



# **MI COVID RESPONSE DATA AND MODELING UPDATE**

December 13, 2022

# Epidemiologic Surveillance: Key Messages

## **COVID and other respiratory viruses will continue to stress the healthcare system this fall and winter**

- In Michigan, COVID metrics are starting to increase
- Other respiratory illness (e.g., influenza) are currently increasing in the U.S. and in Michigan
- Together, the impacts of these illnesses may stress the healthcare system and individuals should take precautions to protect themselves

## **COVID-19 pandemic is increasing in many parts globally and increasing in parts of the United States**

- Case rates globally and in Europe are increasing
- Within the U.S., case rates increased 49.6% over the past week
- Most Midwestern states (Region 5) are showing signs of increases

## **COVID spread in Michigan is starting to increase**

- As of December 8, 32% of Michigan counties are at medium or high COVID-19 community levels
  - One Michigan county classified as High this week according to CDC's Community Levels (1%). Another 26 Michigan counties are currently at Medium level (31%). Together, this represents 64% of the population.
- The  $R_t$  for Michigan recently jumped above 1 but is currently near 1, indicating COVID is starting to increase
- The proportion of specimens sequenced and identified as BA.5 or one of its sublineages in the U.S. and Michigan continues to be the most dominant
- 58% of wastewater SWEEP sites have reported levels that are 20% are higher than baseline threshold levels this week (down from 65% reported last week)

## **COVID-19 hospital metrics in Michigan are starting to increase**

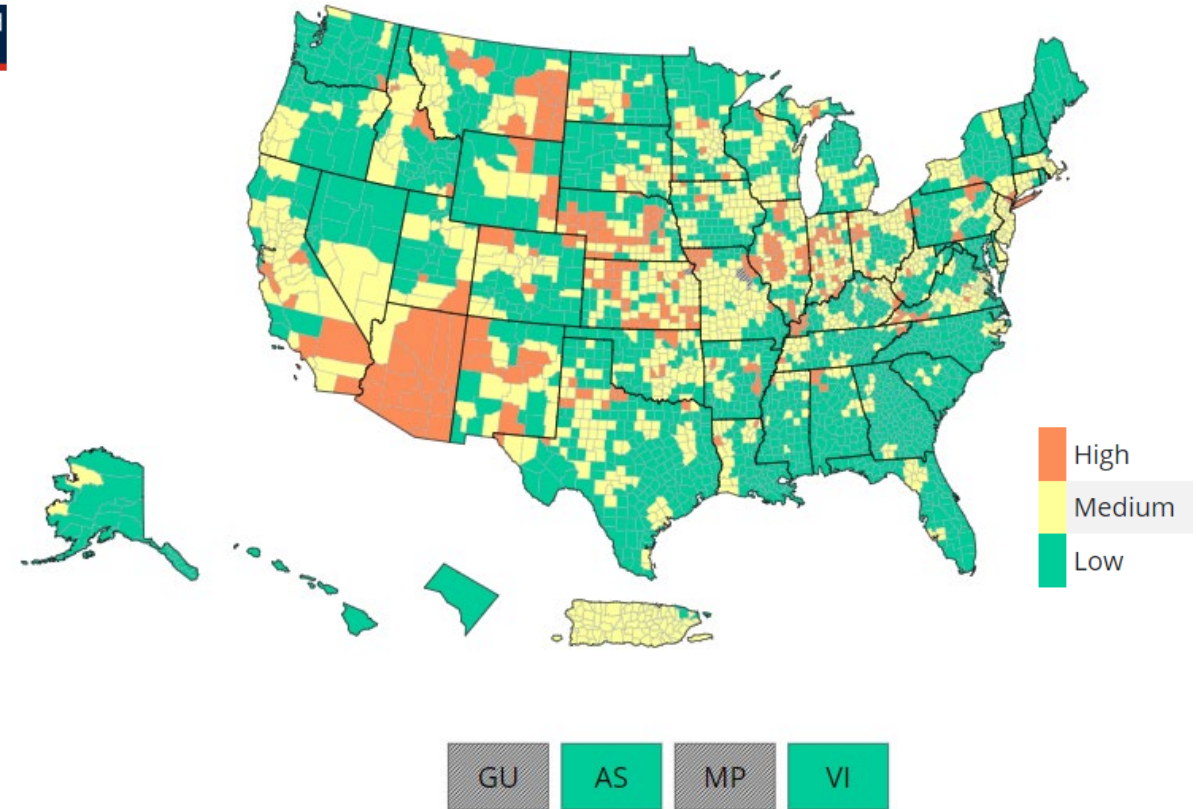
- COVID-19 hospital admissions, total hospital census for COVID+, and pediatric COVID+ census showed increases this week

# Global and National Trends

## Daily new confirmed COVID-19 cases per million people

7-day rolling average. Due to limited testing, the number of confirmed cases is lower than the true number of infections.

Our World  
in Data



**Globally, 649,231,180 cases and 6,653,337 deaths** (Data\* through 12/12/2022)

- Case rates are beginning to increase globally and within the United States

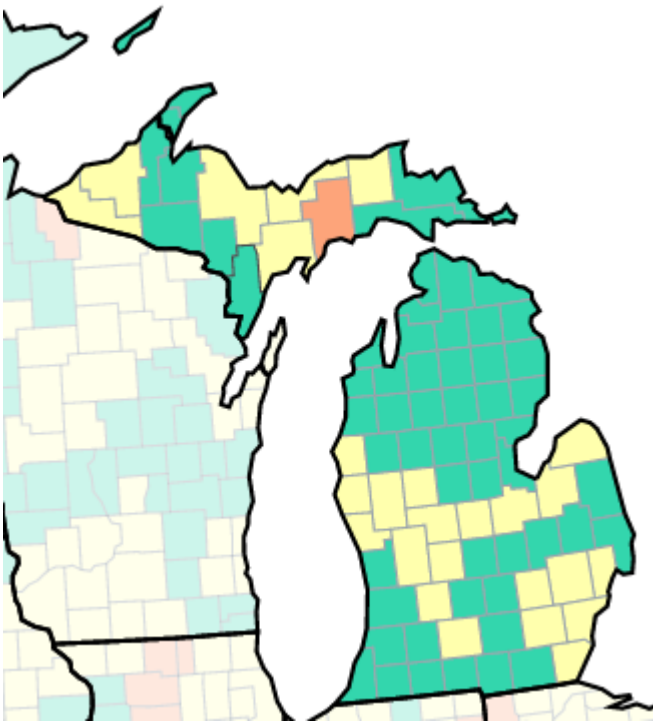
**United States: Reported cases (7-day average) have increased 49.6% since the prior week<sup>†</sup>**

- U.S. case rate is 138.3 cases/100,000 in last 7 days (last week: 92.4 cases per/100,000)

**Region 5 (Midwest) states are increasing**

- Illinois and Indiana have the highest case rates of states in Region 5 (12/7/2022)

# As of Dec 8, 1 Michigan County is at High COVID-19 Community Level



- In the US, 9% of counties have high risk for medically significant disease and healthcare strain
- In Michigan, 1% (1/83) of counties are at high risk. This represents less than 1% of the population
- 26 Michigan counties are currently at Medium level (31%). This represents 64% of the population
- 56 Michigan counties are currently at Low level (67%). This represents 36% of the population

Percent of Counties This Week

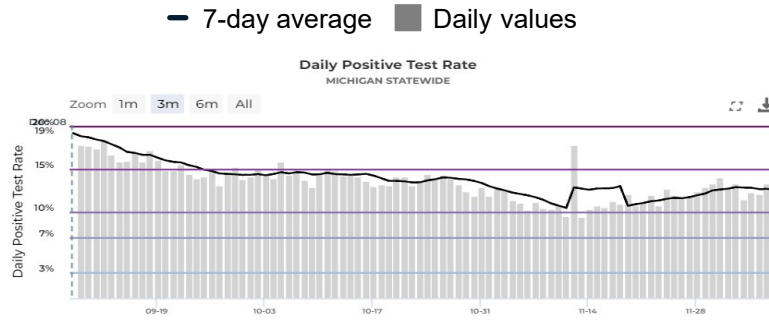
	United States	Michigan	Percent of MI Population
Low	56%	67%	36%
Medium	35%	31%	64%
High	9%	1%	<1%

Low	Medium	High
<ul style="list-style-type: none"><li>• Stay <a href="#">up to date</a> with COVID-19 vaccines</li><li>• <a href="#">Get tested</a> if you have symptoms</li></ul>	<ul style="list-style-type: none"><li>• If you are <a href="#">at high risk for severe illness</a>, talk to your healthcare provider about whether you need to wear a mask and take other precautions</li><li>• Stay <a href="#">up to date</a> with COVID-19 vaccines</li><li>• <a href="#">Get tested</a> if you have symptoms</li></ul>	<ul style="list-style-type: none"><li>• Wear a <a href="#">mask</a> indoors in public</li><li>• Stay <a href="#">up to date</a> with COVID-19 vaccines</li><li>• <a href="#">Get tested</a> if you have symptoms</li><li>• Additional precautions may be needed for people <a href="#">at high risk for severe illness</a></li></ul>

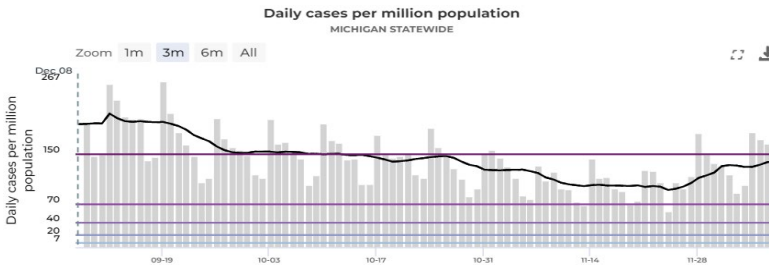
# Recent statewide COVID trends are starting to increase

## Statewide trends

### Positivity, %

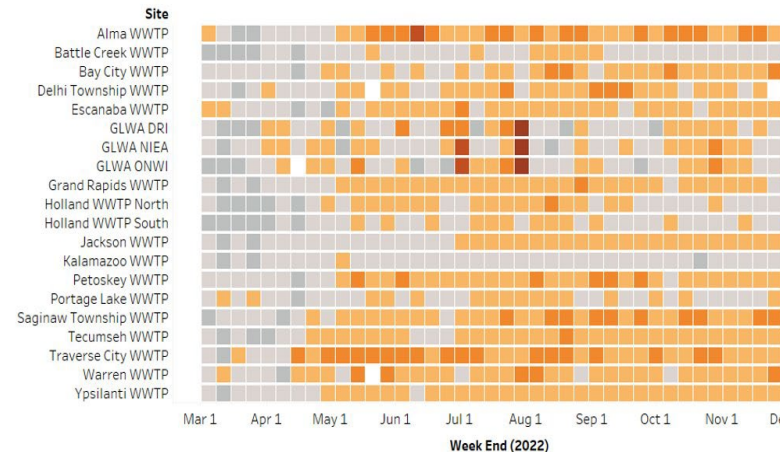
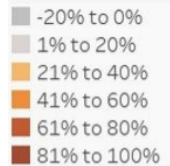


### Daily cases per million



### Wastewater

#### Percent Change



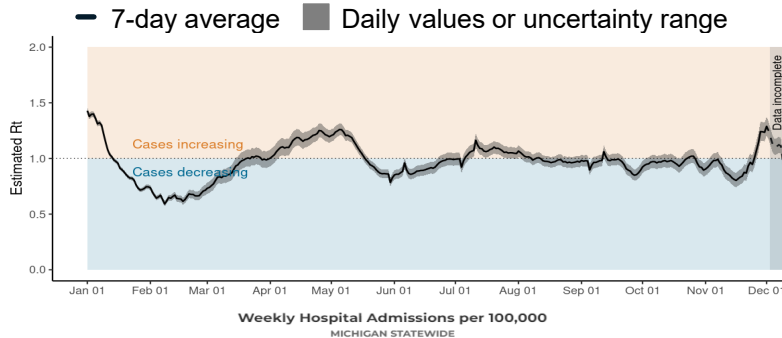
- Test percent positivity, is steady compared to last week
- Case rates are increasing and the highest level since mid October
- 37 counties are currently showing increases in cases and an additional 20 reported an elevated incidence plateau in case rates (via mistartmap.info as of 12/9/22, data through 12/1/22)
- 58% (11/19) of wastewater sentinel sites have reported levels that are 20% or higher than baseline threshold levels this week



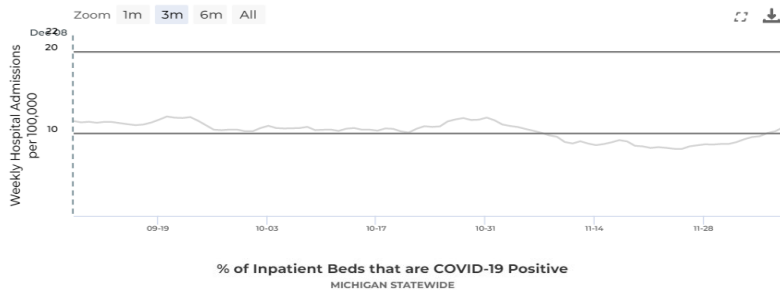
# Recent statewide COVID trends are starting to increase

## Statewide trends

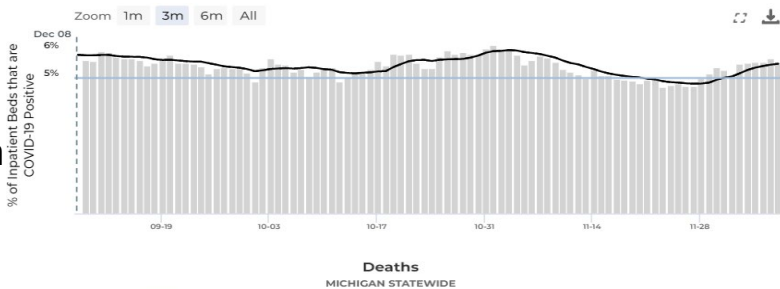
### Reproductive Number, $R_t$



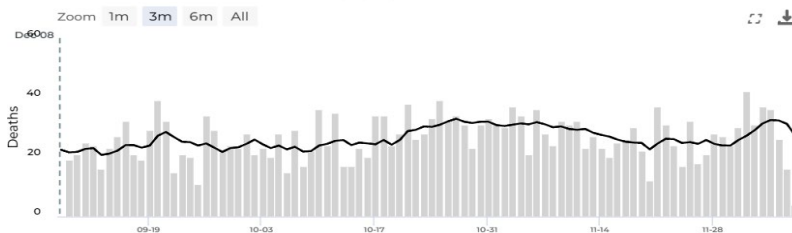
### Hospital Admissions



### Daily hospitalization rate, %



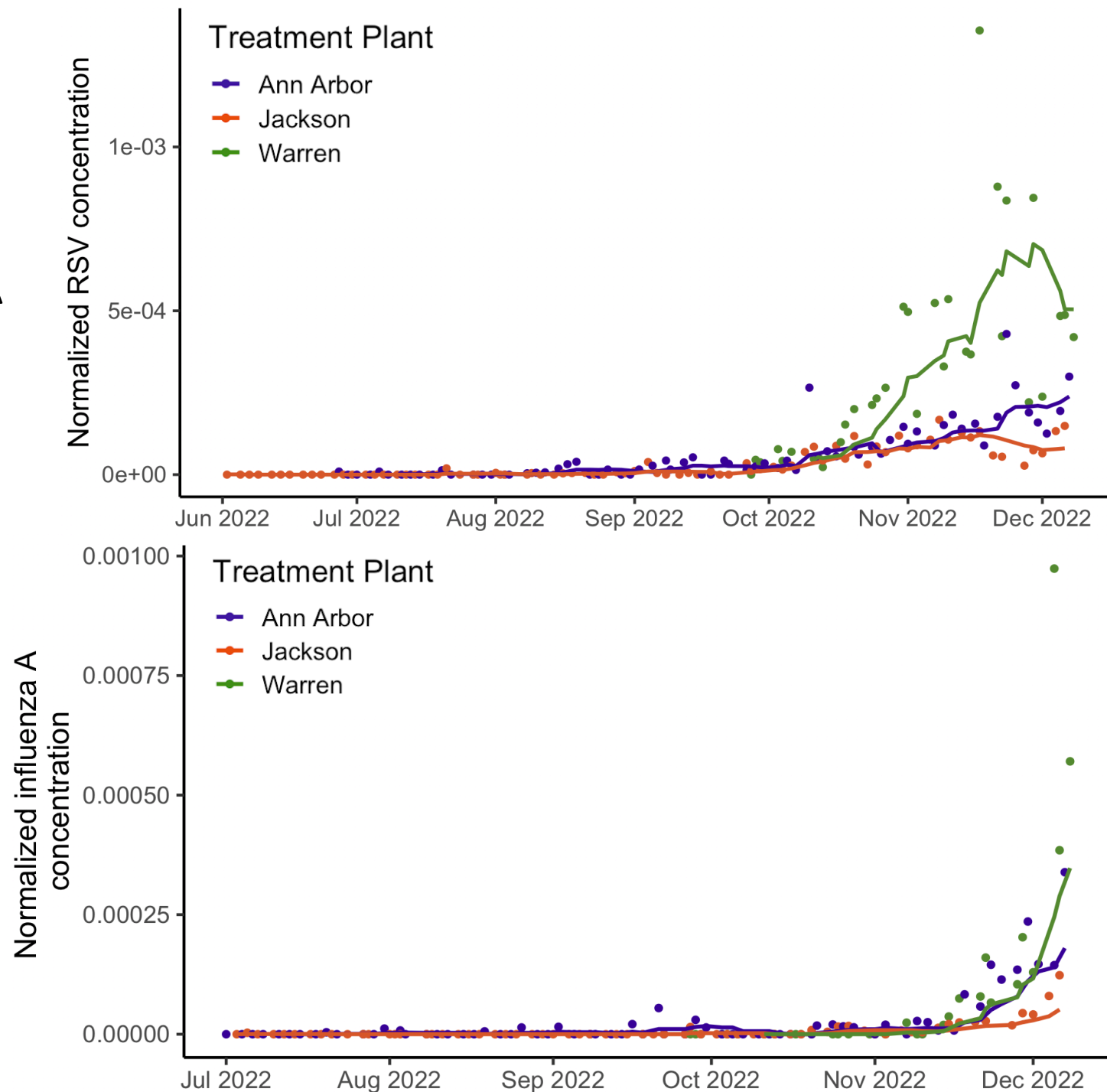
### Deaths



- The reproductive number ( $R_t$ ) in Michigan is around 1 indicating plateau
- There are an average of 8.8 hospital admissions per 100,000 Michiganders day which is an increase from last week
- The percent of inpatient beds that have patients diagnosed with COVID-19 have seen an increase for past week
- Deaths are a lagging indicator but are showing potential increases

# Wastewater monitoring: mix of trends for RSV, increases for influenza A

- Some areas starting to peak for RSV, others still increasing
- Influenza A increasing at all three sites



Source: SCAN/Verily Project:  
<http://publichealth.verily.com>

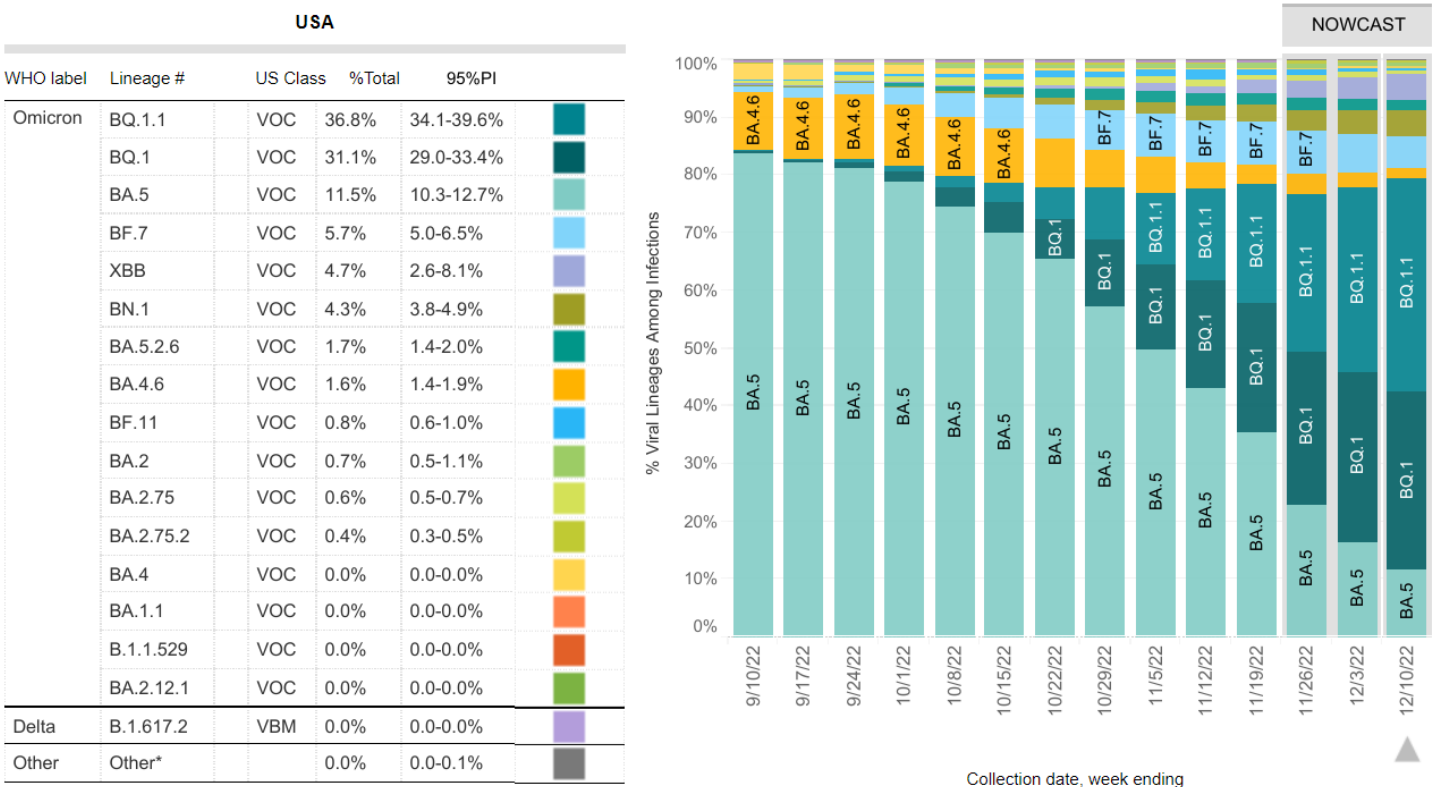
All data normalized to PMMoV. Line represents  
7-day rolling average.

