MI COVID RESPONSE DATA AND MODELING UPDATE

May 24, 2022

Epidemiologic Surveillance: Key Messages

Global Trends slowing; National Trends show continued spread of Omicron BA.2 lineage

- Many countries in Europe showing continued signs of decline
- U.S. cases continue to increase. The increase in midwestern states (region 5) appears to be slowing

As of May 12th, 63% of Michigan Counties at Medium or High COVID-19 Community Levels

- 53% of Michigan residents reside in a county (22 counties) classified as High according to CDC's Community Levels.
- 30 Michigan counties are currently at Medium level (36%). This represents 30% of the population.

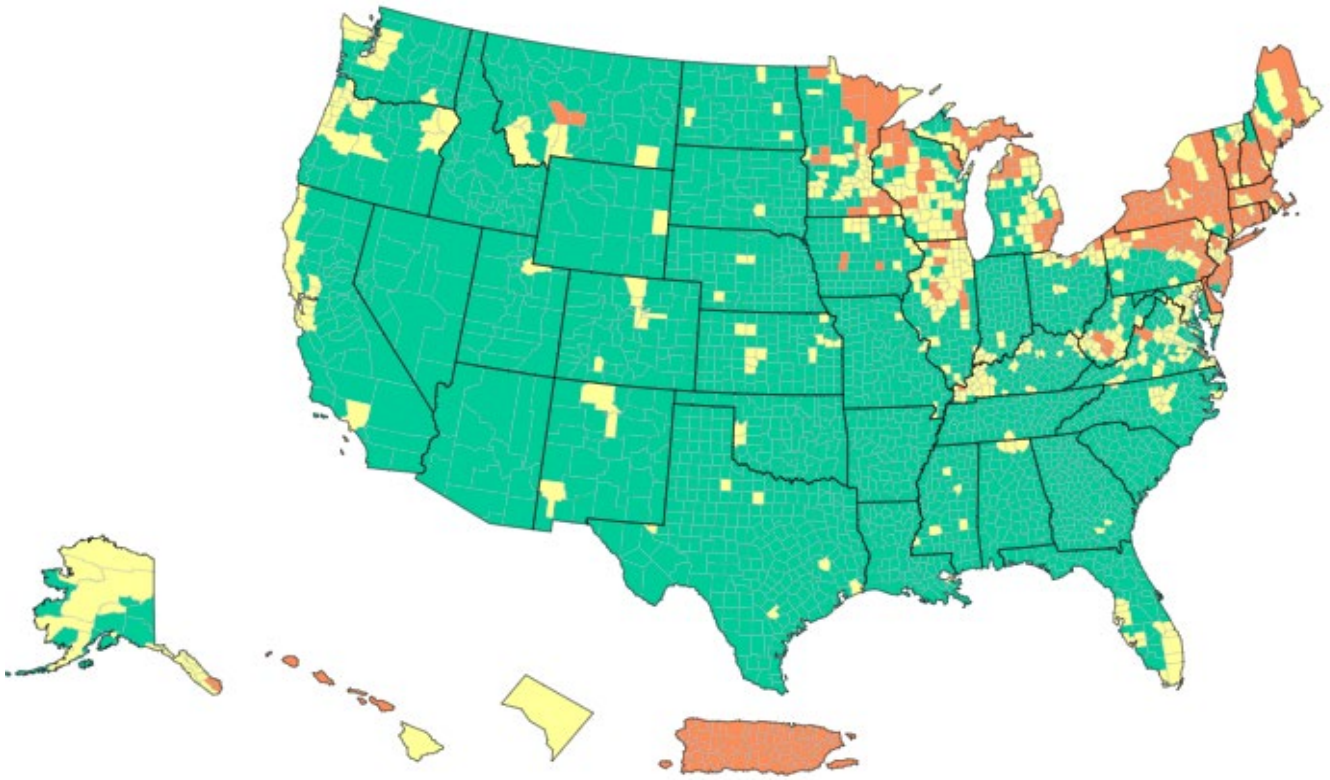
Case rates in Michigan are increasing statewide

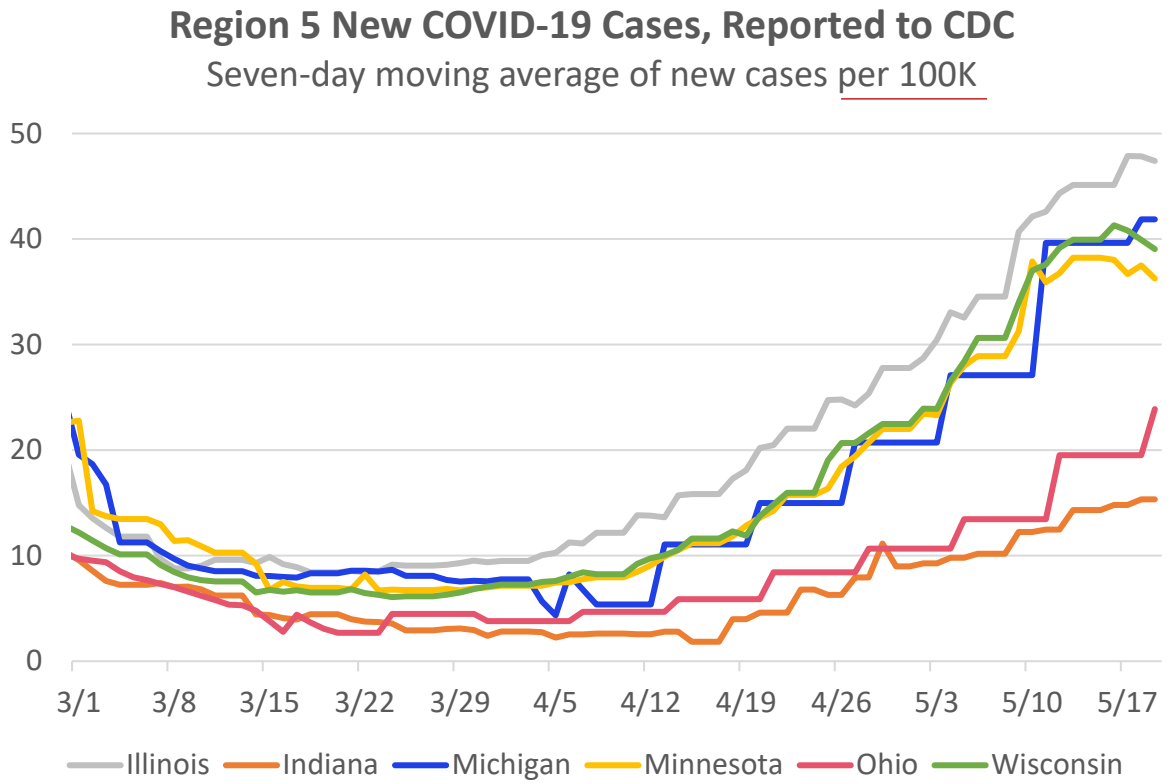
- The proportion of BA.2 in the U.S. and Michigan continues to rise
- 60% of SWEEP sites saw an increase in the most recent week and another 25% of sites saw a plateau in trends
- Case trends are increasing for all MERC regions, age groups, and most reported races and ethnicities
- 7-day avg. death rate is no longer decreasing for 80+ population and the 30-day proportion of deaths among those under 60 years of age continues to decrease (11.0%; last week 14.2%)

Hospitalization Metrics in Michigan showing increases

- In the current Omicron surge, there is a dissociation between patients hospitalized with COVID-19 and severity metrics, like ICU and ventilator use. This likely indicates that even with an uptick in patients hospitalized with COVID-19, most hospitalized patients are not experiencing severe diseases.
- The COVID+ census in hospitals has increased slightly in the last week, by 4% This is a dramatically lower growth rate vs. the past 3 weeks.

Global and National Trends





Globally, 525,696,723 cases and 6,277,390 deaths (Data* through 5/23/2022)

- Case rates appear to be declining or plateauing in many European countries following second Omicron wave

United States: Reported cases (7-day average) have increased over 20.5% since the prior week¶

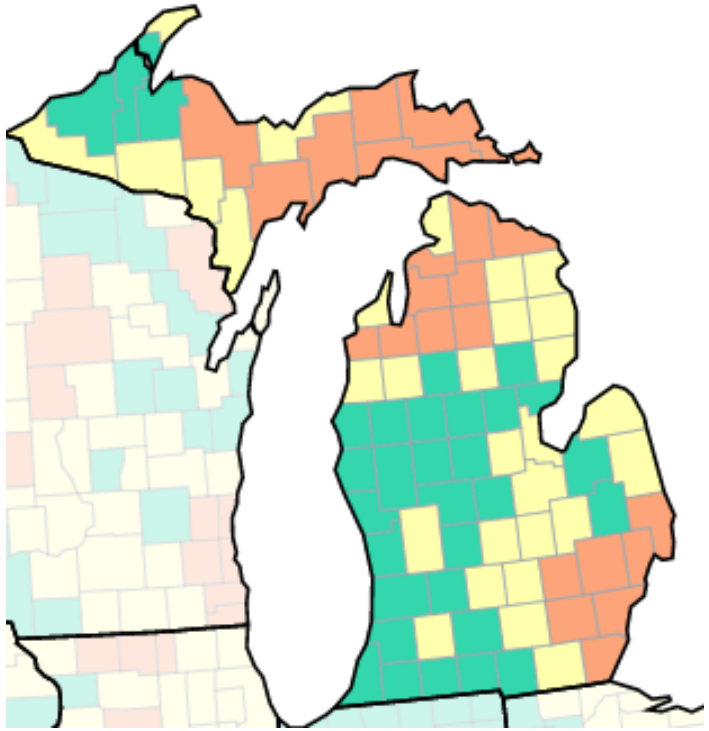
- In the U.S., the case rate is 223 cases/100,000 in last 7 days (last week: 185 cases per/100,000)

Region 5 (Midwest) states are increasing

- Illinois and Michigan have the highest case rates *in Region 5* (5/19)

Source: * Johns Hopkins Coronavirus Resource Center; ¶ CDC COVID Data Tracker Weekly Review; † CDC COVID Data Tracker – CDC recently updated their methodology for reporting case rates

As of May 19th, 22 Michigan Counties at High COVID-19 Community Level



- In the US, 9% of counties have high risk for medically significant disease and healthcare strain; in Michigan, 27% of counties are at high risk
- 53% of Michigan residents reside in a county with a High COVID-19 Community Level
- All counties that are categorized as High have case rates that are greater than 200 per 100,000 and the HSA COVID hospital admissions per 100k is above 10.
- 30 Michigan counties are currently at Medium level (36%). This represents 30% of the population.

Percent of Counties

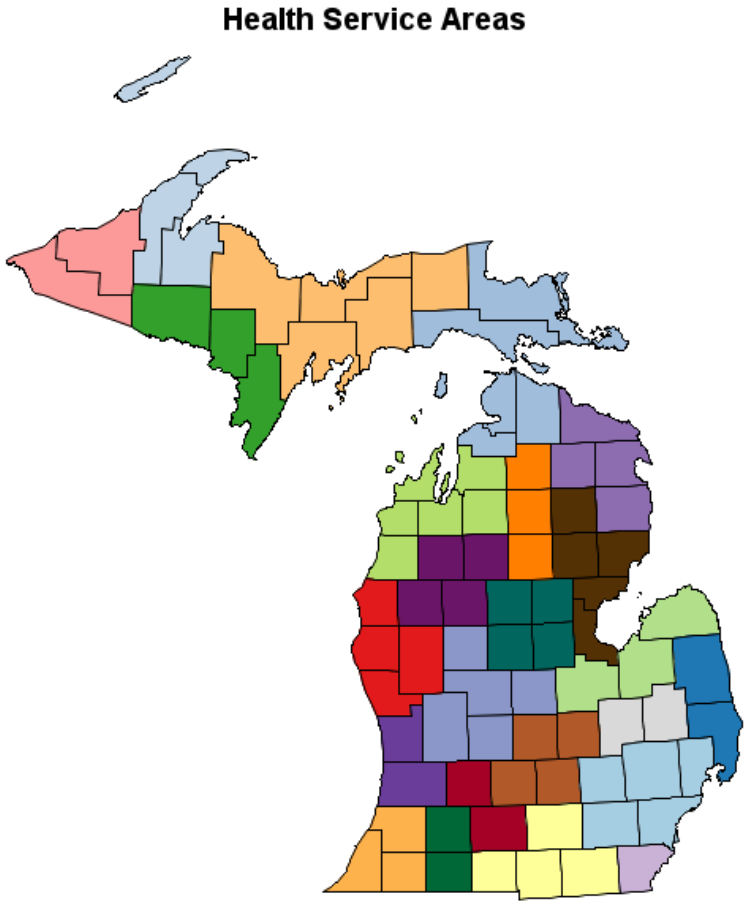
	United States	Michigan	Percent of MI Population
Low	76%	37%	17%
Medium	15%	36%	30%
High	9%	27%	53%

Low	Medium	High
• Stay up to date with COVID-19 vaccines • Get tested if you have symptoms	• If you are at high risk for severe illness, talk to your healthcare provider about whether you need to wear a mask and take other precautions • Stay up to date with COVID-19 vaccines • Get tested if you have symptoms	• Wear a mask indoors in public • Stay up to date with COVID-19 vaccines • Get tested if you have symptoms • Additional precautions may be needed for people at high risk for severe illness

Source: CDC COVID-19 Community Levels https://covid.cdc.gov/covid-data-tracker/#county-view?list_select_state=all_states&list_select_county=all_counties&data-type=CommunityLevels

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%



Source: CDC COVID-19 Community Levels https://www.cdc.gov/coronavirus/2019-ncov/science/community-levels.html

TBU

Mask requirements return in some schools and businesses in counties with High COVID-19 Community Levels; local health recommends prevention

REUTERS® World Business Legal Markets Breakingviews Technology

May 15, 2022
11:07 AM EDT
Last Updated a day ago

Autos & Transportation

Detroit Three automakers reinstate mask mandate at some Michigan facilities

By David Shepardson

WILX 10 FIRST ALERT WEATHER

'All staff and students' back to masks at East Lansing Public Schools

Ann Arbor

mLIVE Michigan

Classes canceled, masks reinstated at Ann Arbor school after COVID-19 uptick

Updated: May. 09, 2022, 9:41 p.m. | Published: May. 09, 2022, 1:33 p.m.

FOX 2 Live Weather COVID-19 Sports Email Contests Moneysaver More

Ferndale Public Schools reinstates mask mandate as COVID-19 rates climb in Michigan

By Jack Nissen | Published May 16, 2022 7:04AM | Ferndale | FOX 2 Detroit

Oakland County now at high COVID-19 Transmission:

Precautions Recommended

Oakland County is now at a high community COVID-19 transmission level according to the Centers for Disease Control and Prevention (CDC) and experiencing an increase in cases overall.

The seven-day average of daily cases in Oakland County was 562 cases per day as of May 12, 2022. The seven-day percent positivity rate for COVID-19 tests is now 19.8 percent.

The Health Division reminds residents, organizations, and worksites of the following prevention steps recommended by CDC during high COVID-19 community levels:

- Stay up to date with COVID-19 vaccines. Visit oaklandcountyvaccine.com for Health Division vaccine locations.
- Get tested if you have symptoms or are exposed to someone with COVID-19.
- Isolate and quarantine if needed.
- Wear a mask indoors in public.
- If you test positive for COVID-19, talk to your doctor about whether you meet eligibility criteria and should get antibody or antiviral treatment.

CHIPPEWA COUNTY HEALTH DEPARTMENT
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Sault Ste. Marie, Michigan 49783
www.chippewahd.com

MEDIA RELEASE
Date: May 16, 2022

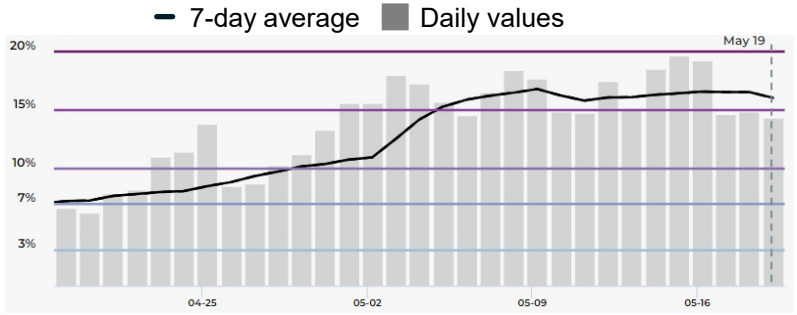
CHIPPEWA COUNTY MOVES INTO HIGH-RISK CATEGORY FOR COVID-19 TRANSMISSION

CHIPPEWA County, Michigan – The Chippewa County Health Department (CCHD) strongly recommends that secure, high filtration face masks be worn indoors in public settings when in close proximity to others. This recommendation is made in accordance with the Centers for Disease Control as an effort to prevent the continued spread of Covid-19. Within the past two weeks, the case count within Chippewa County has increased by more than 100; this increase has led Chippewa County to be categorized as a high-risk area for transmission and infection, according to the Michigan Department of Health and Human Services.

Recent statewide trends

Statewide trends

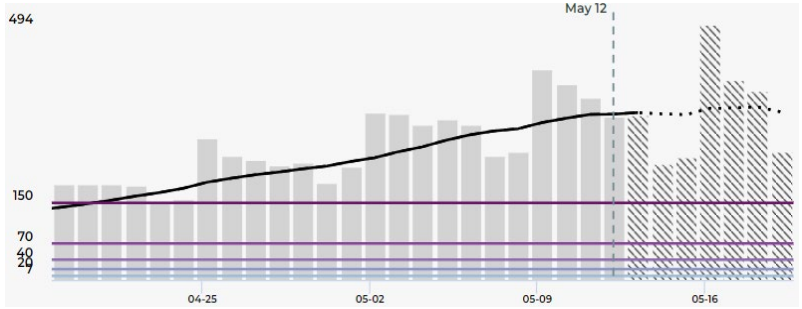
Positivity, %



Current: 15.2%

Last Week: 16.0%

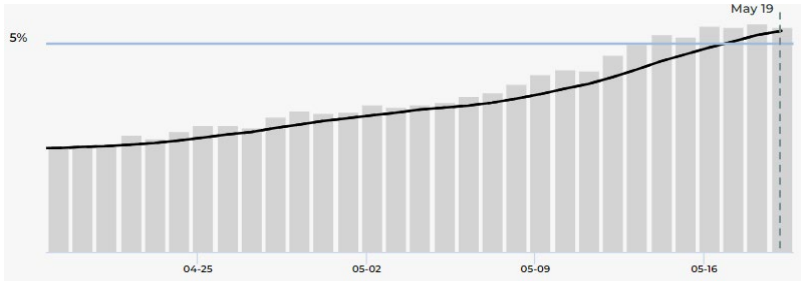
Daily cases per million



Current: 324.3

Last Week: 275.0

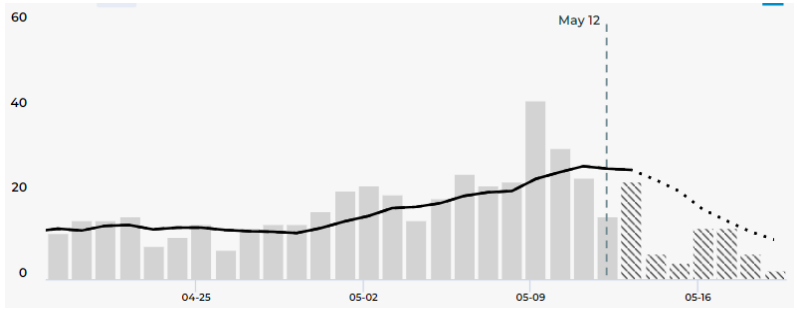
Daily hospitalization rate, %



Current: 5.4%

Last Week: 4.4%

Deaths

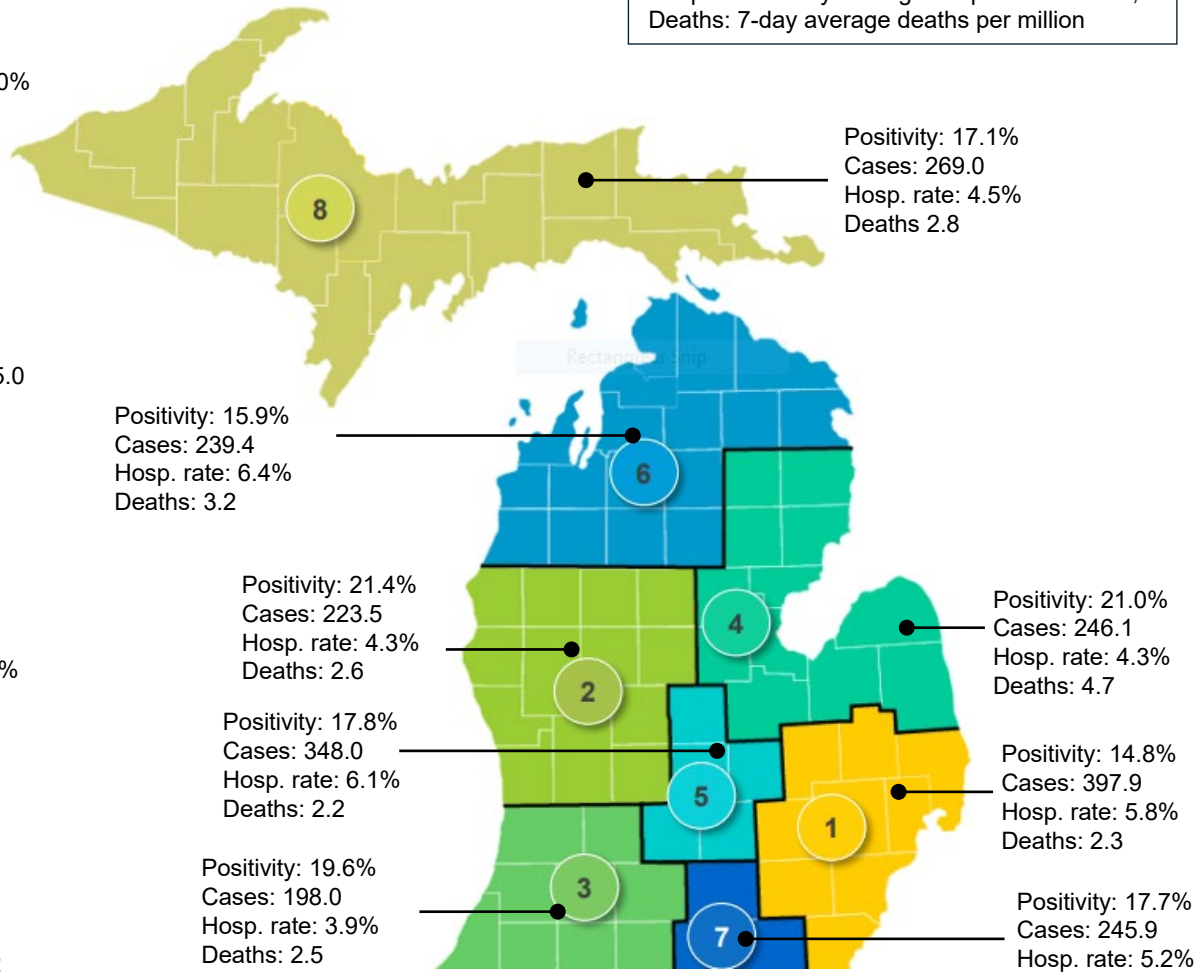


Current: 2.6

Last Week: 1.2

MERC Regional breakdown: Positivity, cases, hospitalization rate, and deaths

Positivity: 7-day average positivity, %
Cases: 7-day average cases per million
Hosp. rate: 7-day average hospitalization rate, %
Deaths: 7-day average deaths per million



