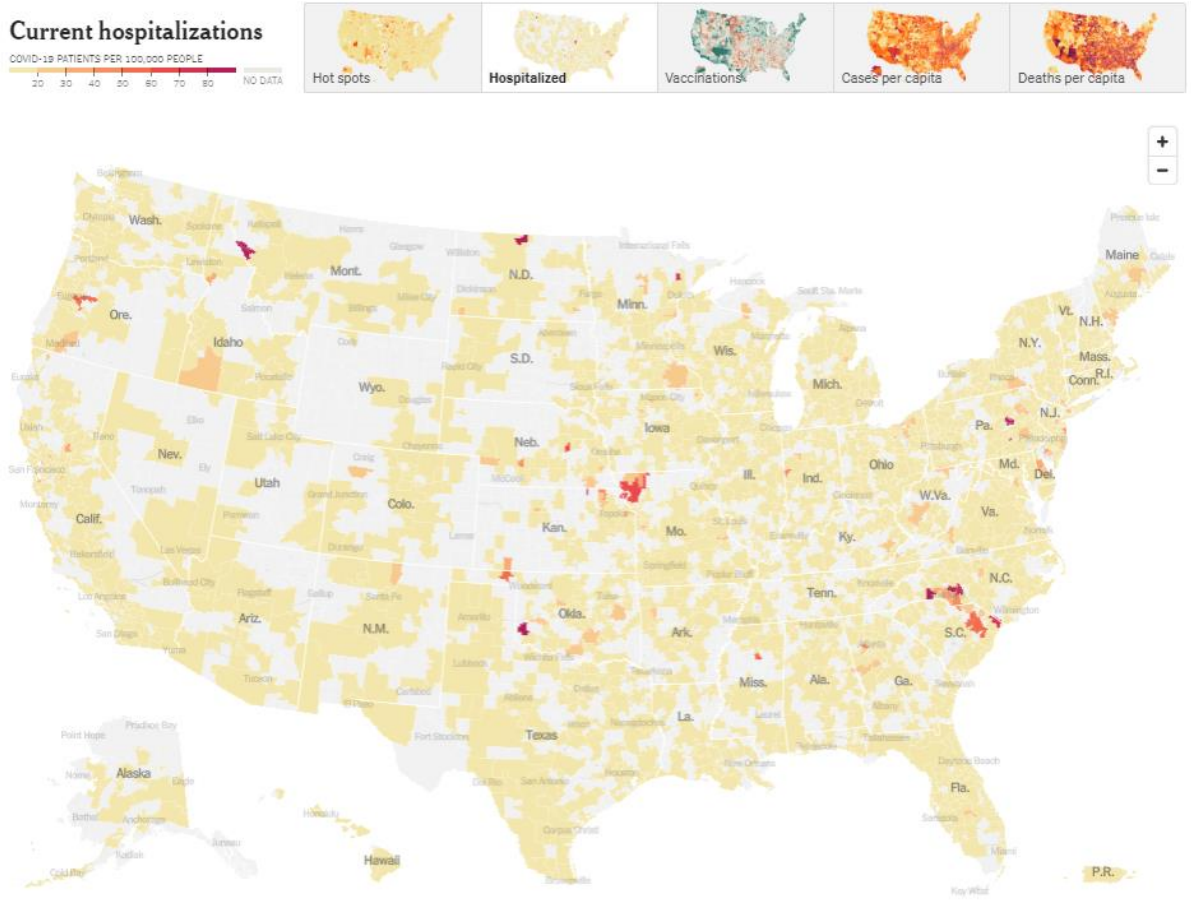
Case rates across the nation appear to be stable and possibly declining, with regional variability.

