MI COVID RESPONSE DATA AND MODELING UPDATE

February 1, 2022

Executive Summary

Current statistics and where we may be going

- All MERC regions experiencing declines for positivity and cases rates; most MERC regions are seeing declines in hospitalization census
- Coming off highest case numbers of entire pandemic: 30–39-year-olds currently have the highest case rate of any age group
- Omicron reported in 68 counties in Michigan; Models suggest we are at or near peak for cases and hospitalizations

Preventing Death and Severe Outcomes

- Deaths rates have decreased over the last week for all age groups
- Cases in long term care facilities are decreasing, crucial to get LTC residents and staff up to date on vaccination

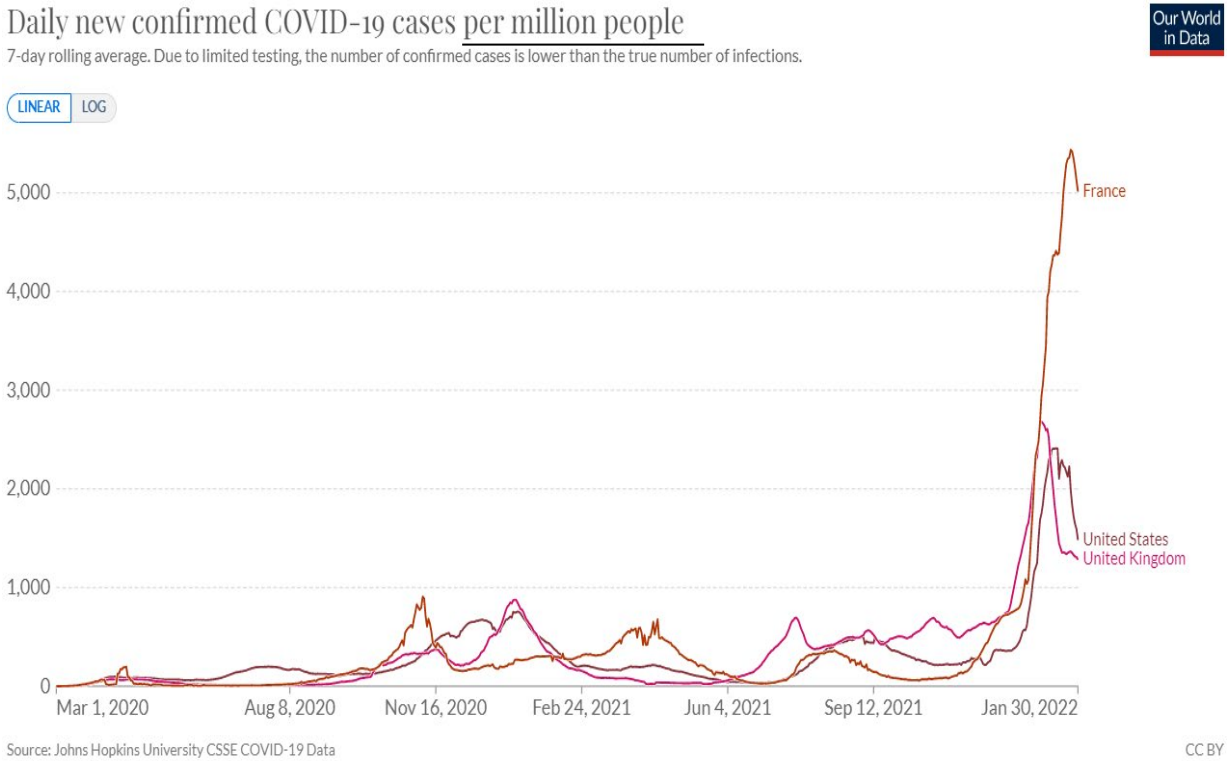
Protect Health Care Capacity

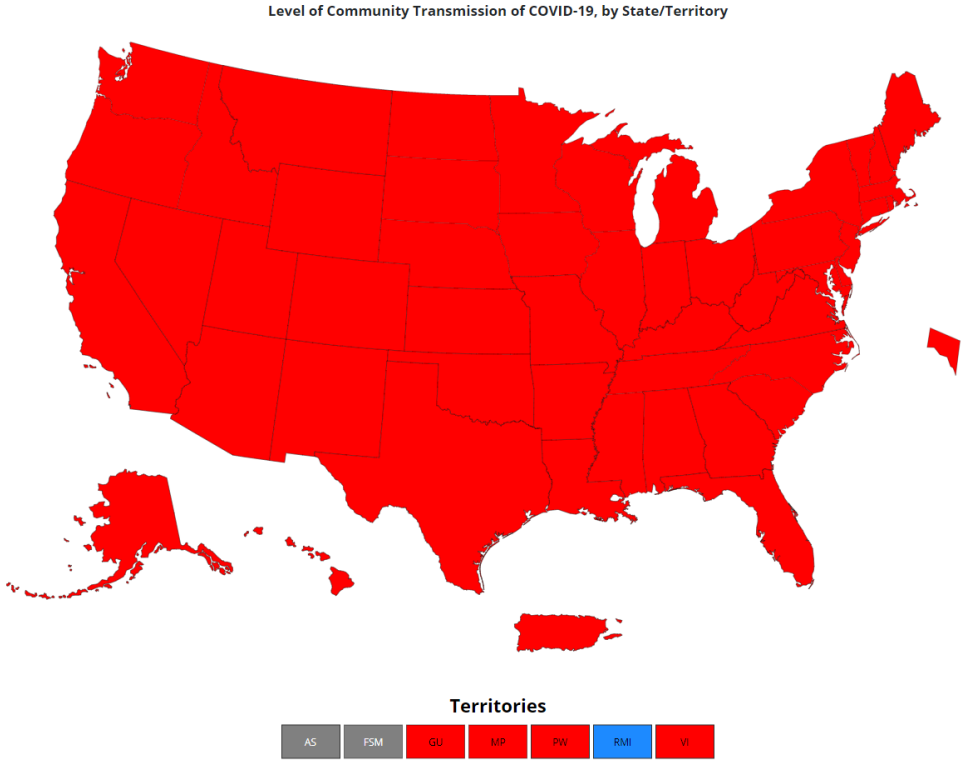
- COVID+ census in hospitals has declined statewide; Pediatric COVID+ census also declining
- Federal support teams are deployed and will continue to support surges and hotspots in Michigan

Keep Vital Infrastructure Functioning