Positivity: 17.1%
Cases: 269.0
Hosp. rate: 4.5%
Deaths 2.8

Positivity: 15.9%
Cases: 239.4
Hosp. rate: 6.4%
Deaths: 3.2

Positivity: 21.4%
Cases: 223.5
Hosp. rate: 4.3%
Deaths: 2.6

Positivity: 21.0%
Cases: 246.1
Hosp. rate: 4.3%
Deaths: 4.7

Positivity: 17.8%
Cases: 348.0
Hosp. rate: 6.1%
Deaths: 2.2

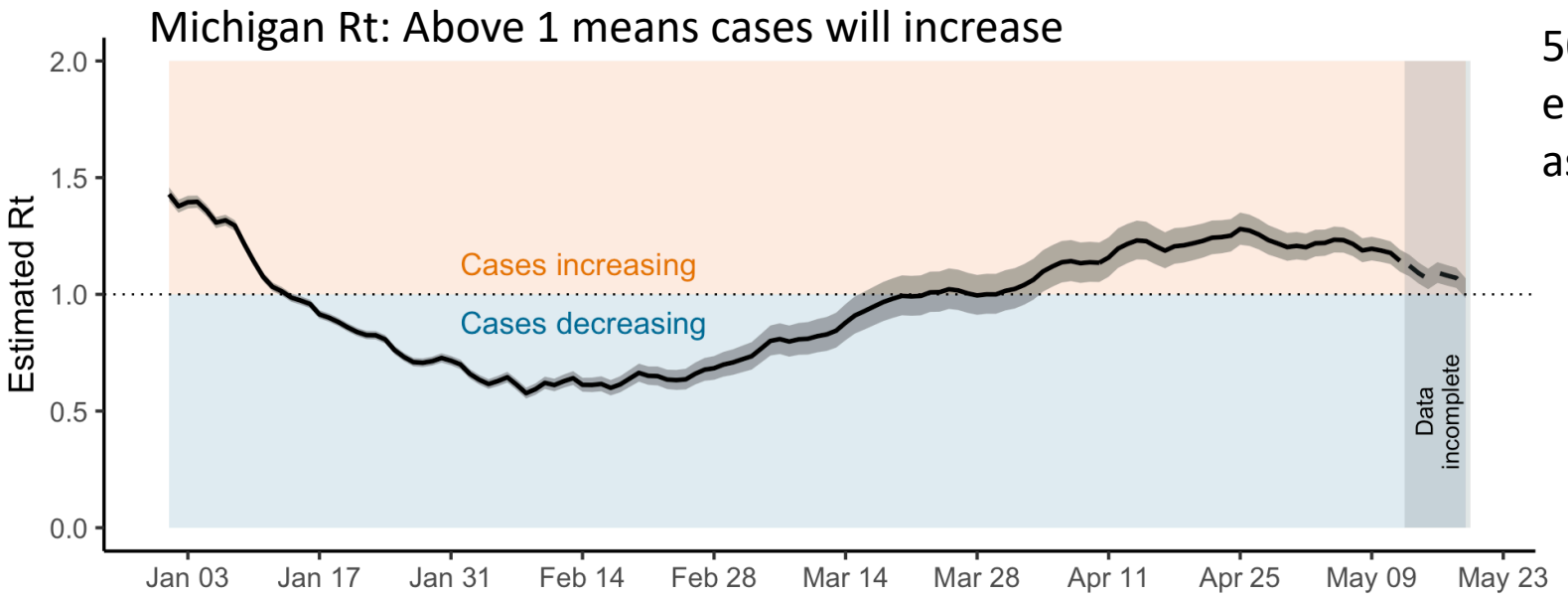
Positivity: 14.8%
Cases: 397.9
Hosp. rate: 5.8%
Deaths: 2.3

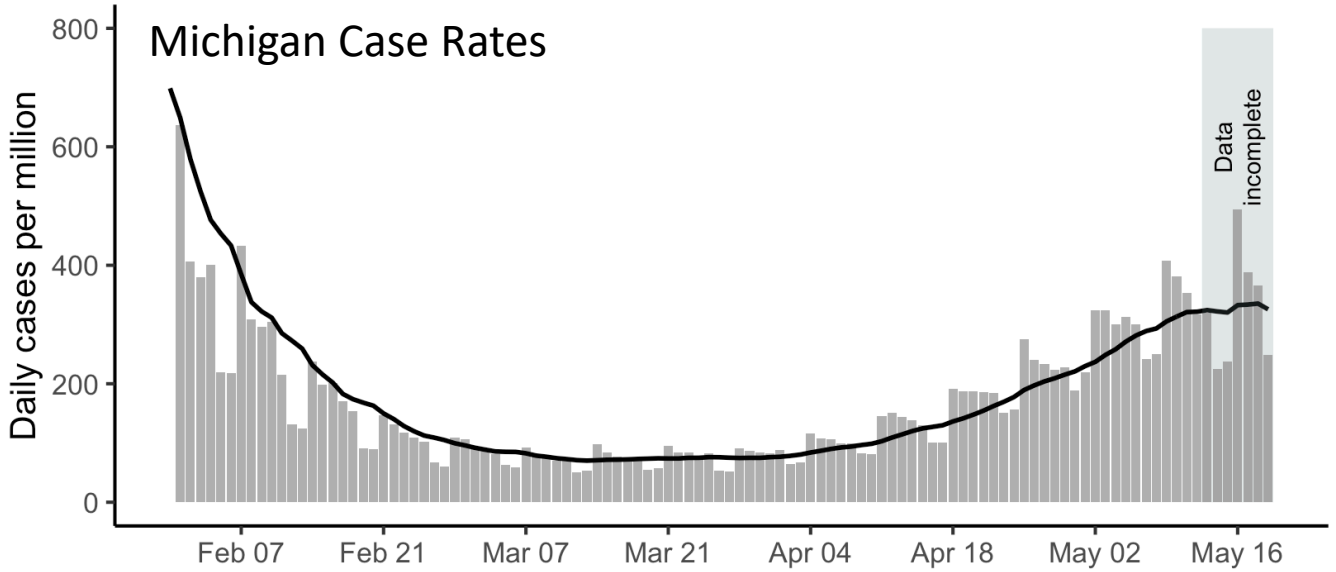
Positivity: 19.6%
Cases: 198.0
Hosp. rate: 3.9%
Deaths: 2.5

Positivity: 17.7%
Cases: 245.9
Hosp. rate: 5.2%
Deaths: 2.4

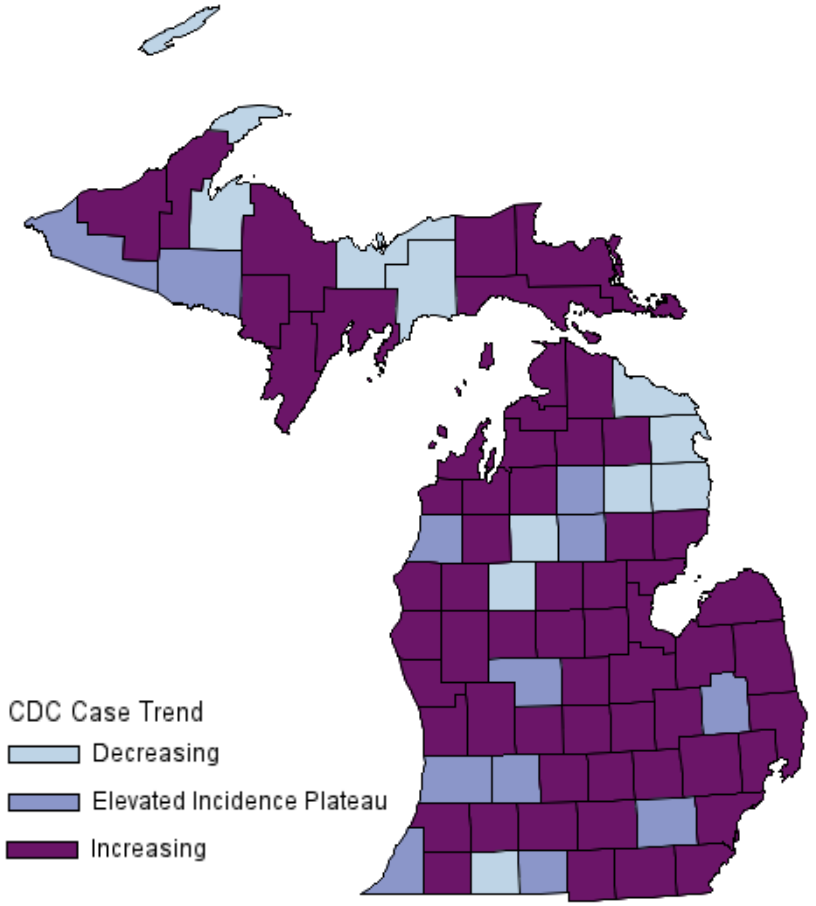
Source: https://mistartmap.info/

Case rates in Michigan are increasing, but the increase may be slowing





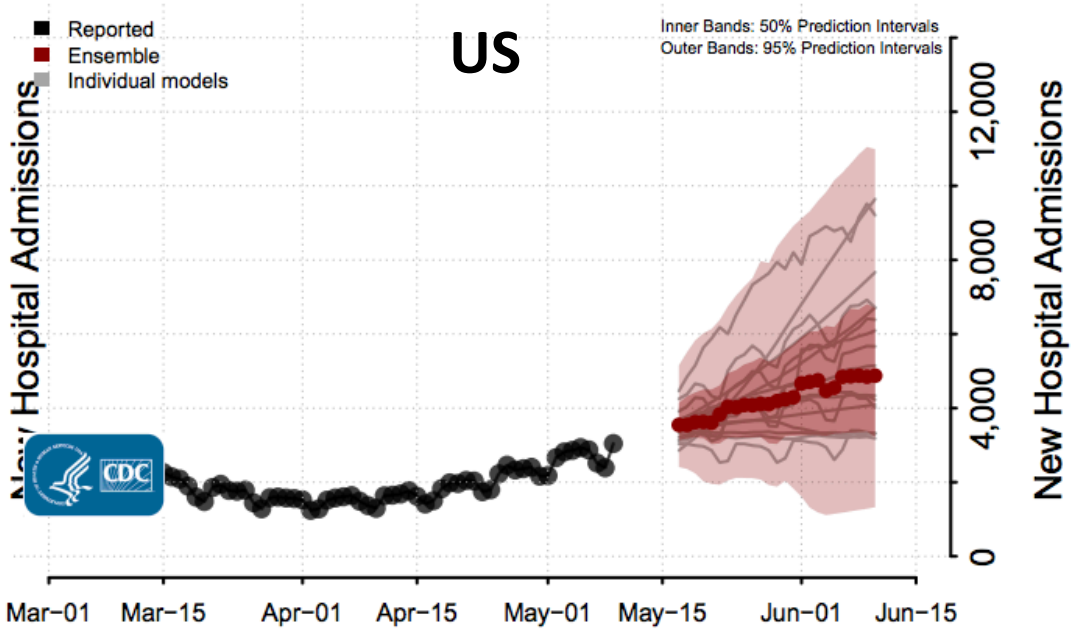
50 counties currently showing increases and 21 in elevated incidence plateaus (via mistartmap.info as of 5/23/22, data through 5/15/22).

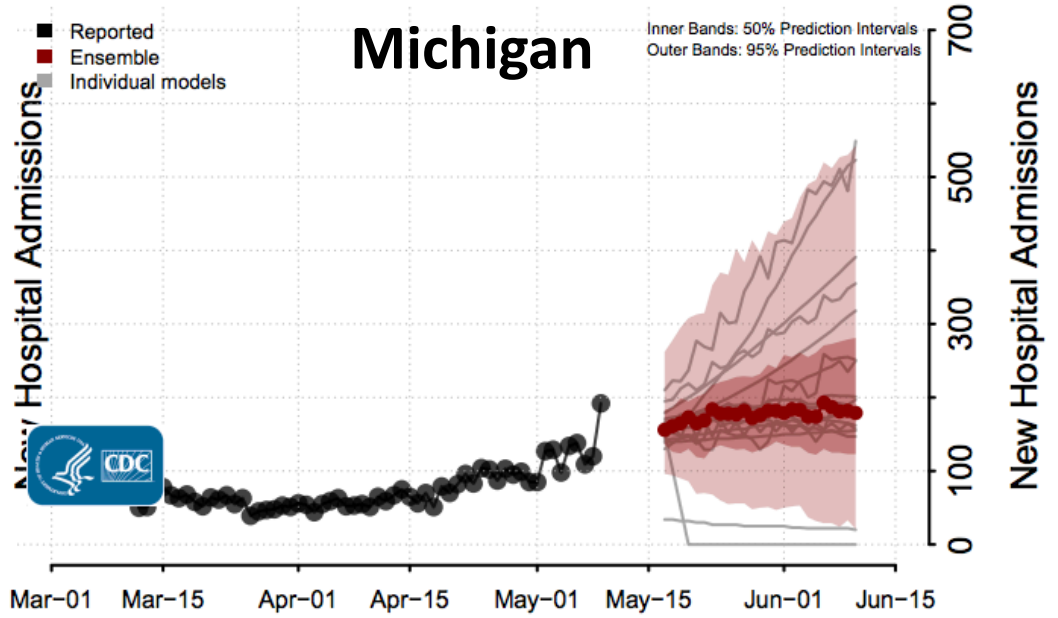


Sources: MDSS cases plotted by onset date as of 5/13/22.

CDC forecasting hub hospitalization projections for the US and Michigan predict continued increases through early June, but potentially some plateauing for Michigan

- Confidence interval range for both US and Michigan ranges from slow decrease to faster increase
- Deaths projections also suggest increases for US & MI (CDC)

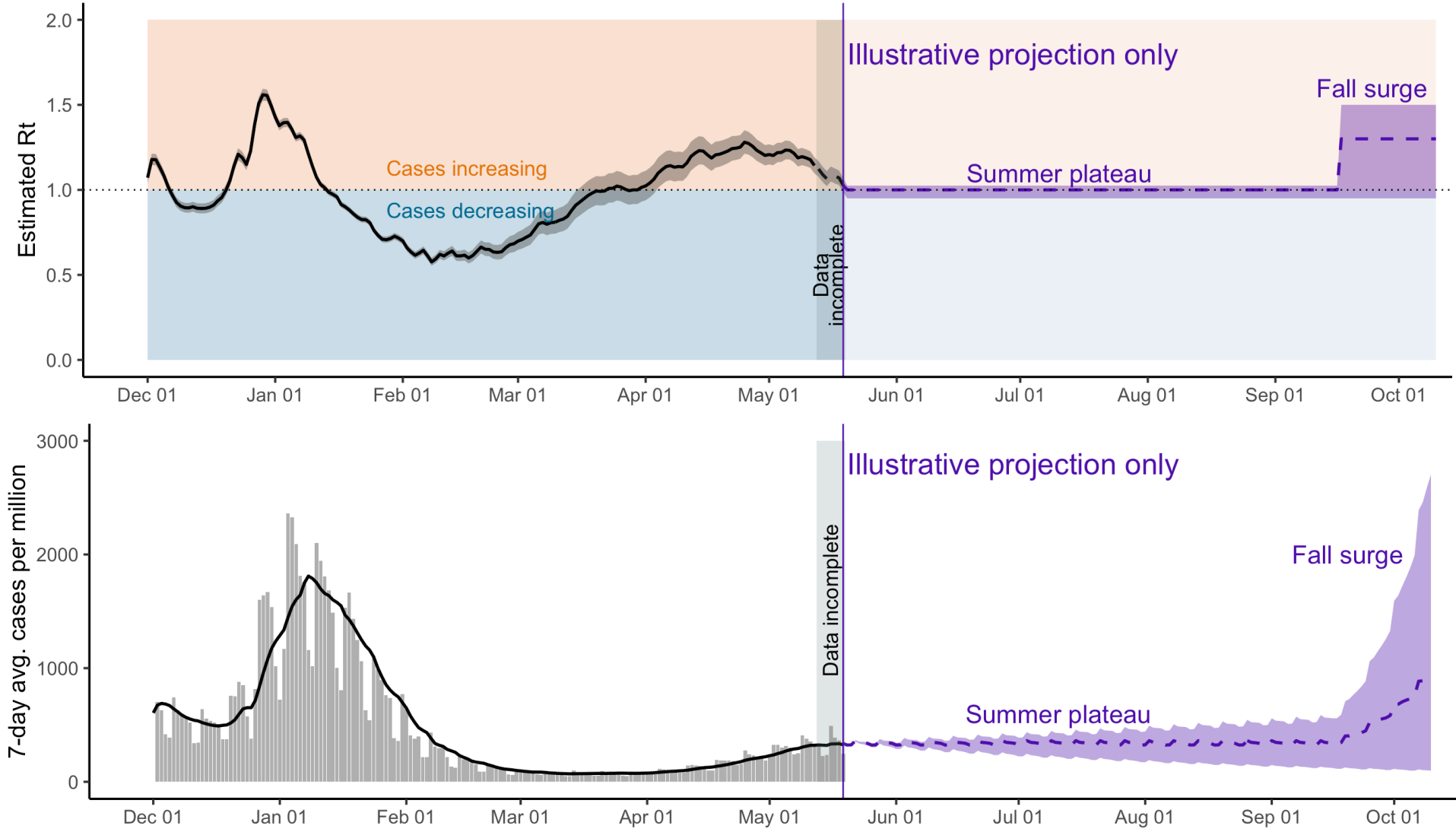




Source: CDC forecasting hub forecasts as of May 16, 2022.

Illustrative only: what if scenario of a summer plateau followed by a fall surge in Michigan

- Given the slowing of the current surge and model projections of a fall surge [1], simulated a plateau through the summer followed by a fall surge
- If the fall surge increases Rt to similar levels as we previously saw in the current surge, this scenario could lead to fall case levels similar to winter omicron wave
- However, important to note this is a what-if scenario only! Rt may not follow this pattern, it is only for illustration purposes



Sources: MDSS case data by onset date (when available) as of 5/20/22. [1] Scenario Modeling Hub Round 13.

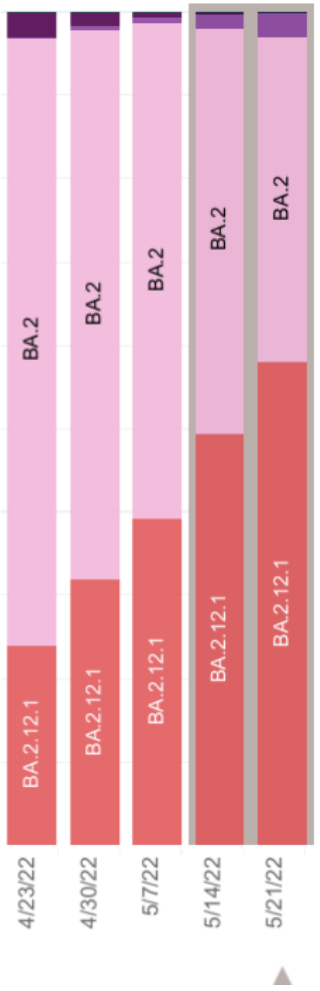
Emerging Variant Update

- Omicron continues to be the predominant concern, including all its sublineages
    - Omicron has several sublineages of this variant, including BA.1, BA.2, BA.4, BA.5, BA.2.12.1, and recombinations of these.
    - BA.4 and BA.5 (new variants of concern) may spread faster than current Omicron in U.S. or U.K. These variants are spreading in other countries (BA.4 in S. Africa; BA.5 in Portugal), but data is still very preliminary.
    - Here in the U.S., BA.2 remains the most predominant but the proportion of BA.2.12.1 is increasing faster than other lineages
- BA.2.12.1 is most common variant in HHS Region 5 (Illinois, Indiana, Michigan, Minnesota, Ohio, Wisconsin)

Sources: UKHSA technical briefings, WHO science briefing , GSAID – COVID sequencing , CDC Variant Tracker

Identified COVID-19 Cases Caused by Variants of Concern (VOC) in US and Michigan

SARS-CoV-2 Variants Circulating in the United States, Apr 23 - May21 (NOWCAST)

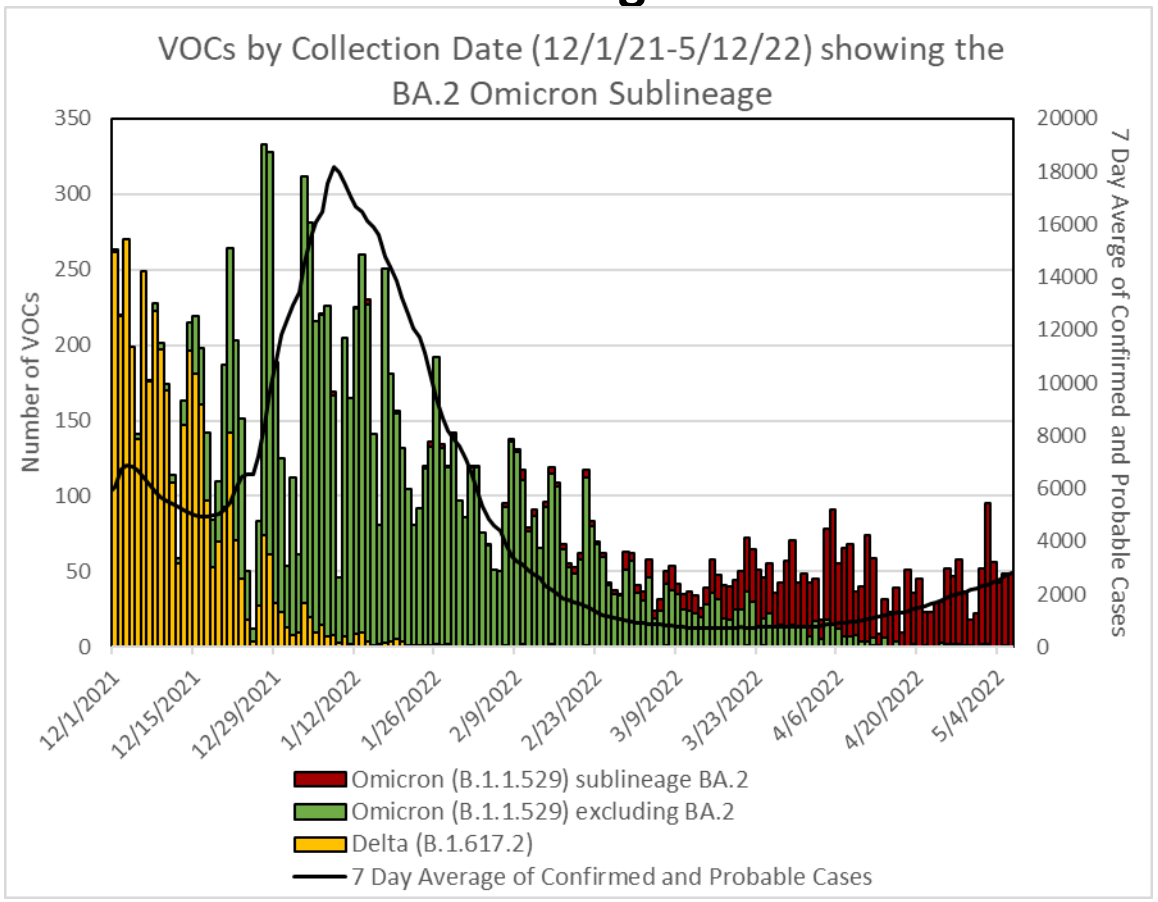


USA

WHO label	Lineage #	US Class	%Total	95%PI
Omicron	BA.2.12.1	VOC	57.9%	52.8-62.9%
	BA.2	VOC	39.1%	34.2-44.2%
	B.1.1.529	VOC	2.8%	1.6-4.9%
	BA.1.1	VOC	0.1%	0.1-0.1%
Delta	B.1.617.2	VBM	0.0%	0.0-0.0%
Other	Other*		0.1%	0.1-0.2%

* 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.
** These data include Nowcast estimates, which are modeled projections that may differ from weighted estimates generated at later dates
# AY.1-AY.133 and their sublineages are aggregated with B.1.617.2. BA.1, BA.3, BA.4, BA.5 and their sublineages (except BA.1.1 and its sublineages) are aggregated with B.1.1.529. For regional data, BA.1.1 and its sublineages are also aggregated with B.1.1.529, as they currently cannot be reliably called in each region. Except BA.2.12.1 and its sublineages, BA.2 sublineages are aggreagated with BA.2.

VOC Distribution in Michigan

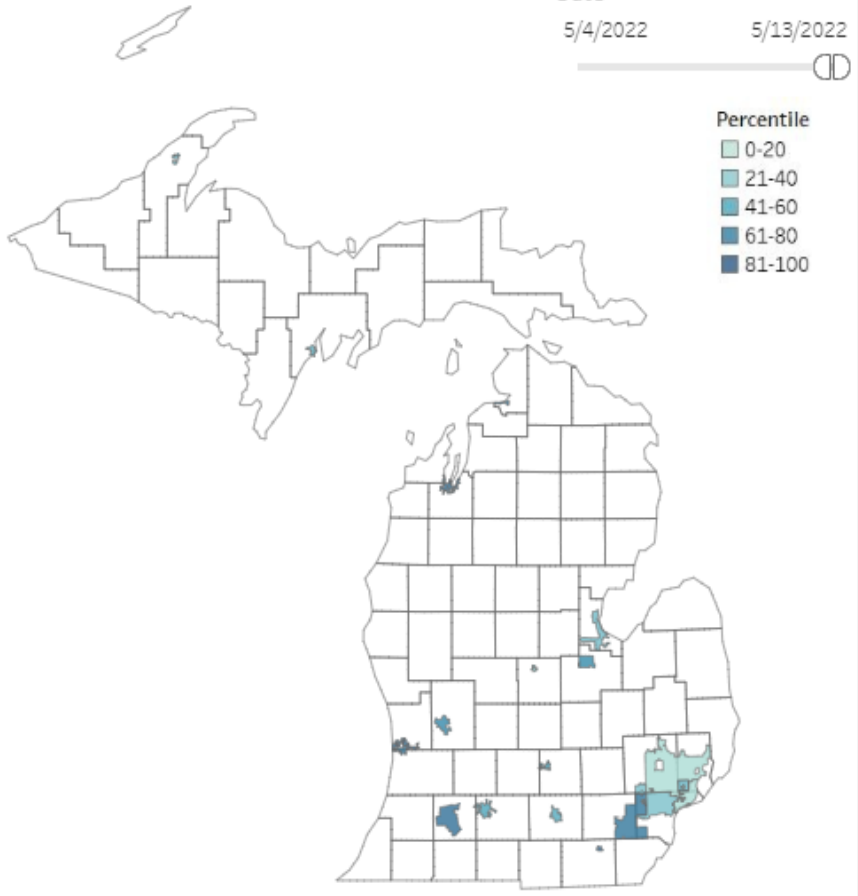


- Since April 15, there have 1,100 VOC specimens sequenced
- 97.9% of specimens sequenced are Omicron

Data last updated May 17, 2022
Source: MDSS
¶ Sequence specimens are from the most recent week by onset date which may change as more specimens are sent in

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. In the top right corner of the map, slide the white buttons to select the time period for which the site-specific percentile is calculated.