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

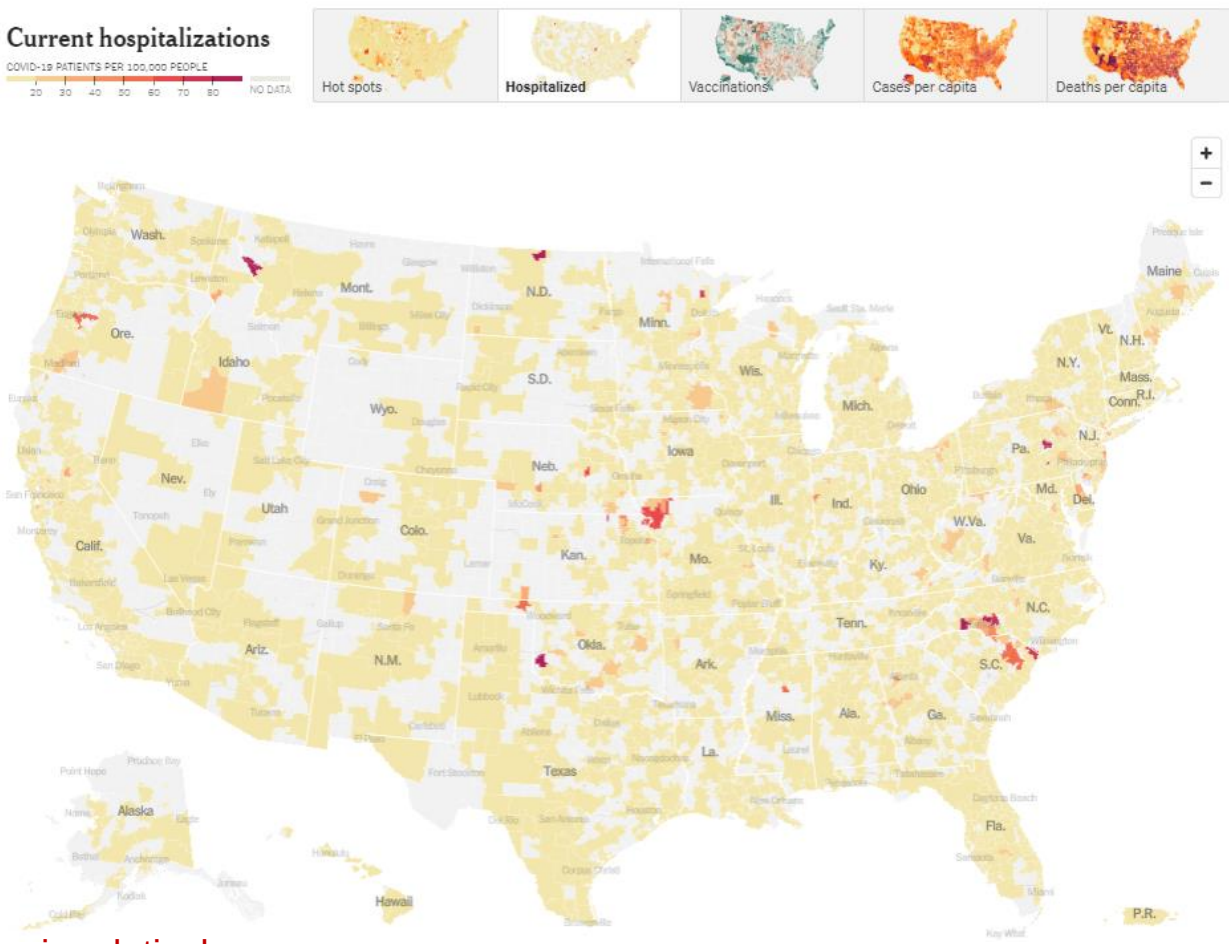
Accessed April 13, 2023

COVID-19 Hospitalization Rates by County Across the US

Two Weeks Ago



This Week



Hospitalization rates remain relatively low across most of the nation.

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

Accessed April 13, 2023

COVID-19 News Headlines

Biden signs bill ending Covid-19 national emergency

https://www.cnn.com/2023/04/10/politics/covid-19-national-emergency-end-biden/index.html

Washington to end distribution of free at-home COVID-19 tests May 11

https://komonews.com/news/local/coronavirus-covid-19-pandemic-free-at-home-tests-washington-department-health-public-emergency-federal-centers-for-disease-control-prevention-say-yes-covid-test

Global COVID markers fall, though cases rising in several countries

https://www.cidrap.umn.edu/covid-19/global-covid-markers-fall-though-cases-rising-several-countries

Michigan's COVID levels return to no high-risk counties

https://www.mlive.com/public-interest/2023/03/michigans-covid-levels-return-to-no-high-risk-counties.html

Science Roundup

Ventilation Improvements Among K–12 Public School Districts — United States, August–December 2022

https://www.cdc.gov/mmwr/volumes/72/wr/mm7214a4.htm

A study evaluating public school districts in the United States found that there was not one ventilation strategy that was adopted by more than 51% of districts, and that ventilation improvements varied by geography and poverty levels. High-poverty school districts reported the highest percentage of strategies implemented.

Transmissible SARS-CoV-2 variants with resistance to clinical protease inhibitors

https://www.science.org/doi/10.1126/sciadv.ade8778

The findings of this study assessing SARS-CoV-2 variants and their resistance to key antiviral drugs, supports the continuous monitoring of resistance variants and the development of other antiviral drugs with different mechanisms and resistance profiles for the treatment of COVID-19.

Severe Maternal Morbidity and Mortality of Pregnant Patients With COVID-19 Infection During the Early Pandemic Period in the US

https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2803485

This national-level analysis of pregnant patients during the early pandemic, found the risk of maternal adverse outcomes to be greater among patients with COVID-19 at delivery compared to those without.

Health Care Access and Affordability Among US Adults Aged 18 to 64 Years With Self-reported Post–COVID-19 Condition

https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2803645

This large study including US adults aged 18 to 64 years, found that individuals with post-COVID-19 condition were more likely to experience barriers obtaining and paying for health care compared to other individuals.