- Vaccination, Masking, Testing and Therapeutics are critical tools in our fight against the impact of COVID-19
- Public health capacity is shifting to investigation and mitigation of COVID-19 outbreaks in priority settings like schools and long-term care facilities
- Masks and respirators are effective at reducing transmission of SARS-CoV-2 when worn consistently and correctly

Global and National Trends





Globally, 375,328,937 cases and 5,665,810 deaths (Data* through 1/31)

- Globally, cases have leveled off over the last week

United States: 1.2% of Americans have been infected with COVID-19 in last week¶

- The U.S. is at High transmission level (**1,144.9** cases/100,000 in last 7 days)

Many Midwestern states are declining

- Minnesota and Indiana have the highest case rates *in Midwest*

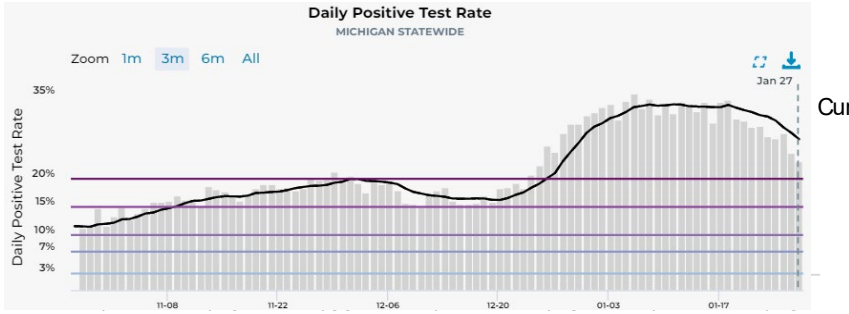
Source: *Johns Hopkins Coronavirus Resource Center; ¶ CDC COVID Data Tracker Weekly Review; † CDC COVID Data Tracker – CDC recently updated their methodology for reporting case rates