Site	Sewershed Population	Consecutive Weeks of Virus Detection	Trend As Of	15-Day Trend
Alma WWTP	8976	0	5/9/2022	
Battle Creek WWTP	51093	4	5/11/2022	
Bay City WWTP	34000	4	5/12/2022	
Delhi Township WWTP	22500	7	5/5/2022	
Escanaba WWTP	12600	2	5/9/2022	
GLWA Detroit River Interce..	492000	81	5/4/2022	
GLWA North Interceptor-	1482000	58	5/4/2022	
GLWA Oakwood-	840600	81	5/4/2022	
Grand Rapids WWTP	265000	40	5/12/2022	
Holland WWTP North	45606	4	5/11/2022	
Holland WWTP South	36912	6	5/11/2022	
Jackson WWTP	90000	43	5/12/2022	
Kalamazoo WWTP	150000	7	5/12/2022	
Petoskey WWTP	7900	4	5/12/2022	
Portage Lake WWTP	14000	35	5/9/2022	
Saginaw Township WWTP	40000	5	5/12/2022	
Tecumseh WWTP	8680	18	5/13/2022	
Traverse City WWTP	45000	9	5/12/2022	
Warren WWTP	135000	4	5/5/2022	
Ypsilanti WWTP	330000	43	5/10/2022	

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 5/18/2022. 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

Sentinel Summary

- 60% (12/20) of sentinel sites are showing increasing trends over last 15-days
- 25% of sites have plateaued over the last 15 days
- 15% (3/20) of sentinel sites are showing declines in the previous 15-days

Source: MDHHS – Sentinel Wastewater Epidemiology Evaluation Project - https://www.michigan.gov/coronavirus/0,9753,7-406-98163_98173-573480--,00.html

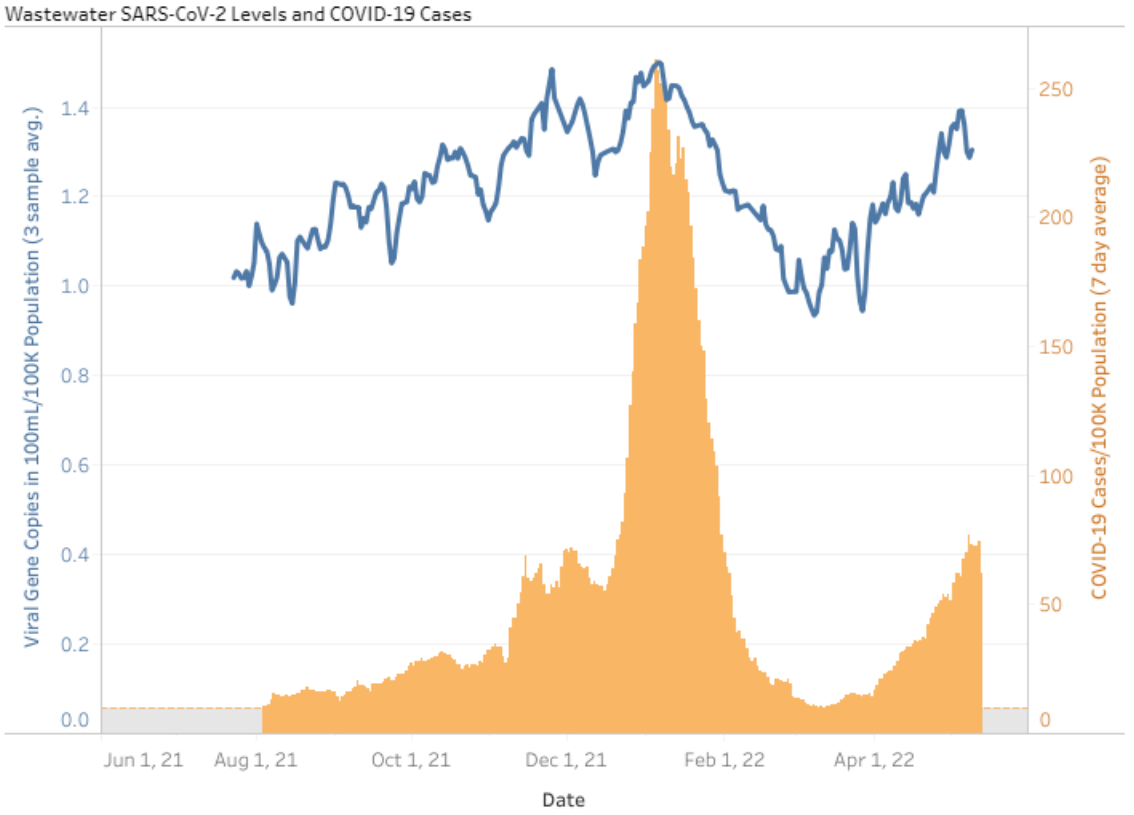
Interpreting Wastewater Should Be In Context with Other Indicators

- 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 84% of samples collected at this site, which puts it in the 81-100 percentile category. As of 5/10/2022, the change in viral concentration over the past 15 days is increasing.

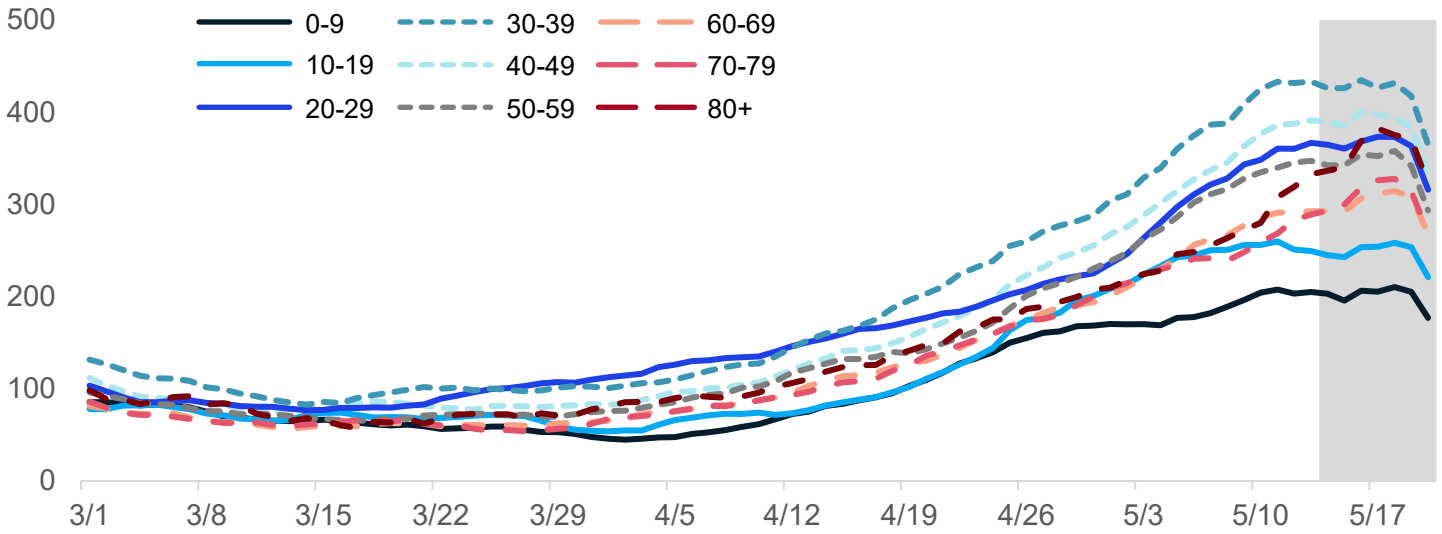


The blue line on the graph shows the levels of SARS-CoV-2, the virus that causes COVID-19, in the wastewater samples collected from Ypsilanti WWTP. Each data point is calculated by averaging the number of viral gene copies detected per 100mL of wastewater in the 3 most recent samples. The orange bars 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.

Source: MDHHS – Sentinel Wastewater Epidemiology Evaluation Project - https://www.michigan.gov/coronavirus/0,9753,7-406-98163_98173-573480--,00.html

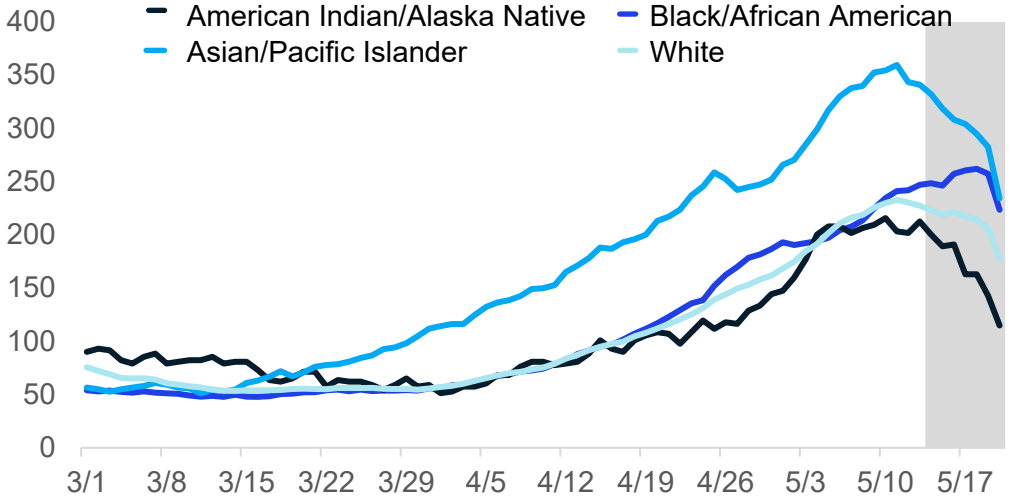
Case rate are increasing for all stratified groups

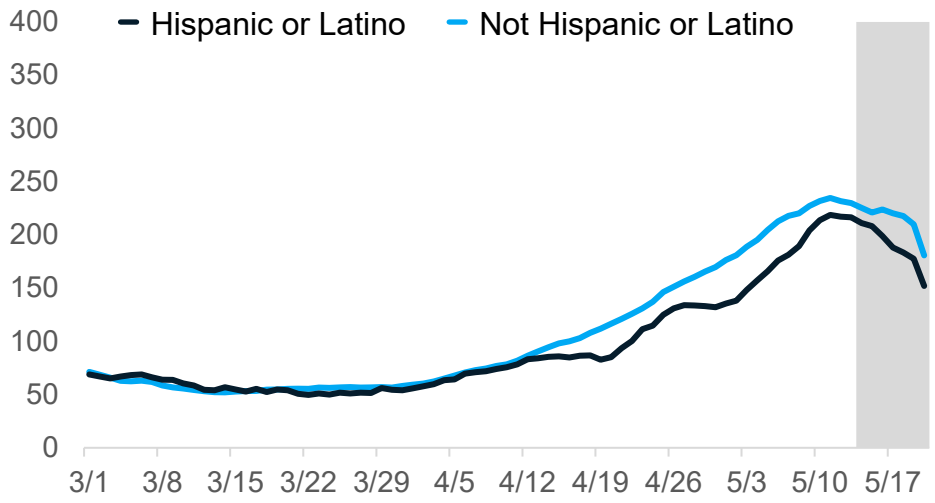
Daily new confirmed and probable cases per million by age group (7-day rolling average)



- Case rates by onset date for all age groups are between 205.1 and 433.2 cases per million (through 5/13)
- Case counts and case rates are highest for 30-39-year-olds this week, followed by 40–49-year-olds and the 20–29-year age groups

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



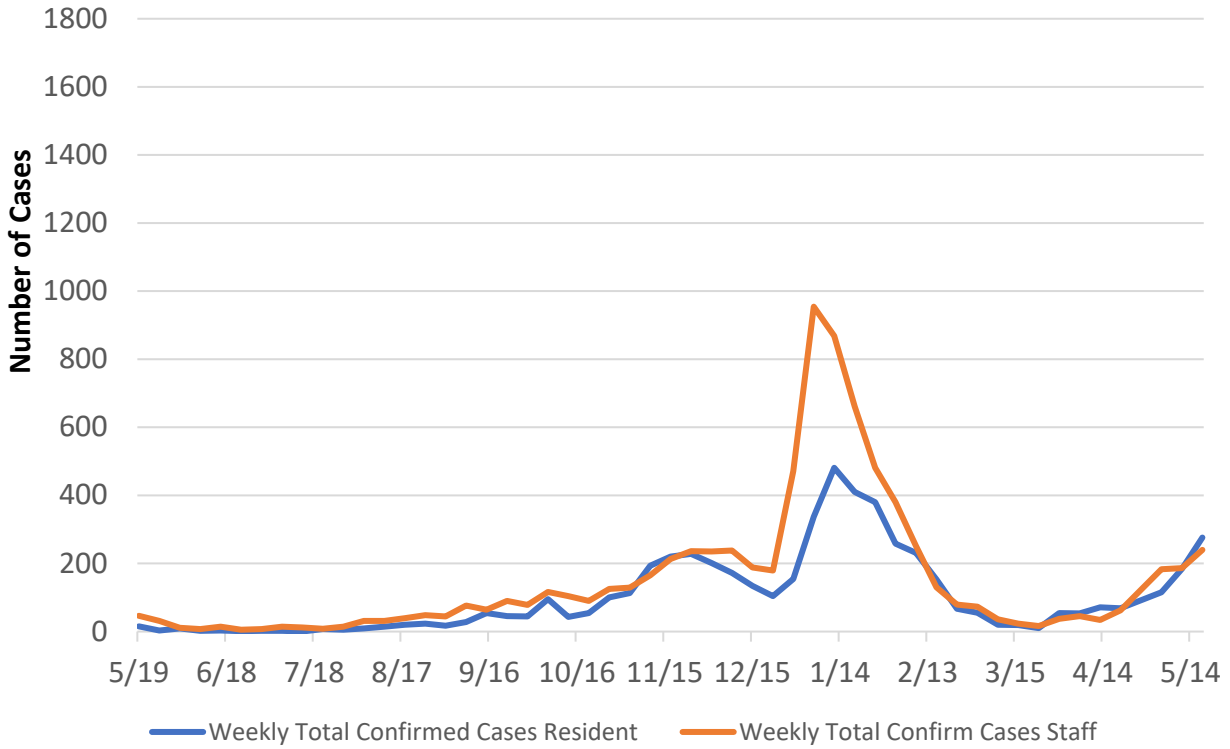


- Case rates are highest for Asian/Pacific Islander populations (341.0 cases/million)
- Between 19-25% of cases in last 30 days have missing race/ethnicity data

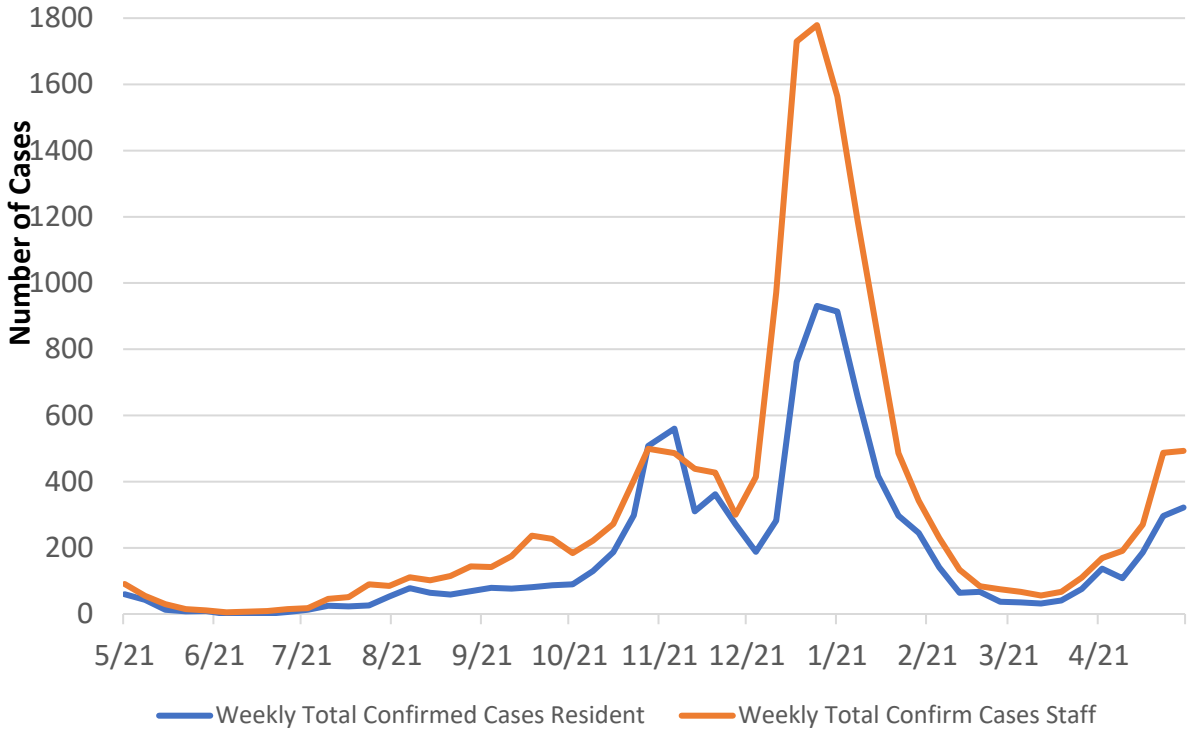
Note: Case information sourced from MDHHS and reflects date of onset of symptoms
Source: MDHHS – Michigan Disease Surveillance System

Cases continue are plateaued or increasing in staff and residents in Long Term Care Facilities

STATE OF MICHIGAN WEEKLY TOTAL CONFIRMED COVID-19 CASES IN AFC/HFA RESIDENTS AND STAFF
05/19/2021 TO 05/18/2022



STATE OF MICHIGAN WEEKLY TOTAL CONFIRMED COVID-19 CASES IN SNF RESIDENTS AND STAFF
05/21/2021 TO 05/20/2022

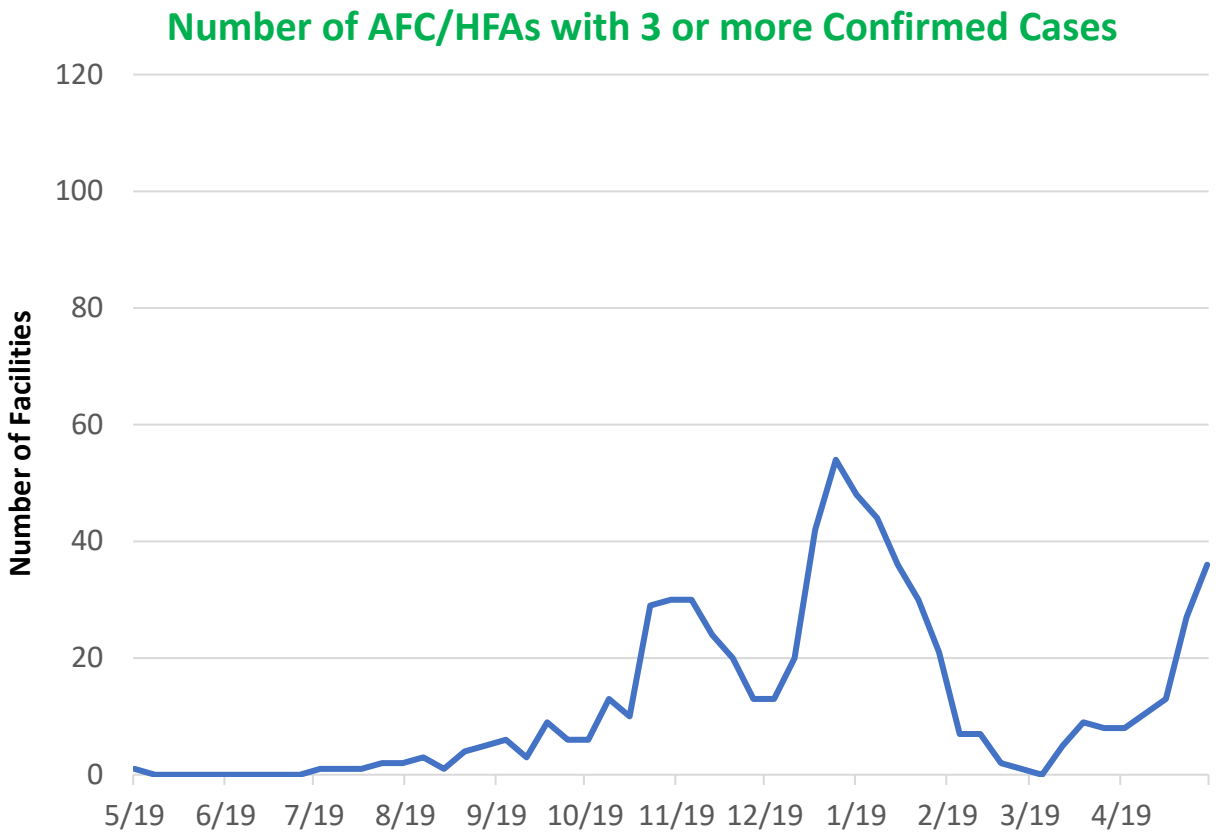


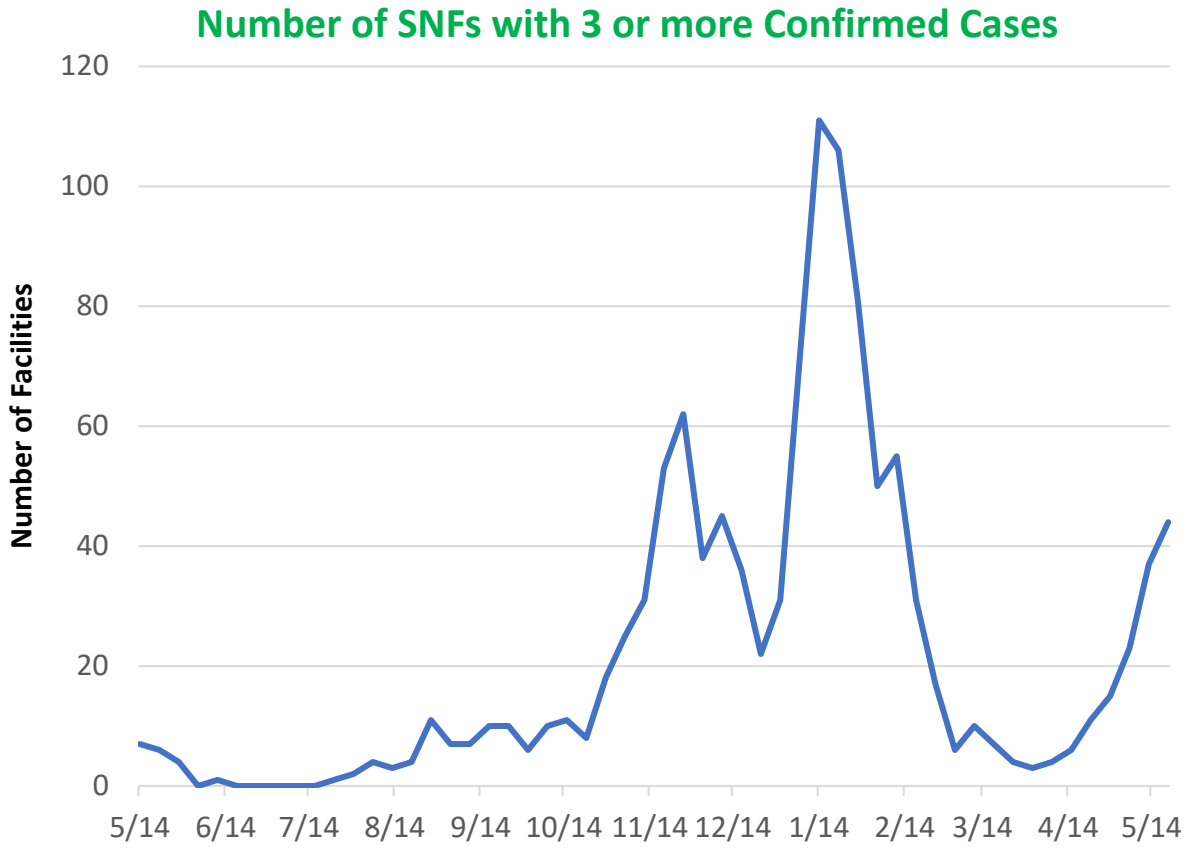
- Case counts in residents increased in AFC/HFA (276) and in SNFs (322) since last week
- Case counts in staff increasing in AFC/HFA (240) and increased in SNF (493)
- **32%** of SNFs are reporting **nursing shortages** and **36%** of SNFs are reporting **aide shortages**, which are stable from last week

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

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

The Number of Outbreaks in Long Term Care Facilities are Increasing





The number of Long-Term Care Facilities reporting 3 or more cases within a single reporting period increased in AFC/HFA from 27 to 36, Increased in SNF from 37 to 44 in most recent data.