# Identified COVID-19 Cases Caused by Variants of Concern (VOC) in US and Michigan: Predominately BA.5 and BA.4 sublineages

## SARS-CoV-2 Variants Circulating in the United States, Sep 4 – Dec 10 (NOWCAST)

United States: 12/4/2022 – 12/10/2022 NOWCAST

United States: 9/4/2022 – 12/10/2022



### National Distribution

- 100% of the VOC currently circulating in the U.S. are Omicron
- Nowcast estimates project that BA.5 sublineages of BQ.1.1 (36.8%) and BQ.1 (31.1%) are most prevalent during the weekend ending on December 10 and these two sublineages are increasing in proportion

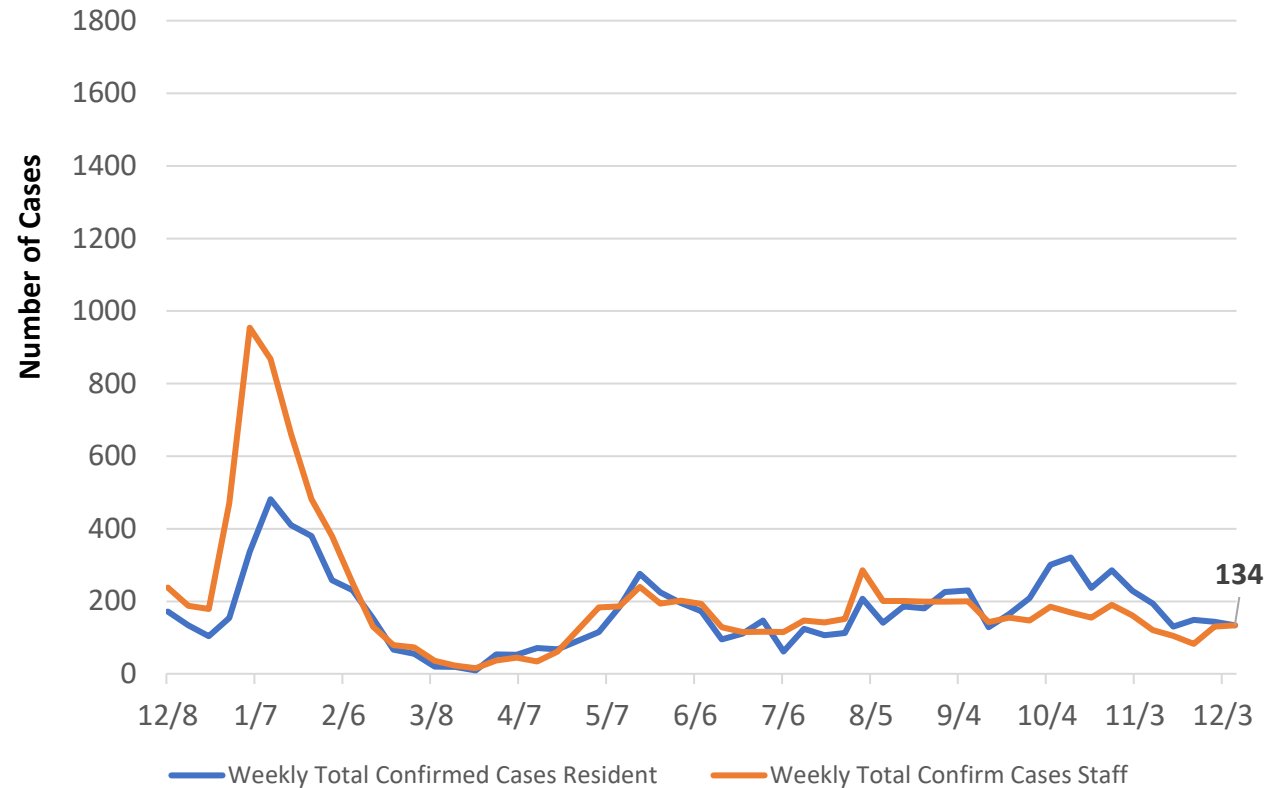
### Distribution in Michigan

- Since November 1, there have 1,953 VOC specimens sequenced
- 100% of specimens sequenced are Omicron
  - Since November 1, 89.1% of specimens sequenced and reported (n=1,740) have been identified as BA.5; of which 10.8% of those specimens are BF.7 (n=187), 16.7% have been identified as BQ.1 (n=291), and 18.5% as BQ.1.1 (n=322)

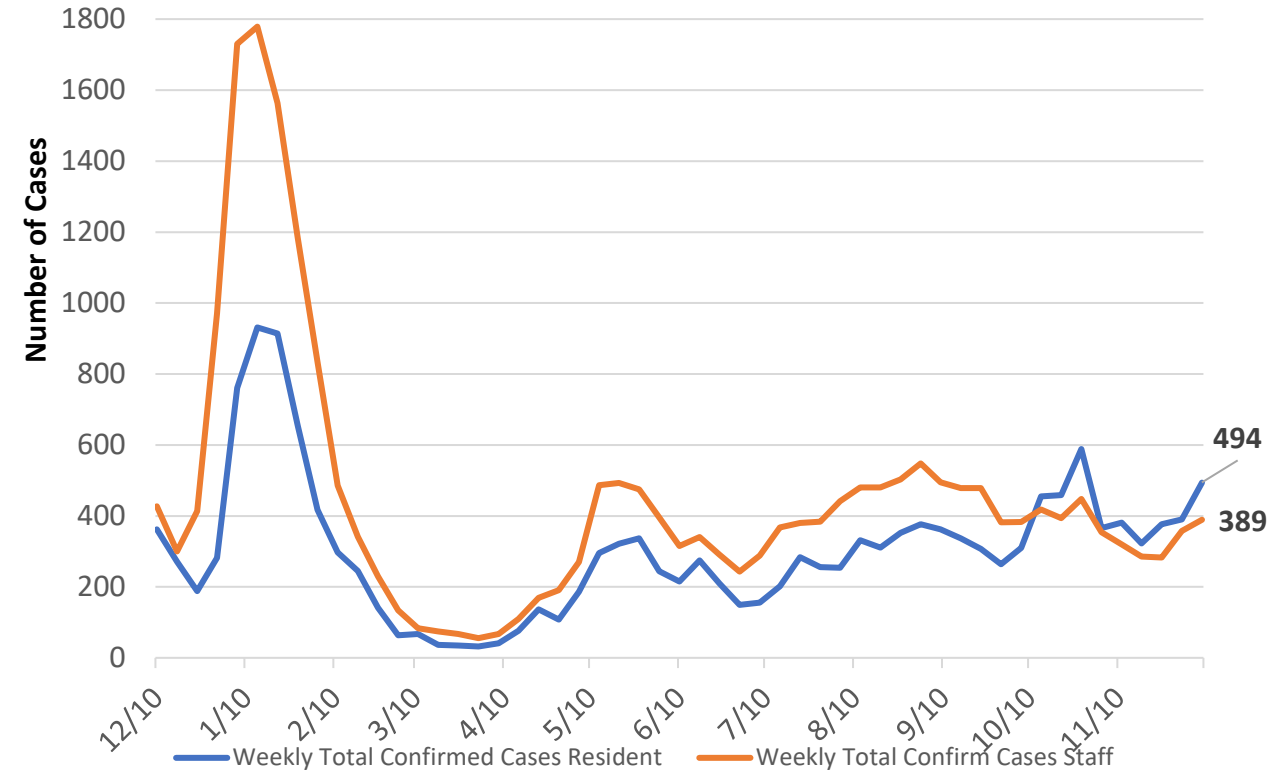


# COVID-19 Cases Among Staff and Residents in Long Term Care Facilities

STATE OF MICHIGAN WEEKLY TOTAL CONFIRMED COVID-19 CASES IN  
AFC/HFA RESIDENTS AND STAFF  
12/08/2021 TO 12/07/2022



STATE OF MICHIGAN WEEKLY TOTAL CONFIRMED COVID-19 CASES IN SNF  
RESIDENTS AND STAFF  
12/10/2021 TO 12/09/2022

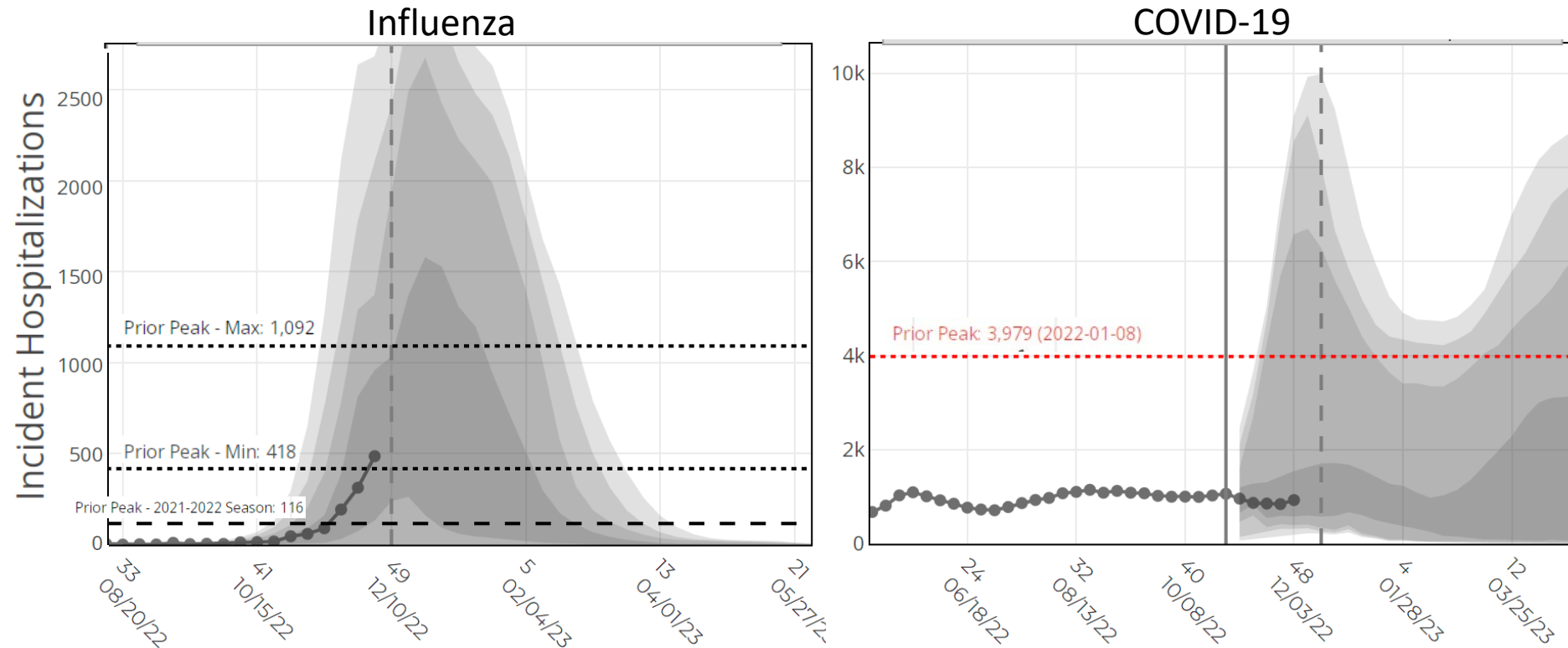


- Case counts in residents slightly decreased in AFC/HFA (149 to 134) but increased in SNFs (390 to 494) since last week
- Case counts in staff are relatively plateaued in AFC/HFA (130 to 134) but increased in SNFs (358 to 389) since last week
- **28%** of SNFs are reporting **nursing shortages** and **29%** of SNFs are reporting **aide shortages**, which is plateaued since end of July

Abbreviations: AFC: Adult Foster Care; HFAs: Homes for the Aged; and SNF: Skilled Nursing Facilities

# Scenario Hub projections suggest winter hospitalizations due to a mix of flu/COVID, potential spring COVID surge

- Multiple scenarios simulated for Michigan, all show a winter surge (size and mix of flu/COVID depends on variants and vaccine uptake/effectiveness)
- COVID projections suggest fairly flat trend through winter but potential for a spring surge
- Did not simulate other respiratory illnesses (e.g. RSV)

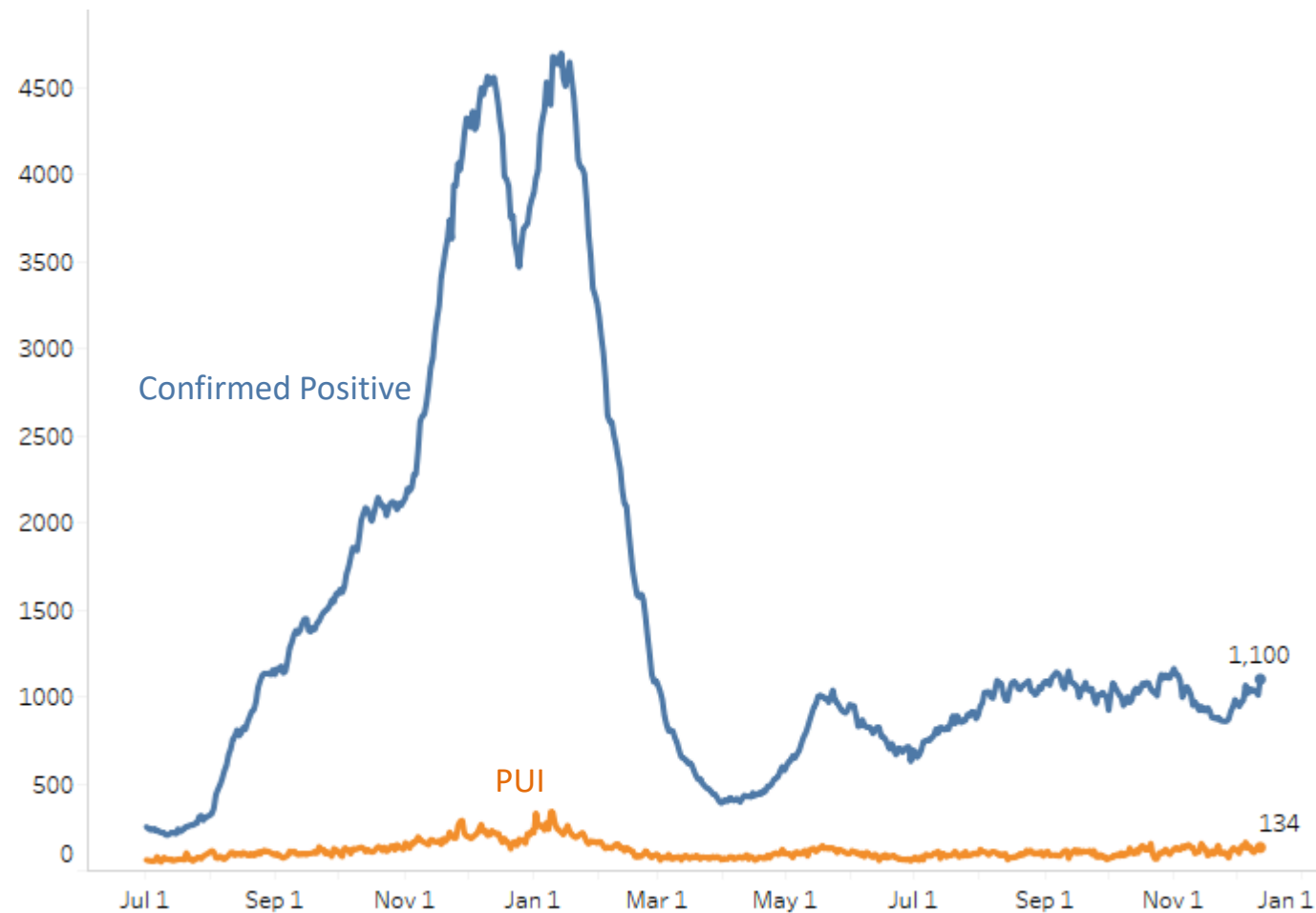


Flu scenario shown: Scenario D – low vaccine protection, pessimistic immunity (this scenario showed closest fit of median model projection to current data), COVID-19 scenario shown: Scenario C – low boosters, moderate immune escape variant (closest match to current booster uptake and fit of median model projection to current data). Model simulations of weekly incident hospitalizations in Michigan. Uncertainty range: 50% (darkest), 80%, 90%, 95% (lightest).

Source: [Round 16 Scenario Modeling Hub Projections](#), [Round 1 Flu Scenario Modeling Hub Projections](#)

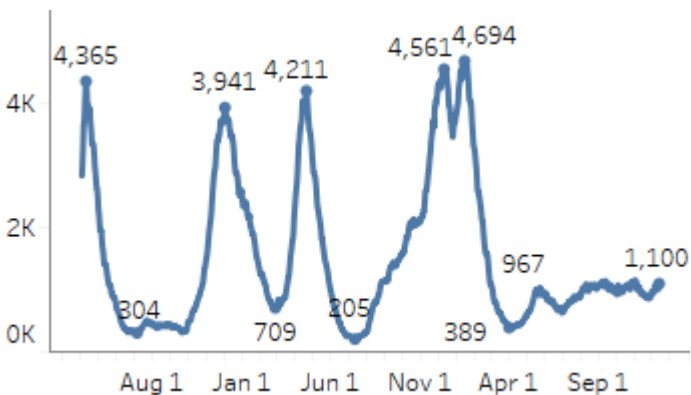
# Statewide Hospitalization Trends: Total COVID+ Census

Hospitalization Trends 7/1/2021 – 12/12/2022  
Confirmed Positive & Persons Under Investigation (PUI)



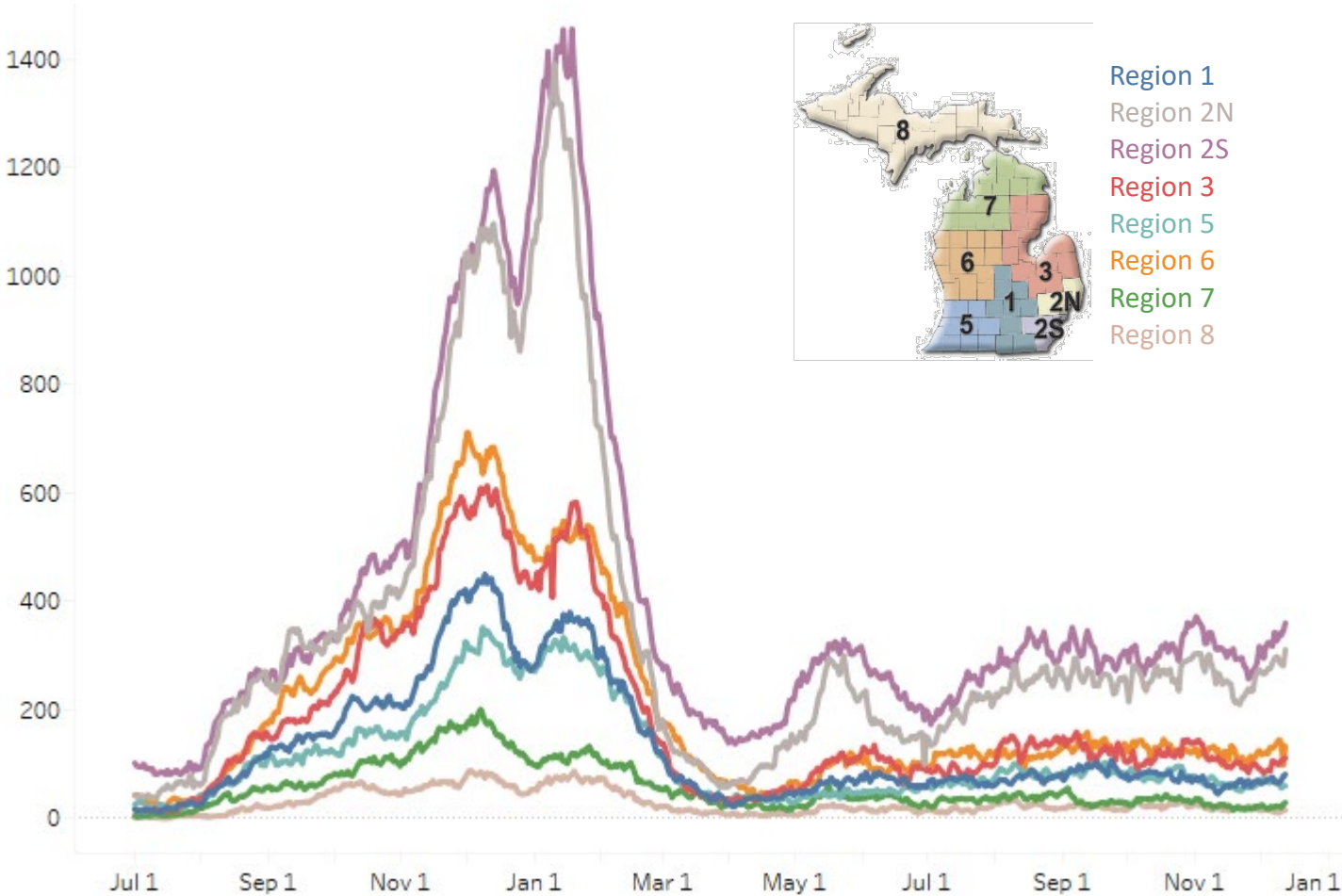
The COVID+ census in hospitals has increased by 11% from last week. Overall census is currently 1,100 patients.

Hospitalized COVID Positive Long Term Trend (beginning March 2020)



# Statewide Hospitalization Trends: Regional COVID+ Census

Hospitalization Trends 7/1/2021 – 12/12/2022  
Confirmed Positive by Region



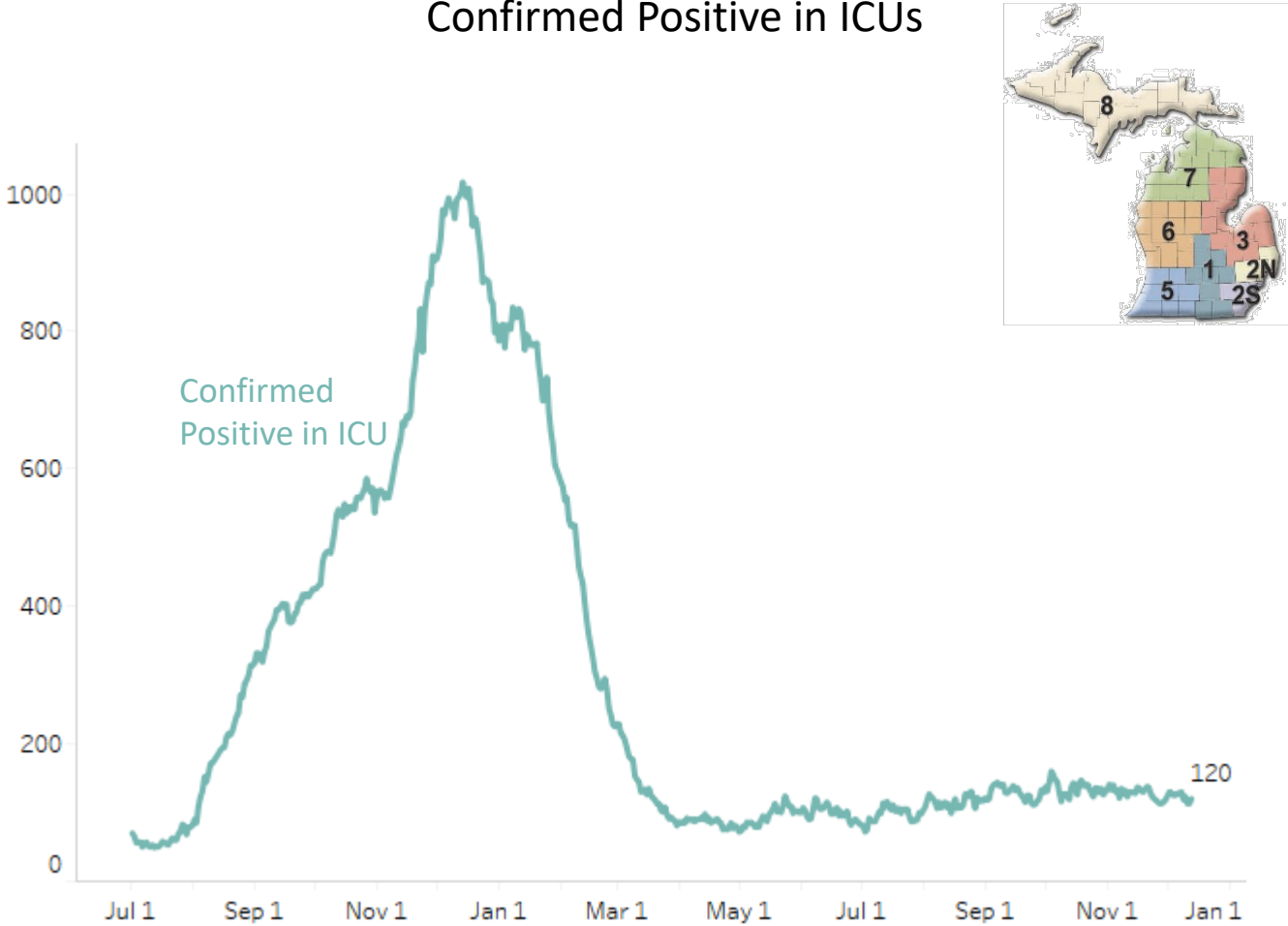
This week hospitalizations have decreased in Region 5. Hospitalizations have increased in Regions 1, 2N, 2S, 3, 6, 7, and 8.

Regions 2N and 2S have greater than 100 hospitalizations/Million population.

Region	COVID+ Hospitalizations (% Δ from last week)	COVID+ Hospitalizations / MM
Region 1	81 (8%)	75/M
Region 2N	311 (13%)	140/M
Region 2S	360 (12%)	162/M
Region 3	111 (28%)	98/M
Region 5	60 (-9%)	63/M
Region 6	133 (2%)	91/M
Region 7	29 (38%)	58/M
Region 8	15 (7%)	48/M

# Statewide Hospitalization Trends: ICU COVID+ Census

Hospitalization Trends 7/1/2021 – 12/12/2022  
Confirmed Positive in ICUs



Overall, the volume of COVID+ patients in ICUs has increased by 2% from last week. There are 120 COVID+ patients in ICU beds across the state.

ICU occupancy is greater than 85% in Regions 1, 3, and 7. All regions have fewer than 10% of ICU beds occupied by COVID+ patients.

Region	Adult COVID+ in ICU (% Δ from last week)	ICU Occupancy	% of ICU beds COVID+
Region 1	12 (20%)	93%	7%
Region 2N	37 (16%)	73%	7%
Region 2S	40 (-13%)	77%	6%
Region 3	15 (36%)	85%	5%
Region 5	4 (-56%)	65%	2%
Region 6	8 (33%)	81%	4%
Region 7	3 (-25%)	86%	2%
Region 8	1 (100%)	51%	2%



# Statewide Hospitalization Trends: Pediatric COVID+ Census

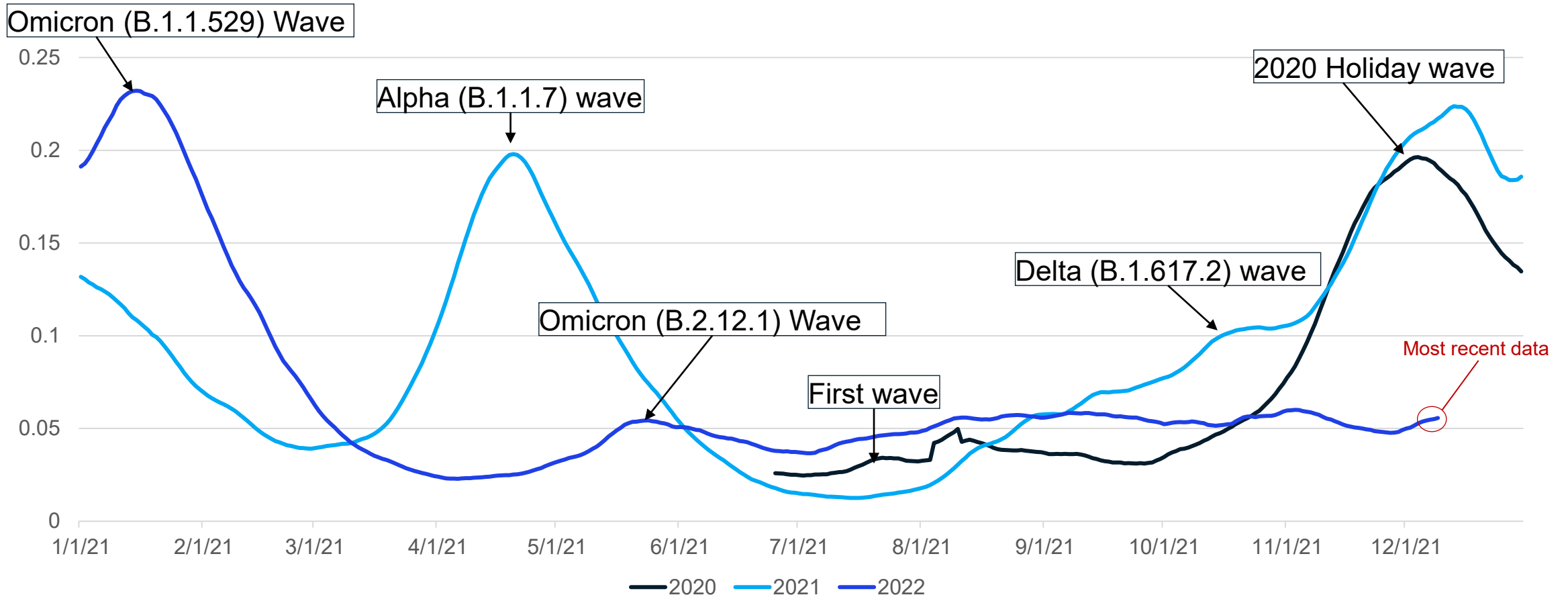
Hospitalization Trends 1/1/2021 – 12/12/2022  
Pediatric Hospitalizations, Confirmed