Recent statewide trends

Statewide trends

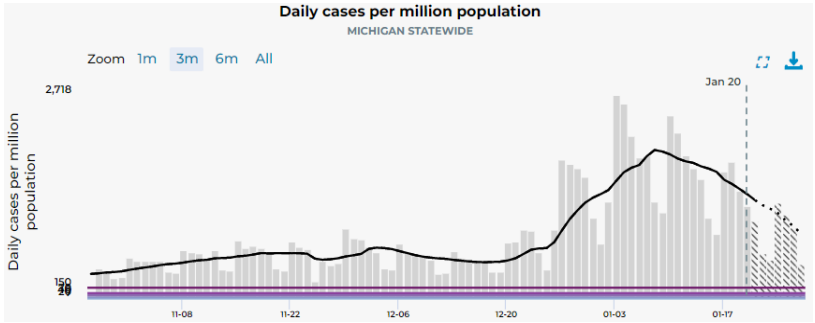
7-day average Daily values

Positivity, %



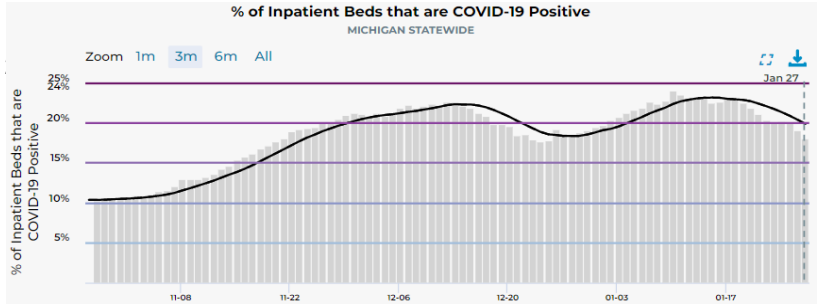
Current: 25.3%

Daily cases per million



Current: 1,141.6

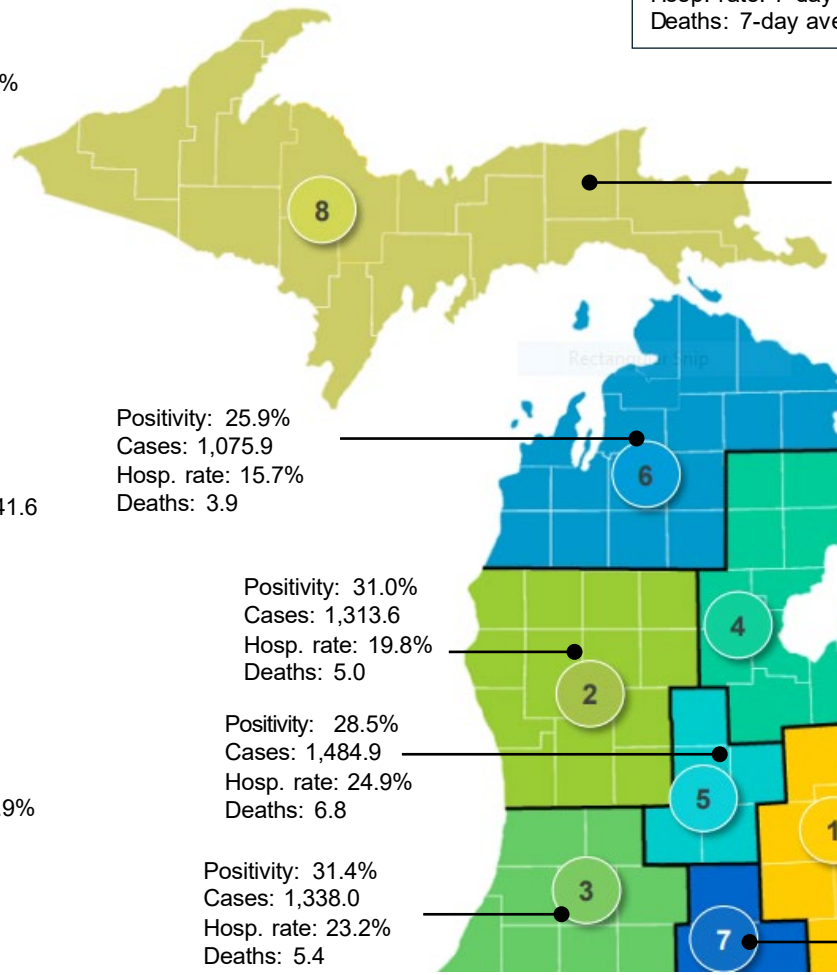
Daily hospitalization rate, %



Current: 17.9%

MERC Regional breakdown: Cases, hospitalization rate, and positivity

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: 29.5%
Cases: 1,858.4
Hosp. rate: 13.7%
Deaths: 8.0