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

During the Omicron wave, Nursing home residents with an additional dose/ booster were significantly more protected against infection compared to those fully vaccinated without a booster

COVID-19 surveillance and vaccination coverage data among nursing home residents, were reported to CDC's National Healthcare Safety Network (NHSN) during February 14–March 27, 2022, when the Omicron variant accounted for >99% of sequenced isolates.

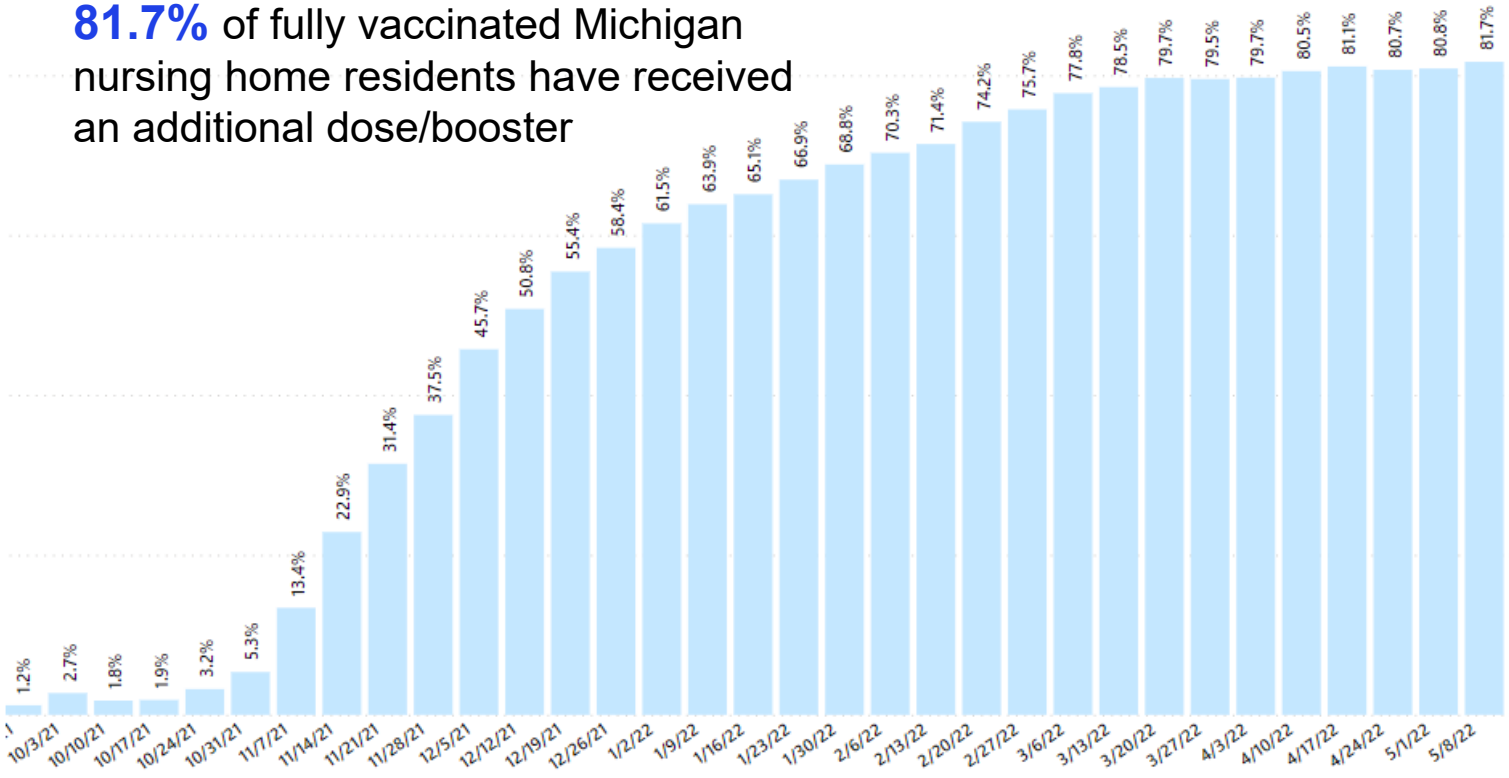
Overall, 7,510 cases were confirmed among 1,509,674 resident-weeks with primary series vaccination only and 11,334 cases were confirmed among 4,416,401 resident-weeks with an additional or booster dose

Relative vaccine efficacy of a COVID-19 additional primary or booster dose was 46.9% (95% CI = 44.8%–48.9%)

These findings indicate that COVID-19 additional primary or booster doses provide greater protection against Omicron variant infection than primary series vaccination alone.

Percentage of Fully Vaccinated Nursing Home Residents with Additional Primary or Booster Dose, by Week – Michigan

81.7% of fully vaccinated Michigan nursing home residents have received an additional dose/booster



MMWR Article: https://www.cdc.gov/mmwr/volumes/71/wr/mm7118a4.htm?s_cid=mm7118a4_w

Data: https://www.cdc.gov/nhsn/covid19/ltc-vaccination-dashboard.html

Those 12 years and older who are moderately to severely immunocompromised or those 50 years of age and above SHOULD receive a 2nd Booster

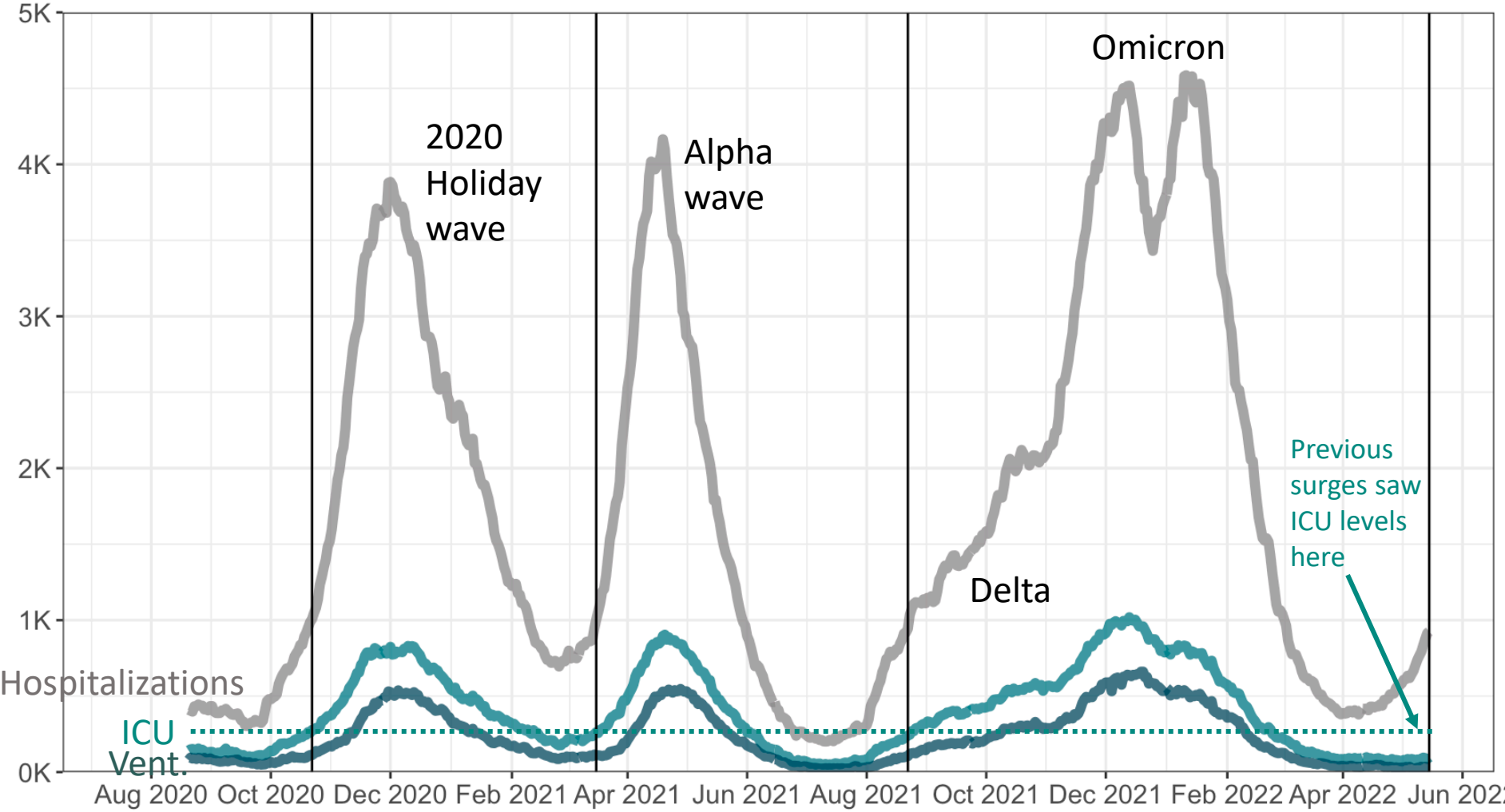
Four months after receipt of a first booster dose of Pfizer BioNTech, Moderna or Janssen (Johnson & Johnson), the following are now authorized

- A second booster dose of the Pfizer-BioNTech COVID-19 vaccine or Moderna COVID-19 vaccine **should** be administered to individuals 50 years of age and older.
- A second booster dose of the Pfizer-BioNTech COVID-19 vaccine **should** be administered to moderately or severely immunocompromised individuals 12 years of age and older.
- A second booster dose of the Moderna COVID-19 vaccine **should** be administered to moderately or severely immunocompromised individuals 18 years of age and older.

Michigan currently has nearly **2.5 million** adult Pfizer or Moderna doses:

- 1.1 million Pfizer
- 1.4 million Moderna

COVID-19 Hospitalization and Severe Illness Trends



— vertical line indicates where hospitalizations reached 1K in previous increases

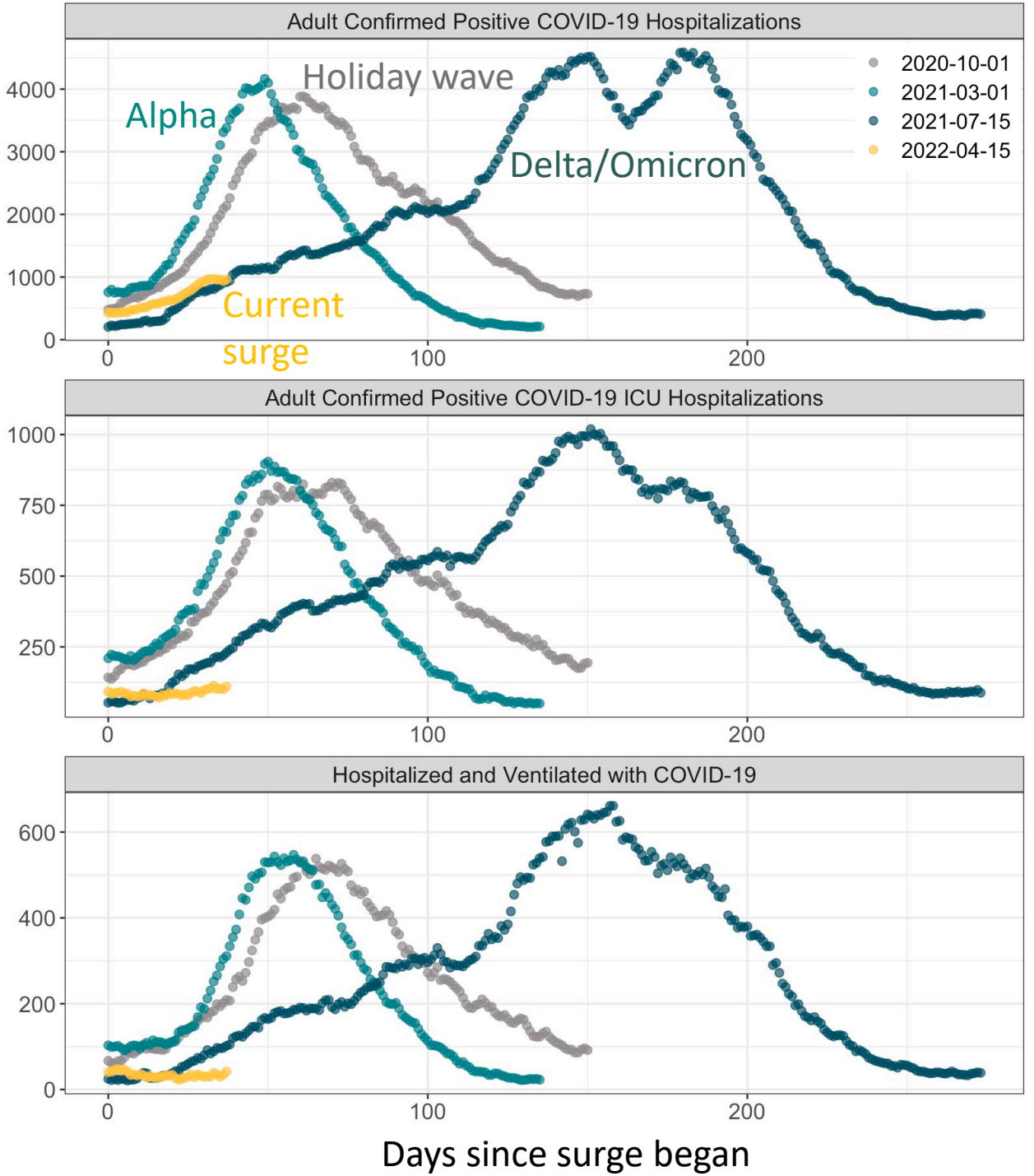
- Adult Confirmed Positive COVID-19 Hospitalizations
- Adult Confirmed Positive COVID-19 ICU Hospitalizations
- Hospitalized and Ventilated with COVID-19

- In all prior surges we have seen a simultaneous increase in patients hospitalized with COVID-19 vs patients in the ICU with COVID-19 vs patients on ventilators with COVID-19.
- In the current surge there is a dissociation between those three metrics, likely indicating that even with an uptick in patients hospitalized with COVID-19, most hospitalized patients are not experiencing severe diseases. This may be attributed in part to vaccinations and therapeutics.

Data Source: EM Resource data as of 5/23/22

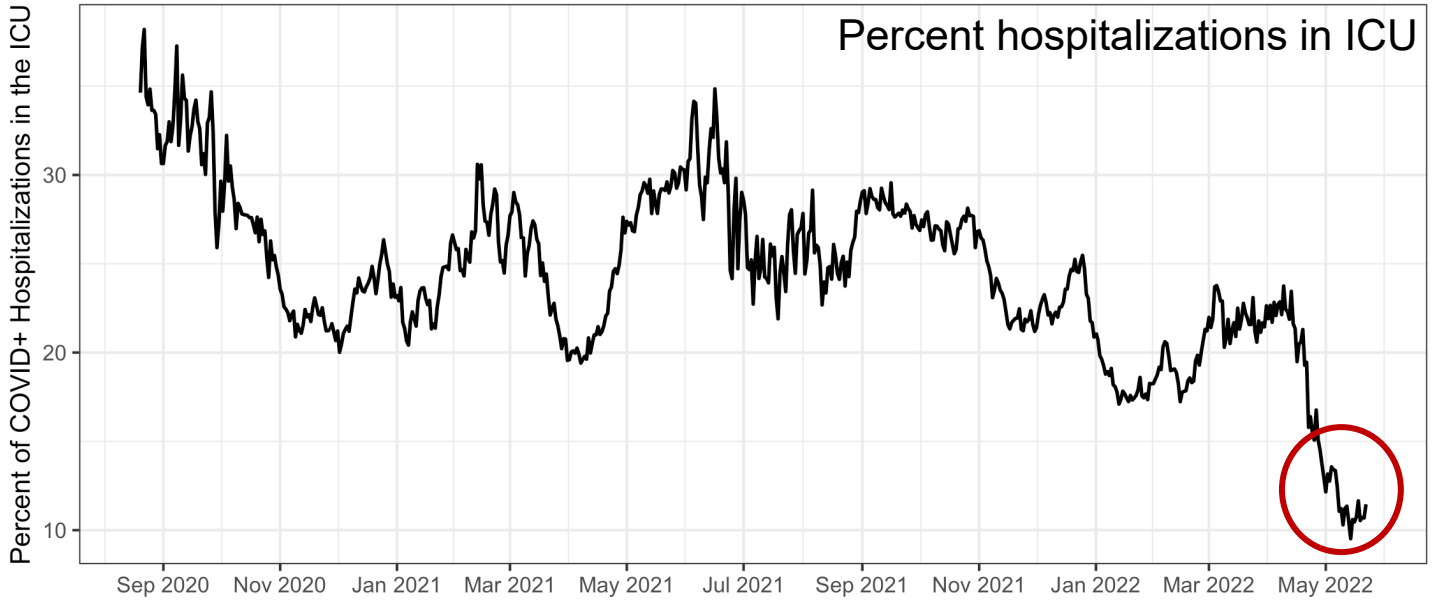
Another view: severity wave by wave

- In previous waves, when hospitalizations reached ~1000 patients (top panel), ICU and ventilator use were higher than they are currently (bottom two panels yellow vs. others)
- Overall, the ICU and ventilator usage is lower than would be expected based on previous surges



Data Source: EM Resource data as of 5/23/22

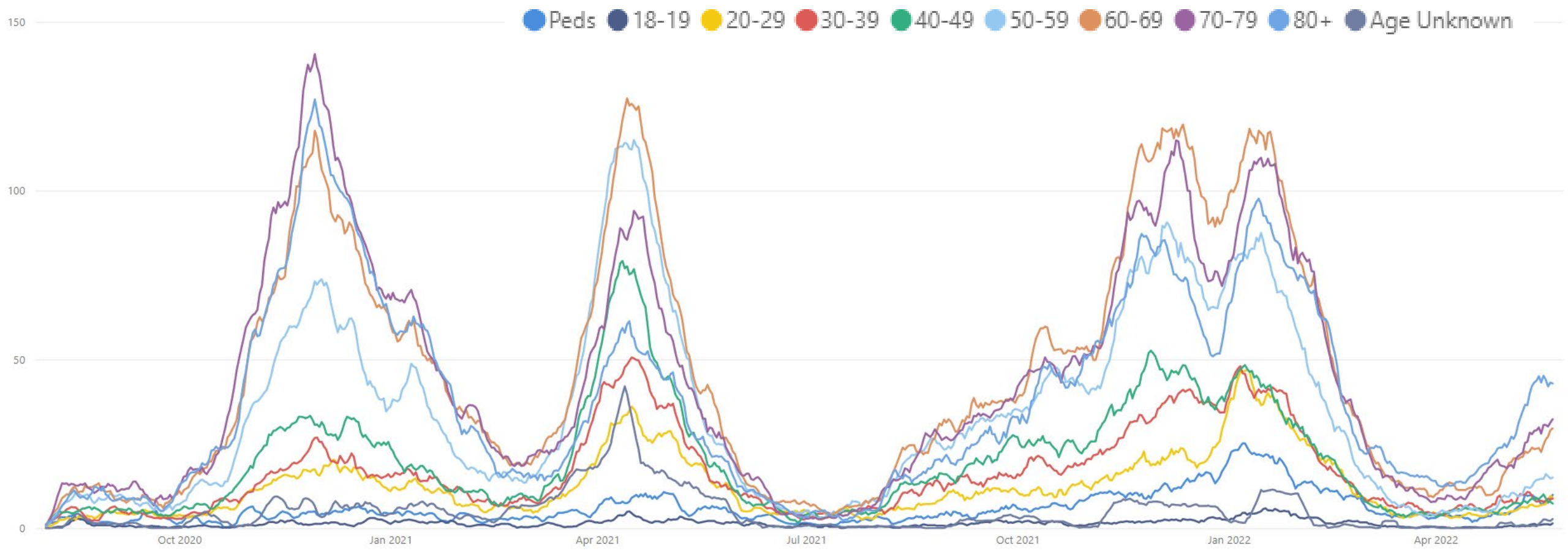
Correlating ICU and Ventilators with Hospitalization Census: currently seeing the lowest percentage of hospitalizations requiring ICU or ventilator since September 2020



- Both metrics have seen a general decline in the proportion compared to the total adult patients hospitalized between September 2020 and May 2022, with a steeper decrease in the last couple of months
- Currently seeing the lowest percent of hospitalizations in ICU or ventilator since September 2020
- Previous surges (e.g., Alpha, Delta waves) have seen a rise in the proportion either admitted to the ICU or placed on a ventilator, however, no such surge has been yet observed during the current Omicron wave (red circle)
- While these are lagging indicators, it is not expected that ICU admissions or ventilator usage during this wave will exceed that of previous waves

Data Source: EM Resource data as of 5/23/22

Hospital admissions due to COVID-19 remain low but are increasing



- Trends for daily average hospital admissions increased (+7%) since last week (vs. +34% prior week)
- Over half of the age groups saw increases this week
- Those 70-79 and 80+ are now seeing between 30-45 daily hospital admissions

Source: CHECC & EM Resource

Hospital Admissions and Admission Rates by Age Group

Daily new hospital admission per million by age group (7-day rolling average)

Age Group	Average† daily number of hospital admissions	Average† Daily Hospital Admission Rate*	One Week % Change (Δ #)
0-11	6.9	4.9	+30% (+2)
12-17	3.1	4.2	+175% (+2)
18-19	1.4	5.4	+11% (0)
20-29	7.7	5.6	+17% (+1)
30-39	8.9	7.3	+11% (+1)
40-49	7.3	6.2	-12% (-1)
50-59	15.6	11.5	+10% (+1)
60-69	**28.3**	**22.2**	+19% (+5)
70-79	**31.9**	**41.5**	+7% (+2)
80+	**41.7**	**100.7**	-5% (-2)
Total¶	**155.9**	**13.7**	**+7% (+11)**

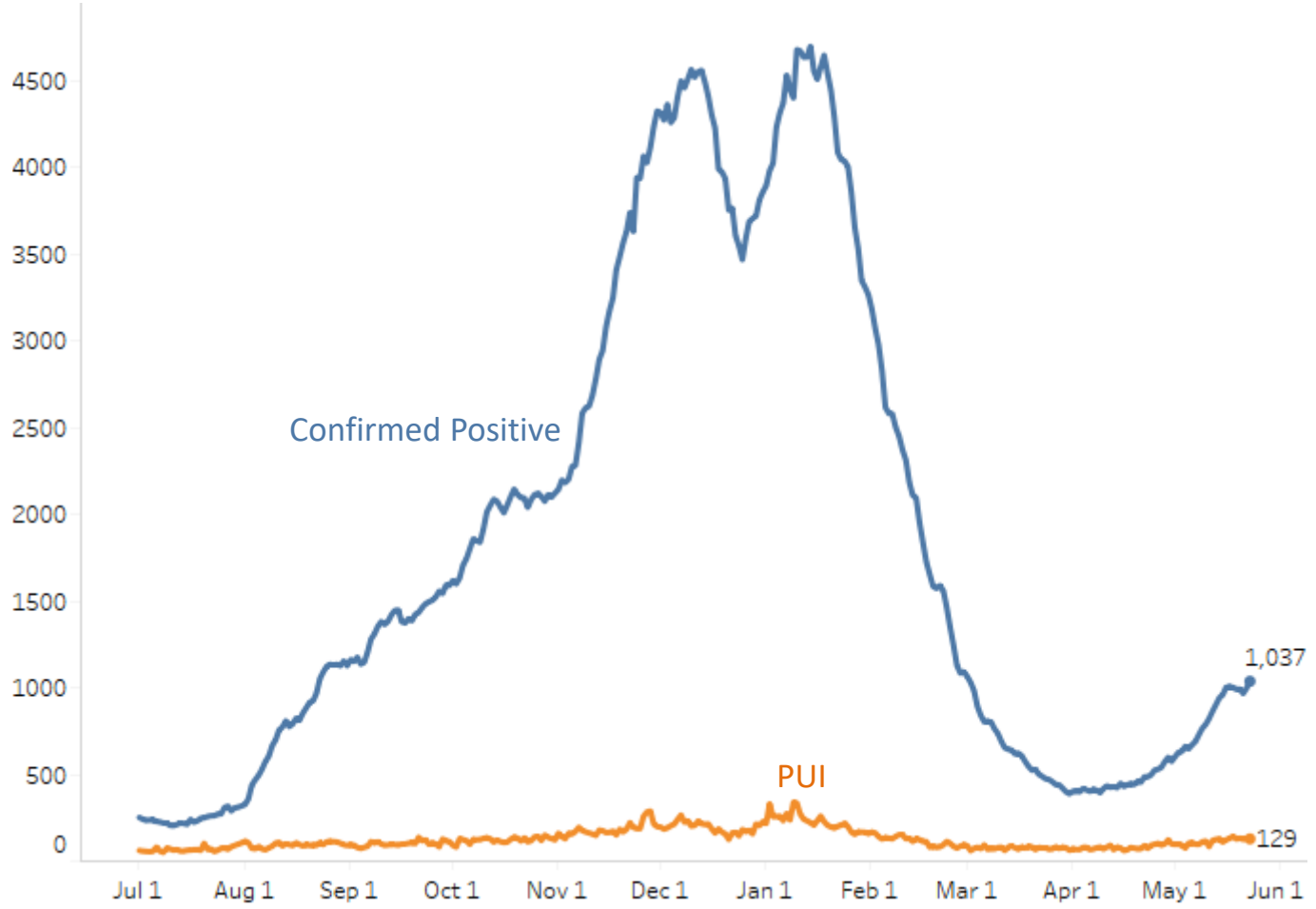
* Rate per 1 million residents; † Rolling 7-day average; ¶ Total may not reflect state due to missing age data
Note: Hospital Admission data reflects date data was submitted
Source: CHECC and EM Resource