# Percent of Inpatients with COVID is Currently Lower than the Past Two Years

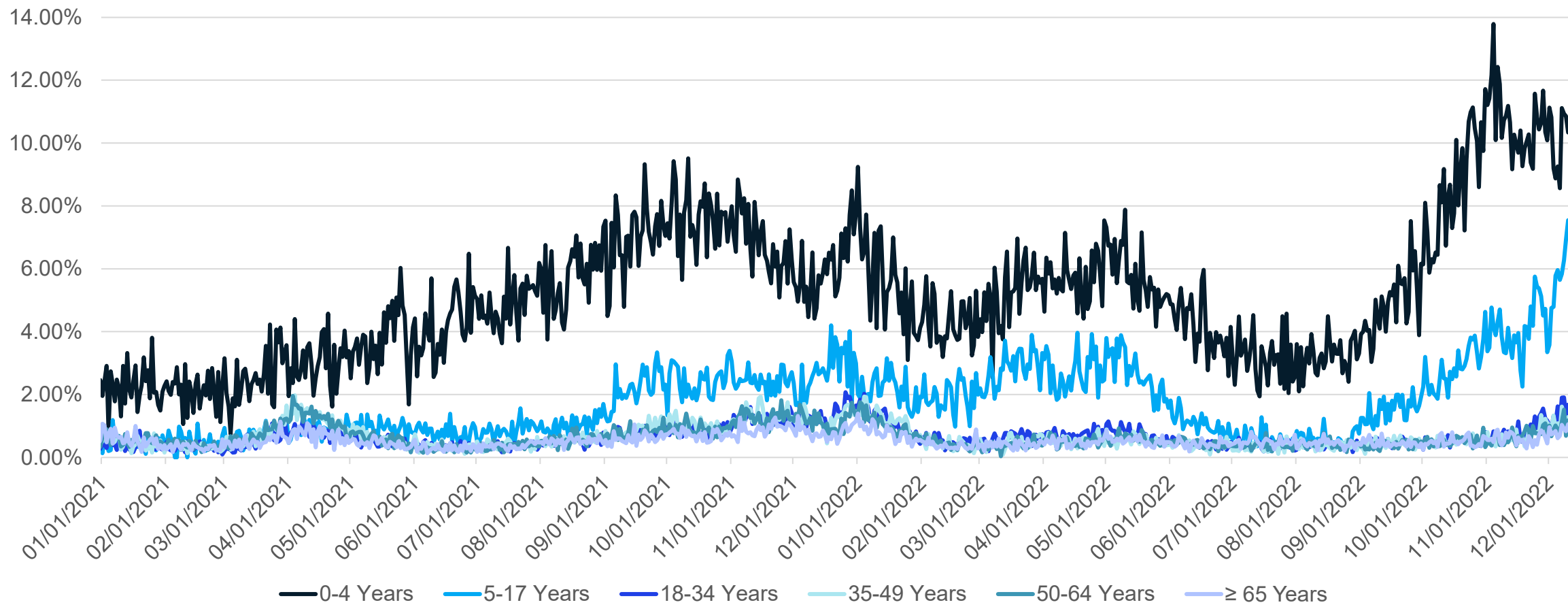
- The percent of inpatients who are COVID+ remains lower than Alpha, Omicron, and holiday wave peaks
- Current hospital levels are plateaued with slight increases recently, and below levels in winter 2020 and winter 2021

## 7-day rolling average of percent of inpatients who are COVID positive



# Syndromic Surveillance for **CLI** in Michigan is increasing, and highest for younger ages

Proportion of Visits with Coronavirus Like Symptoms (CLI) Only by Age Group - Michigan

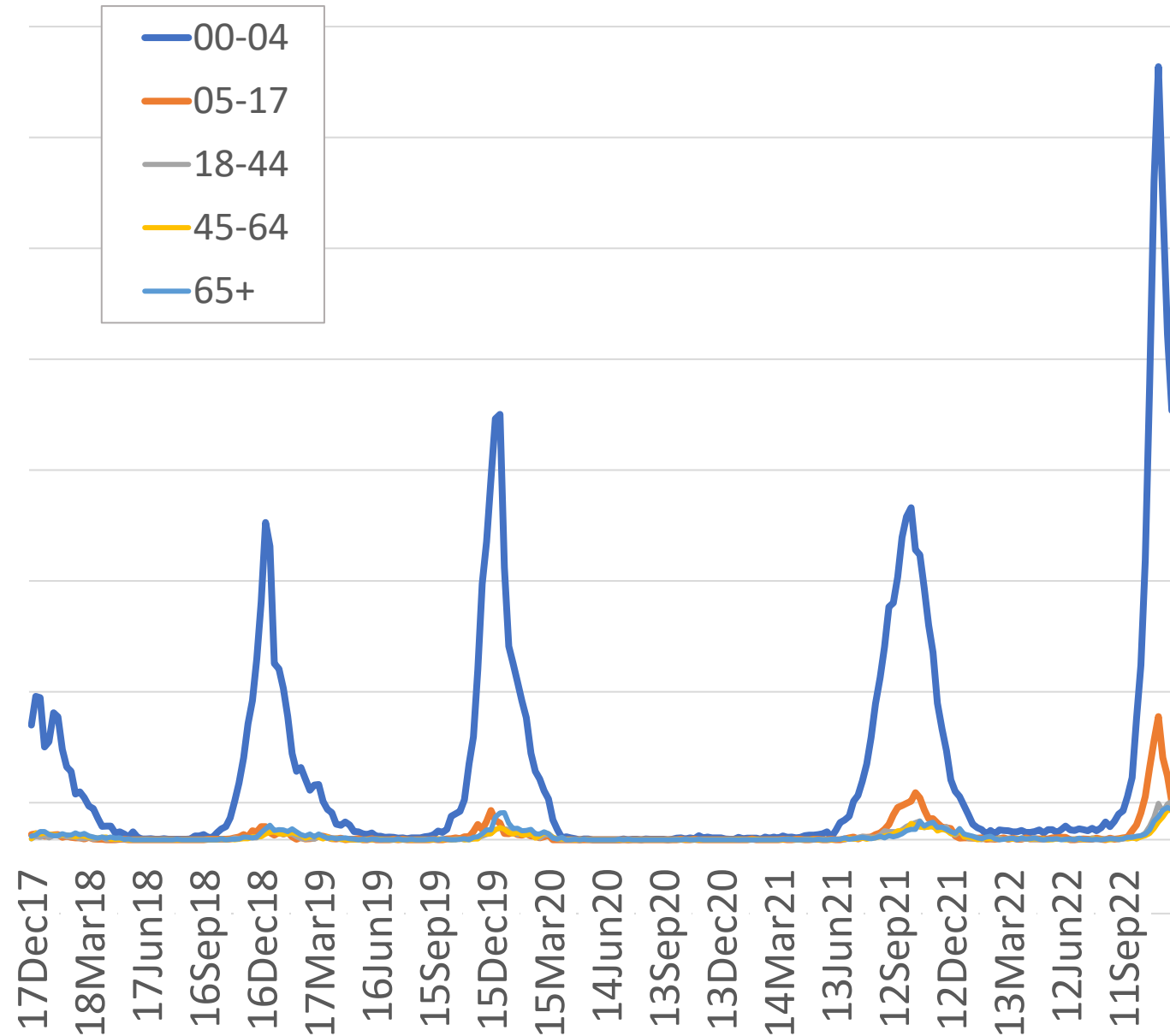


- The proportion of emergency department and urgent care visits with COVID-like illness (CLI) is increasing since early September for all age groups
- Younger ages have a higher proportion of visits for CLI than older ages

# Respiratory Syncytial Virus (RSV)

- RSV is not routinely notifiable meaning MDHHS doesn't receive individual reports of cases and deaths
- One way of measuring burden is by using Emergency Department and Urgent Care Syndromic Surveillance
- EDs and UCs may report to our syndromic surveillance network
- Not every facility reports into the network and the number of reporters to the network changes over time as do the quality of their feeds
  - Therefore, focus less on comparing trends across years, but rather seasonal nature of RSV and intra-season trend
- Data are representative of visits not persons
- Data are representative of diagnoses, not lab-confirmed cases
  - Laboratory testing and/or diagnoses may be subject to ascertainment/clinical bias

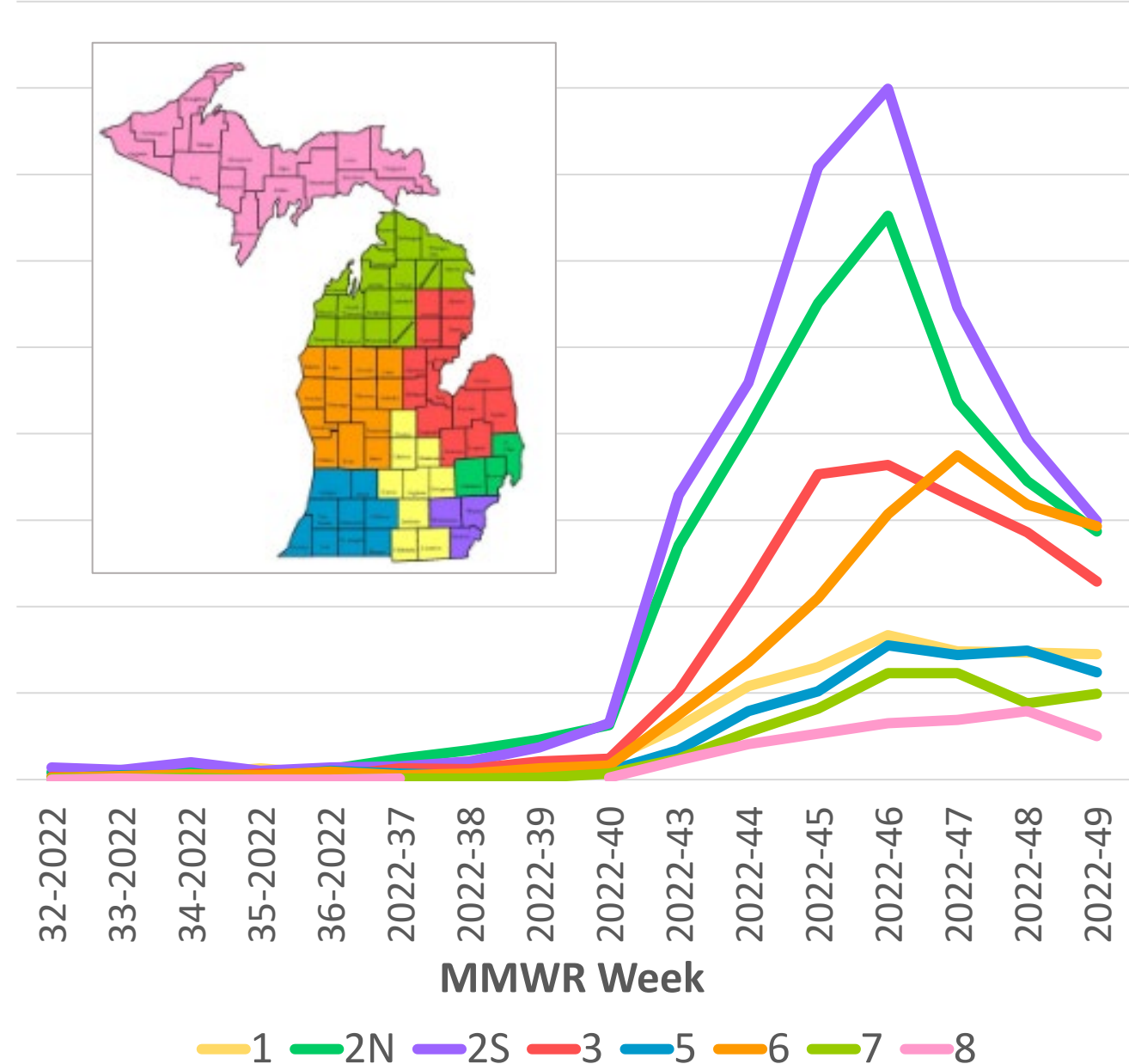
RSV ED and Urgent Care Visits by Age, Michigan 2017-2022



# RSV

- RSV season appears to be hitting early and impacting those <5 years of age
- While difficult to conclude from these data alone, indications would suggest this may have been a worse RSV season than in previous years
- Visits to urgent cares and EDs appear to now be on the decline
- Take advantage of opportunities to protect ourselves from severe illness caused by respiratory viruses

## RSV ED and Urgent Care Visits by PHP Region - Michigan, 2022



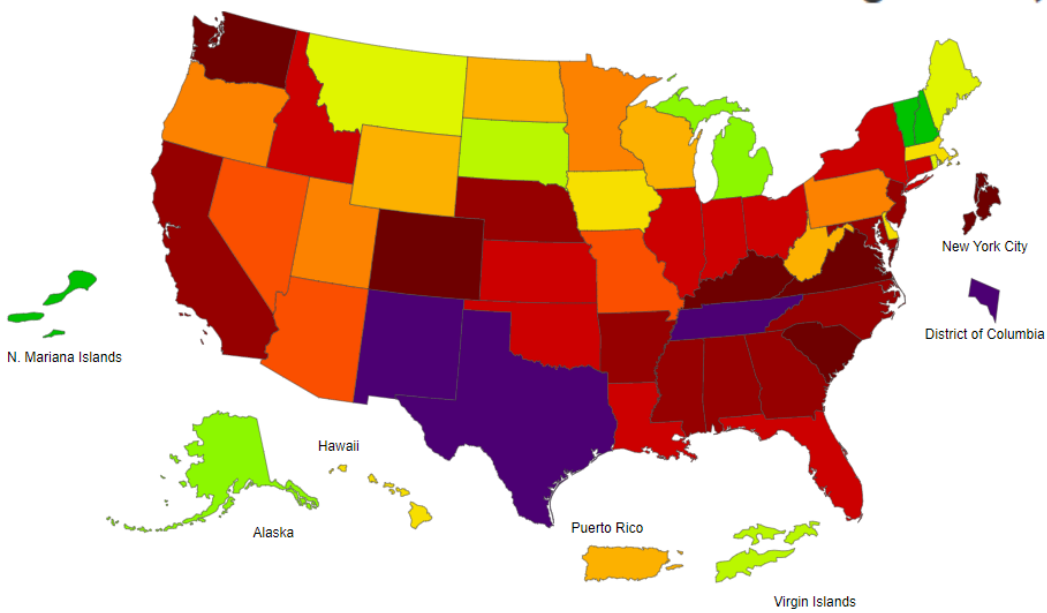


# A Weekly Influenza Surveillance Report Prepared by the Influenza Division

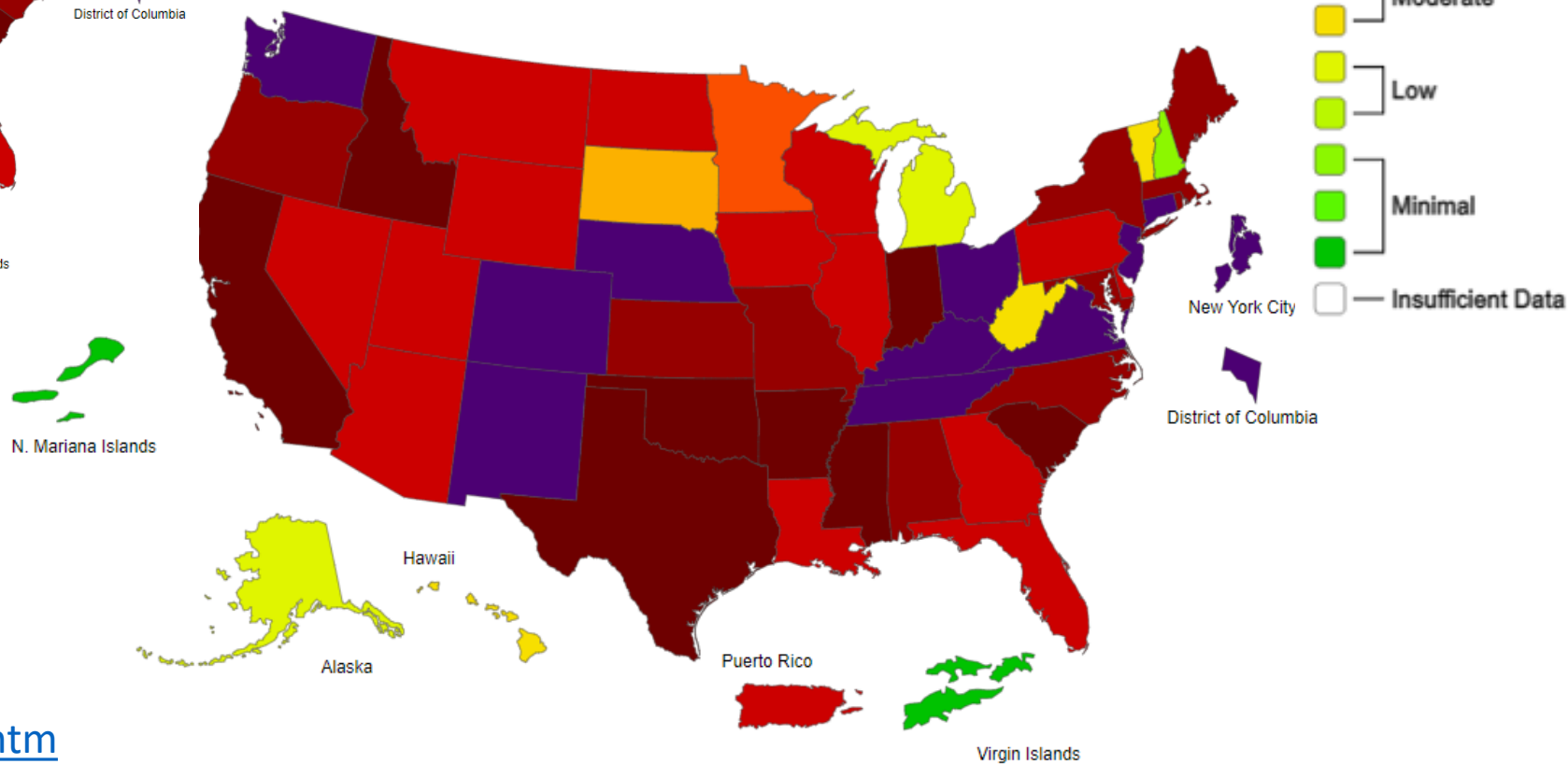
## Outpatient Respiratory Illness Activity Map Determined by Data Reported to ILINet

This system monitors visits for respiratory illness that includes fever plus a cough or sore throat, also referred to as ILI, not laboratory confirmed influenza and may capture patient visits due to other respiratory pathogens that cause similar symptoms.

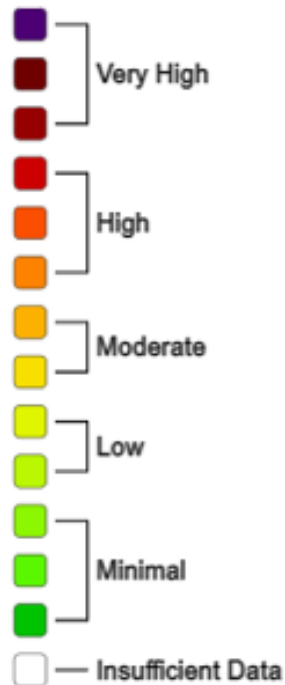
### 2022-23 Influenza Season Week 46 ending Nov 19, 2022



### 2022-23 Influenza Season Week 48 ending Dec 03, 2022

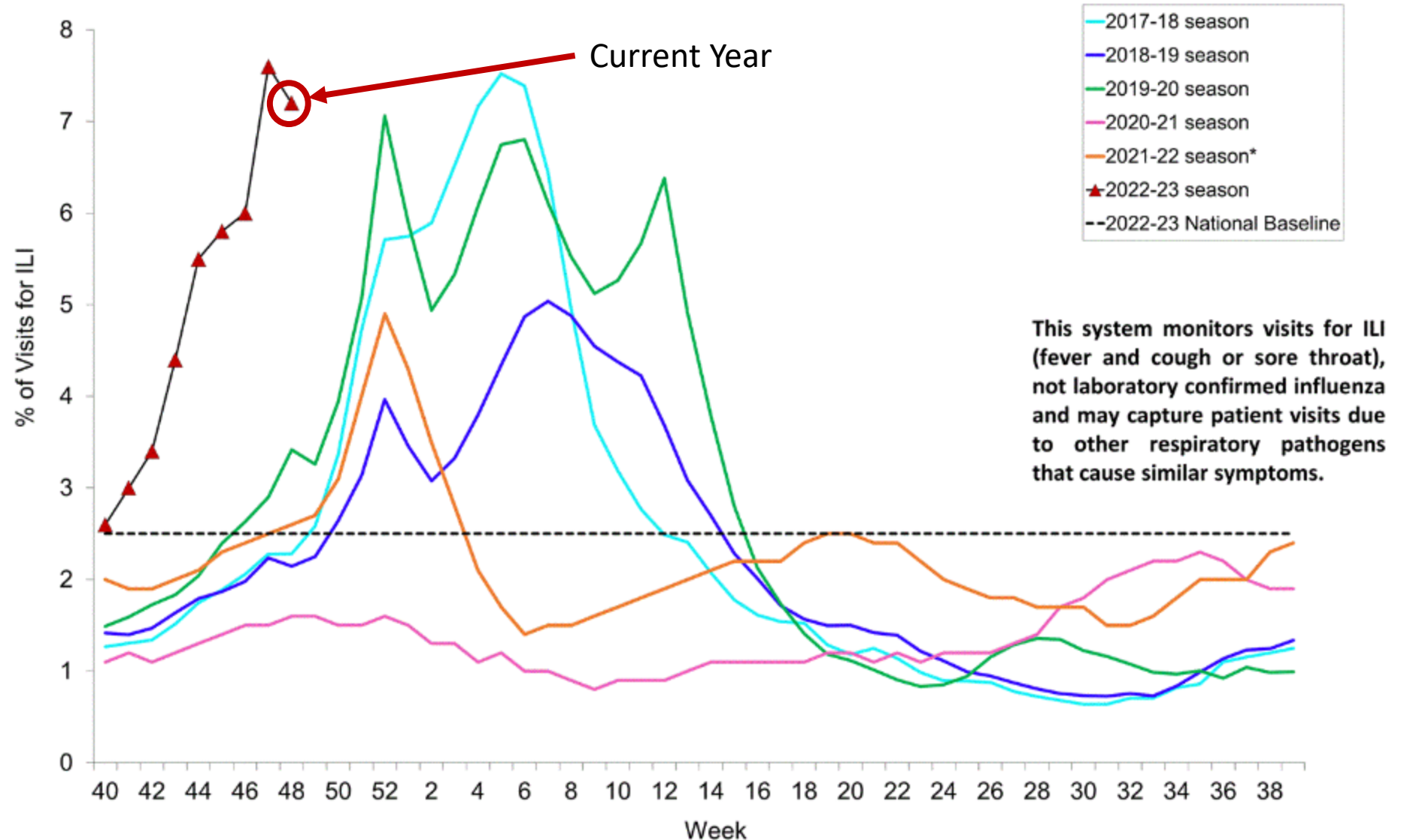


#### ILI Activity Level



- Flu season has started earlier than normal in the U.S.
- ILI activity is high throughout most of the country
- ILI levels recently decreased for only the first time this year
- Michigan remains at moderate ILI activity, but ILI levels are increasing
- The best time to get a seasonal flu vaccine is before there is widespread flu activity

Percentage of Outpatient Visits for Respiratory Illness Reported By The U.S. Outpatient Influenza-like Illness Surveillance Network (ILINet), Weekly National Summary, 2022-2023\* and Selected Previous Seasons

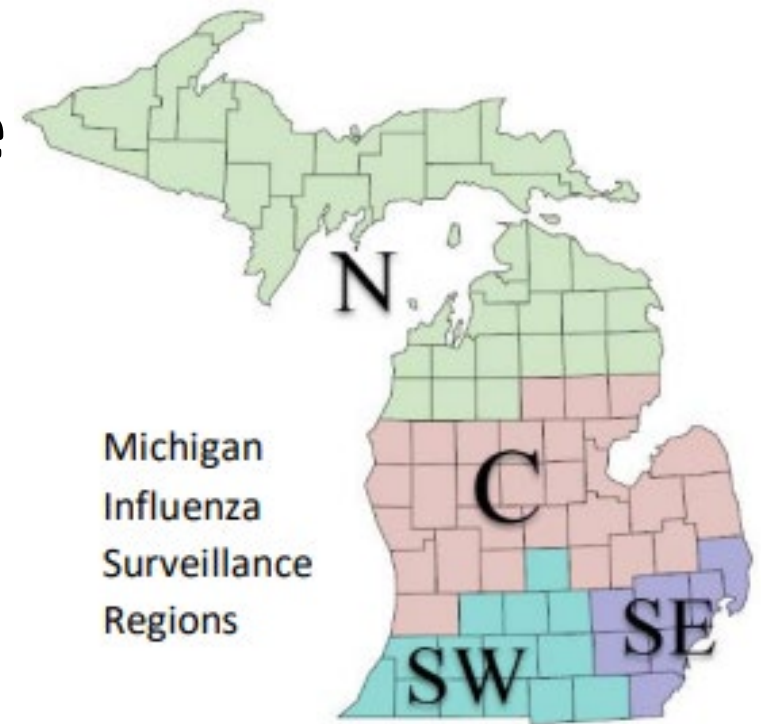
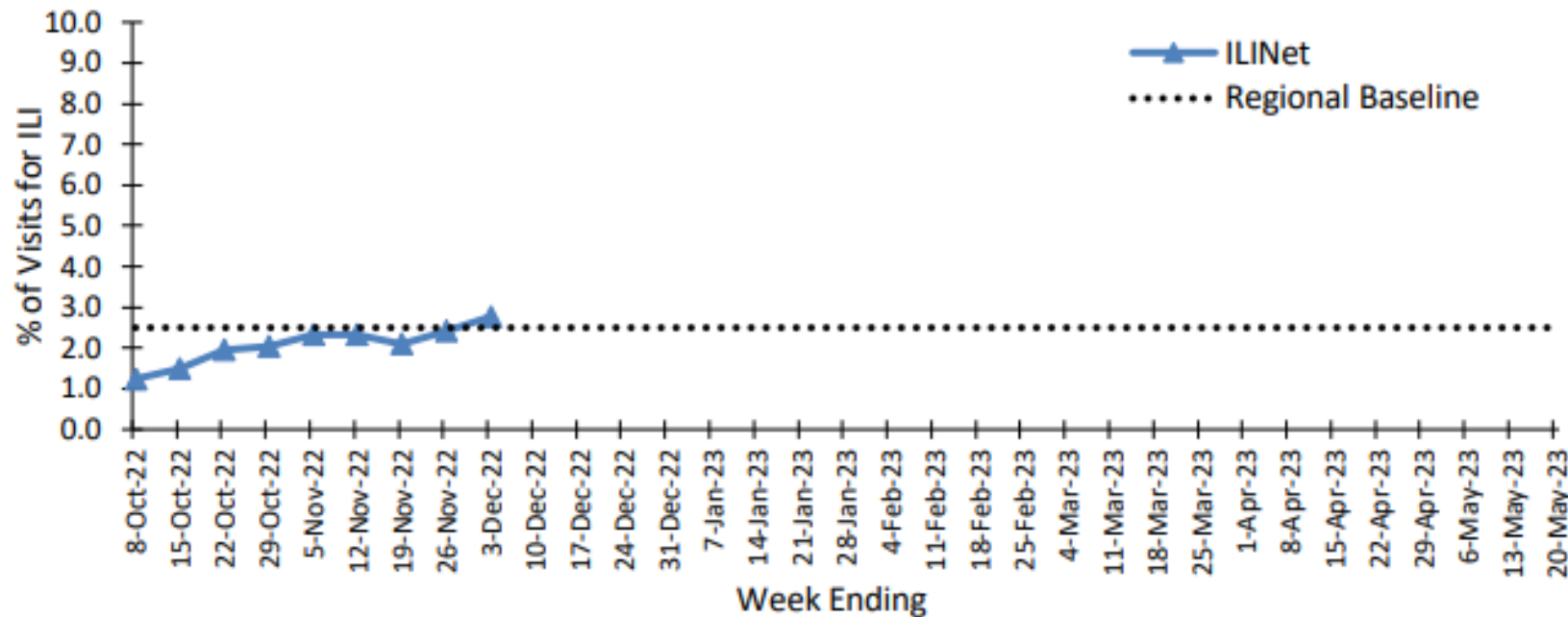