Positivity: 25.9%
Cases: 1,075.9
Hosp. rate: 15.7%
Deaths: 3.9

Positivity: 31.0%
Cases: 1,313.6
Hosp. rate: 19.8%
Deaths: 5.0

Positivity: 31.3%
Cases: 1,447.7
Hosp. rate: 17.9%
Deaths: 8.6

Positivity: 28.5%
Cases: 1,484.9
Hosp. rate: 24.9%
Deaths: 6.8

Positivity: 21.3%
Cases: 929.8
Hosp. rate: 16.7%
Deaths: 6.6

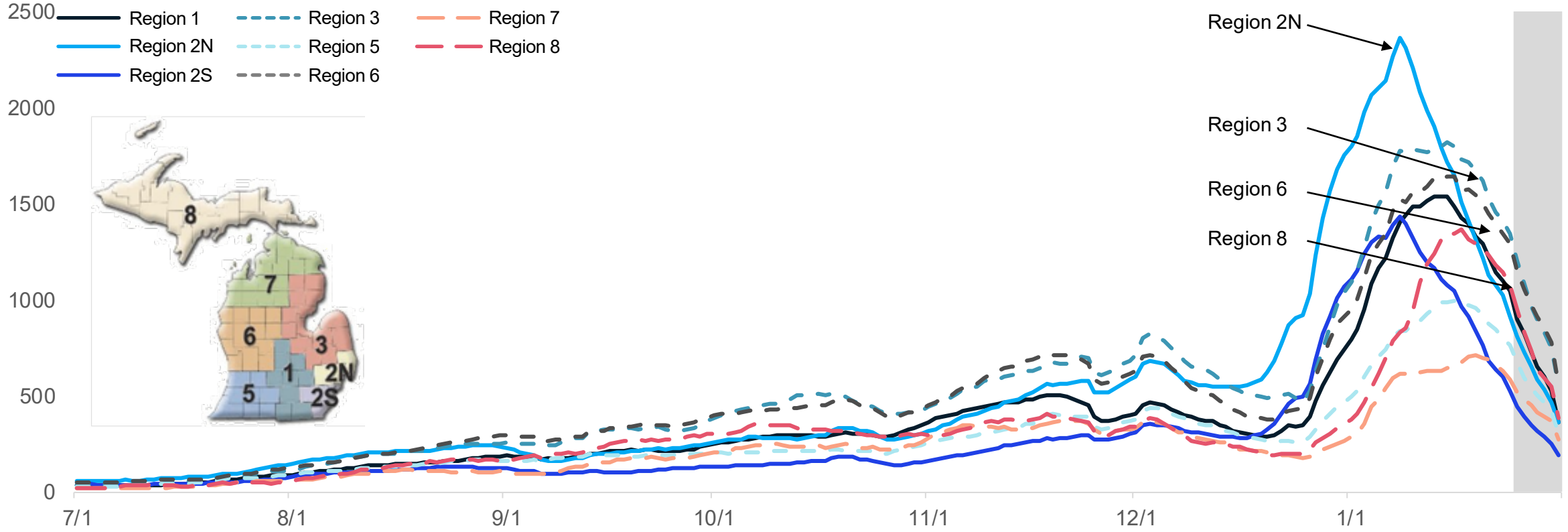
Positivity: 31.4%
Cases: 1,338.0
Hosp. rate: 23.2%
Deaths: 5.4