- Through May 13, there were an average of 155.9 hospital admissions per day due to COVID-19; an increase from last week (+7%, +11)
- Most age groups continued to increase this week
- The largest one-week percent increase was among those 60-69 years (+19%, +5)
- Average daily hospital admission count (41.7 hospital admissions per day) and average daily hospital admission rate (100.7 hospital admissions/million) were highest among those aged 80+
- Those 70-79 and 80+ are seeing between 30-45 daily hospital admissions

Note: for some age groups, small changes in number of hospitalization admissions can cause large change in One Week Percent Change

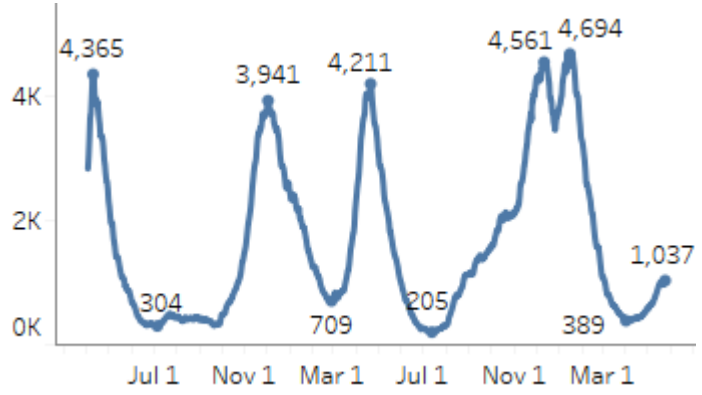
Statewide Hospitalization Trends: Total COVID+ Census

Hospitalization Trends 7/1/2021 – 5/23/2022
Confirmed Positive & Persons Under Investigation (PUI)



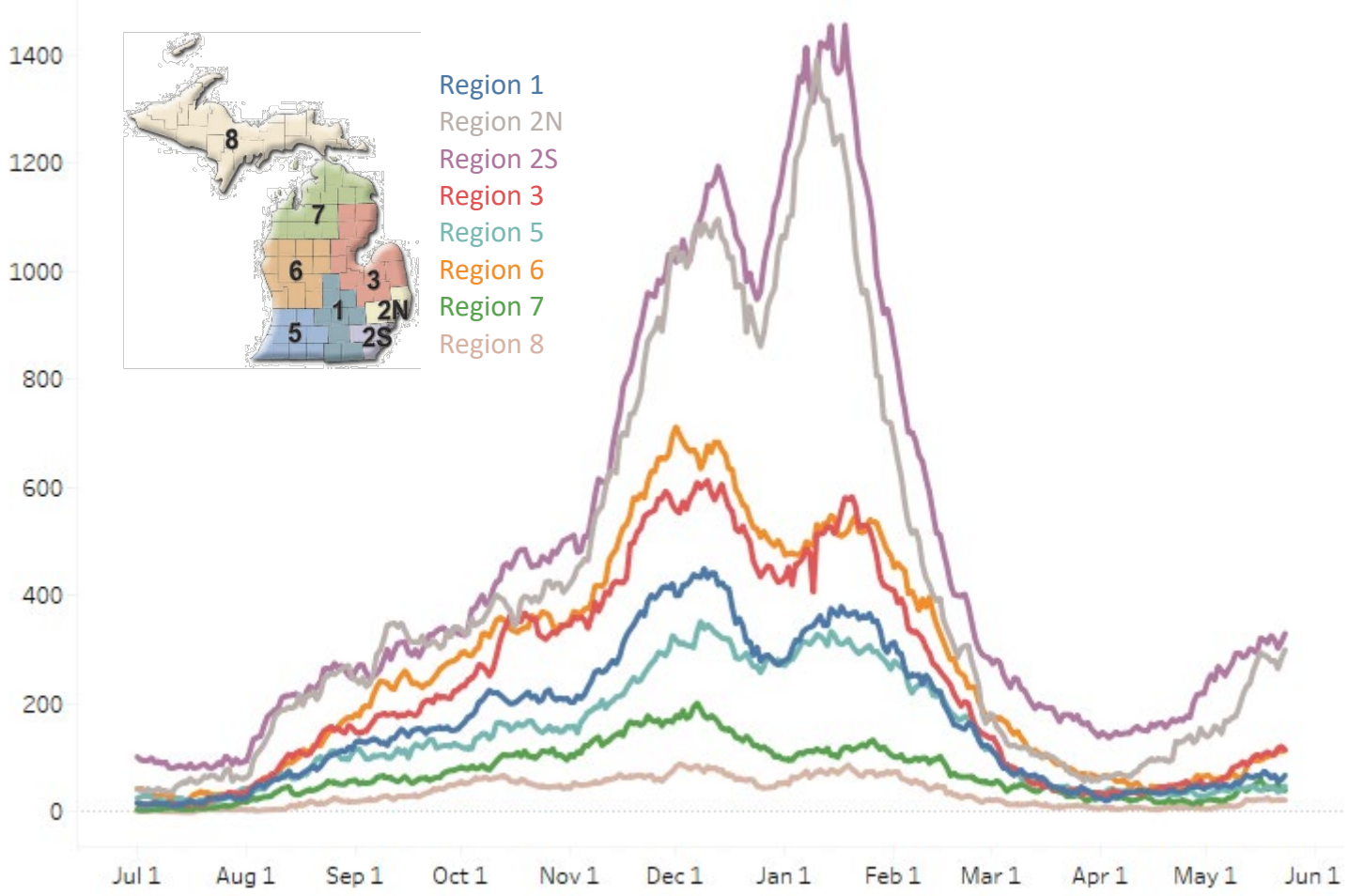
The COVID+ census in hospitals has increased slightly in the last week, by 4% This is a dramatically lower growth rate vs. the past 3 weeks.

Hospitalized COVID Positive Long Term Trend (beginning March 2020)



Statewide Hospitalization Trends: Regional COVID+ Census

Hospitalization Trends 7/1/2021 – 5/23/2022
Confirmed Positive by Region



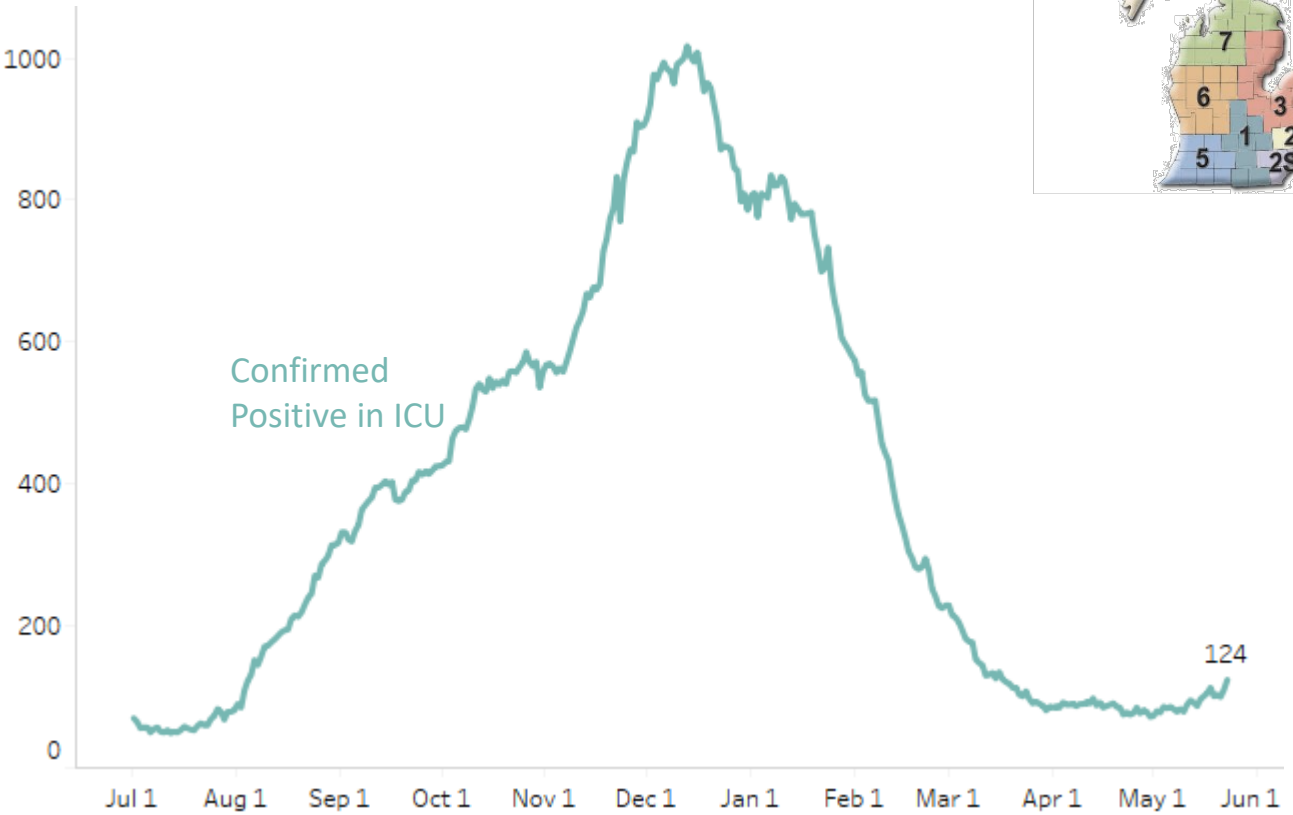
This week hospitalizations have increased in all regions except Regions 7 and 8. The fastest growth was seen in Regions 5 and 6 while growth in the SE was very low compared to prior weeks.

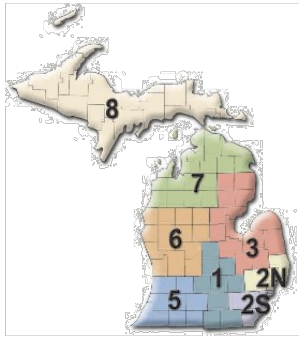
Regions 2N, 2S, and 3 have greater than 100 hospitalizations/M

Region	COVID+ Hospitalizations (% Δ from last week)	COVID+ Hospitalizations / MM
Region 1	68 (3%)	63/M
Region 2N	300 (2%)	135/M
Region 2S	330 (3%)	148/M
Region 3	115 (13%)	101/M
Region 5	48 (20%)	50/M
Region 6	114 (19%)	78/M
Region 7	40 (-32%)	80/M
Region 8	22 (-4%)	71/M

Statewide Hospitalization Trends: ICU COVID+ Census

Hospitalization Trends 7/1/2021 – 5/23/2022
Confirmed Positive in ICUs





Overall, the census of COVID+ patients in ICUs has increased by 23% from last week which is a notable increase in growth rates. The overall number of COVID+ patients in ICUs remains low at 124.

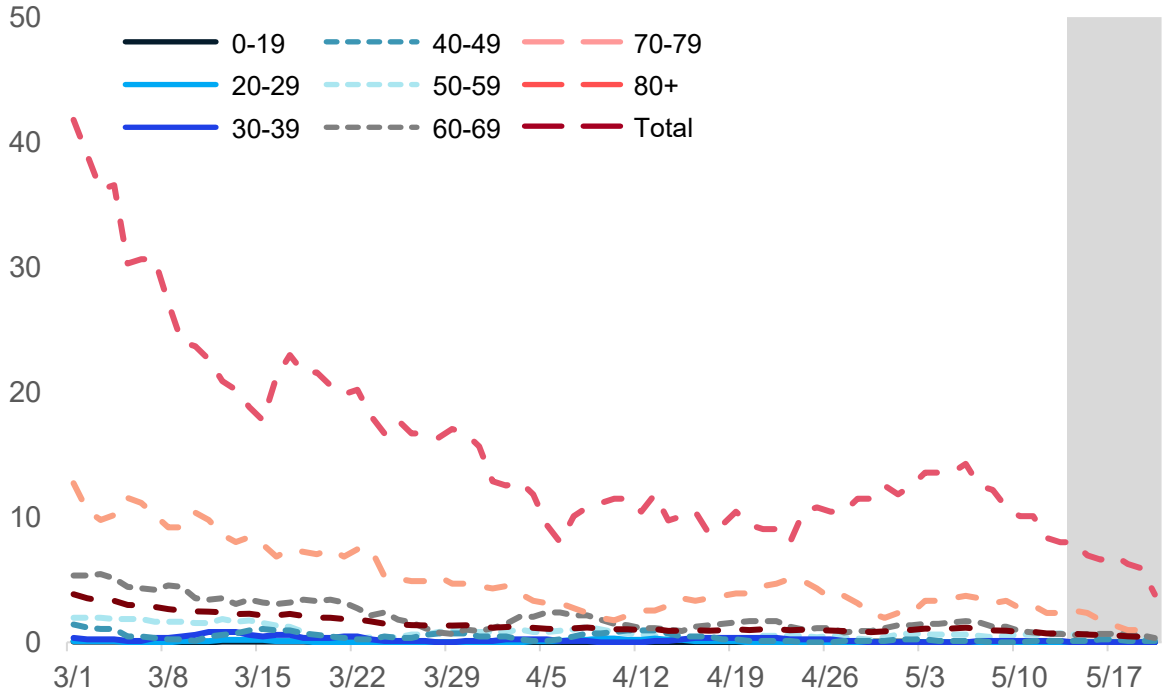
All regions have 6% or fewer ICU beds used to care for COVID+ patients. Regions 3 and 7 have 85% or higher overall ICU occupancy.

Region	Adult COVID+ in ICU (% Δ from last week)	ICU Occupancy	% of ICU beds COVID+
Region 1	10 (67%)	81%	6%
Region 2N	33 (6%)	70%	6%
Region 2S	39 (5%)	78%	6%
Region 3	14 (56%)	85%	5%
Region 5	8 (700%)	65%	4%
Region 6	10 (233%)	78%	4%
Region 7	7 (-13%)	88%	5%
Region 8	3 (200%)	48%	5%

Statewide Hospitalization Trends: Pediatric COVID+ Census

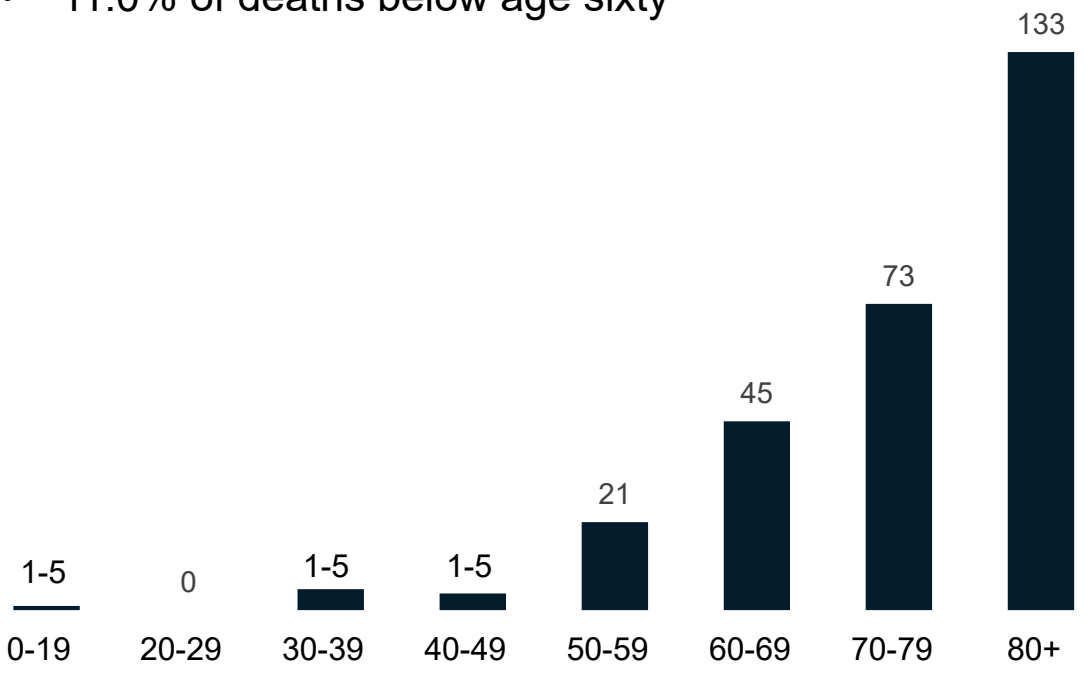
Average new deaths have plateaued for most age groups

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 5/13/2022)

- 11.0% of deaths below age sixty

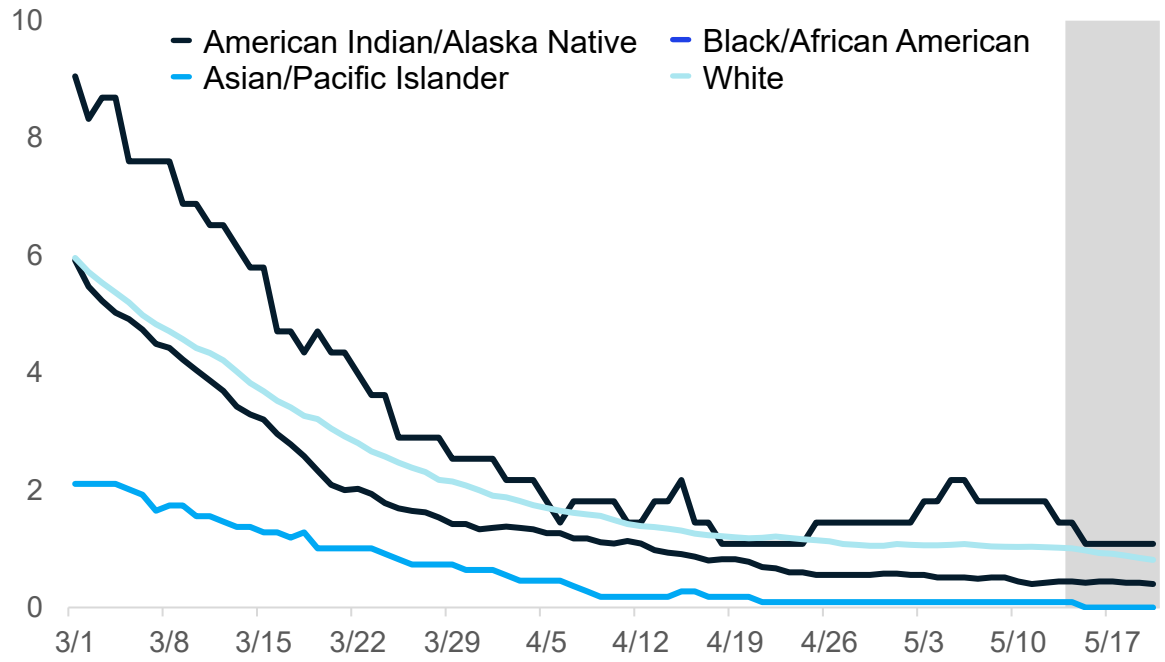


- Through 5/13, the 7-day avg. death rate is no longer decreasing (8 deaths per million people) for those over the age of 80
- In the past 30 days, there are fewer than 10 among confirmed and probable COVID-19 cases under the age of 40
- 30-day proportion of deaths among those under 60 years of age is 11.0%. This proportion has decreased incrementally over the last 4 weeks (last week 14.2%)

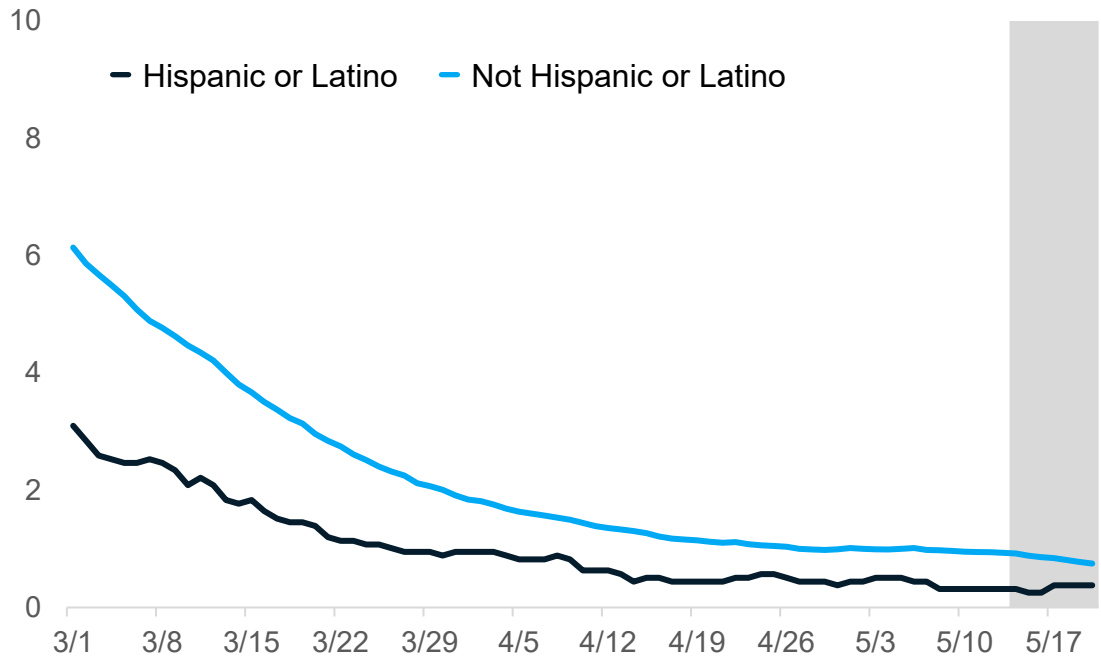
Note: Death information sourced from MDHHS and reflects date of death of confirmed and probable cases.
Source: MDHHS – Michigan Disease Surveillance System (MDSS)

Daily average deaths per million people by race and ethnicity have plateaued or are increasing slightly

Average daily deaths per million people by race



Average daily deaths per million people by ethnicity



- Deaths are lagging indicator of other metrics
- Currently, the American Indian/Alaskan Native population have the highest death rate (1.4 deaths/million)

Note: Death information sourced from MDHHS and reflects date of death of confirmed and probable cases.
Source: MDHHS – Michigan Disease Surveillance System

Harm Reduction: Key Messages

Michiganders can take advantage of local, state, and national COVID-19 resources

- Empowering community members to make best choices for their individual circumstances and to be prepared by making a COVID plan
- CDC recommends masking indoors when COVID Community Levels reach high
- Get tested and if positive, seek care with therapeutics

Vaccinations and Boosters

- Those 12 years and older who are immunocompromised or those 50 years of age and above SHOULD receive a 2nd Booster
- COVID-19 vaccinations remain safe and effective to prevent spread and severe disease:
  - COVID-19 can make some children very sick and COVID-19–associated hospitalization rates in children aged 5–11 years were approximately twice as high among unvaccinated as among vaccinated children
  - Cardiac Complications were 2-6X higher for boys aged 12-17 years after SARS-CoV-2 Infection than after mRNA COVID-19 Vaccination
- 54.6% of fully vaccinated Michiganders have received at least one booster. Vaccination coverage has modestly increased overall with greatest increase in the percent who have received a booster dose

Other Notable Messages

- Childhood routine immunization rates (non-COVID vaccinations) have been negatively impacted by the pandemic – especially among the Medicaid population

Make a COVID-19 Plan

MDHHS
Michigan Department of Health & Human Services

Visit Michigan.gov/Coronavirus for current COVID-19 information.

Make a plan for vaccination or learn if you are eligible for boosters.

- Ages 5 and older can get vaccinated.
- Ages 12 and older can get the booster.
- Ages 50 and older, or 12 and older and moderately to severely immunocompromised, can schedule a second booster.

Learn more about vaccines and whether you're up to date at Michigan.gov/COVIDVaccine.