# Michigan Seasonal Influenza Surveillance

Number of Reports and ILI % by Region during this time period:

Region	C	N	SE	SW
No. of Reporters ( <b>150</b> )	49	18	55	28
ILI %	2.8	2.5	3.0	2.3

Percentage of Visits for ILI in Michigan Reported by ILINet, 2022-2023



Michigan  
Influenza  
Surveillance  
Regions

**Michigan ILI Activity: 2.8%**

(Last week: 2.4%)

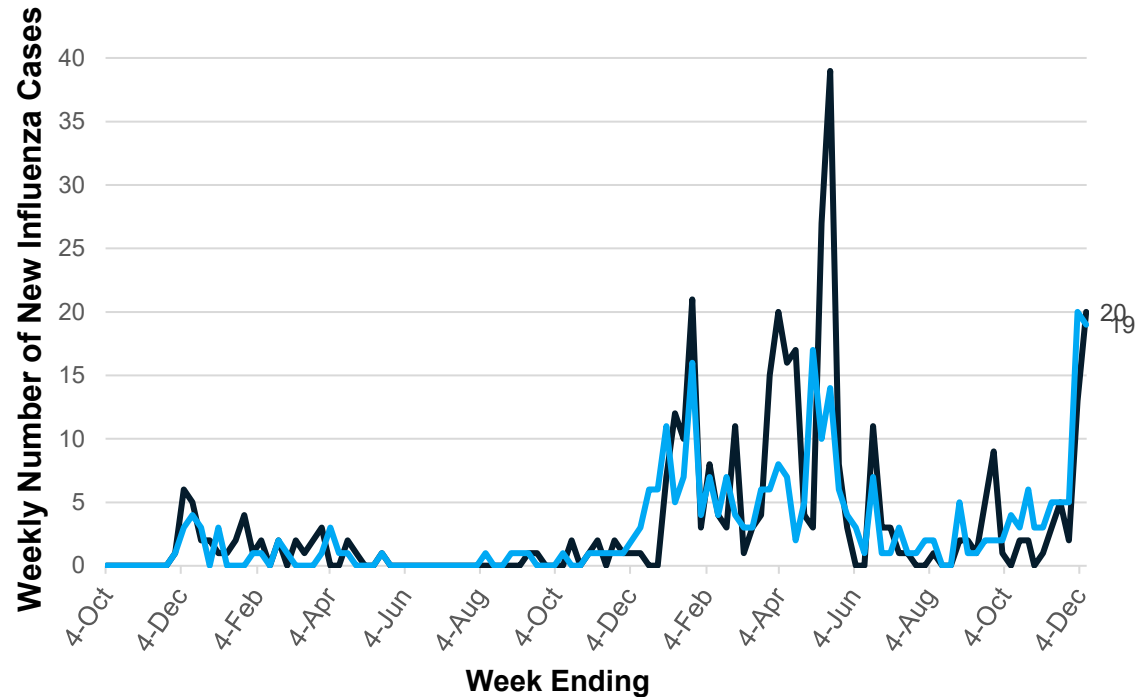
Regional Baseline\*: 2.5%

A total of **2,560** patient visits due to ILI were reported out of **92,509** outpatient visits.

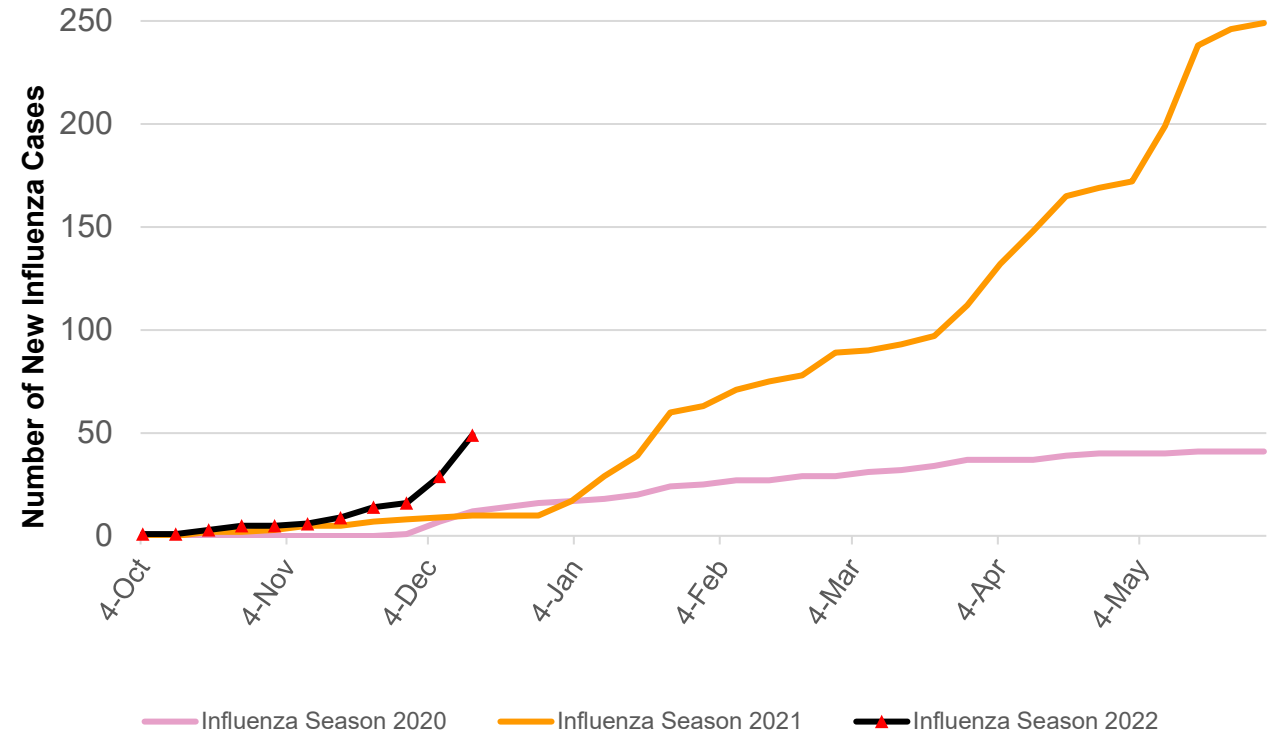
\*Regional baseline is determined by calculating the mean percentage of patient visits due to ILI during non-influenza weeks for the previous three seasons and adding two standard deviations.

# Influenza Cases Among Staff and Residents in Long Term Care Facilities

Weekly New Influenza cases in Skilled Nursing Facility  
Residents and Staff



Cummulative Number of Influenza cases in Skilled Nursing Facility  
Residents  
2020 - 2022 Seasons



- The number of influenza cases reported in the most recent week has increased from last week, and it is the highest number of weekly reported cases for this flu season (starting in October 2022)
- Influenza testing may not be as routine as COVID-19 testing in LTC settings
- The number of influenza cases among residents reported in 2022-2023 season through December 13 is higher than the 2020-2021 and 2021-2022 seasons

# Harm Reduction: Key Messages

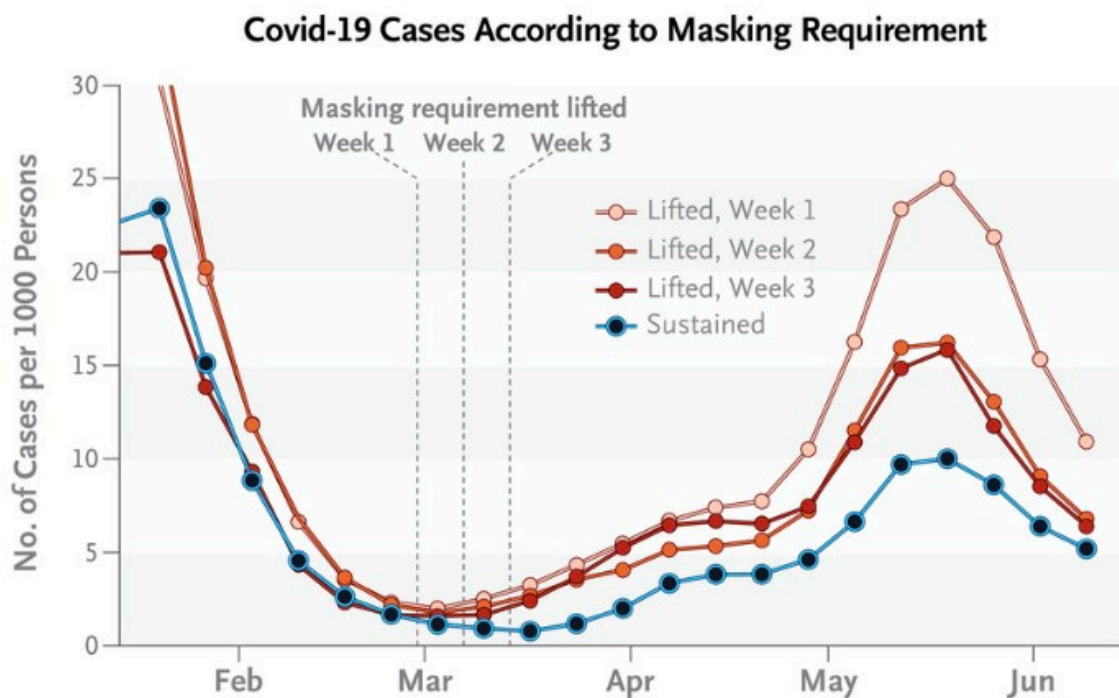
**Empowering community members to make best choices for their individual circumstances and to be prepared by making a COVID, cold, and flu plan this season**

- Children ages 6 months to 4 years should get a flu shot and receive their COVID-19 primary series or booster, as eligible
- Everyone ages 5 years and older should get a flu shot and be up to date on COVID-19 vaccines (e.g., bivalent boosters)
- It's important to protect ourselves and others from COVID-19 and other respiratory illnesses through the use of masks, testing, and other layered prevention measures
- Get tested, and if positive, seek care with therapeutics (e.g., antiviral medications)
  - Cumulative therapeutic availability and administration has slowly declined since early September
  - Talk to your doctor or pharmacist about whether you should get antibody or antiviral treatment, and where you can find treatment
  - Therapeutics are authorized for people who meet select criteria
- Vaccinations remain the best way to protect from COVID-19, especially from severe disease
  - COVID-19 vaccines are now available for ages 6 months and up
    - Everyone 6 months and older should also get an age-appropriate COVID-19 booster, when eligible
  - Over 6.8 million Michiganders have received at least one dose (69.1%)
  - The percentage of Michiganders who have received the updated (bivalent) booster is higher than national percentages for all reported age groups, but the overall uptake of the booster remains low
    - 14.8% of Michiganders ages 5 years and older, and 38.4% of the population 65 years of age or older, have received their updated (bivalent) booster dose



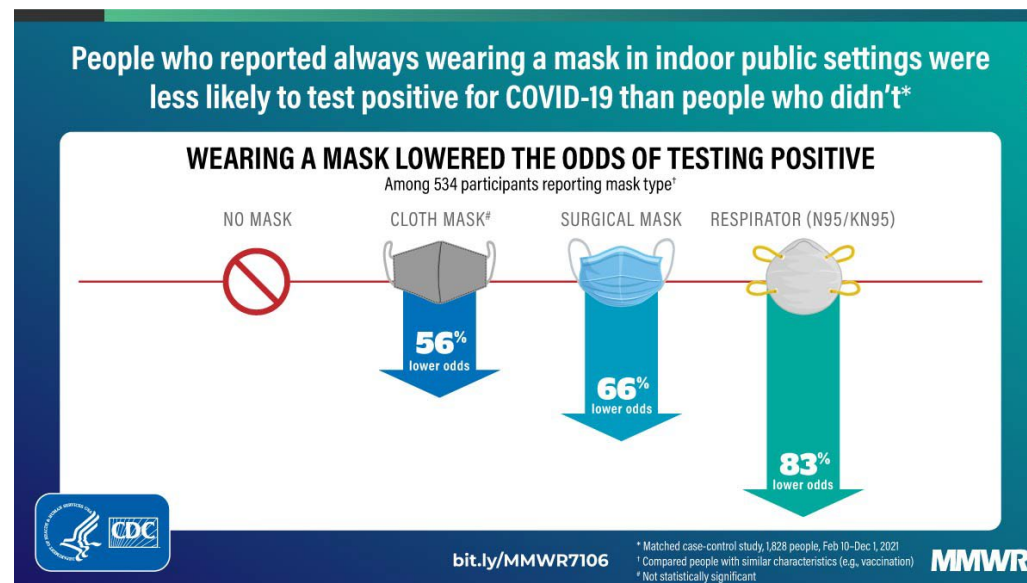
# Masks are helpful tools to stop the spread of colds, flu, and COVID-19

A [recent study](#) showed universal masking in schools was associated with significantly lower incidence of COVID-19 for both staff and students in schools in the Boston area



A [study based on a Southeast MI cohort \(HIVE\)](#) found that the rate of respiratory illness in families fell by 50% during 2020 and 2021 (while mask wearing and other mitigation measures were in place), compared to earlier years.

Wearing surgical masks in indoor public settings [has been shown](#) to reduce the odds of testing positive for COVID-19 by 66% and wearing N95/KN95 masks reduces the odds by 83%

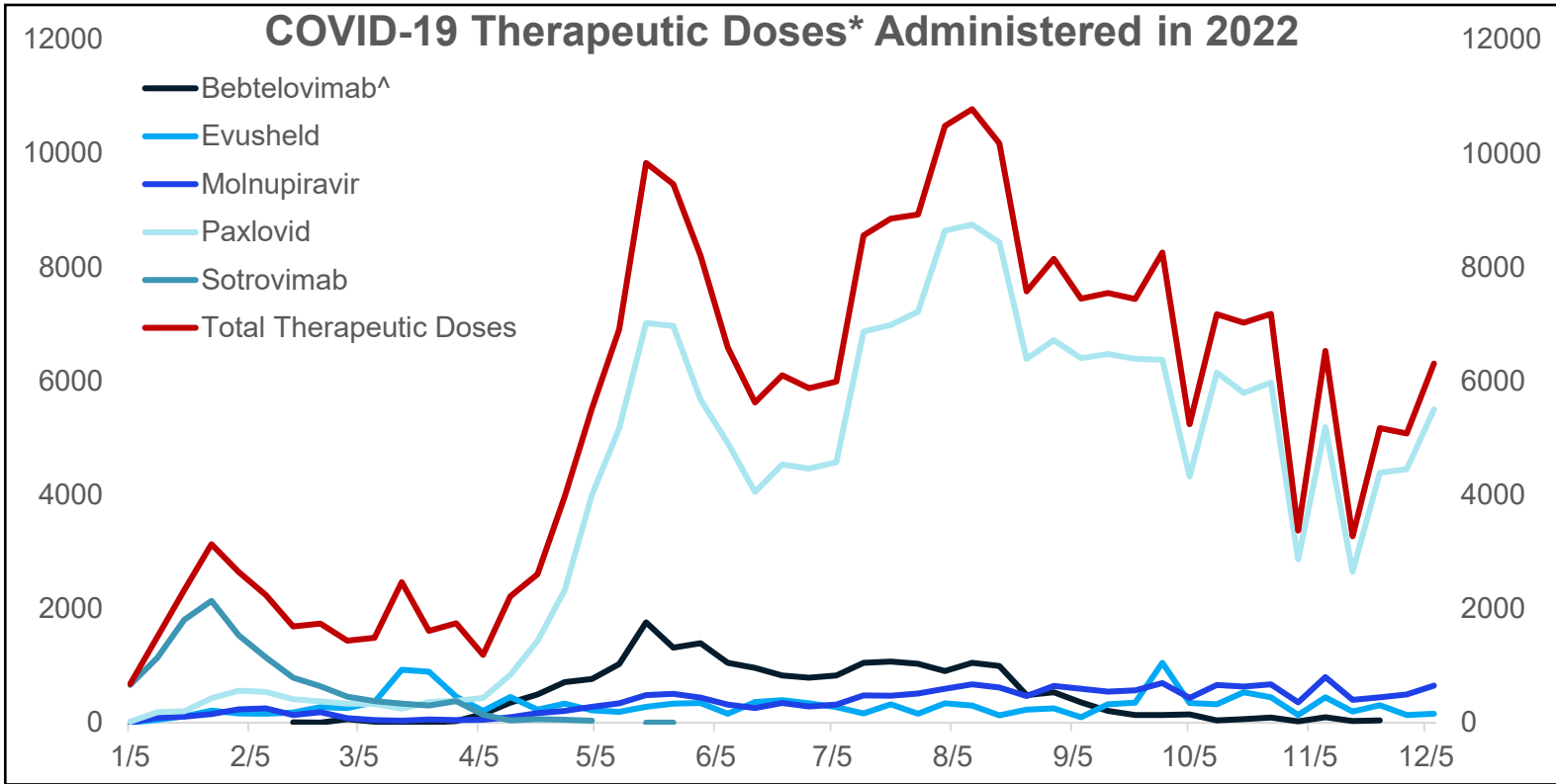


## Federal & Michigan websites assist COVID positive residents find treatment

COVID-19 resources available on federal website: [COVID.gov](https://www.covid.gov)

Test-to-Treat program simplifies access to COVID treatment: [Find a Test-to-Treat location near you](#)

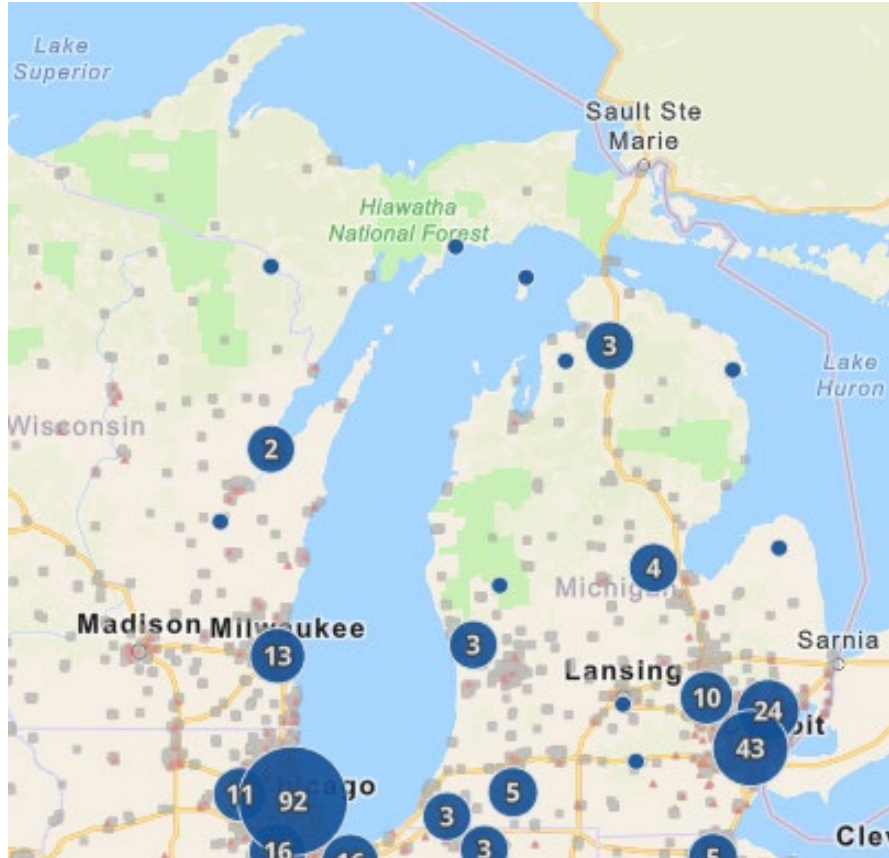
- If you have COVID-19 symptoms, do not wait to get treated
- You must take oral COVID-19 medication within 5 days of your first COVID-19 symptoms
- Use the tool to find a location that is right for you



Source: HHS – Tiberius. Data Updated December 12

\*Data is reported as a single patient course, except for Evusheld, which is reported as the number of 300mg doses administered.

<sup>a</sup>Federally supplied Bebtelovimab has concluded, and product has transitioned to the commercial marketplace



Source: Screen capture of Michigan Test-to-Treat sites from linked website

Therapeutic administration increased during Michigan's Spring Omicron surge. Supply limitations in January 2022 required strategic distribution and should not be compared directly.

# Over 6.1 Million Michiganders have completed the primary series – 62.1% of the total population

## Vaccination Coverage

Over 6.1 million people in the state are fully vaccinated\*  
91.1% of people aged 65 and older have completed the primary series\*  
69.1% of total population have initiated the primary series\*

## Race/Ethnicity† for those 6 months and older:

- Up-to-date coverage is highest among those of Non-Hispanic (NH) White (13.2%), then NH Asian, Native Hawaiian or Pacific Islander Race (11.0%), then NH American Indian (9.7%), NH Black or African American Races (6.5%).
- Initiation is at 7.6% for those of Hispanic ethnicity

## Updated Booster Coverage

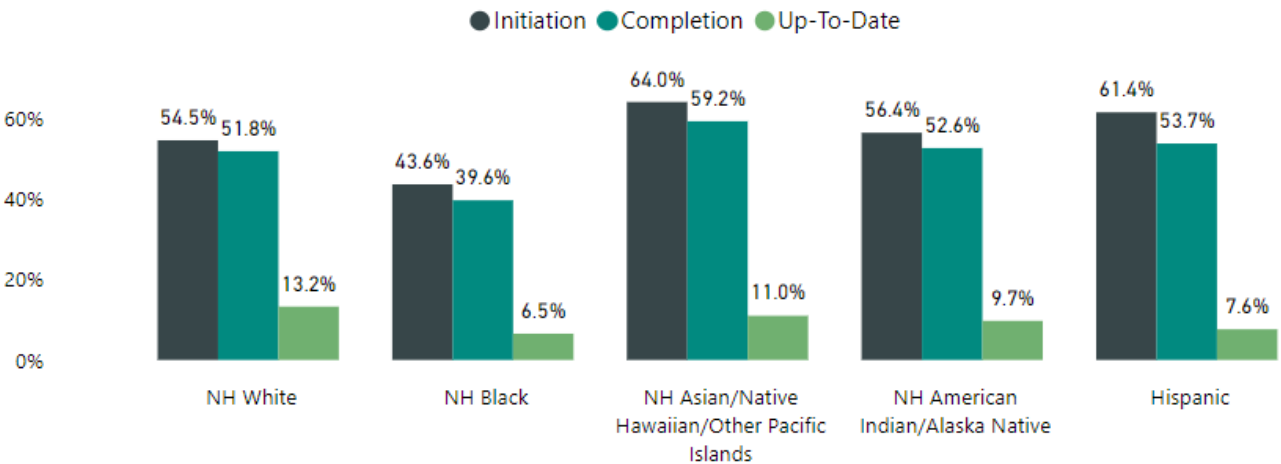
The percentage of Michiganders who have received the updated (bivalent) booster is higher than national percentages for all reported age groups  
38.4% of the population 65 years of age or older has received an updated (bivalent) booster  
14.8% of Michiganders ages 5 years and older have received their updated (bivalent) booster dose

## Vaccination Coverage in Michigan as of 12/7/2022

Age Group	% At Least One Dose	% Completed Primary Series	% Updated Booster**	U.S. % Boosted**	Primary Series Total
Total Population	69.1%	62.1%	NA	NA	6,197,737
≥ 5 years	73.0%	65.7%	14.8%	13.5%	6,185,541
≥ 12 years	77.0%	69.3%	16.0%	14.6%	5,952,842
≥ 18 years	79.2%	71.2%	17.1%	15.5%	5,586,240
≥ 65 years	95.0%	91.1%	38.4%	34.2%	1, 608,313

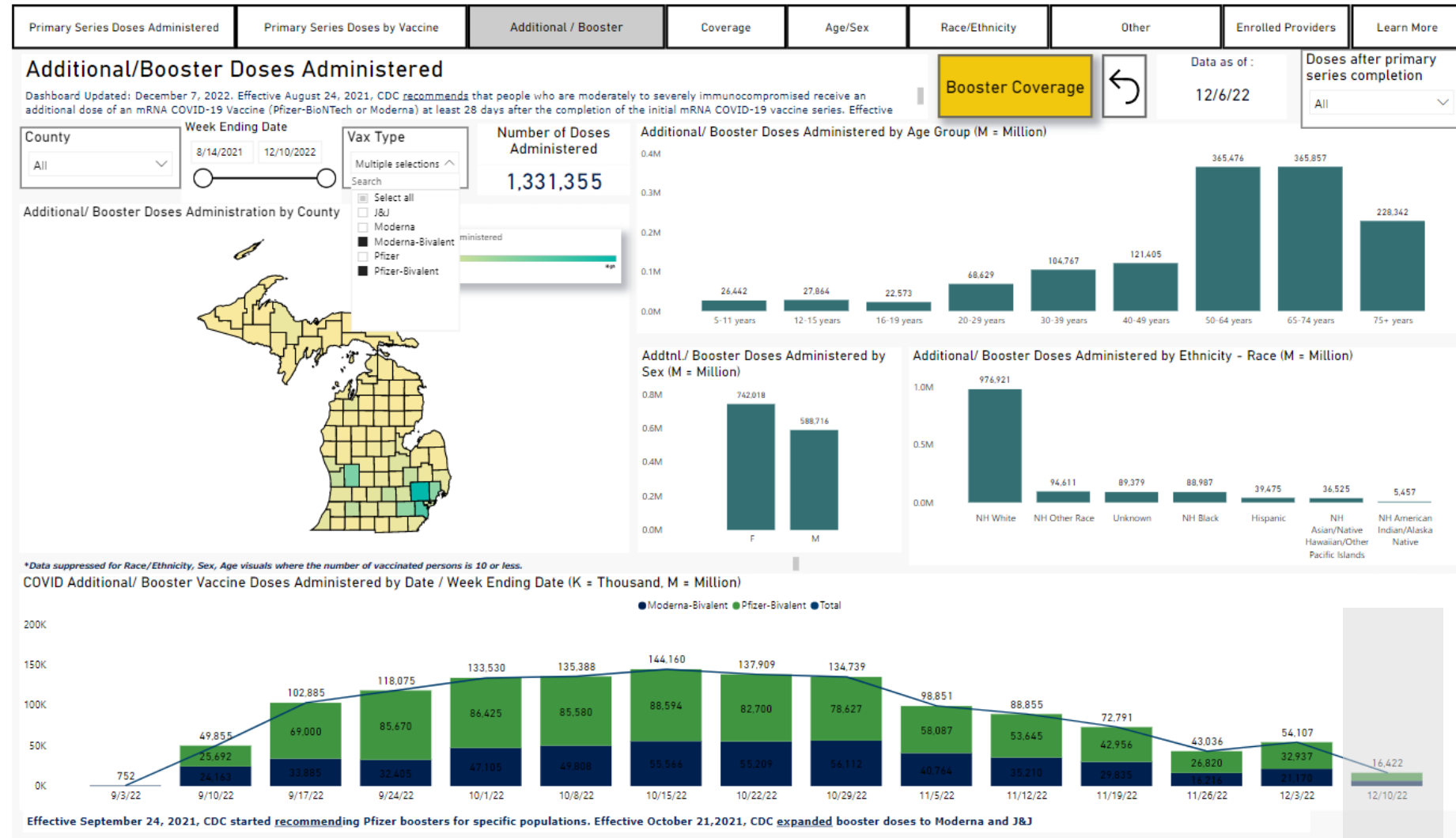
\*\*This shows the percentage of all residents ages 5 years and older in a jurisdiction (state, territory, national) with an updated (bivalent) booster dose. Non-residents who received vaccine are attributed to their jurisdiction of residence.