Positivity: 31.5%
Cases: 1,420.0
Hosp. rate: 21.5%
Deaths: 5.7

Source: https://mistartmap.info/

Case Rate Trends by Emergency Preparedness Region

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

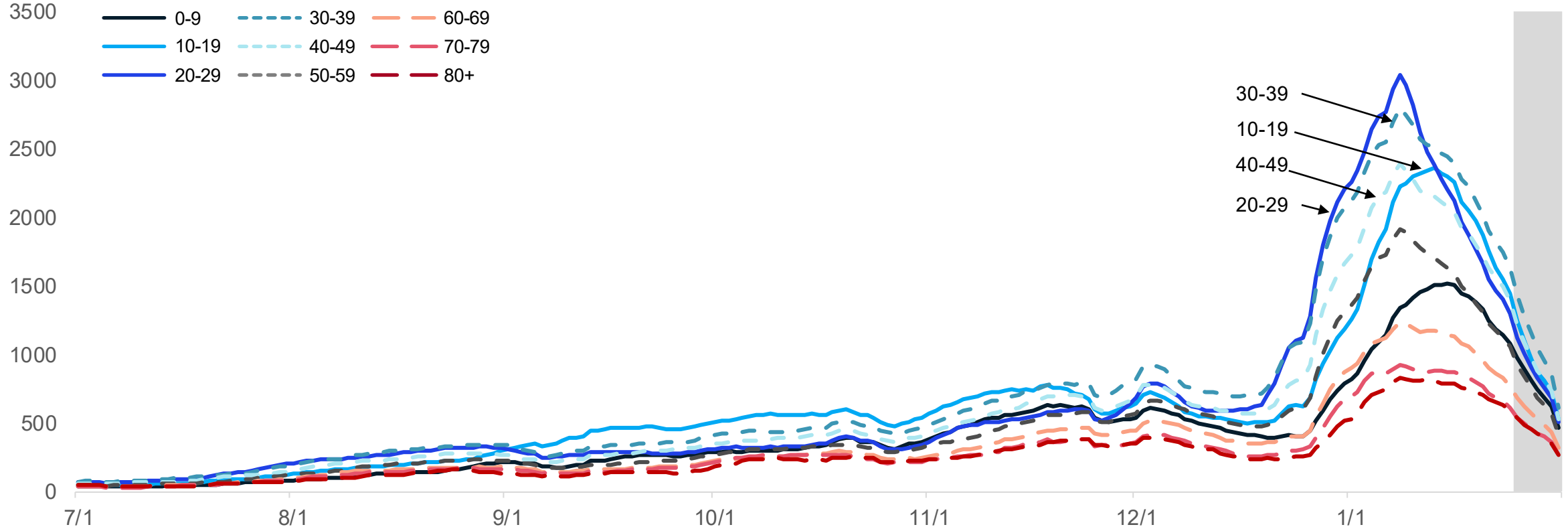


- Case rate trends for all preparedness regions are declining
- Case rates by onset date for all preparedness regions are between 525 and 1,345 cases per million (through 1/24)
- Case rates are highest in Region 3, followed by Region 6, 8, and 1