Keep a supply of well-fitting masks.

Masks are helpful tools to reduce COVID-19 transmission, especially if:

- You are unwell or test positive for COVID-19.
- You have been exposed to someone with COVID-19.
- You are concerned about the risk of transmission in a particular setting. Respect that others may have a risk different than yours.

Learn more about masking at Michigan.gov/MaskUp.

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

Tests are useful for early detection of COVID-19, especially if:

- You have symptoms of or have been exposed to COVID-19.
- You are traveling or will be attending a large or unmasked gathering. Test before and after attending large events.

Over-the-counter tests are available at libraries and schools through MIbackpack, also through federal distribution programs.

Learn more about COVID-19 testing at Michigan.gov/COVIDTest.

Learn if you are eligible for COVID-19 therapeutics.

- Talk to a primary care provider about whether you are eligible for preventative antibodies or for COVID-19 antiviral treatment if you become infected.

Learn more about COVID-19 therapeutics at Michigan.gov/COVIDTherapy.

Testing

- Keep a supply of at-home tests
- Consider testing before and after travel or large events/gathering
- Test early and seek care

Library Partnership for At-Home Test

> Contain COVID > Test > Library Partnership for At-Home Test

MDHHS has partnered with several libraries across the state of Michigan to provide free at-home COVID-19 test kits to Michiganders.

Individuals and families should consider seeking out COVID-19 at-home test kits if they are considered more vulnerable to sever health outcomes from contracting COVID-19 or live, work, and socialize in group settings.

Additional information on COVID-19 self-testing can be found here: Self-Testing_Fast_Facts_v5_744280_7.pdf (michigan.gov)

Households are eligible to receive up to 5 free at-home test kits from participating library partners while supplies last. Participating library partners are listed below:

Library	Address	City	Zip
Amy Van Andel Library (ADA)	7215 Headley SE	Ada	49301
Adrian District Library	143 E. Maumee St.	Adrian	
Albion District Library	501 S Superior St.	Albion	
Allegan District Library	331 Hubbard St.	Allegan	49010

Have questions? Chat with Robin

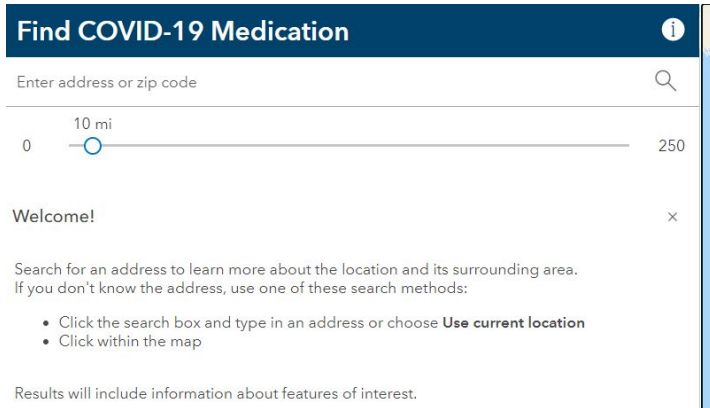
https://www.michigan.gov/coronavirus/contain-covid/test/library-partnership-for-at-home-test

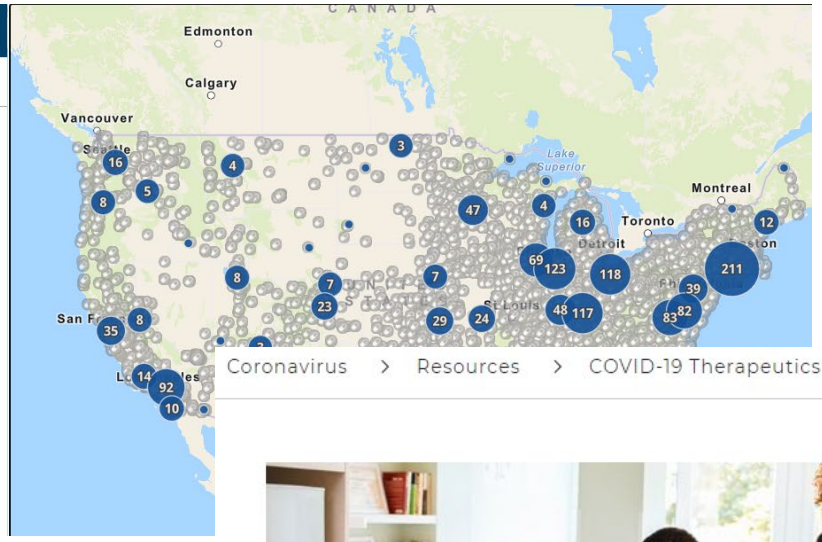
Federal website & Michigan site assists COVID positive residents find treatment

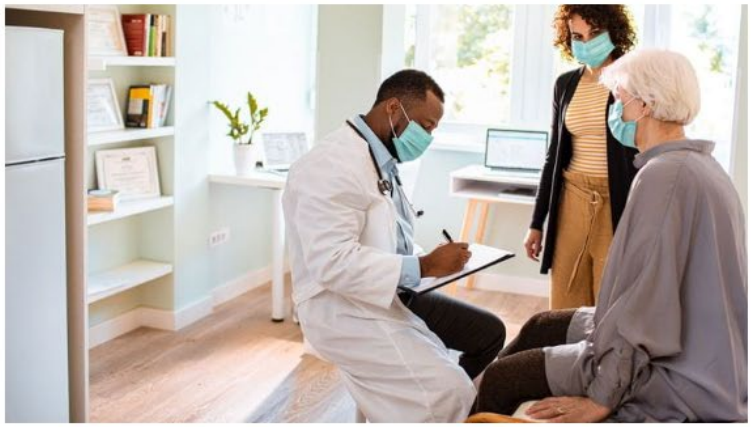
COVID-19 resources available on federal website: COVID.gov

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







Talk to your doctor 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.

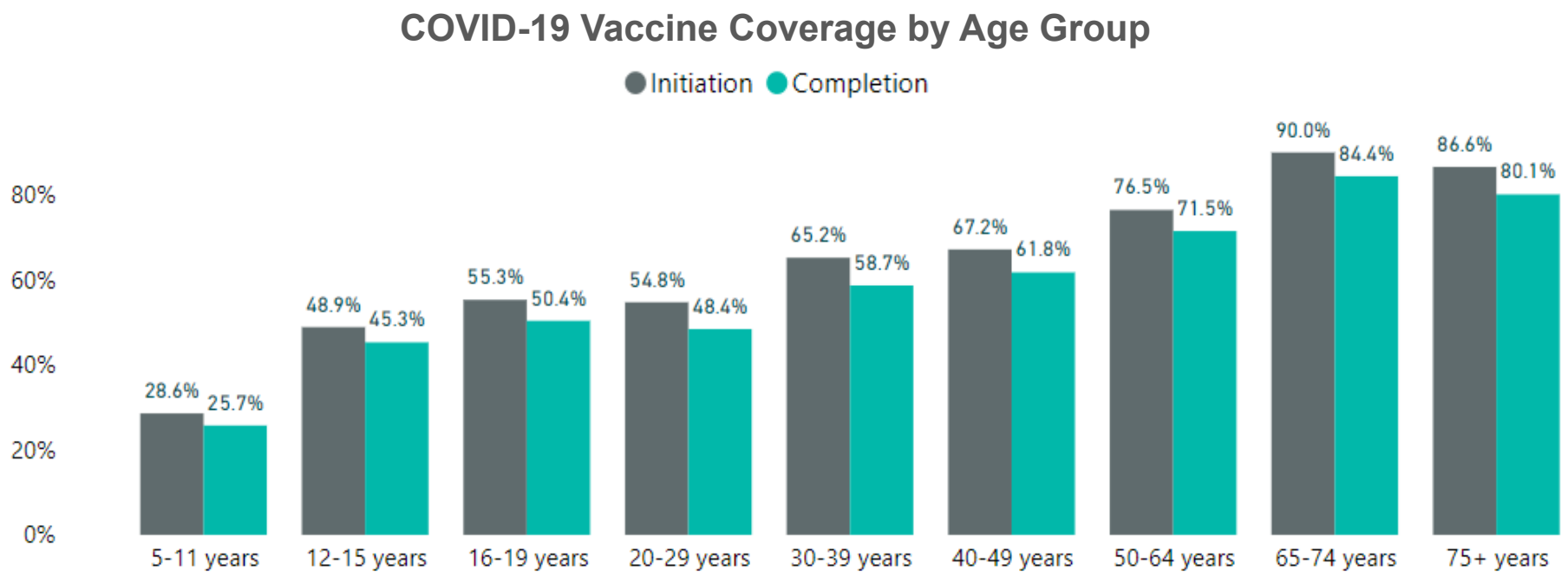
For assistance locating COVID-19 therapeutics call 1-800-232-0233, **TTY** 1-888-720-7489. Available in 100 languages.

Find COVID-19 Treatment

To find a specific medication, enter the therapy name in the search bar.

Vaccinations and Boosters

- Nearly 16.1 million COVID-19 vaccine doses have been administered in Michigan
  - Over 6.7 million Michiganders have received at least one dose (67.2%)
  - Over 6 million Michiganders have completed a primary series (60.4%)
  - Over 3.29 million additional/booster doses have been administered in Michigan
    - 54.6% of the fully vaccinated population has received a booster
    - 77.0% of the fully vaccinated population 65 years of age or older has received a booster



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

https://covid.cdc.gov/covid-data-tracker/#vaccinations

Those Aged 5 to 11 should get a COVID-19 Booster when Eligible

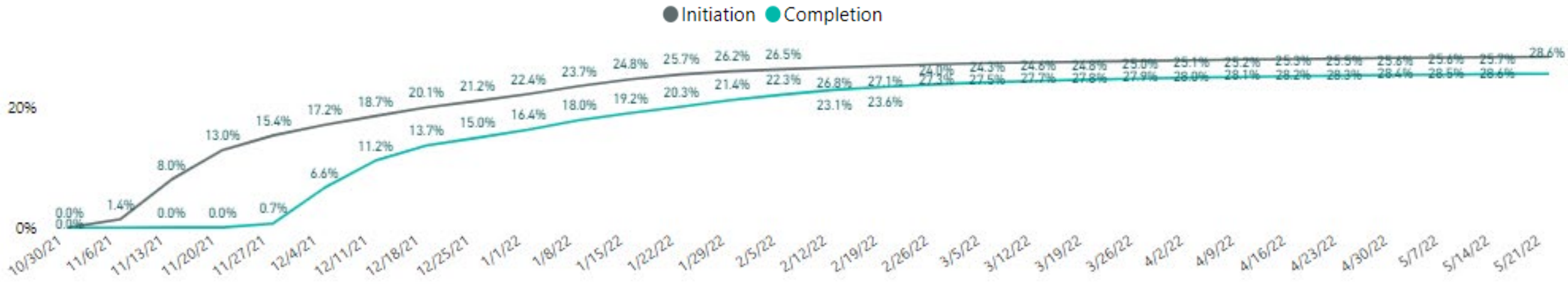
What You Need to Know

- CDC recommends **everyone ages 5 years and older** get vaccinated against COVID-19.
- Everyone ages 12 years and older should also get a COVID-19 booster shot.

CDC Recommends Booster doses for those 5 years of age and older, 5 months after completion of a primary vaccine series

Those who received their second dose by end of December 2021 will be eligible for a booster shortly

Initiation and Completion Trends in 5–11-year-olds



https://www.michigan.gov/coronavirus/0,9753,7-406-98178_103214_103272-547150--,00.html
https://www.cdc.gov/coronavirus/2019-ncov/vaccines/recommendations/children-teens.html
https://www.cdc.gov/vaccines/covid-19/clinical-considerations/covid-19-vaccines-us.html

December 2021 through February 2022 saw COVID-19-associated hospitalization rates in children 5-11 that were twice as high among unvaccinated than in vaccinated children

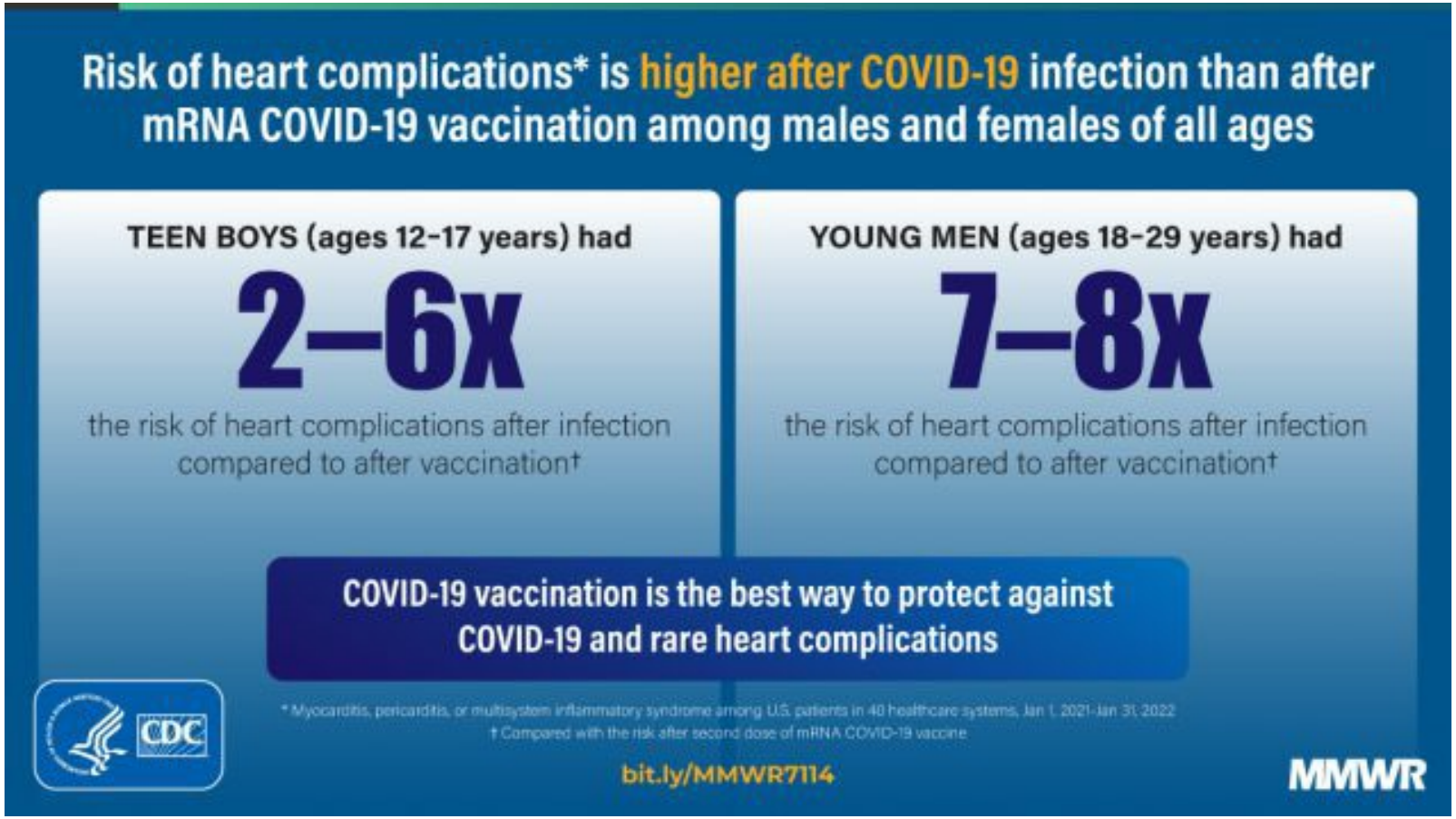
- COVID-19 can cause severe illness in children
- During the period of Omicron predominance (Dec 19, 2021–Feb 28, 2022), COVID-19–associated hospitalization rates in children aged 5–11 years were approximately 2X as high among unvaccinated as among vaccinated children
  - Non-Hispanic Black children represented the largest group of unvaccinated children
  - Thirty percent of hospitalized children had no underlying medical conditions, and 19% were admitted to an intensive care unit
  - Children with diabetes and obesity were more likely to experience severe COVID-19
- **Increasing COVID-19 vaccination coverage among children aged 5–11 years, particularly among racial and ethnic minority groups disproportionately affected by COVID-19, can prevent COVID-19–associated hospitalization and severe outcomes**

Source: Shi DS, Whitaker M, Marks KJ, et al. Hospitalizations of Children Aged 5–11 Years with Laboratory-Confirmed COVID-19 — COVID-NET, 14 States, March 2020–February 2022. MMWR Morb Mortal Wkly Rep 2022;71:574-581. DOI: http://dx.doi.org/10.15585/mmwr.mm7116e1

Cardiac Complications was Significantly Higher after SARS-CoV-2 Infection than after mRNA COVID-19 Vaccination

- Data from 40 health care systems participating in a large network found that the risk for cardiac complications was significantly higher after SARS-CoV-2 infection than after mRNA COVID-19 vaccination for both males and females in all age groups

- These findings support continued use of recommended mRNA COVID-19 vaccines among all eligible persons aged ≥5 years

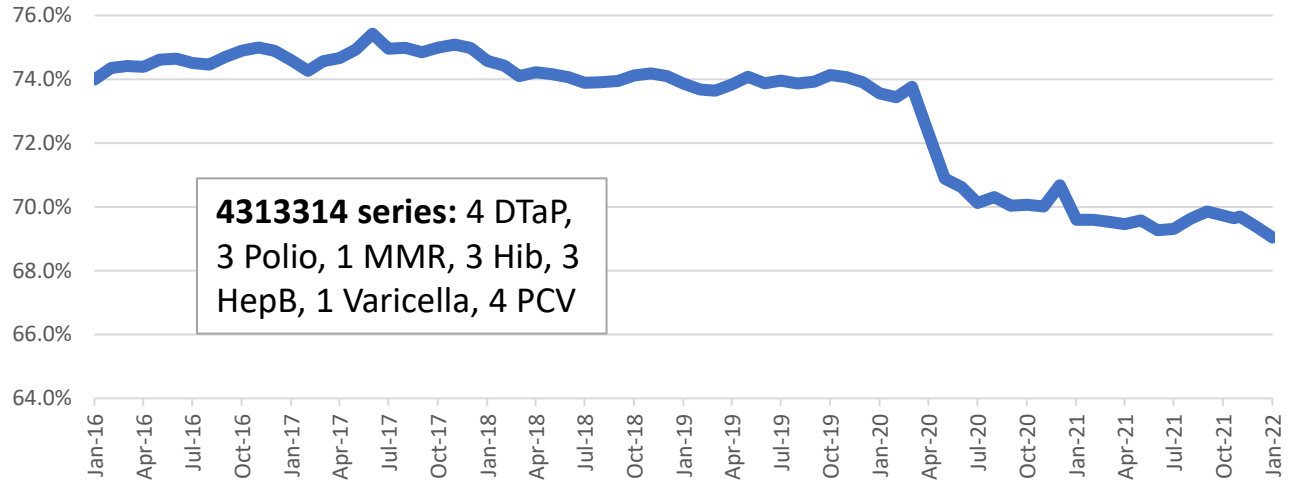


Source: Rader B, Gertz A, Iuliano AD, et al. Use of At-Home COVID-19 Tests — United States, August 23, 2021–March 12, 2022. MMWR Morb Mortal Wkly Rep 2022;71:489–494. DOI: http://dx.doi.org/10.15585/mmwr.mm7113e1

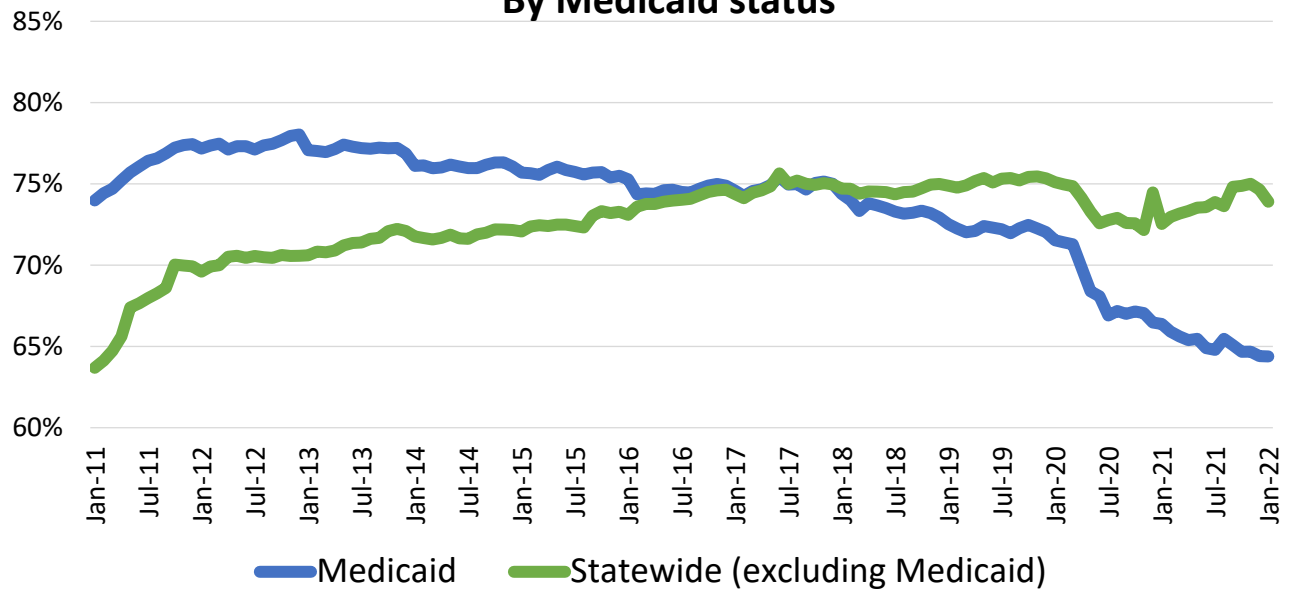
Vaccines save lives: unfortunately, childhood immunization rates have been negatively impacted by the pandemic – especially among the Medicaid population

- Childhood vaccination coverage decreased from 74% to less than 70% since the start of the COVID pandemic
- Childhood vaccination rates have not returned to pre-pandemic levels
- Childhood vaccine coverage in the Medicaid population has been decreasing compared to the non-Medicaid population; this decrease accelerated during the pandemic
- A childhood vaccine for COVID-19 may not be far around the corner
- Pediatric providers are going to be critically important for administering vaccine in this age cohort
- This offers an opportunity to get kids up to date on core childhood vaccines

4313314 Vaccine Coverage for children 19-35 months, January 2016 - January 2022



4313314 Vaccine Coverage for children, 19-35 months, January 2011 - January 2022
By Medicaid status



Protect Yourself, Protect Your Community

Vaccines

Protect against severe outcomes

Vaccines are available for ages 5 and up. Boosters are available for ages 12 and up.

Masks, Distancing & Ventilation

Prevent spread

People with symptoms, a positive test, or exposure to someone with COVID-19 should wear a mask. Masking may also be based on personal preference and informed by personal level of risk.

Tests

Prevent spread

Over-the-counter tests allow for testing at home; an important addition to on-site antigen and PCR testing.

Treatment

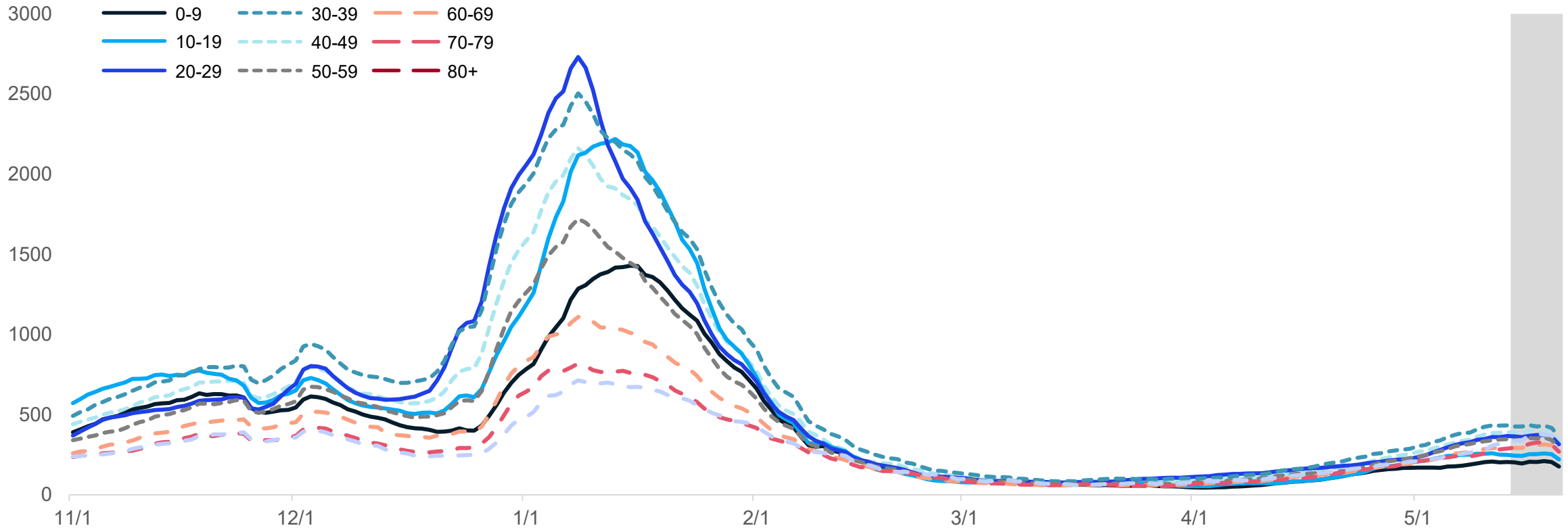
Protect against severe outcomes

Oral antivirals and monoclonal antibodies can reduce the risk of hospitalization and death from COVID-19.