## Coverage by Race\*



# Bivalent Administration

- FDA has authorized and CDC now recommends expanding the use of the updated bivalent COVID-19 vaccines to everyone over the age of 6 months.\*
- As of 12/6<sup>†</sup>, 1,331,355 Michiganders had received their bivalent booster
- Note: the data for the week ending 12/10 would have been incomplete on the date the dashboard was last refreshed (12/6)



● Moderna Bivalent

● Pfizer Bivalent

\* [CDC Expands Updated COVID-19 Vaccines to Include Children Ages 6 Months through 5 Years](#)

<sup>†</sup> These data are updated every Wednesday on our COVID-19 vaccination Dashboard under Additional/Booster Administration Trends and then restricting the view to just Moderna and Pfizer bivalent doses

Sources: [Michigan Coronavirus Vaccine Dashboard](#)



# Staying up to date with recommended COVID-19 vaccinations, including the bivalent booster, provides significant protection against SARS-CoV-2 infection

- Monovalent COVID-19 vaccines were less effective against symptomatic infection due to SARS-CoV-2 Omicron variant
- Updated bivalent boosters provided significant additional protection against symptomatic SARS-CoV-2 infection in those who had previously received monovalent vaccine doses
- All persons should stay up to date with recommended COVID-19 vaccinations, including bivalent booster doses for eligible persons
- Currently, 14.8% of those 5 and older have received their bivalent vaccine; and 38.4% of those over 65 years have received their bivalent booster

**An updated (bivalent) COVID-19 booster provides *additional protection* against symptomatic COVID-19 illness\***

**COVID-19 VACCINE DRIVE-THRU**

**COVID-19 spread has increased during the last two winters; stay up to date with COVID-19 vaccination**

\* Among immunocompetent adults with COVID-19-like symptoms, the vaccination status of 121,687 adults with a positive COVID-19 test was compared to that of 238,939 adults with a negative COVID-19 test

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NOVEMBER 22, 2022

**MMWR**



# Newly Authorized and Recommended Bivalent Boosters for Those Aged 6 Months to 5 Years

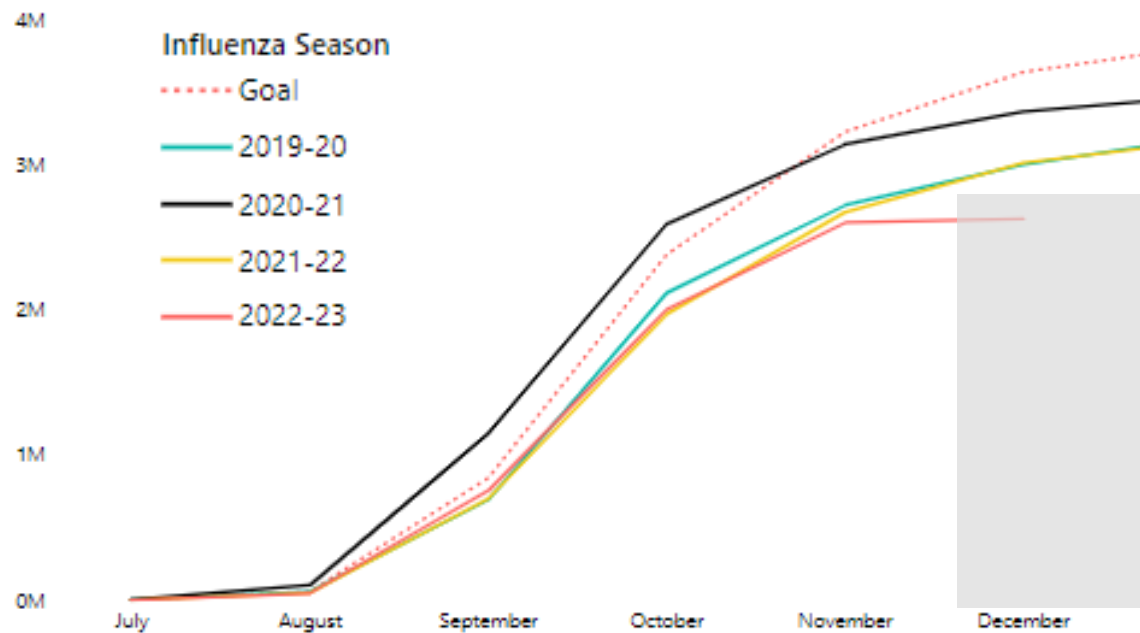
- Expansion of the updated COVID-19 vaccines now includes children ages 6 months through 5 years
- Updated COVID-19 vaccines are formulated to protect against some of the more recently circulating viruses
- Eligibility for the booster depends on the primary series that has been received
  - **Moderna:** complete the two-dose primary series, and then the child can receive the bivalent vaccine at least two months following completion of the primary series.
  - **Pfizer:** The bivalent dose is given as the third dose of the primary series.
    - Children who already completed the Pfizer 3-dose monovalent primary series are not recommended for the bivalent COVID-19 vaccine at this time.
- COVID-19 vaccines are critical to providing ongoing protection as immunity wanes and the virus continues to mutate.

\* At this time, children who have received all shots of the Pfizer 3-dose series are not eligible to receive the updated bivalent vaccine

Sources: CDC Vaccination Recommendations. <https://www.cdc.gov/media/releases/2022/s1209-covid-vaccine.html>

# Michigan Seasonal Influenza Vaccine Coverage

Influenza Vaccine Doses Administered by Month (units in M=Million, K=Thousand)



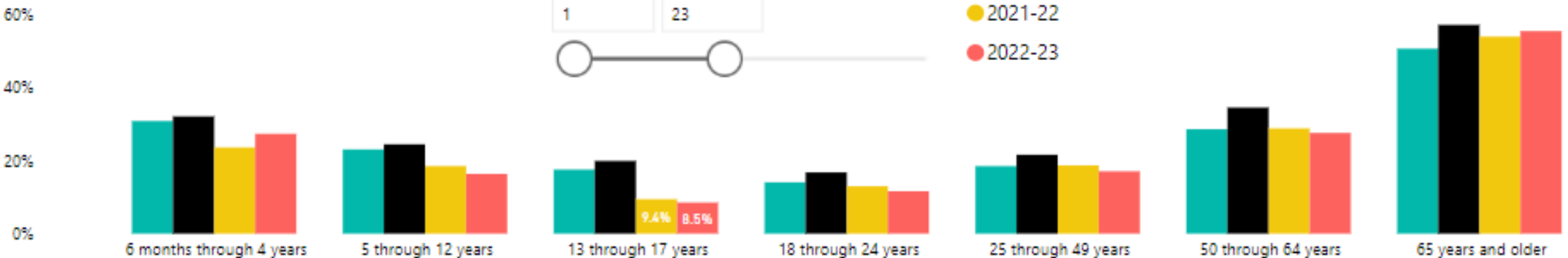
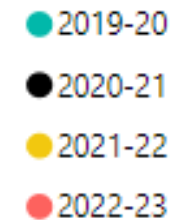
- Data presented here are through 12/3/2022 (December 2022 data are incomplete)
- Seasonal flu vaccine coverage in Michigan is similar to that of 2021-22 season
- Over 2.6 million Michiganders have received flu vaccine, but that is just over 70% towards the goal of 4 million Michiganders vaccinated for flu
- A higher proportion of those under 5 have been vaccinated compared to this time last year
- Still, just over 27% of those under 5 are vaccinated for flu in 2022-23

Influenza Vaccination Coverage by Age Group

Influenza Week

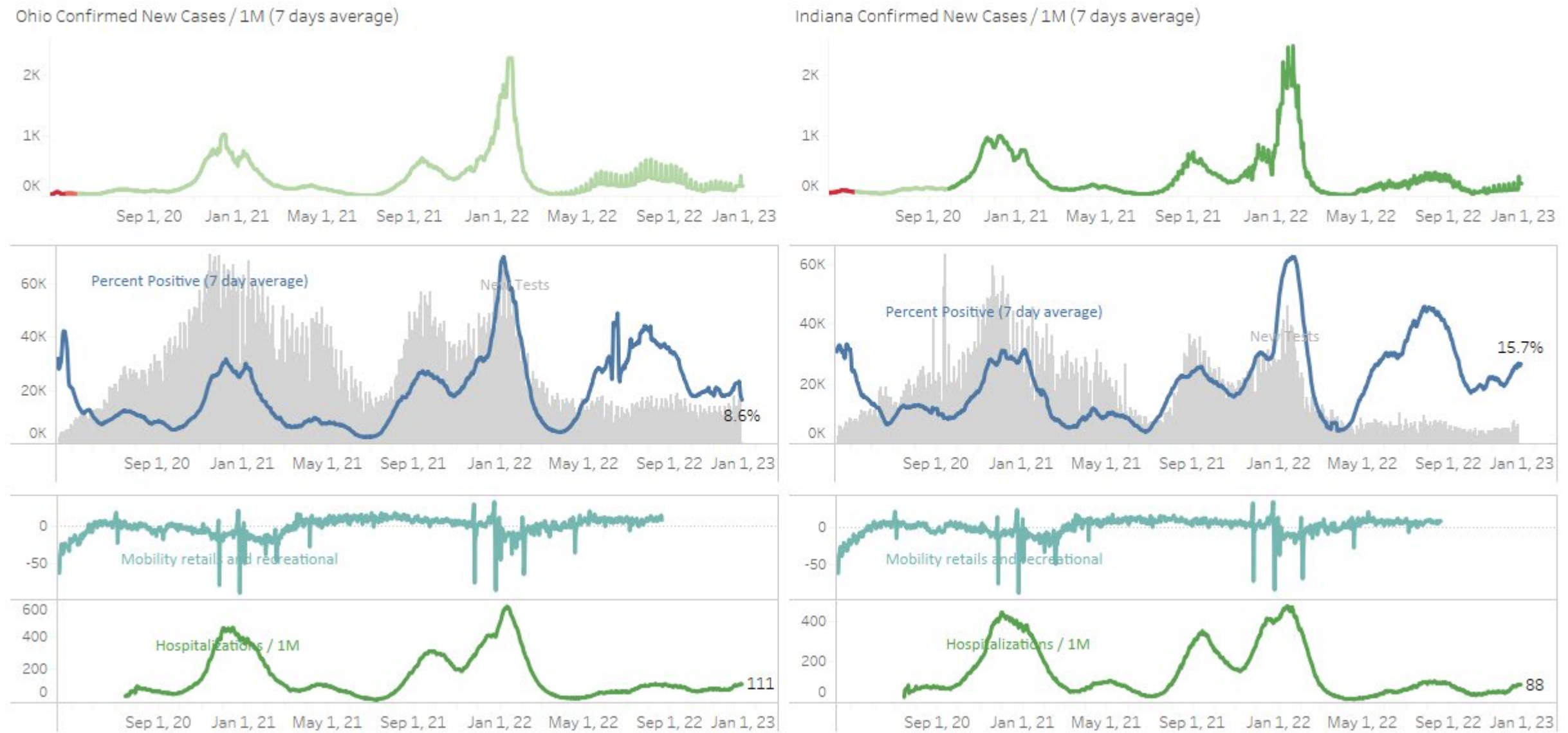


Influenza Season

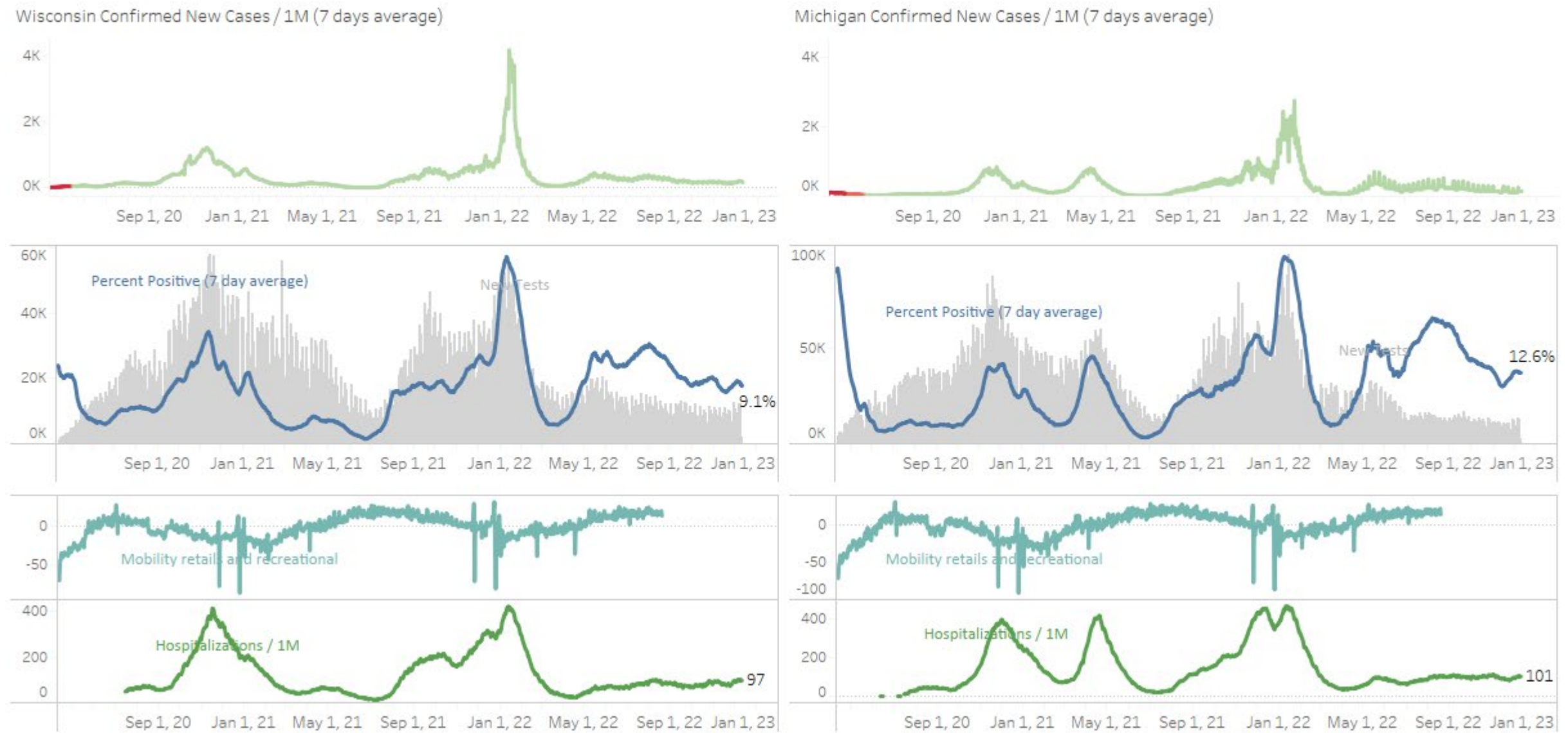


# APPENDIX

# State Comparisons: Ohio and Indiana



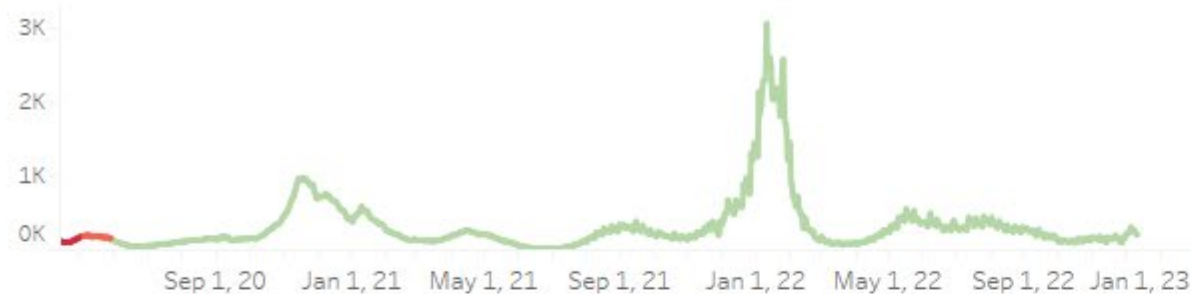
# State Comparisons: Wisconsin and Michigan



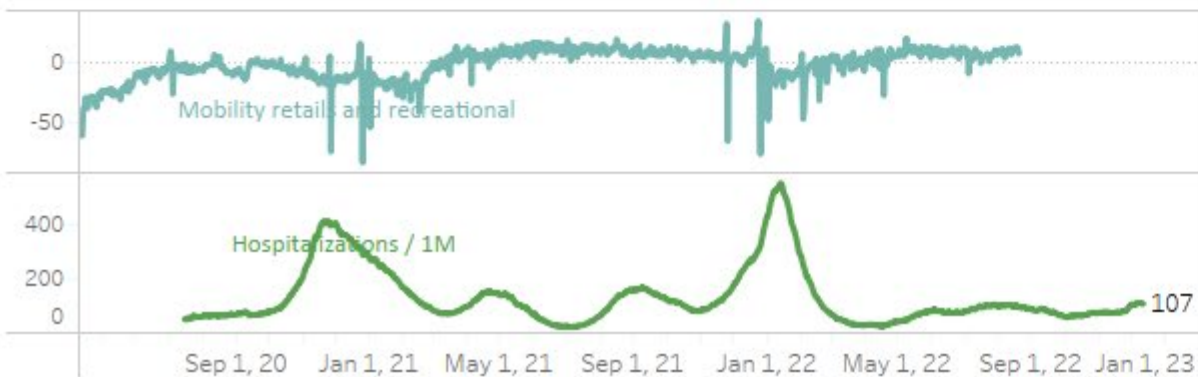
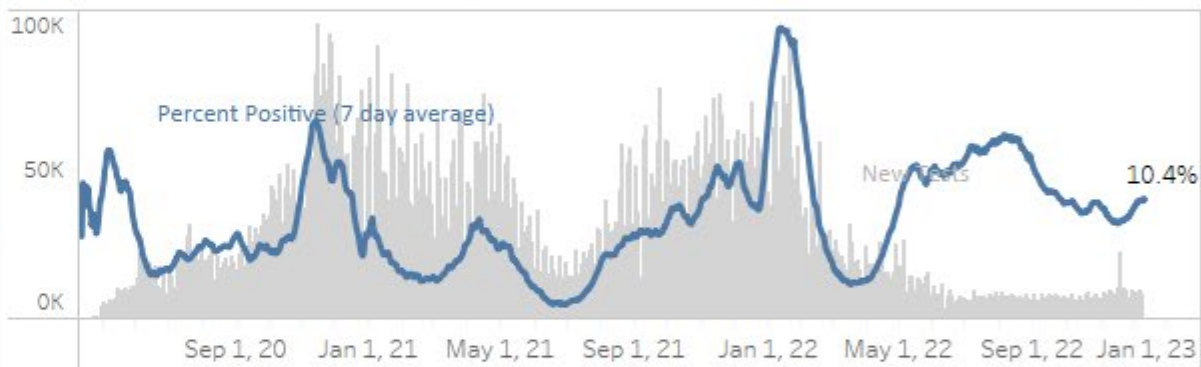
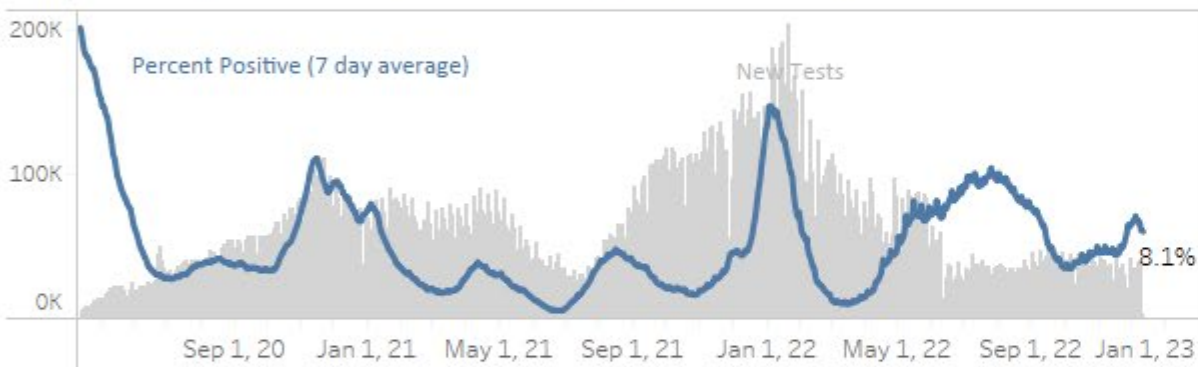
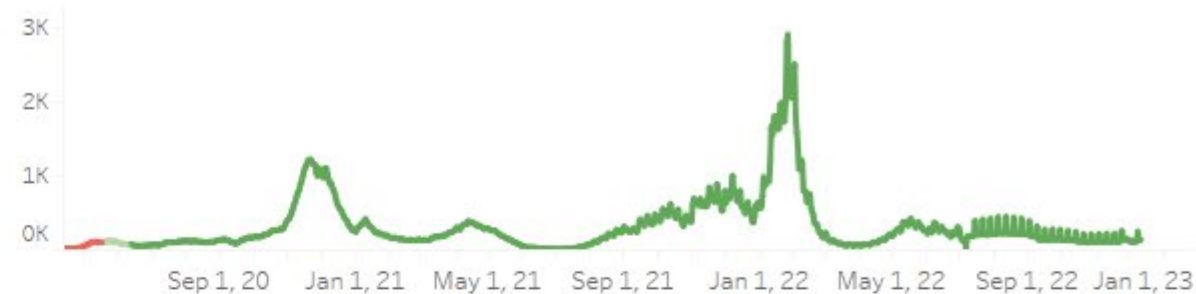


# State Comparisons: Illinois and Minnesota

Illinois Confirmed New Cases / 1M (7 days average)



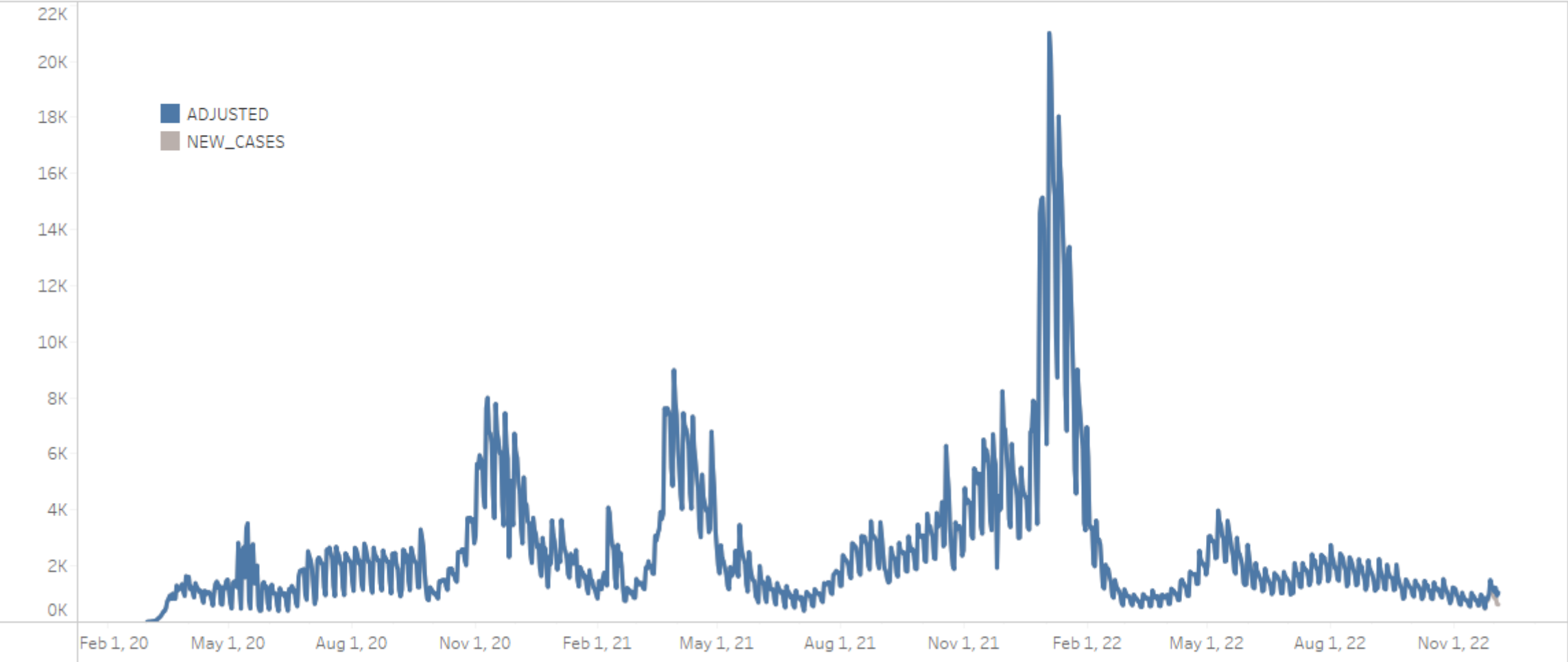
Minnesota Confirmed New Cases / 1M (7 days average)