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

Case Rate Trends by Age Group

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



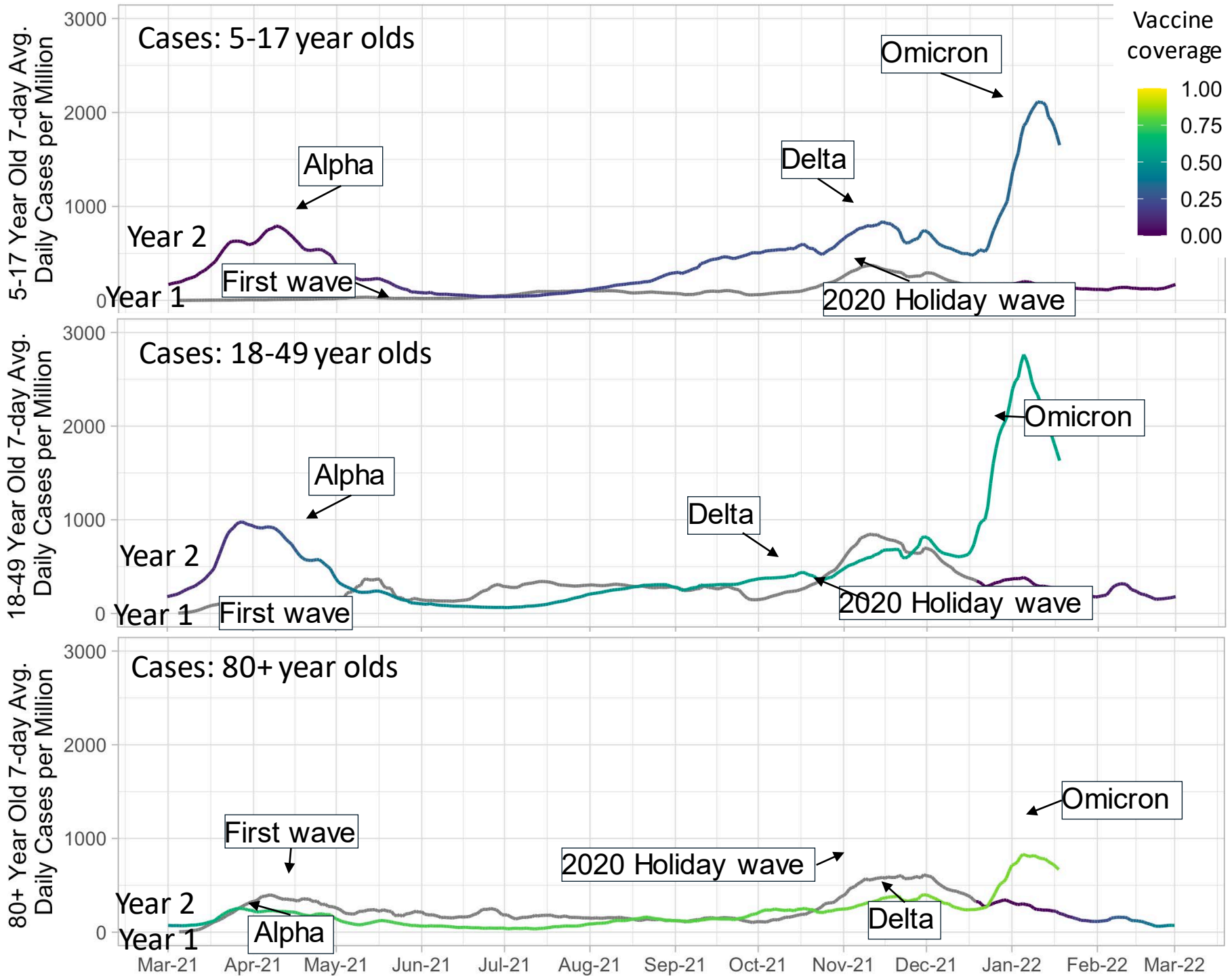
- Case rate trends for all age groups saw decreases over the past week
- Case rates by onset date for all age groups are between 590 and 1,640 cases per million (through 1/24)
- Case counts and case rates are highest for 30-39-year-olds this week, followed by 10-19, 40-49, and 20-29

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

Year-over-year comparisons by age group

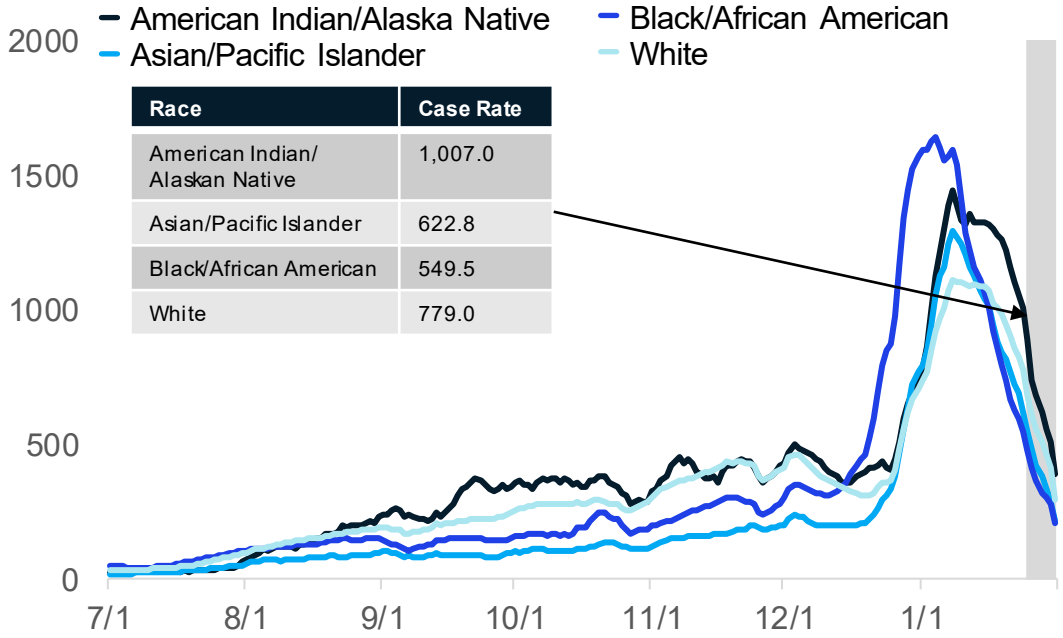
- All age groups are seeing their highest case rates of the entire pandemic
- Vaccine coverage is lower among younger age groups compared to middle and older age groups
- Older age groups have higher vaccine coverage and relatively lower case rates in the second year of the pandemic