APPENDIX

Case Rate Trends by Age Group

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

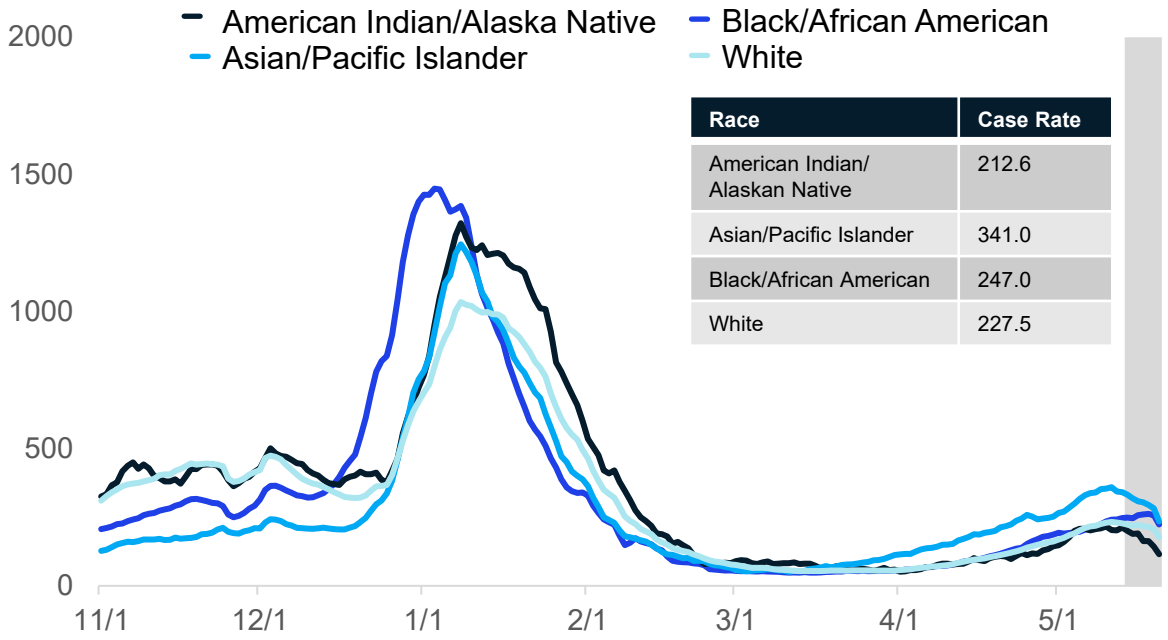


- Case rate trends for all age groups experienced an increase over the last week
- Case rates by onset date for all age groups are between 205.1 and 433.2 cases per million (through 5/13/22)
- Case counts and case rates are highest for 30-39-year-olds this week, followed by 40-49 and the 20-29 age groups

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

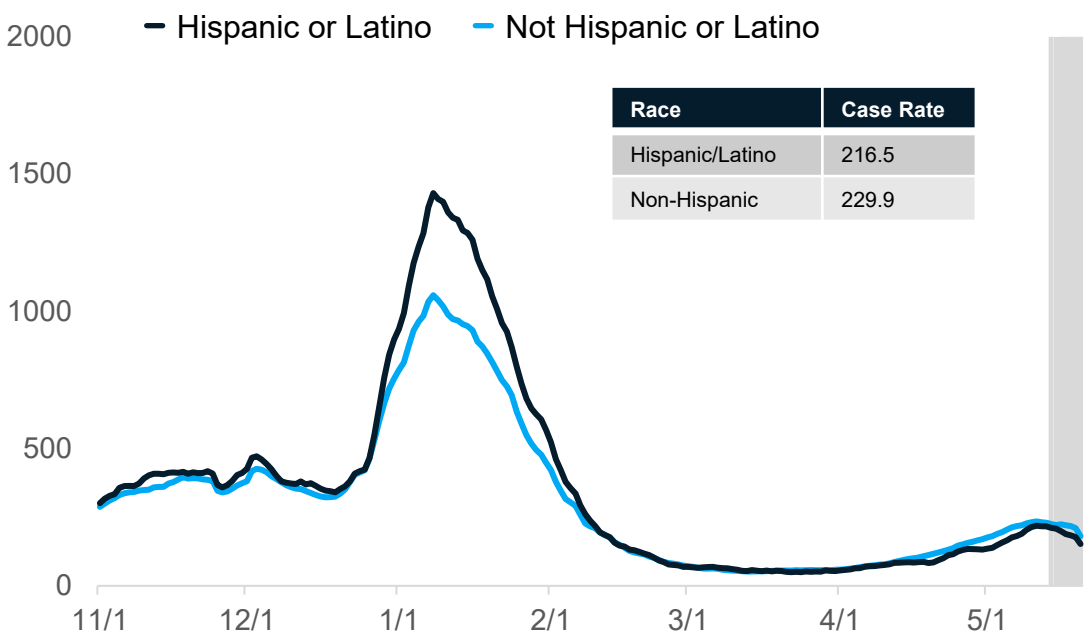
Case Rates by Reported Racial and Ethnic Group

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



Race	Case Rate
American Indian/ Alaskan Native	212.6
Asian/Pacific Islander	341.0
Black/African American	247.0
White	227.5

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



Race	Case Rate
Hispanic/Latino	216.5
Non-Hispanic	229.9

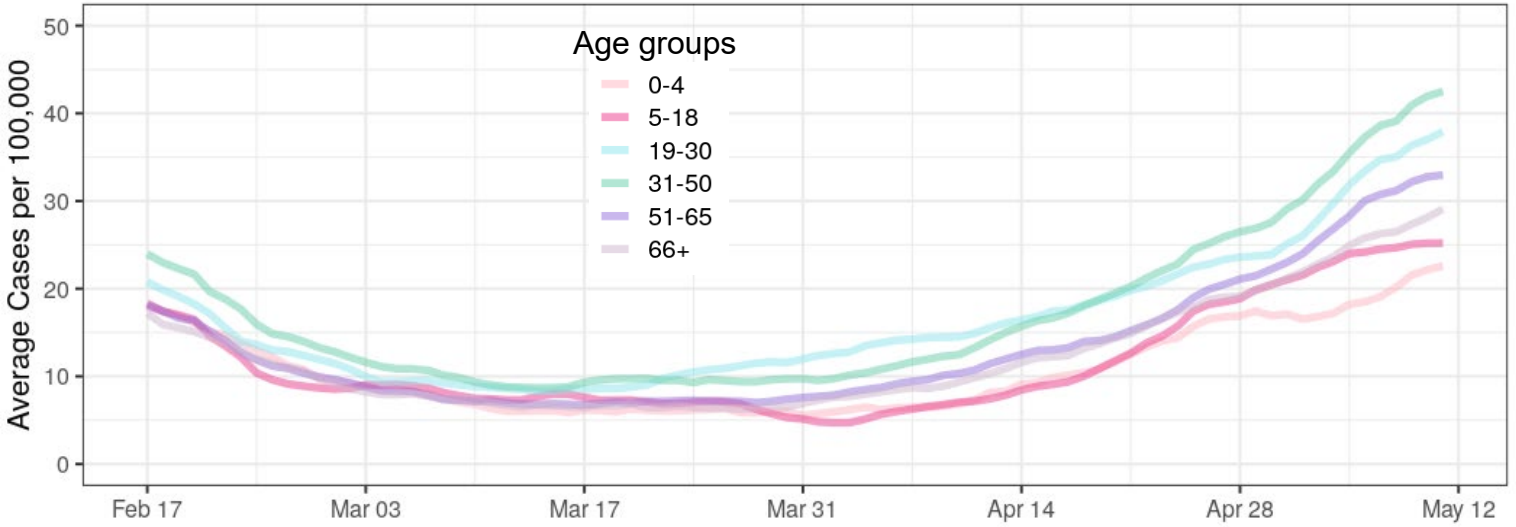
Updates since last week:

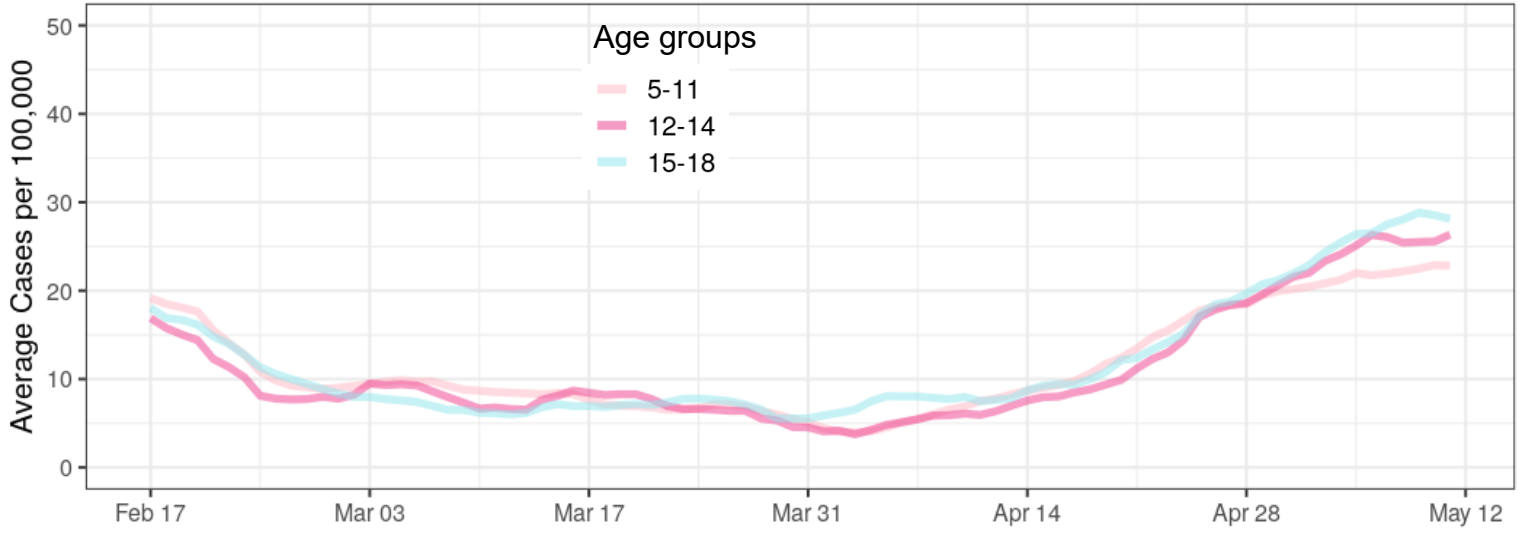
- Cases per million are increasing at the same rate for all reported racial and ethnic groups, with the exception of Asian/Pacific Islander
- In the past 30 days, 19.9% (↑ 0.5%) of race data and 24.8% (↓ 1.7%) ethnicity data was either missing or reported as unknown

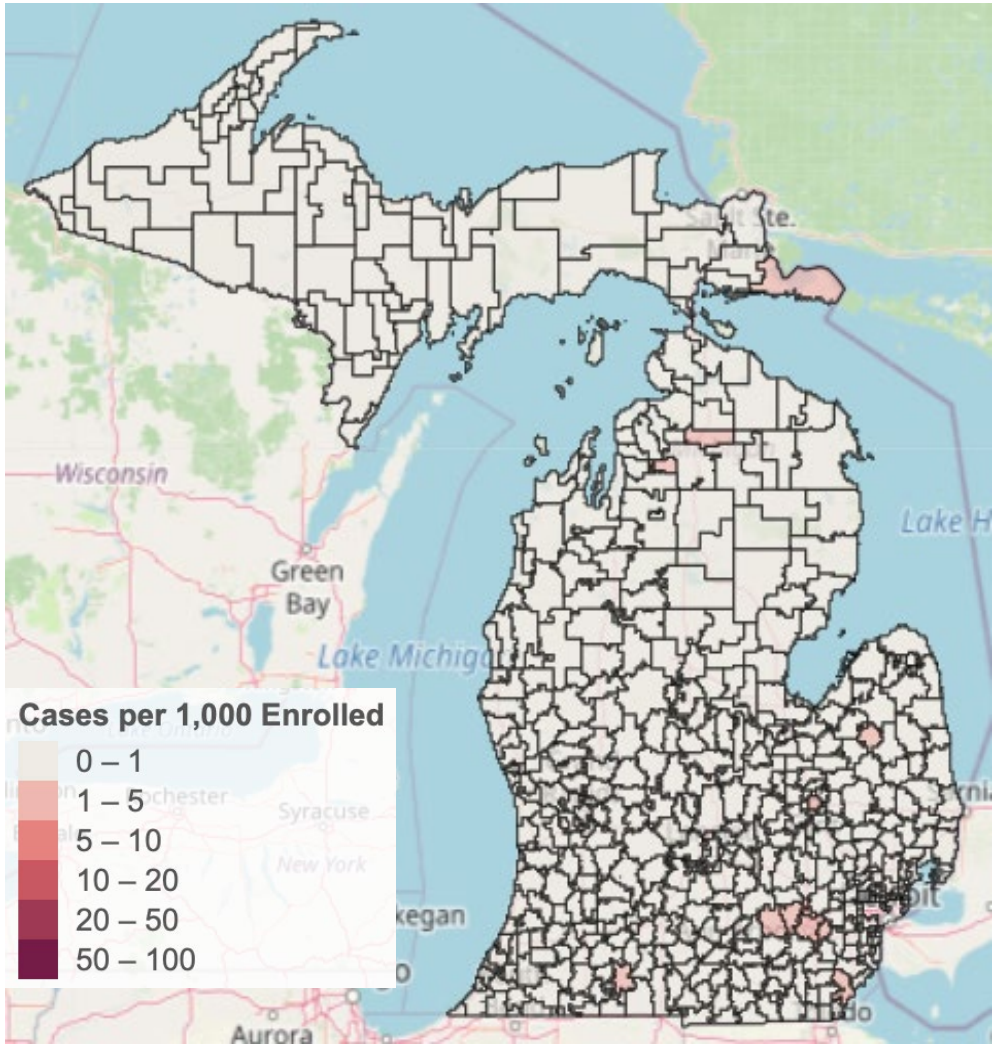
Note: Case information sourced from MDHHS and reflects date of death of confirmed and probable cases.
Source: MDHHS – Michigan Disease Surveillance System

Case rate increase in the school-aged population statewide

- Case rates in 5–18-year-olds are lower than rates in 19–50-year-olds
- Case rates among school-aged populations continue to increase along with other age groups





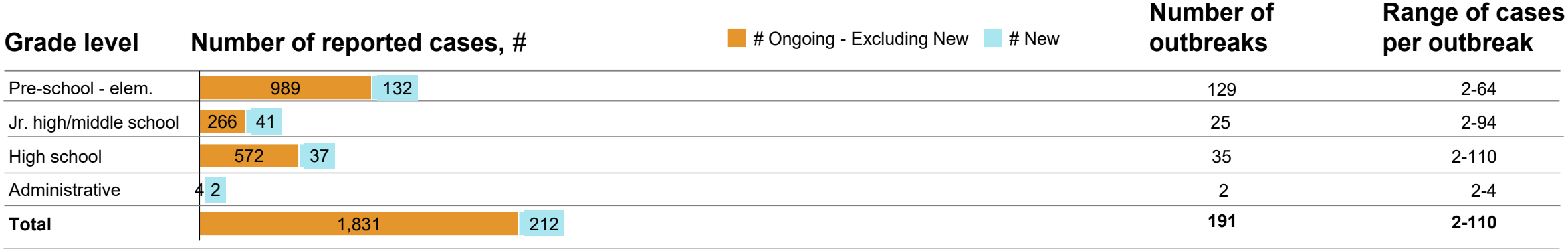


Sources: MDSS case data as of 5/21/2022 (data through 5/11/22), line charts use statewide age group population, map uses ISD enrolled populations from EOG mask tracker data.

Vital Infrastructure: K-12 school clusters and outbreaks, week ending May 20th

Number of reported outbreaks/clusters increased since last week (176 to 191), all regions reported at least 1 outbreak.

Region	Number of reported cases, #		Number of outbreaks	Range of cases per outbreak
Region 1	218	6	23	3-70
Region 2n	0	0	0	N/A
Region 2s	558	94	83	3-42
Region 3	721	35	38	2-110
Region 5	22	13	6	3-9
Region 6	130	48	26	3-21
Region 7	170	14	12	4-64
Region 8	12	2	3	2-7
Total	1,831	212	**191**	**2-110**



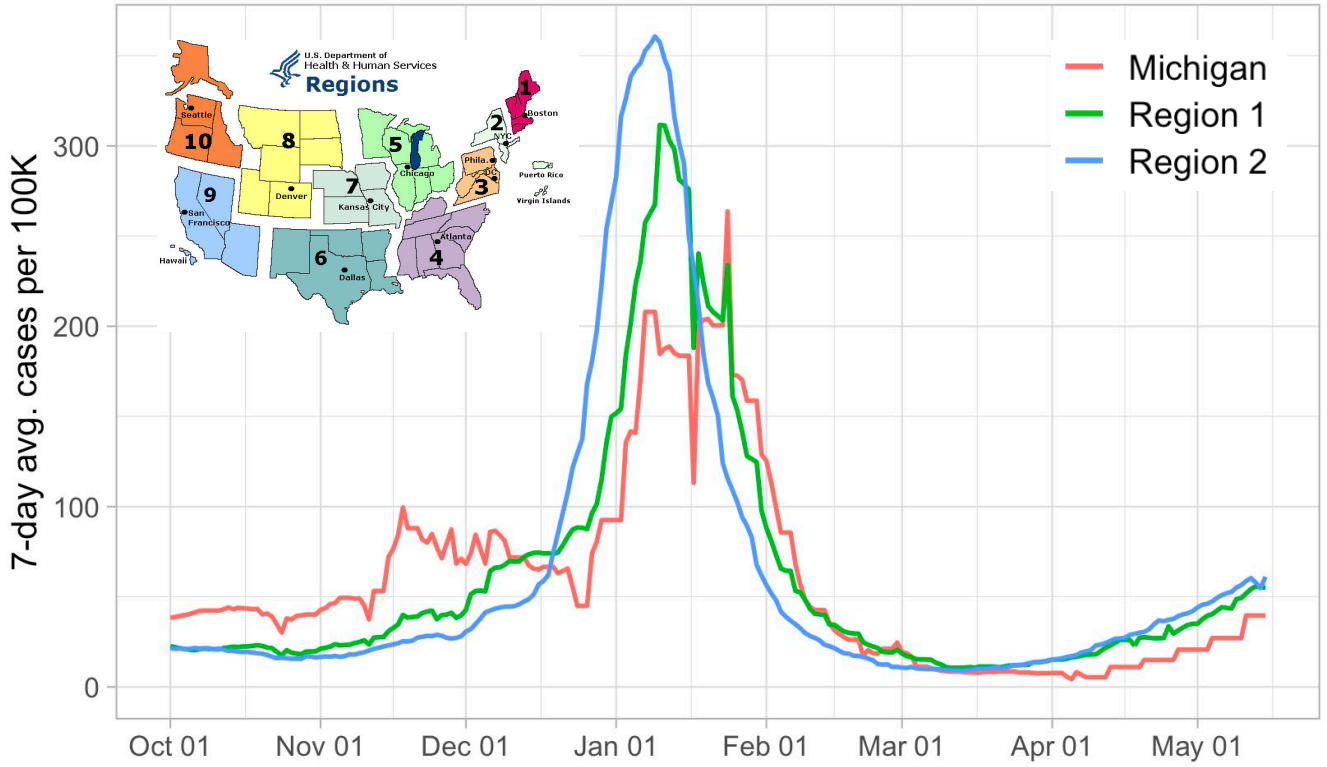
Grade level	Number of reported cases, #		Number of outbreaks	Range of cases per outbreak
Pre-school - elem.	989	132	129	2-64
Jr. high/middle school	266	41	25	2-94
High school	572	37	35	2-110
Administrative	4	2	2	2-4
Total	1,831	212	**191**	**2-110**

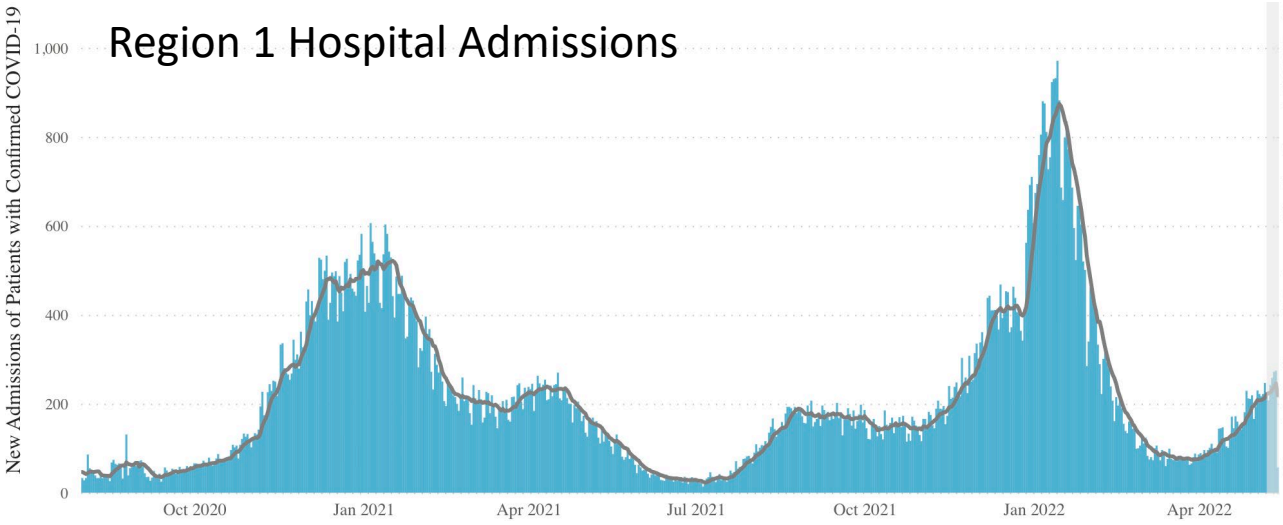
Many factors, including the lack of ability to conduct effective contact tracing in certain settings, may result in significant underreporting of outbreaks. This chart does not provide a complete picture of outbreaks in Michigan and the absence of identified outbreaks in a particular setting in no way provides evidence that, in fact, that setting is not having outbreaks.
NOTE (10/4): MDHHS adopted the new CSTE school cluster and outbreak definition which impacts how transmissions within school-sponsored settings are reported to the health department

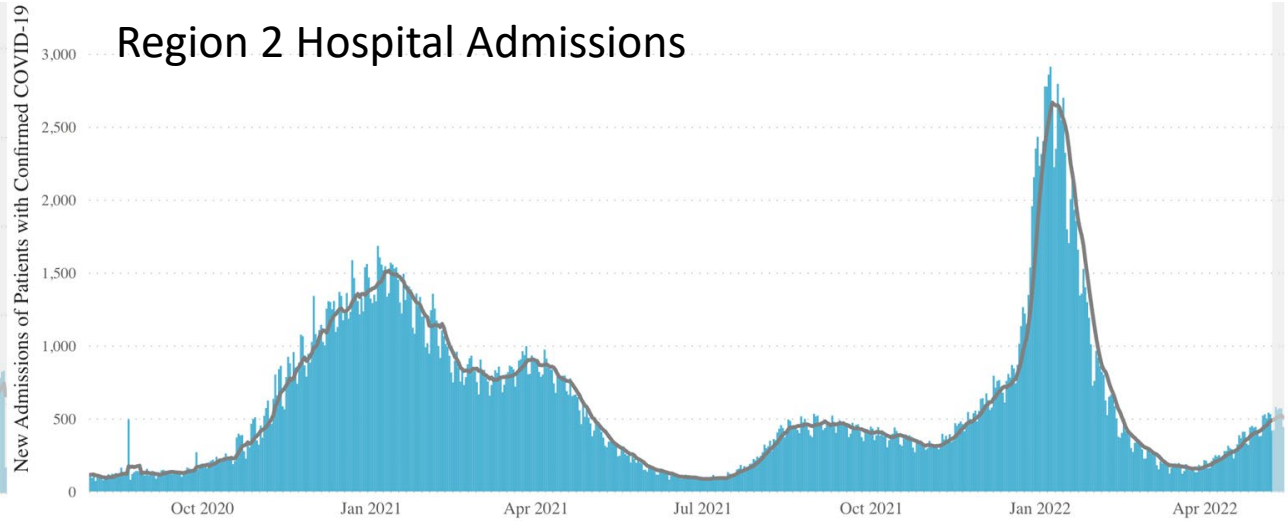
Source: LHD Weekly Sitreps

Cases and hospitalizations are increasing in the northeastern US

- Michigan appears to be 2-3 weeks behind the Northeast based on case data, suggests we will continue increasing for the next couple of weeks