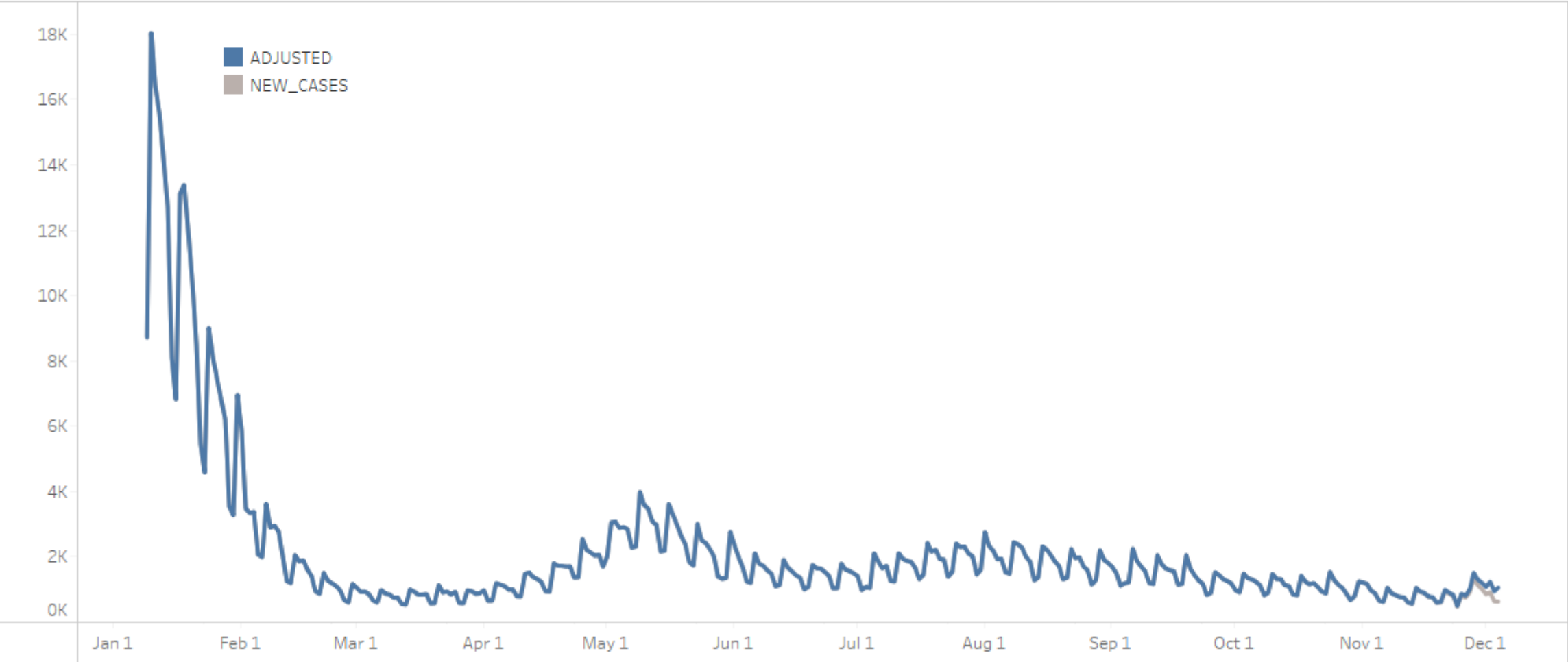
# Michigan Lag-adjusted new COVID cases by onset date

New confirmed cases by onset actual and adjusted as of December 6, 2022 (-2 days)

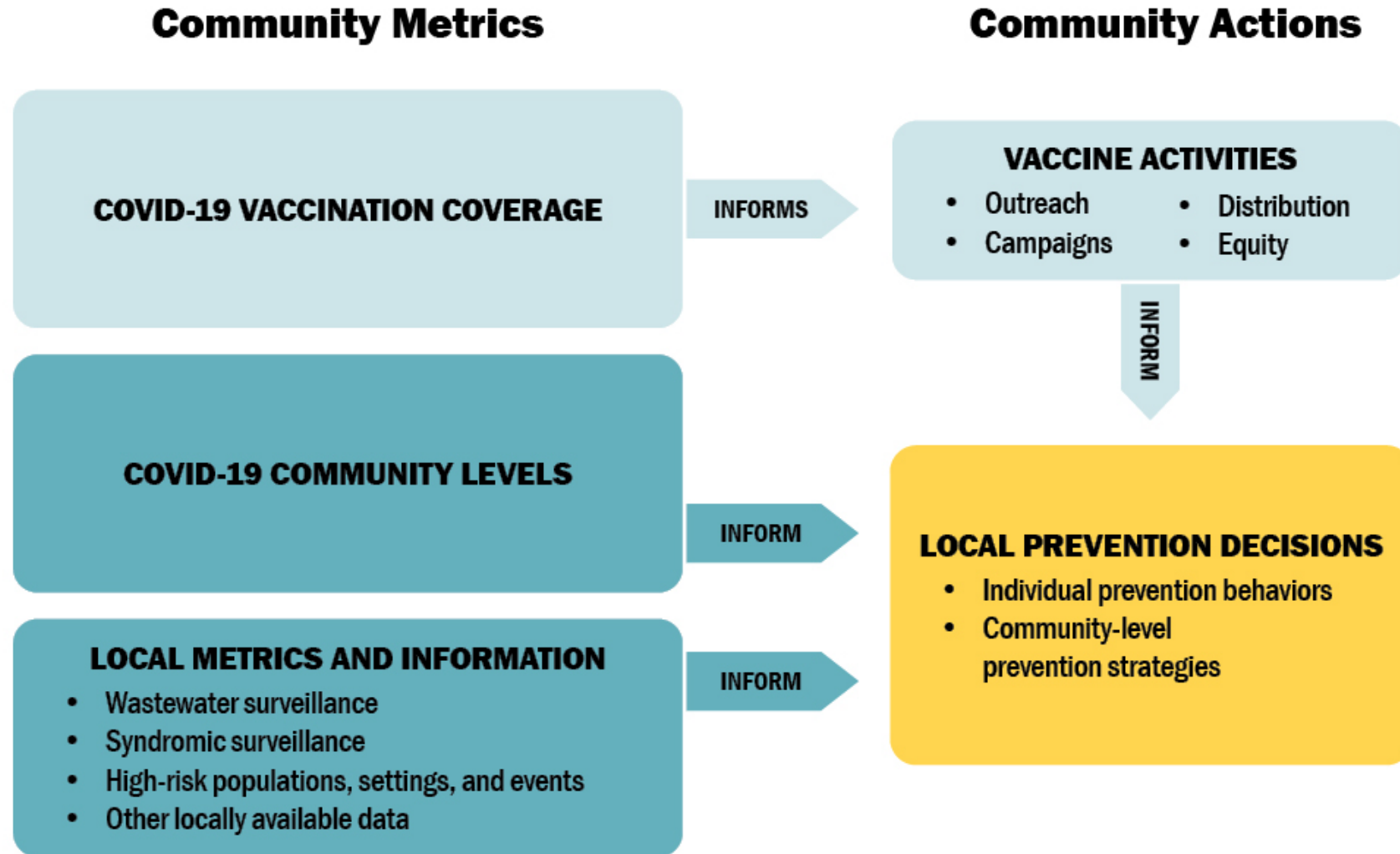


# Michigan Lag-adjusted new cases by onset date, recent trends

New confirmed cases by onset actual and adjusted as of December 6, 2022 (-2 days)



# Local Prevention Decisions Should Use Community Levels in Concert with Other Pandemic Indicators

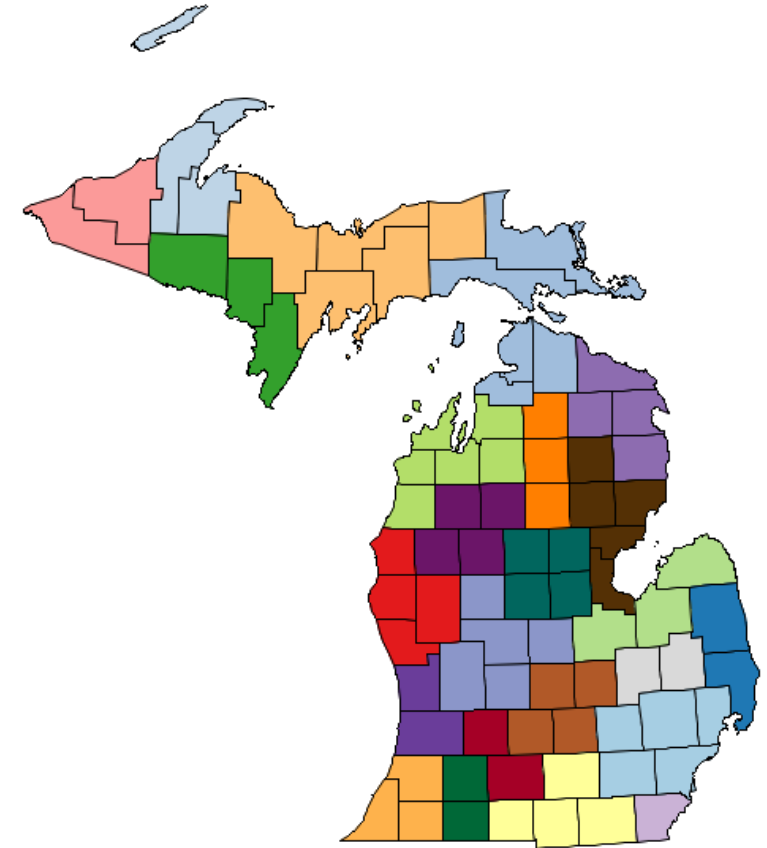


# CDC COVID-19 Community Levels are defined by County Case Rates and Health Service Area (HSA) Hospitalizations

COVID-19 Community Levels – Use the Highest Level that Applies to Your Community

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
	Proportion of staffed inpatient beds occupied by COVID-19 patients (7-day average)	NA	<10.0%	≥10.0%

Health Service Areas



# Interpreting Wastewater Should Be In Context with Other Indicators

- When levels of virus in wastewater are low, a modest increase overall in virus level can appear much larger as numbers are translated into percentages
- This does not necessarily mean we will see major increases in transmission in the community
- When increases are seen within one wastewater site, public health officials compare with neighboring communities and other data sources to understand potential of surges
- For example, the Ypsilanti WWTP saw increases in SARS-CoV-2 levels which correlated with increasing presence of Omicron BA.2 lineage and then followed by an increase in cases

## Ypsilanti WWTP

The most recent sample concentration is higher than 86% of samples collected at this site, which puts it in the 81-100 percentile category. As of 7/27/2022, the change in viral concentration over the past 15 days is increasing.

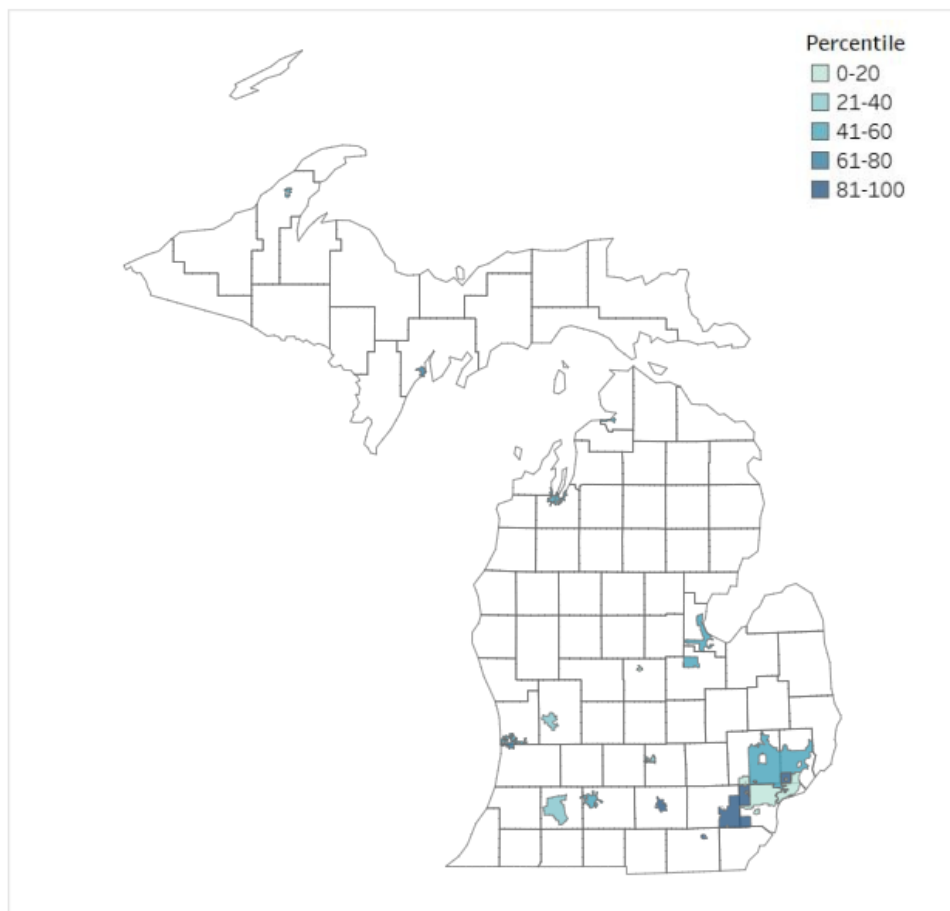
## Wastewater SARS-CoV-2 Levels and COVID-19 Cases



The blue line on the graph shows the levels of SARS-CoV-2, the virus that causes COVID-19, in the wastewater samples collected from Ypsilanti WWTP. Each data point is calculated by averaging the number of viral gene copies detected per 100mL of wastewater in the 3 most recent samples. The orange bars on the graph show the COVID-19 cases reported to MDHHS from the zip codes that the wastewater treatment plant serves (7-day average). Both the virus levels and COVID-19 cases are calculated per 100,000 people. Case data will not be shown on the graph when the average number of cases is fewer than 10 per 100,000 people to protect the confidentiality of individuals with infections. This will be represented by an orange dashed line with gray shading below.

# Michigan COVID-19 SWEEP Sentinel Wastewater Dashboard

The map below shows 20 sewershed sites in Michigan where wastewater is being monitored for the presence of SARS-CoV-2, the virus that causes COVID-19. These sentinel sites serve as a subset of wastewater surveillance in Michigan distributed across the Michigan Economic Recovery Council (MERC) Regions. Click on each site on the map to see wastewater and clinical case data over time. To view wastewater data from previous weeks, please use the "Map - All Data" and "Trends - All Data" tabs.



Site	Sewershed Population	Consecutive Weeks of Virus Detection	Trend As Of	15-Day Trend
Alma WWTP	8976	33	11/28/2022	↓
Battle Creek WWTP	51093	33	11/30/2022	↑
Bay City WWTP	34000	24	11/28/2022	↓
Delhi Township WWTP	22500	34	11/16/2022	↓
Escanaba WWTP	12600	31	11/30/2022	↑
GLWA Detroit River Interce..	492000	21	11/30/2022	↓
GLWA North Interceptor-Ea..	1482000	88	11/30/2022	↔
GLWA Oakwood-Northwest..	840600	111	11/30/2022	↔
Grand Rapids WWTP	265000	69	12/1/2022	↑
Holland WWTP North	45606	33	11/30/2022	↑
Holland WWTP South	36912	35	11/30/2022	↑
Jackson WWTP	90000	72	11/30/2022	↑
Kalamazoo WWTP	150000	6	12/1/2022	↓
Petoskey WWTP	7900	33	11/28/2022	↑
Portage Lake WWTP	14000	64	12/1/2022	↓
Saginaw Township WWTP	40000	34	11/28/2022	↓
Tecumseh WWTP	8680	47	12/2/2022	↑
Traverse City WWTP	45000	38	12/1/2022	↑
Warren WWTP	135000	32	11/21/2022	↑
Ypsilanti WWTP	330000	72	11/30/2022	↑

Abbreviations: GLWA - Great Lakes Water Authority; WWTP - Waste Water Treatment Plant

Definitions and descriptions of data calculations can be found in the "About" tab.

Current results reflect data that were uploaded to MDHHS as of 12/7/2022. Labs are required to report test results to local partners within 24 hours. Data is subject to change as additional wastewater data and case data are received.

## 15-Day Trends

- ↑ 1000% or more
- ↑ 100% to 999%
- ↑ 10% to 99%
- ↔ 0% to 9%
- ↓ -1% to -9%
- ↓ -10% to -99%
- ↓ -100% to -999%
- ↓ -1000% or more

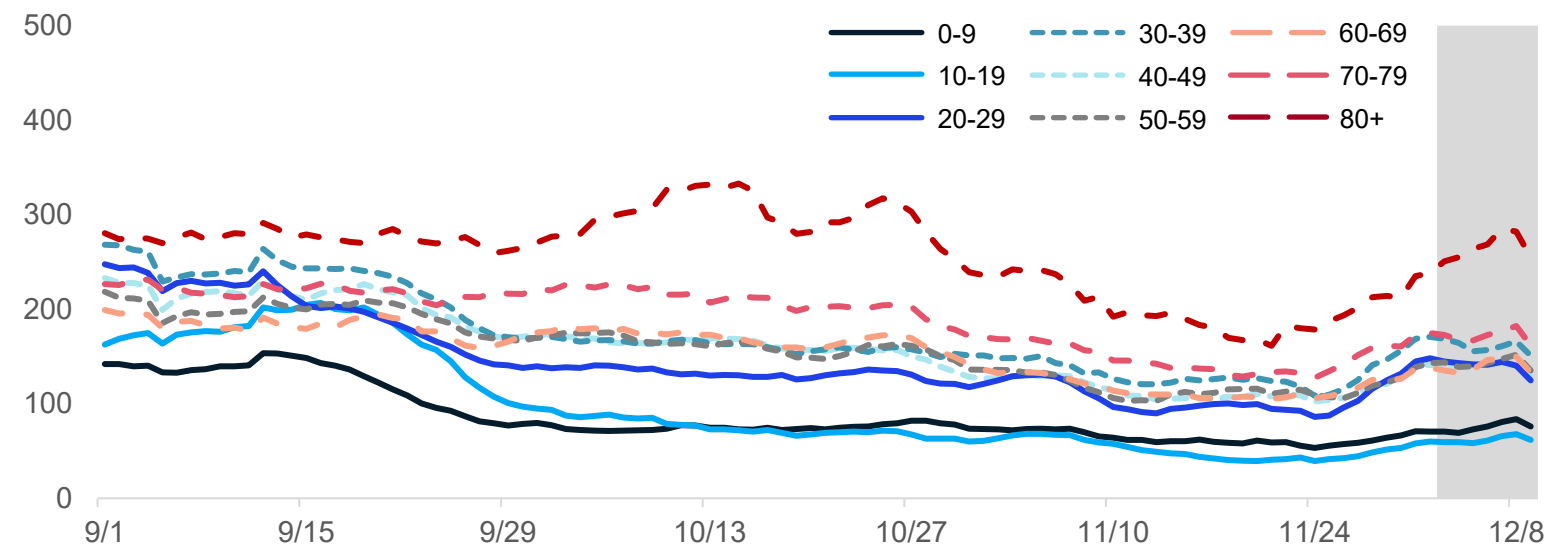
## SWEEP Summary

- 55% (11/20) of sentinel sites are showing increasing trends over last 15-days
- 10% (2/20) of sites have plateaued over the last 15 days
- 35% (7/20) of sentinel sites are showing declines in the previous 15-days



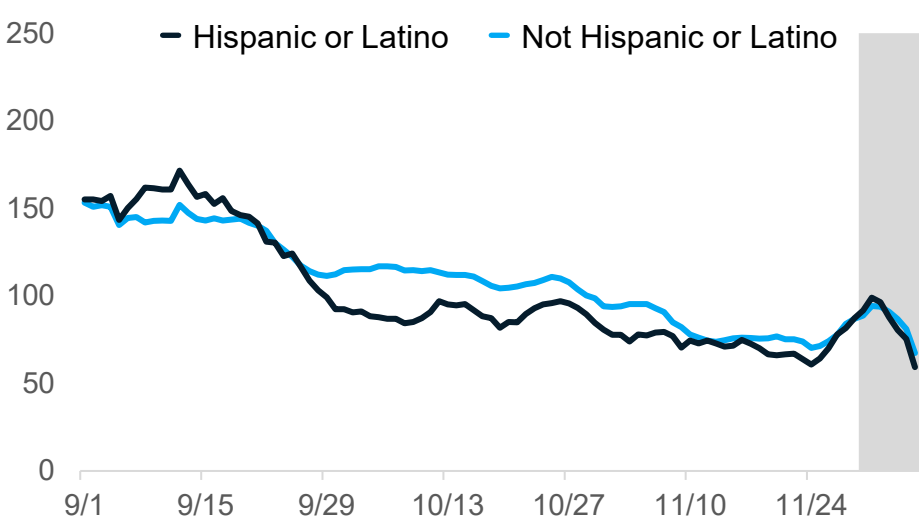
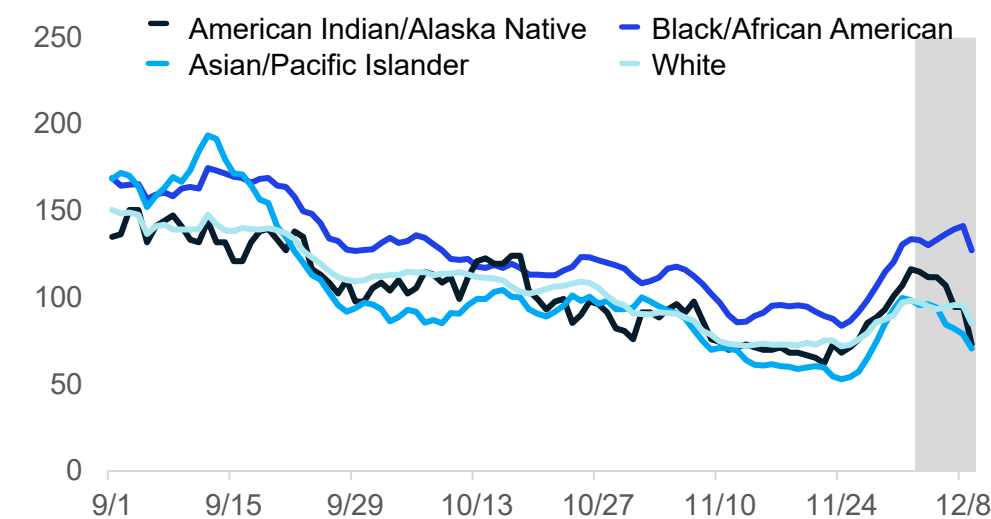
# Case rates have started to increase for most age groups

Daily new confirmed and probable cases per million by age group (7-day rolling average)



- Case rates by onset date for all age groups are between 60.1 and 238.3 cases per million (through 12/2)
- Case counts and case rates are highest for 80+-year-olds this week, followed by 70-79-year-olds and the 30-39-year-old age groups

Daily new confirmed and probable cases per million (7 day rolling average) by race & ethnicity category



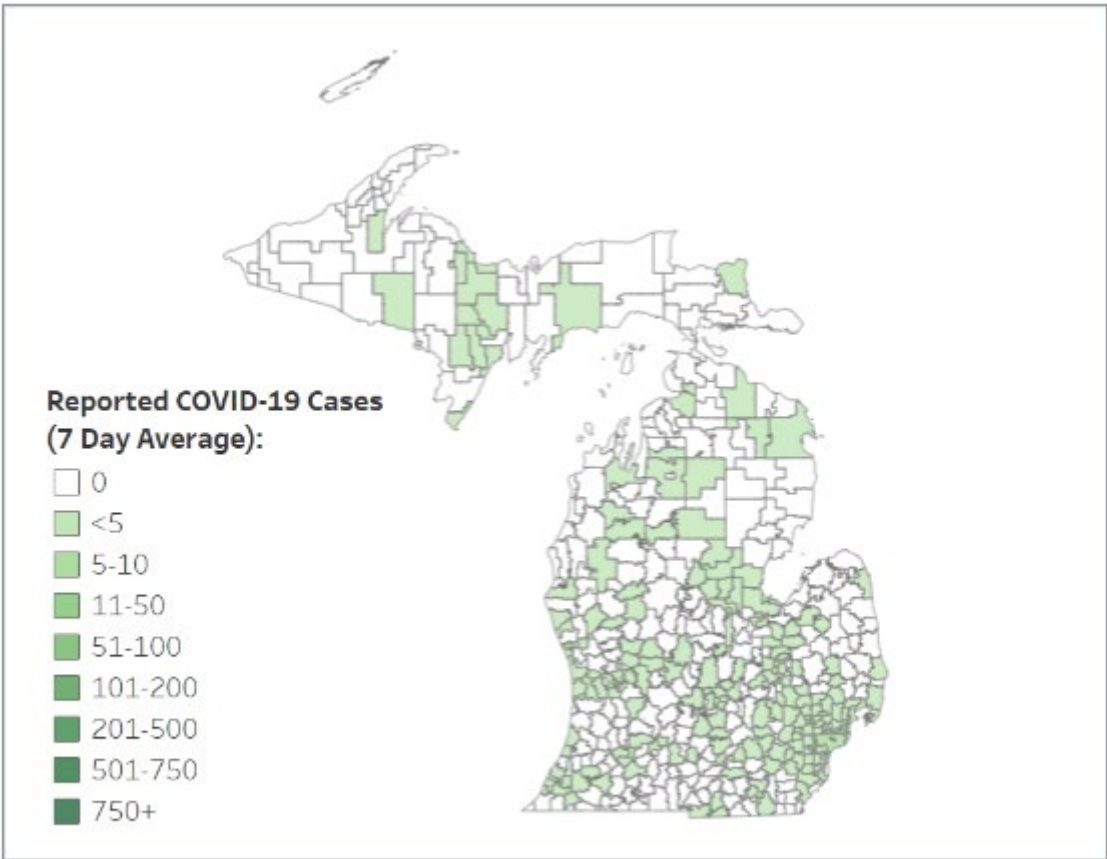
- Case rates are highest for Black populations (133.8 cases/million)
- Between 19-23% of cases in last 30 days have missing race/ethnicity data