Source: MDSS and MCIR data. Note that the vaccine age groups shown as colors in this plot are 5-19, 20-49, and 75+.



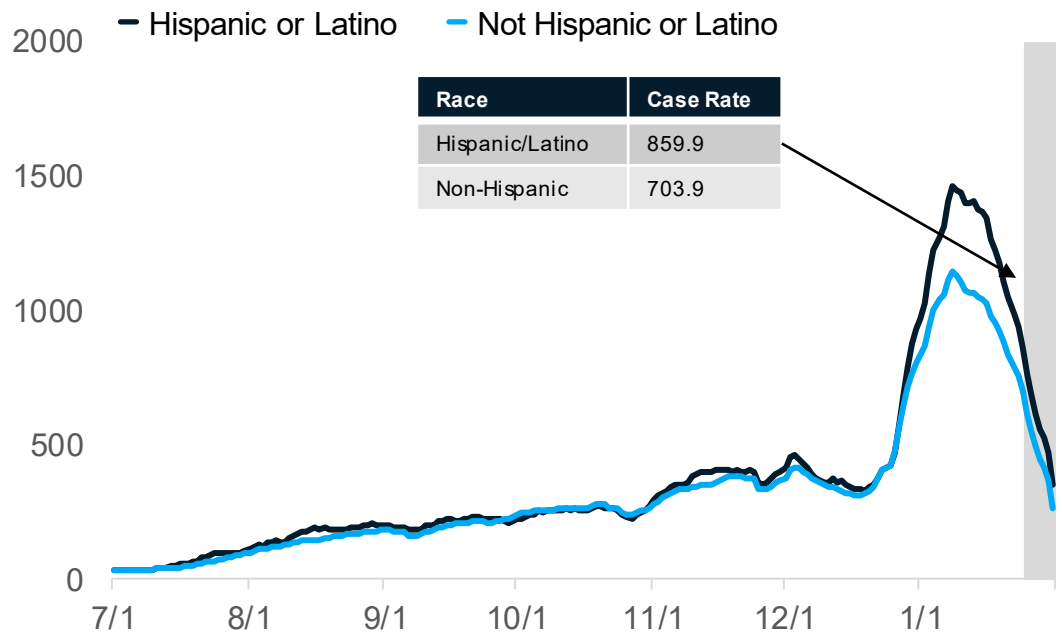
Case Rates by Reported Racial and Ethnic Group

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



Race	Case Rate
American Indian/ Alaskan Native	1,007.0
Asian/Pacific Islander	622.8
Black/African American	549.5
White	779.0