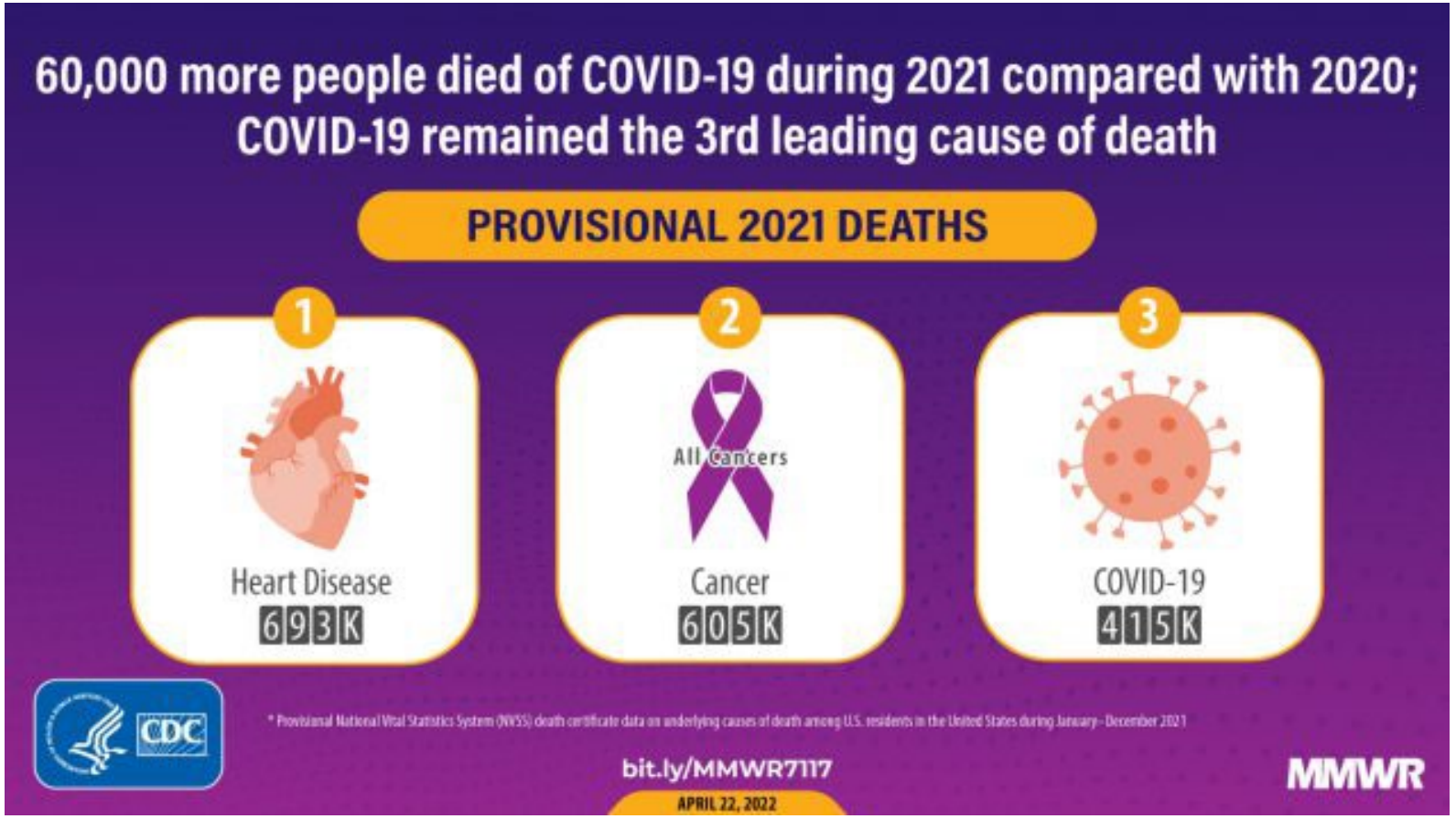




Sources: CDC data on cases per 100K by submission date for Region 1, Region 2, and Michigan, CDC daily hospital admissions data for Regions 1 and 2.

COVID-19 was the 3rd leading cause of death in 2021

- Between January and December 2021, COVID-19 was associated with approximately 460,000 deaths in the U.S.
- The overall age-adjusted death rate increased by 0.7% in 2021 from 2020
- Overall death rates were highest among non-Hispanic American Indian or Alaskan Native and non-Hispanic Black or African American populations
- For a second year, COVID-19 was the third leading cause of death after heart disease and cancer



Source: Ahmad FB, Cisewski JA, Anderson RN. Provisional Mortality Data — United States, 2021. MMWR Morb Mortal Wkly Rep. ePub: 22 April 2022. DOI: http://dx.doi.org/10.15585/mmwr.mm7117e1

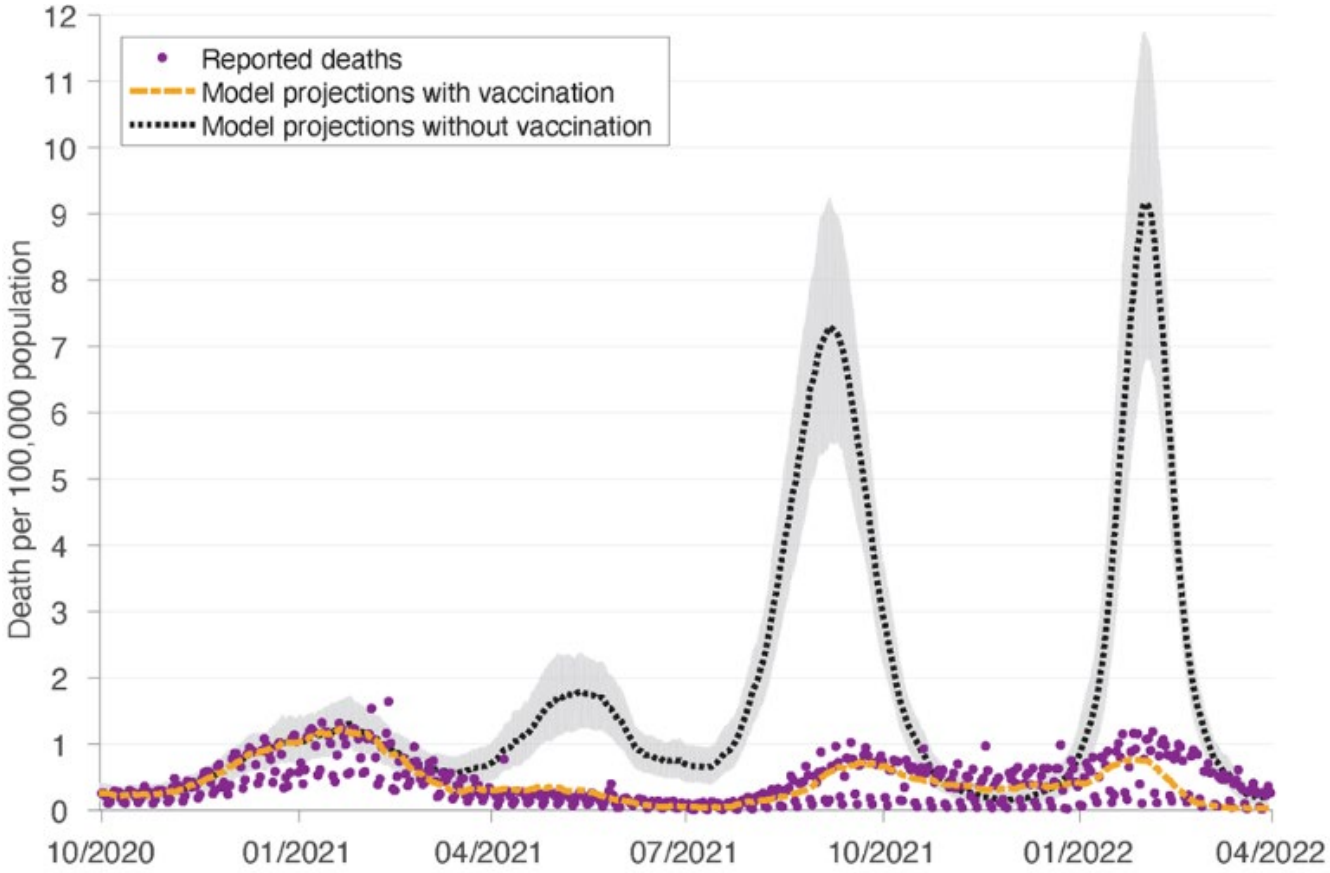
Commonwealth Fund: COVID-19 vaccines saved millions lives, averted tens of millions of infection, and saved billions of dollars

Latest model estimates the impact of vaccine through the Omicron wave and demonstrates the impact of boosters

Modeling estimates from the Commonwealth Fund estimated that COVID-19 vaccine prevented:

- Over 2 million deaths
- 17 million hospitalizations
- 66 million infections
- almost $900 billion in health care costs

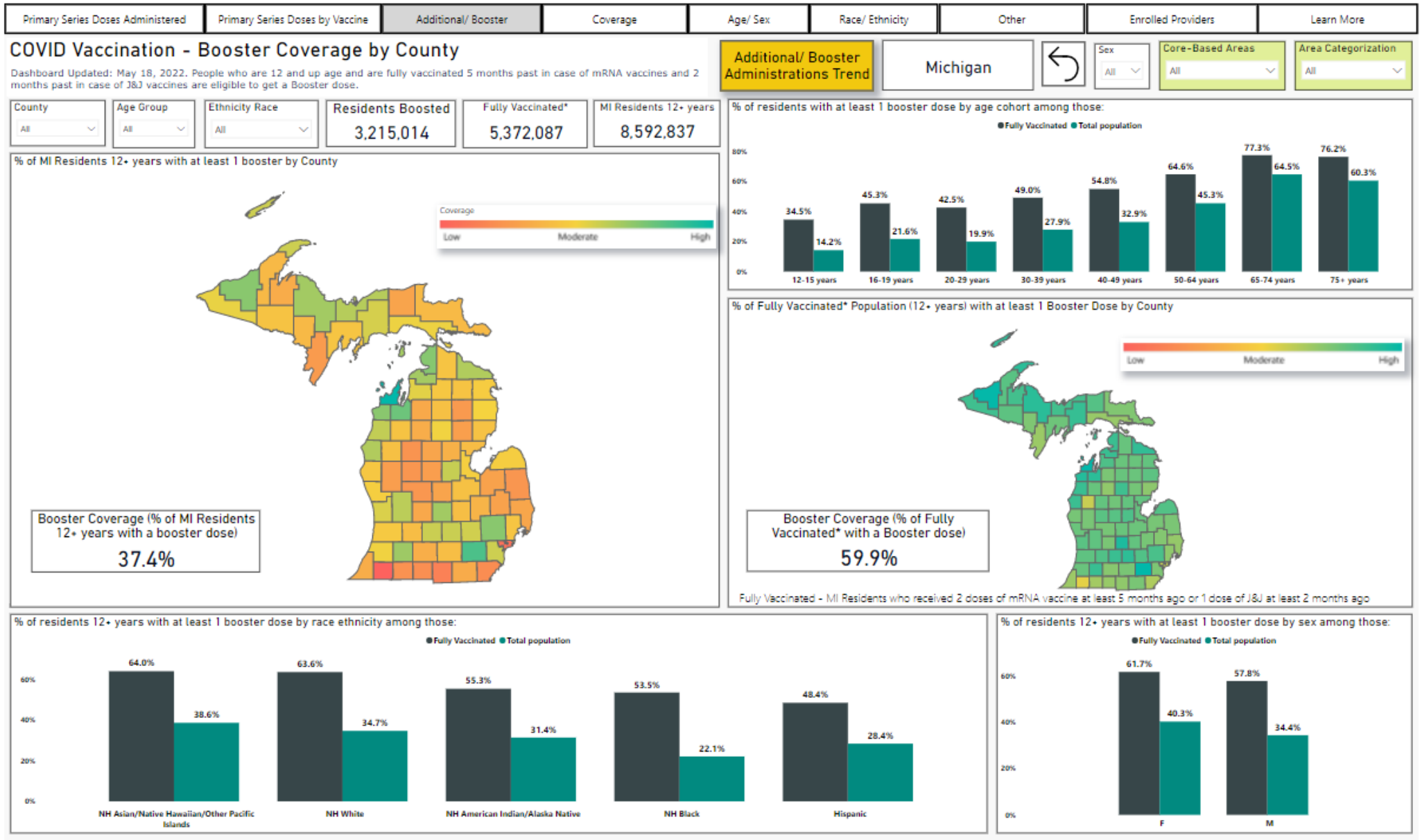
Projected U.S. Seven-Day Rolling Average of Daily Deaths per 100,000 Population, With and Without Vaccination



Estimates of COVID-19-Attributable Deaths, Hospitalizations, Infections, and Health Care Costs Averted by the U.S. Vaccination Program Between December 12, 2020, and March 31, 2022

Deaths	2,265,222	2,051,041 to 2,467,683
Hospitalizations	17,003,960	15,680,556 to 18,250,413
Infections	66,159,093	58,774,953 to 73,787,291
Health care costs	$899.4 billion	$825.3 billion to $978.5 billion

Additional Doses and Booster Coverage



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

Ongoing response to COVID-19 cycle

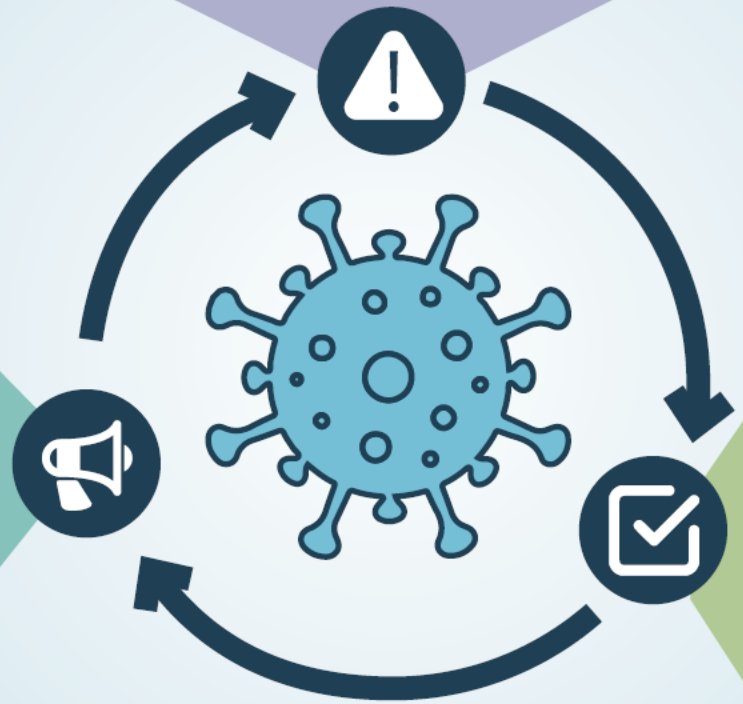
MDHHS
Michigan Department of Health & Human Services

Visit Michigan.gov/Coronavirus for current COVID-19 information.

Response (Surge)

A surge means rapid response by local and state public health.

- Increased supplies for testing, masking and medications.
- Increased masking, testing and social distancing efforts.



Readiness (Pre-Surge)

A surge is expected due to a new variant, local outbreak, seasonal changes.

Expect increased illness severity and overwhelmed hospital capacity.

- Educate public regarding new risks.
- Ensure enough supplies of tests, masks and medications.

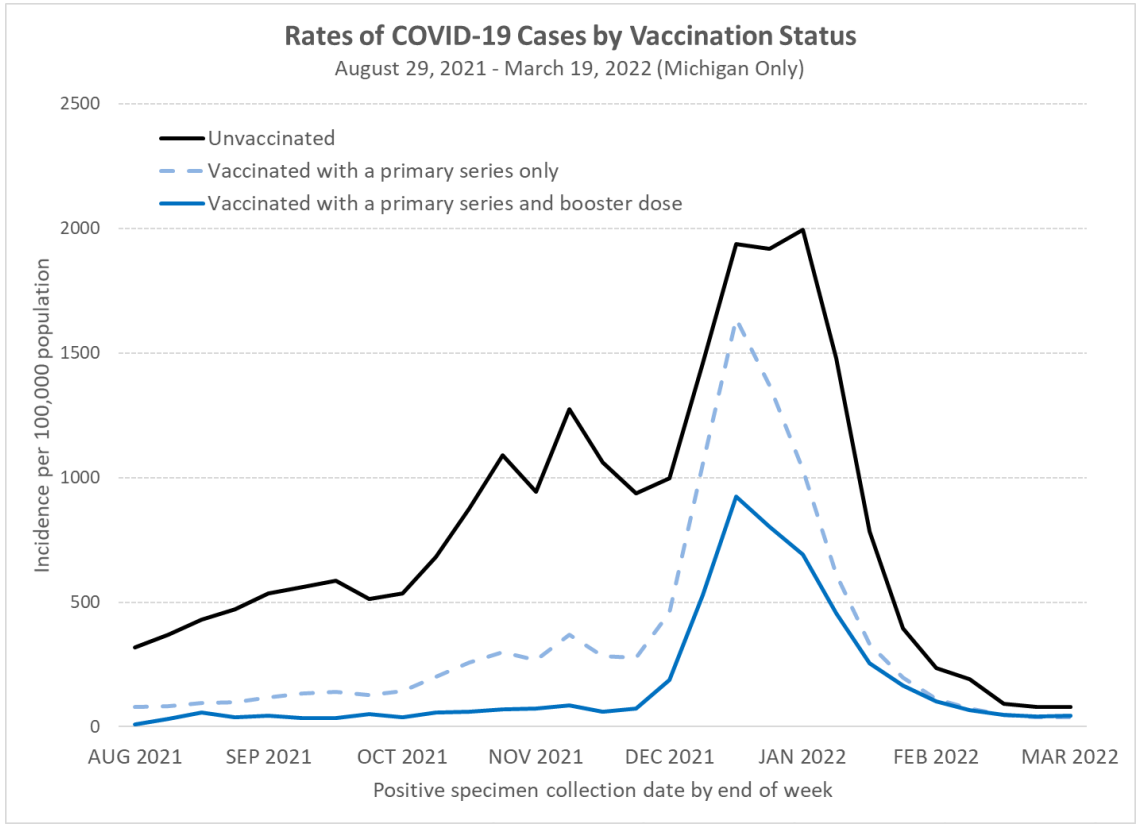
Recovery (Post-Surge)

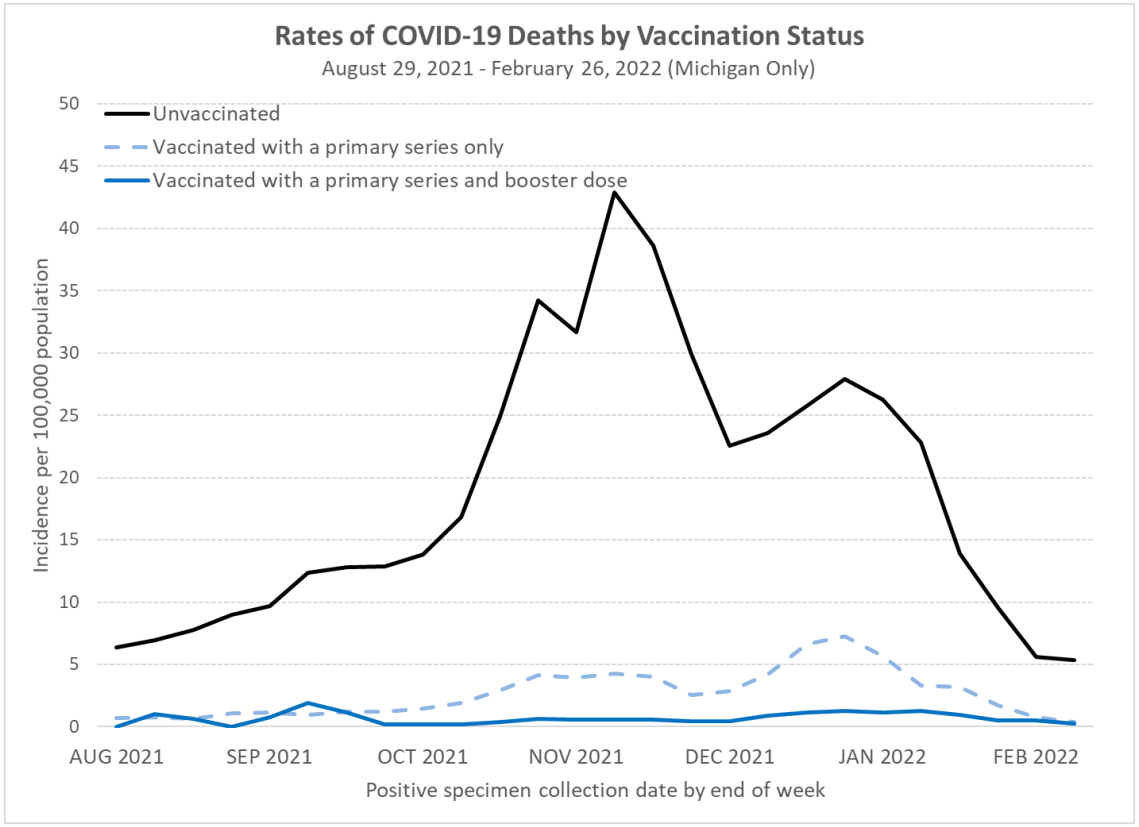
Expect to remain in this phase for longer periods as COVID-19 evolves.

Monitor conditions that may lead to surges, such as a new variant.

- Encourage vaccines to decrease COVID-19 risks.
- Strengthen community support with local stakeholders.
- Empower community members to make best choices for individual situations.

Unvaccinated people in Michigan had 1.8 times the risk of testing positive for COVID-19 in March compared to people up to date on their vaccination





Unvaccinated people aged 12 years and older had:

2.8 X
Risk of Testing Positive for COVID-19

AND

16 X
Risk of Dying from COVID-19

in February, and

1.8 X
Risk of Testing Positive for COVID-19

in March,* compared to people vaccinated with a primary series and a booster dose.**

*These data reflect cases among persons with a positive specimen collection date through March 19, 2022, and deaths among persons with a positive specimen collection date through February 26, 2022. Please note that these provisional data are subject to change. **Data on immune status are unavailable, thus an additional dose in an immunocompromised person cannot be distinguished from a booster dose.

Cumulative COVID-19 Cases by Vaccination Status, Michigan, 1/15/21–4/8/22

Fully Vaccinated People (5,678,598)		
Cases	**Hospitalizations***	**Deaths**
Percent of Cases In People Not Fully Vaccinated (1,213,561/ 1,702,057) **71.3%**	Percent of Hospitalizations In People Not Fully Vaccinated (27,234 / 33,197) **82.0%**	Percent of Deaths In People Not Fully Vaccinated (15,422 / 19,879) **77.6%**
1,213,561 Total Cases Not Fully Vaccinated	**27,234** Total Hospitalized Not Fully Vaccinated	**15,422** Total Deaths Not Fully Vaccinated
Total Breakthrough Cases **488,496**	Total Breakthrough Hospitalizations **5,963**	Total Breakthrough Deaths **4,457**
8.6% Percent of Fully Vaccinated People who Developed COVID-19 (488,496 / 5,678,598)	**0.105%** Percent of Fully Vaccinated People Who Were Hospitalized for COVID-19 (5,963 / 5,678,598)	**0.078%** Percent of Fully Vaccinated People Who Died of COVID-19 (4,457 / 5,678,598)
28.7% Percent of Cases Who Were Fully Vaccinated (488,496 / 1,702,057)	**18.0%** Percent of Hospitalizations Who Were Fully Vaccinated (5,963 / 33,197)	**22.4%** Percent of Deaths Who Were Fully Vaccinated (4,457 / 19,879)
Total Cases: **1,702,057**	Total Hospitalizations: **33,197**	Total Deaths: **19,879**

***The Michigan Disease Surveillance System (MDSS) may underestimate the frequency of COVID-19 hospitalizations due to the following:

- Universal case investigations are no longer being performed
- Case investigation and follow-up is more difficult for individuals who get hospitalized (e.g., they are too ill to speak to investigators, don't answer their phone, or otherwise).
- These hospitalizations include individuals who are hospitalized for issues other than COVID19 (the same as breakthrough COVID-19).
- Many hospitalizations often lag after initial infection and may occur after case investigation.