Note: Case information sourced from MDHHS and reflects date of onset of symptoms  
Source: MDHHS – Michigan Disease Surveillance System

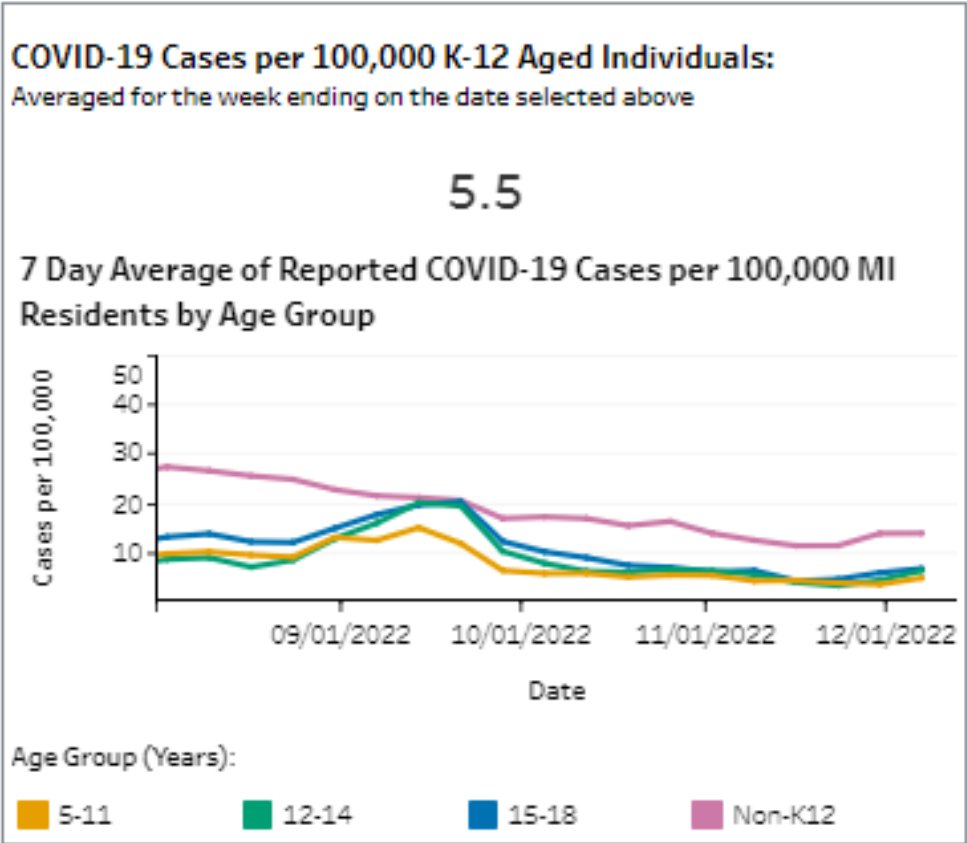
# COVID case rates among K-12 age individuals are starting to increase

## K-12 age population summary:

- Overall case rates among school-aged populations has plateaued (7-day average 5.5)
- 42% of school district areas have between 1-10 cases
- 5 ISD areas have greater than 5 cases

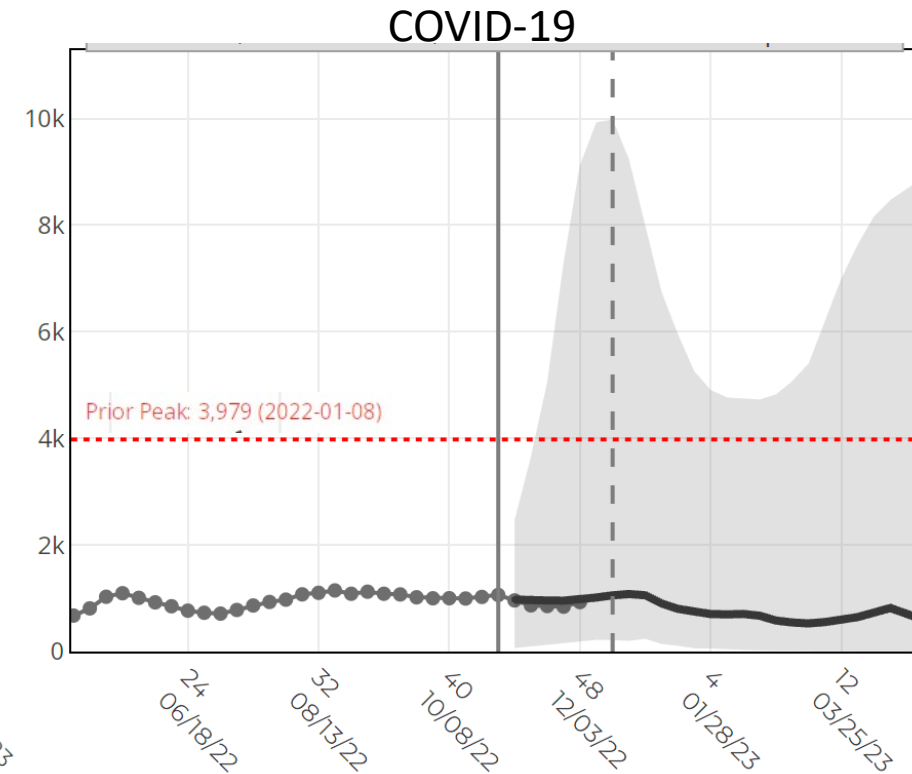
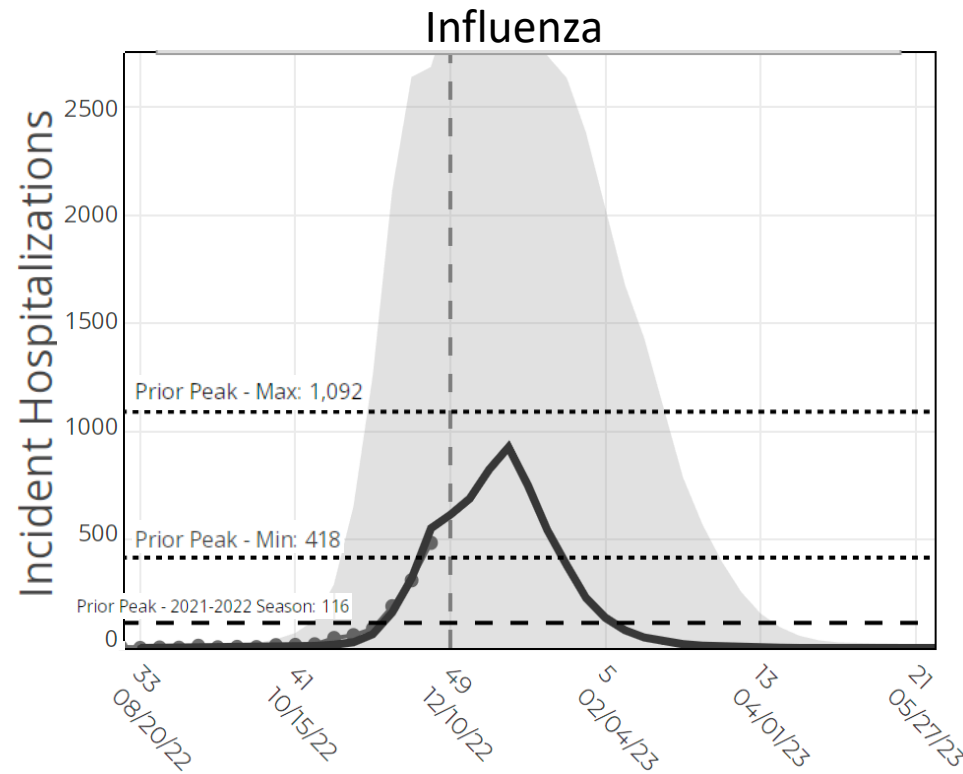


Data Source: Michigan Disease Surveillance System (MDSS)  
Last Updated: 12/13/2022



# Scenario Hub projections suggest winter hospitalizations due to a mix of flu/COVID, potential spring COVID surge

- Multiple scenarios simulated, all show a winter surge (size and mix of flu/COVID depends on variants and vaccine uptake/effectiveness)
- Median COVID projections suggest fairly flat trend through winter but potential for a spring surge
- Did not simulate other respiratory illnesses (e.g. RSV)

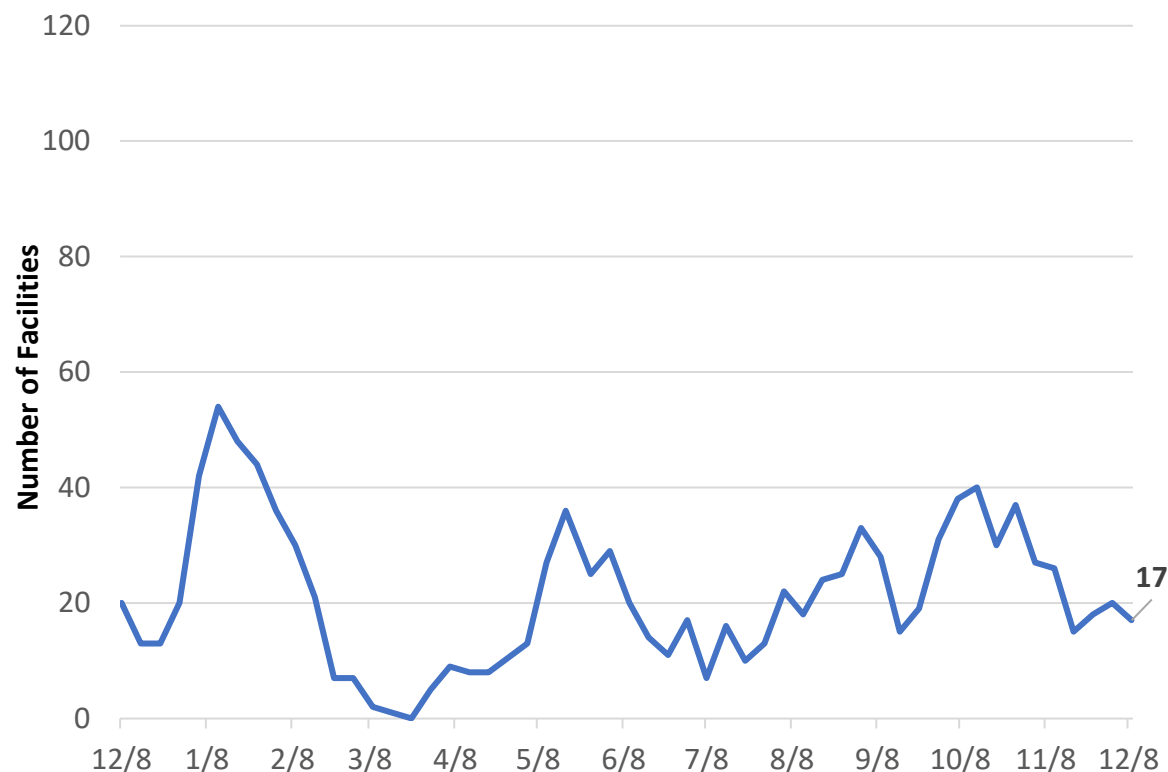


COVID scenario shown: late booster uptake, new immune escape variant; Flu scenario shown: Scenario D – low vaccine protection, pessimistic immunity (this scenario showed closest fit of median model projection to current data), COVID-19 scenario shown: Scenario C – low boosters, moderate immune escape variant (closest match to current booster uptake and fit of median model projection to current data). Uncertainty range: 95%.

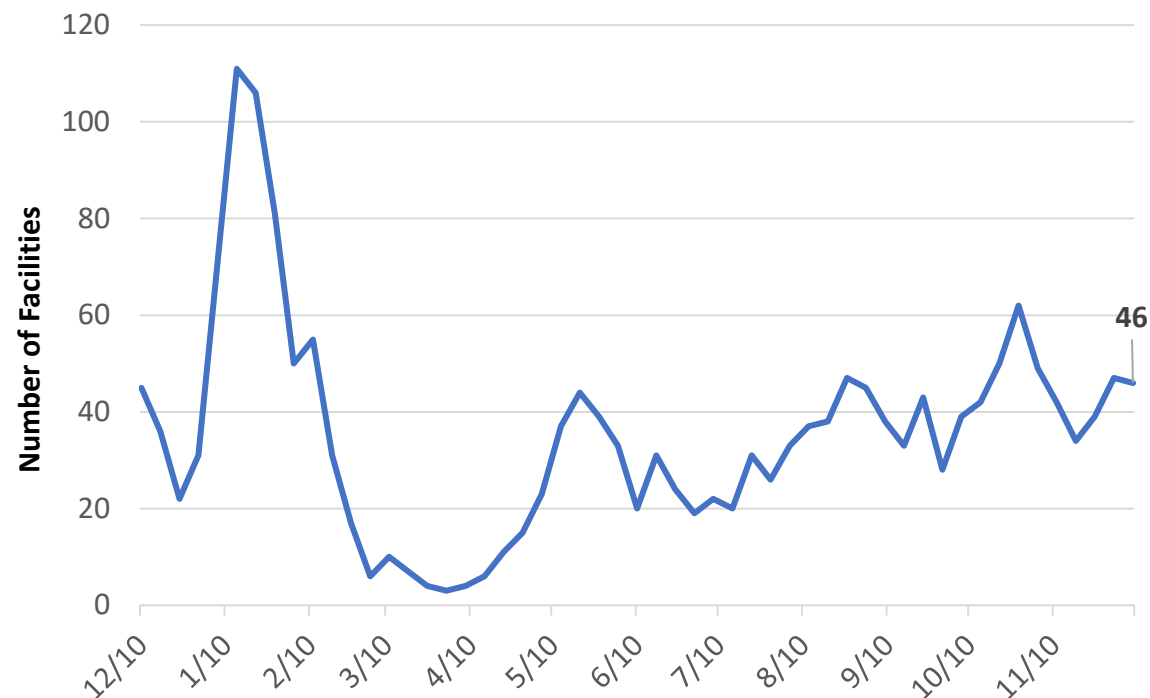
Source: [Round 16 Scenario Modeling Hub Projections](#)

# Reported Number of Clusters in Long Term Care Facilities

Number of AFC/HFAs with 3 or more Confirmed Cases



Number of SNFs with 3 or more Confirmed Cases

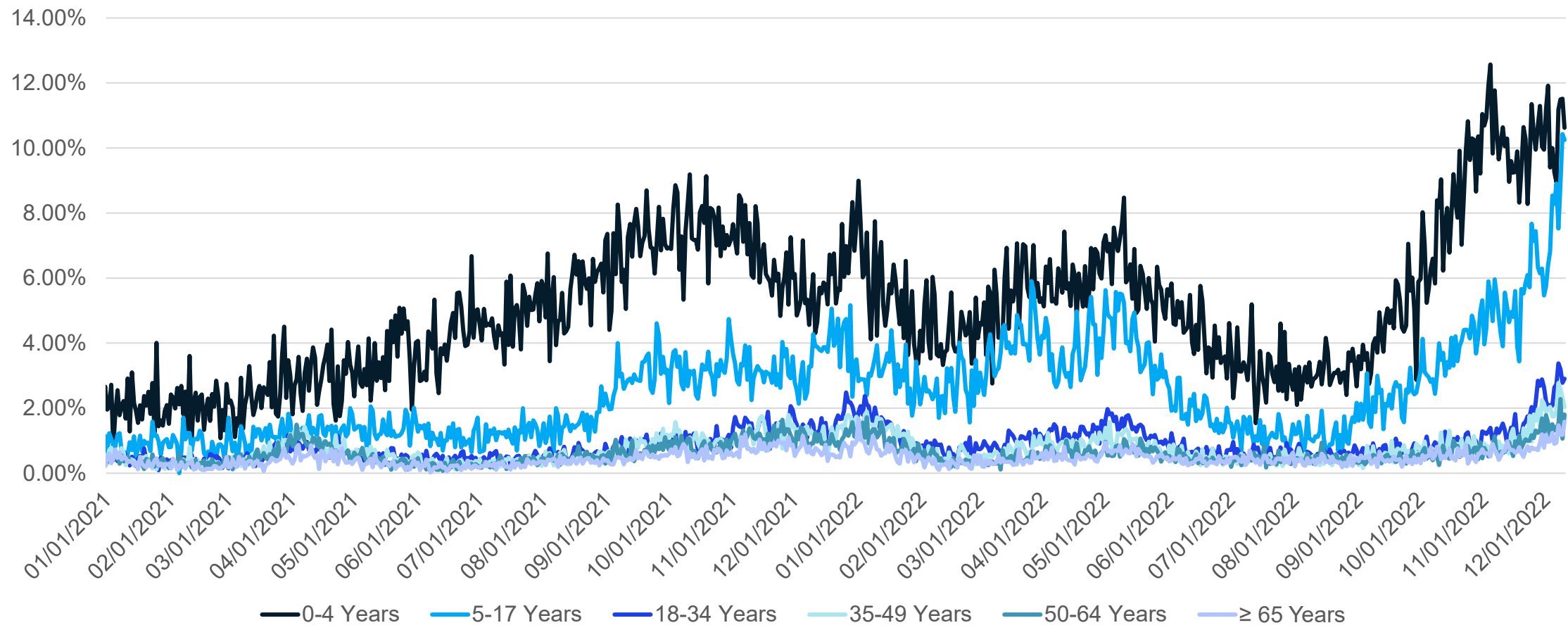


- The number of Long-Term Care Facilities reporting 3 or more cases within a single reporting period is slowly increasing over the past 4 months with weekly fluctuations
- This week, the number has decreased in **AFC/HFAs** (20 to 17) and in **SNFs** (47 to 46) since the previous week

The data is from weekly reporting by facilities with bed occupancy of at least 13 beds.

# Syndromic Surveillance for ILI in Michigan is increasing, and highest for younger ages

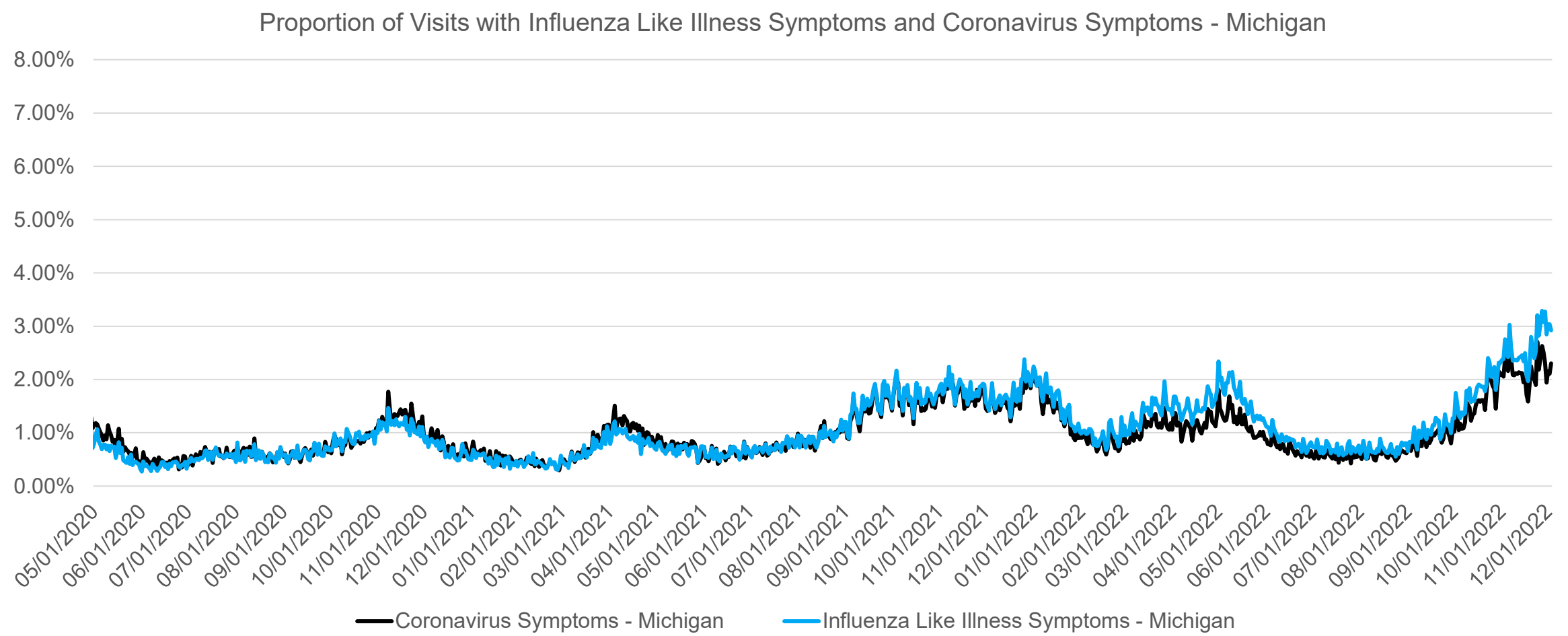
Proportion of Visits with Influenza Like Illness Symptoms by Age - Michigan



- The proportion of emergency department and urgent care visits with Influenza-like illness (ILI) is increasing since early September for all age groups
- Younger ages have a higher proportion of visits for ILI than older ages

Source: Michigan Syndromic Surveillance System (MSSS) and National Syndromic Surveillance Program – data obtained from 216 participating emergency department and urgent care facilities in Michigan

# Syndromic Surveillance for CLI and ILI in Michigan is increasing

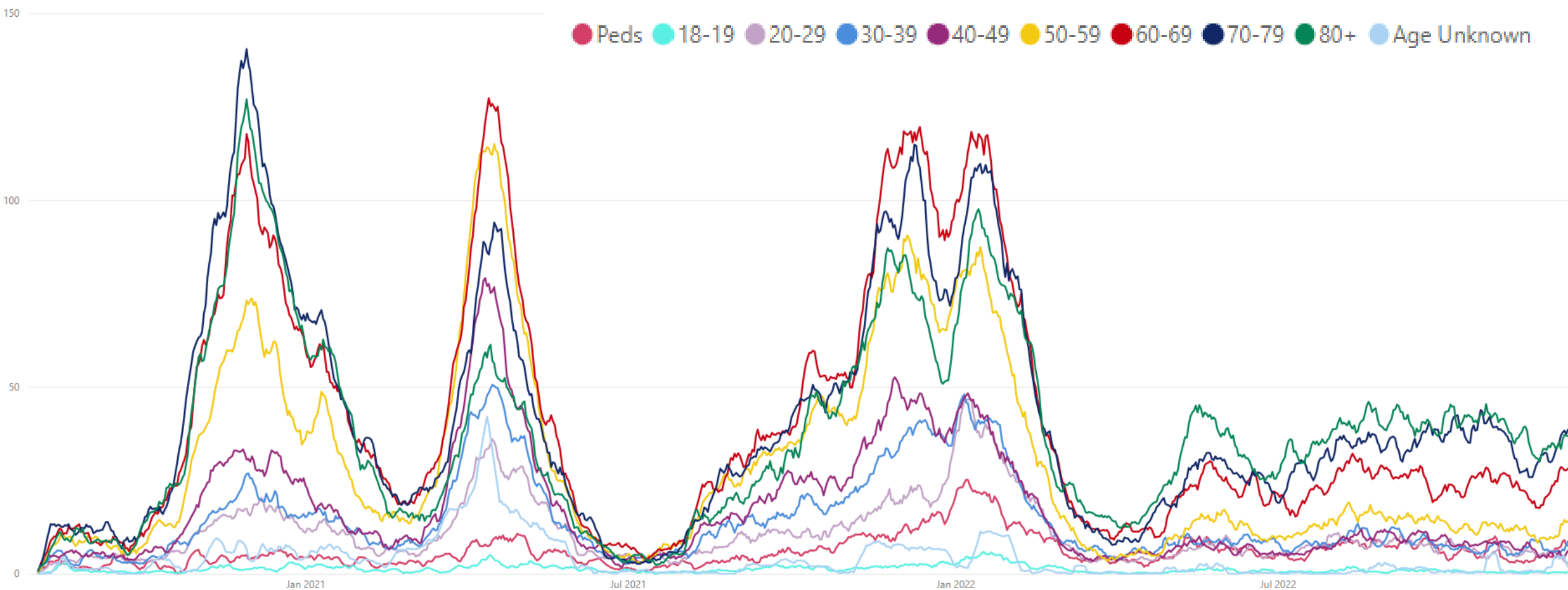


- The proportion of emergency department and urgent care visits with COVID-like illness (CLI) and Influenza-like illness (ILI) is increasing since early September
- Currently, approximately 3% of visits report ILI symptoms and 2.25% of visits report CLI
- Currently ILI and CLI are at the highest levels since mid-2020

Source: [Michigan Syndromic Surveillance System \(MSSS\)](#) and National Syndromic Surveillance Program – data obtained from 216 participating emergency department and urgent care facilities in Michigan



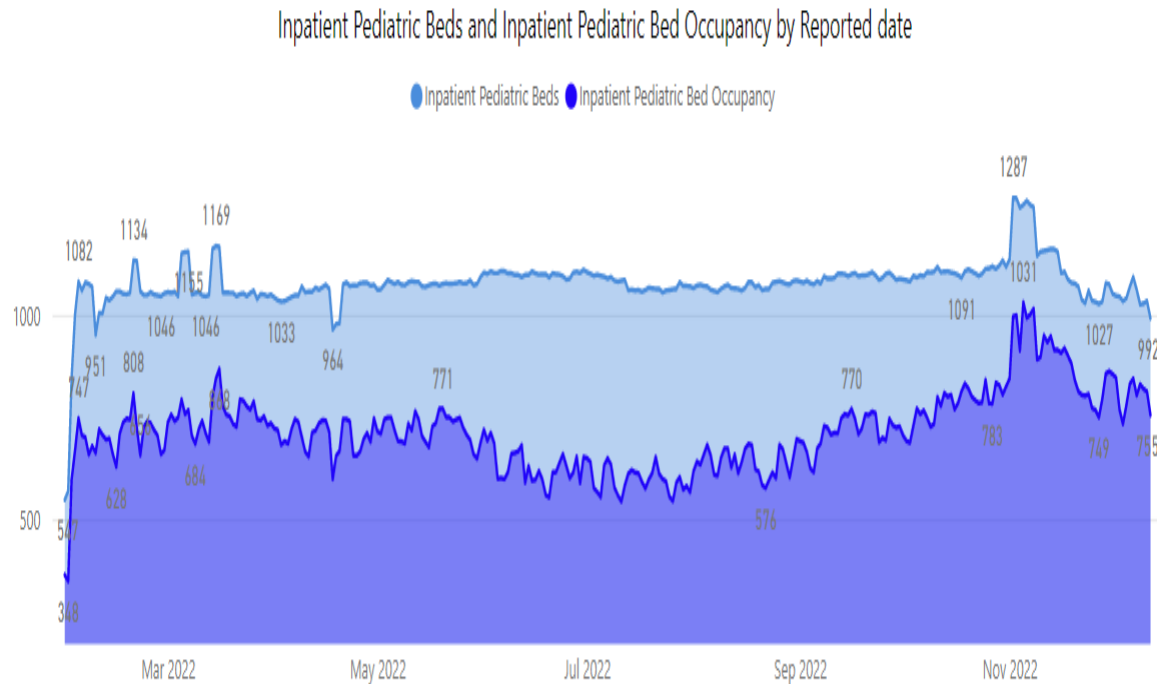
# Hospital admissions due to COVID-19 remain lower than past surges



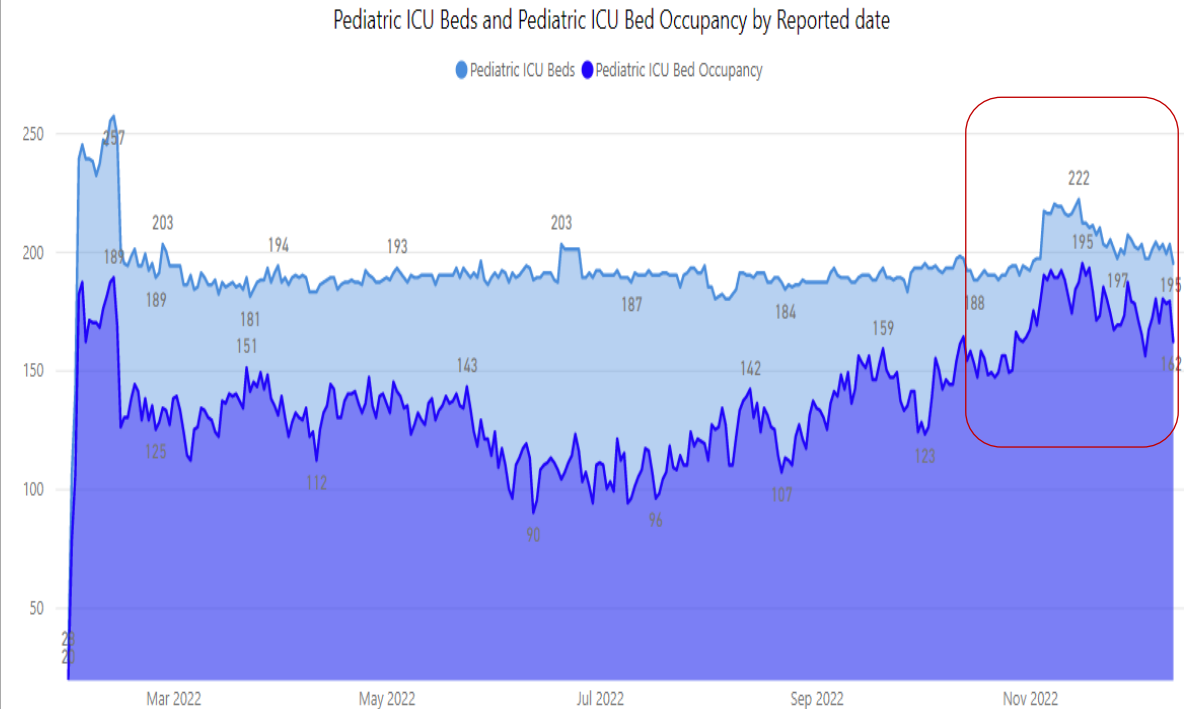
- Trends for daily average hospital admissions increased 20% (+24 more admissions/day) to 145 admissions per day
- This week, those over the age of 80 experienced the highest average daily admission (36.9 admissions/day)
- Those 60-69, 70-79, and 80+ are seeing between 25 and 40 daily hospital admissions

# All Inpatient Pediatric Hospitalization (COVID and non-COVID related)

## All Inpatient Pediatric Beds Available and Pediatric Inpatient Bed Occupancy, Jan 2022 - Present



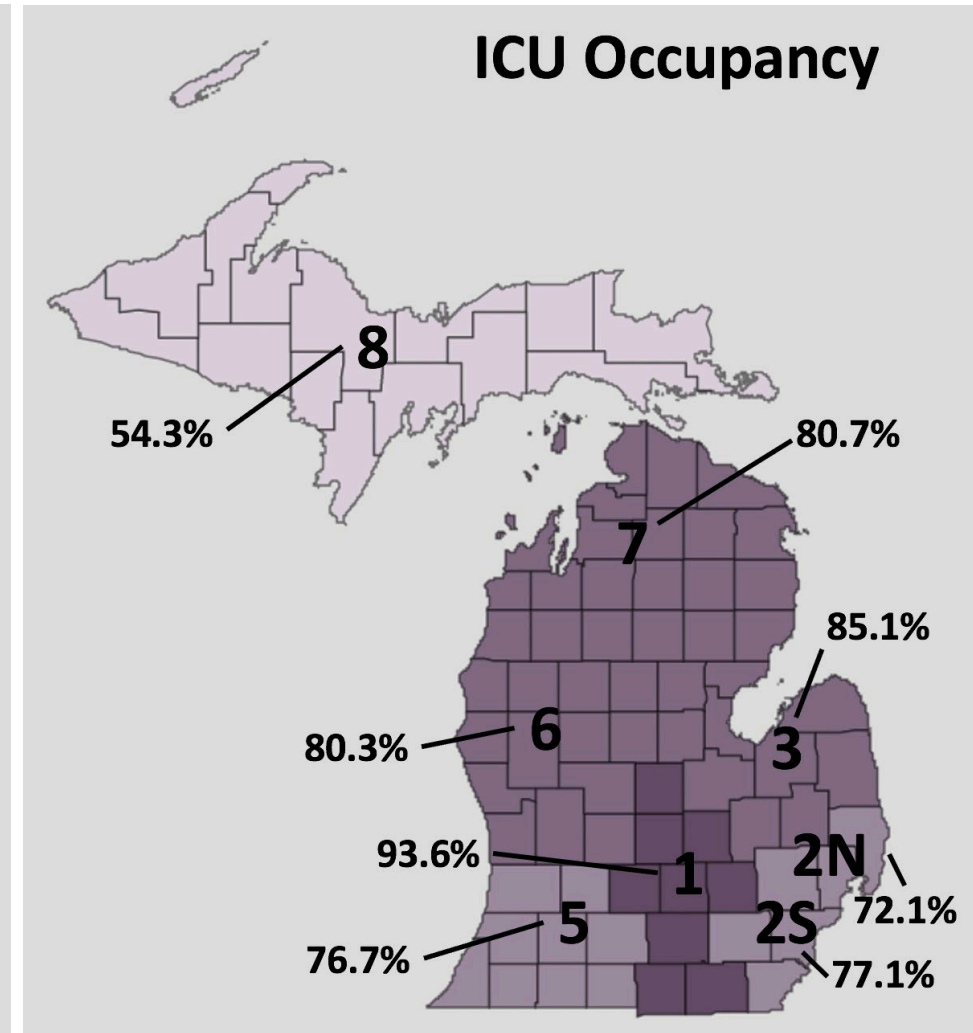
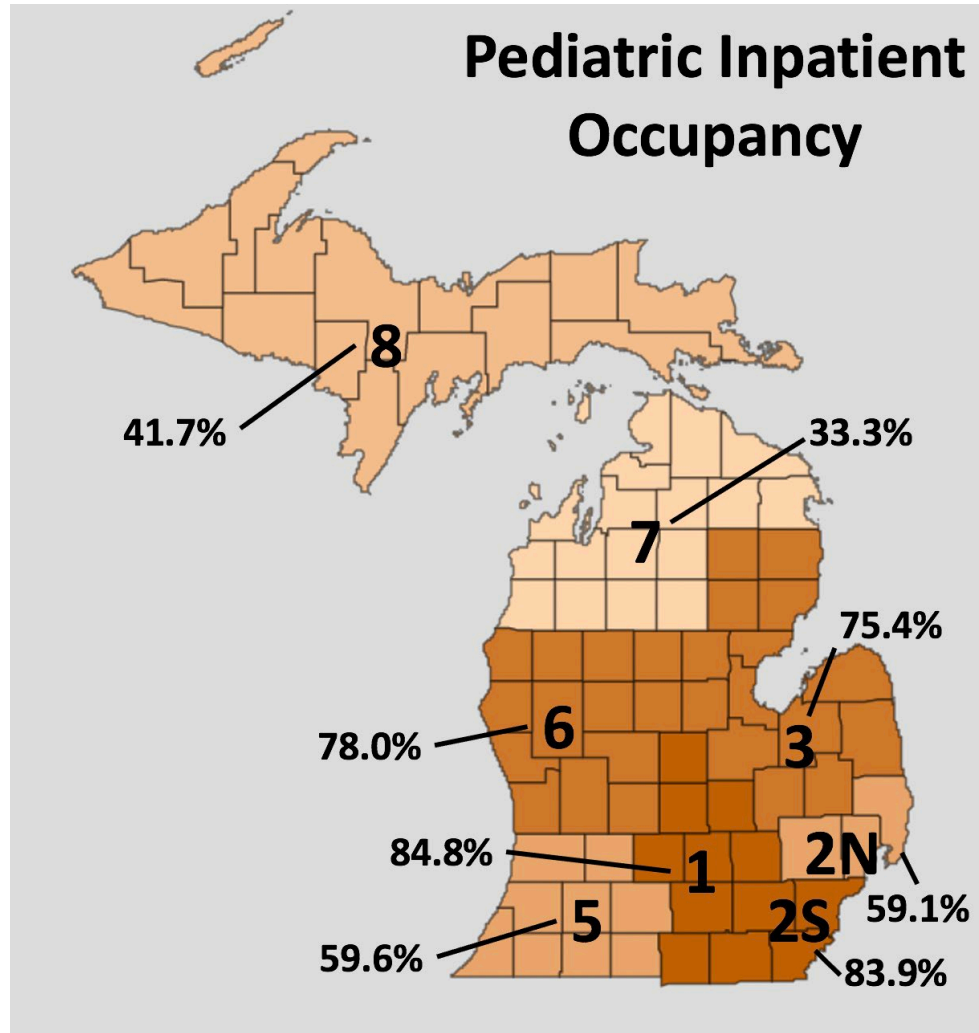
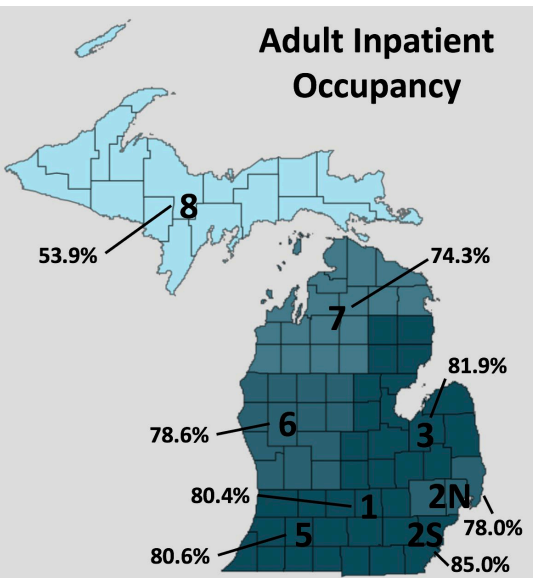
## Pediatric ICU Bed Availability and Pediatric ICU Bed Occupancy by report date, Jan 2022 - Present



- Statewide pediatric COVID inpatient census is plateaued (previous slide), however, overall inpatient census has increased since September (figure on left) to peak in early November
- Pediatric ICU bed occupancy had been increasing since September and is relatively plateaued near one-year highs (figure on right)
- In some regions, pediatric inpatient and ICU occupancy are at or near capacity (figures in appendix)

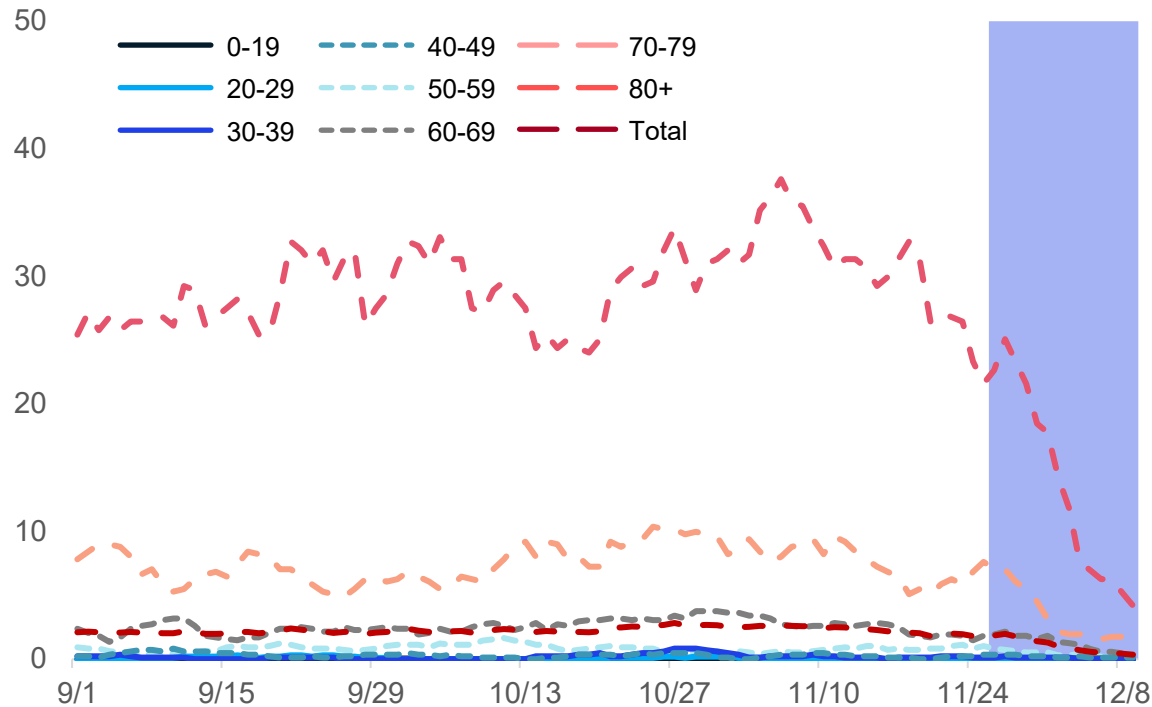
# High pediatric inpatient and ICU occupancy (all cause) in Michigan, particularly in Region 1

- Note Regions 7 and 8 have small numbers of total pediatric beds (21 and 12 as of 12/12), so % occupancy is highly variable
- Data as of 12/12/2022



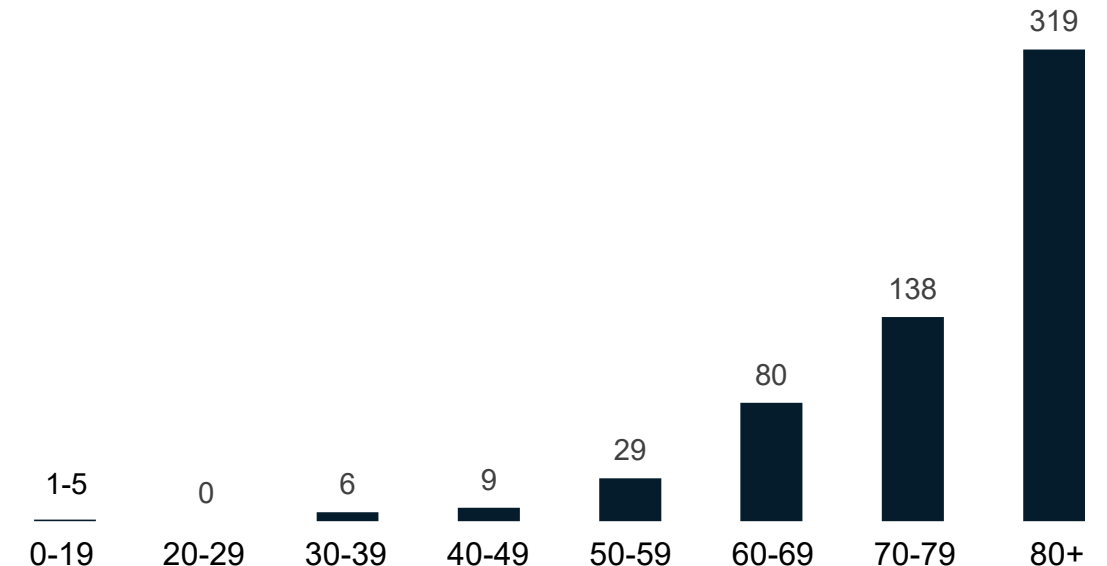
# Average new deaths remain plateaued and are highest for those over 80y

Daily COVID-19 deaths in confirmed and probable cases per million by age group (7 day rolling average)



Total COVID-19 deaths in confirmed and probable cases by age group (past 30 days, ending 12/2/2022)

- 7.7% of deaths below age sixty



- Through 11/25, the 7-day avg. death rate has declined (21.6 deaths per million people) for those over the age of 80
- In the past 30 days, there are fewer than 20 confirmed and probable COVID-19 deaths under the age of 50
- 30-day proportion of deaths among those under 60 years of age is 7.7%.

# Make a Plan for Cold and Flu Season



## Get vaccinated and boosted for COVID-19 and the flu.

- COVID-19 and flu vaccines are available for ages 6 months and older.
- Updated COVID-19 boosters are available for ages 5 years and older.
- COVID-19 and flu vaccines can be given at the same visit.

Learn more about vaccines at [Michigan.gov/COVIDVaccine](https://Michigan.gov/COVIDVaccine) or [Michigan.gov/Flu](https://Michigan.gov/Flu).



## Keep a supply of over-the-counter COVID-19 tests.

- Tests are useful for early detection of COVID-19, especially if you have symptoms or have been exposed.
- If you are unwell and test negative for COVID-19, it is still important to stay home when you are sick.

Learn more about COVID-19 testing at [Michigan.gov/COVIDTest](https://Michigan.gov/COVIDTest).



## Prevent the spread of illness.

- Stay home if you have symptoms.
- Masks are helpful tools to stop the spread of colds, flu and COVID-19. Understand that others may have different risks than yours and respect their mask choice.
- Cover coughs and sneezes, and wash hands.

Learn more about masking at [Michigan.gov/MaskUp](https://Michigan.gov/MaskUp).



## Learn if you are eligible for therapeutics for COVID-19 or flu.

- Talk to a primary care provider about whether you are eligible for antivirals for the flu or COVID-19, if you test positive.

Learn more about COVID-19 therapeutics at [Michigan.gov/COVIDTherapy](https://Michigan.gov/COVIDTherapy).



Visit [Michigan.gov/Coronavirus](https://Michigan.gov/Coronavirus) and [Michigan.gov/Flu](https://Michigan.gov/Flu) for current information.



# The Update on being “Up to Date” on COVID-19 Vaccination

- The introduction of the new boosters has caused some changes in vaccine recommendations
- These new recommendations are based on
  - Age
  - First vaccine received
  - Time from last vaccine dose received
- Being up to date on COVID-19 vaccination now indicates **having completed a COVID-19 vaccine primary series *and* having received the most recent booster dose as recommended by the CDC**
  - **Age 6 month to 4 years\*** : receive 2 doses of the monovalent COVID-19 primary series *and* the currently recommended bivalent booster OR receive all three of the monovalent Pfizer COVID primary series
  - **Ages 5 years to 11 years** : receive COVID-19 primary series *and* the currently recommended bivalent booster
  - **Ages 12 years and older** : receive COVID-19 primary series *and* the updated Pfizer or Moderna bivalent booster
  - **Moderate or severely immunocompromised** : consult physician or [CDC](https://www.cdc.gov/coronavirus/2019-ncov/vaccines/stay-up-to-date.html) for additional vaccination recommendations

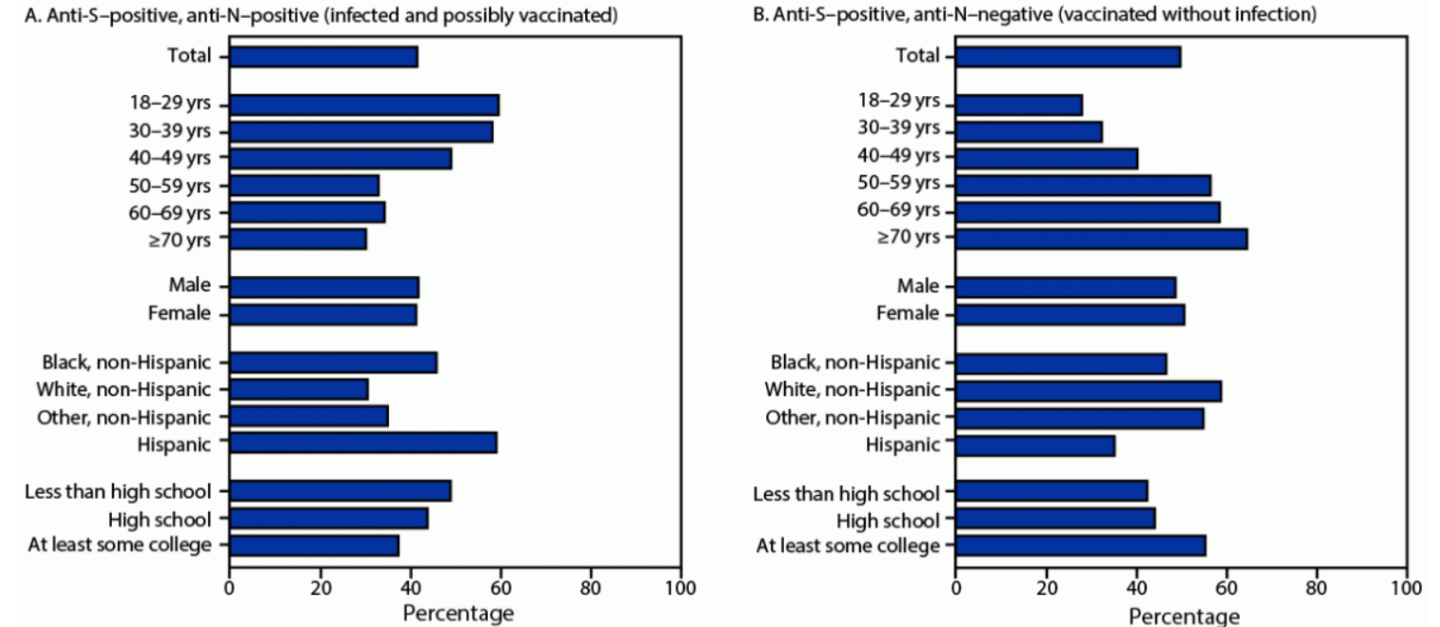
\* At this time, children who have received all shots of the Pfizer 3-dose series are not eligible to receive the updated bivalent vaccine

Sources: CDC Vaccination Recommendations. <https://www.cdc.gov/coronavirus/2019-ncov/vaccines/stay-up-to-date.html>

# Preliminary SARS-CoV-2 Serology and Self-Reported Infection Among Adults in the National Health and Nutrition Examination Survey, August 2021 – May 2022

- A high percentage of U.S. adults have antibodies to SARS-CoV-2, attained through vaccination, infection, or both
- During August 2021–May 2022, 91.5% of sampled\* adults had antibodies<sup>†</sup> indicating previous infection or vaccination and 41.6% of sampled\* adults had antibodies<sup>†</sup> indicating previous infection
  - 43.7% of persons with antibodies<sup>†</sup> indicating previous infection were possibly asymptotically infected
- Prevalence of serologic patterns consistent with vaccination without infection was lower among adults who were younger, Hispanic and non-Hispanic Black or African American adults, and persons with less education.
- CDC recommends that everyone stay up to date with COVID-19 vaccination. These results can guide ongoing efforts that are needed to achieve equity in primary series vaccination and booster dose coverage

FIGURE 1. Combined SARS-CoV-2 anti-spike\* and anti-nucleocapsid<sup>†</sup> antibody testing results among adults aged ≥18 years who were infected and possibly vaccinated (A) and those vaccinated without infection (B), by age group, sex, race and Hispanic origin,<sup>§</sup> and education — National Health and Nutrition Examination Survey, United States, August 2021–May 2022<sup>¶</sup>



Abbreviations: anti-N = anti-nucleocapsid; anti-S = anti-spike.

\* Positivity for SARS-CoV-2 anti-S antibodies (previous infection, vaccination, or both).

<sup>†</sup> Positivity for SARS-CoV-2 anti-N antibodies (previous infection).

<sup>§</sup> The category "other, non-Hispanic" includes non-Hispanic participants who reported being either American Indian or Alaska Native, Asian, Native Hawaiian or other Pacific Islander, or multiple race.

<sup>¶</sup> Preliminary sample = 1,574, unweighted data; information on education was missing for 63 adults.

\* NHANES is a program of studies designed to assess the health and nutritional status of U.S. residents. The 2021-2022 study is not yet completed and therefore sampling weights for analysis are not yet available deeming these findings a nonrandomized convenience sample

<sup>†</sup> Sera were tested for anti-nucleocapsid antibodies which are produced only in response to SARS-CoV-2 infection, and sera were tested for anti-spike antibodies which are produced in response to COVID-19 vaccination, SARS-CoV-2 infection, or both

Source: Akinbami LJ, Kruszon-Moran D, Wang C, et al. SARS-CoV-2 Serology and Self-Reported Infection Among Adults — National Health and Nutrition Examination Survey, United States, August 2021–May 2022. MMWR Morb Mortal Wkly Rep 2022;71:1522–1525. DOI: <http://dx.doi.org/10.15585/mmwr.mm7148a4>