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



Race	Case Rate
Hispanic/Latino	859.9
Non-Hispanic	703.9

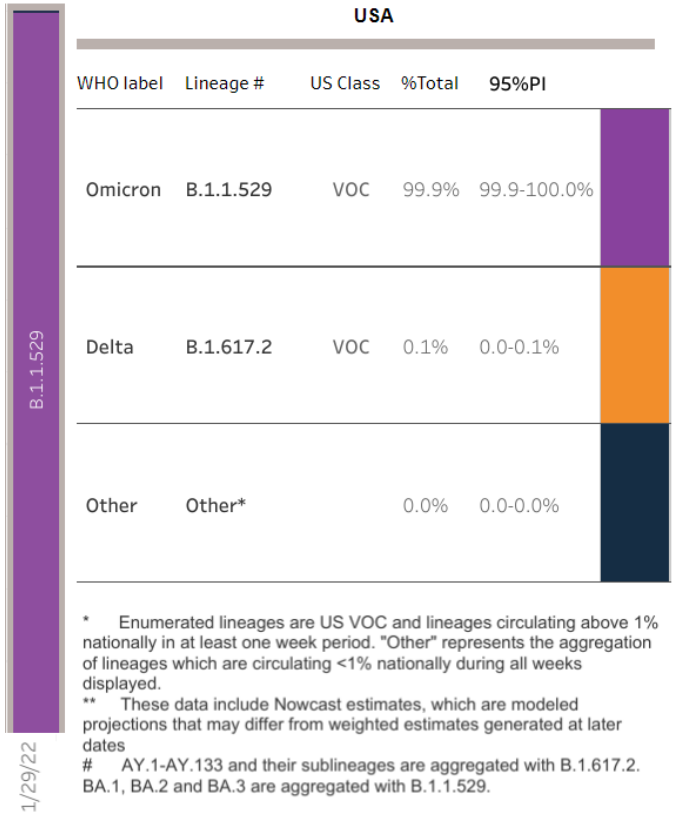
Updates since last week:

- Cases per million are decreasing for all reported racial and ethnic groups and are highest for American Indian and Alaskan Native
- In the past 30 days, 31% (↔) of race data and 40% (↓1%) 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

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

SARS-CoV-2 Variants Circulating in the United States, Jan 23 – Jan 29 (NOWCAST)

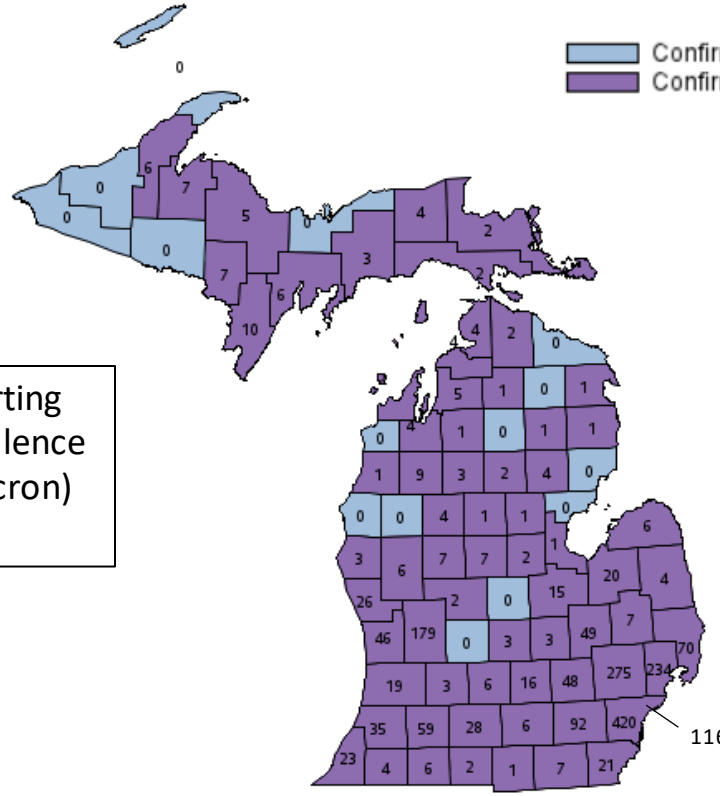


WHO label	Lineage #	US Class	%Total	95%PI
Omicron	B.1.1.529	VOC	99.9%	99.9-100.0%
Delta	B.1.617.2	VOC	0.1%	0.0-0.1%
Other	Other*		0.0%	0.0-0.0%

* 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.2 and BA.3 are aggregated with B.1.1.529.

Currently, CDC is reporting rapid increase in prevalence of B.1.1.529 (i.e., Omicron) over past 2 months

Variants of Concern in Michigan, Jan



116 Omicron cases in Wayne County attributed to Detroit City

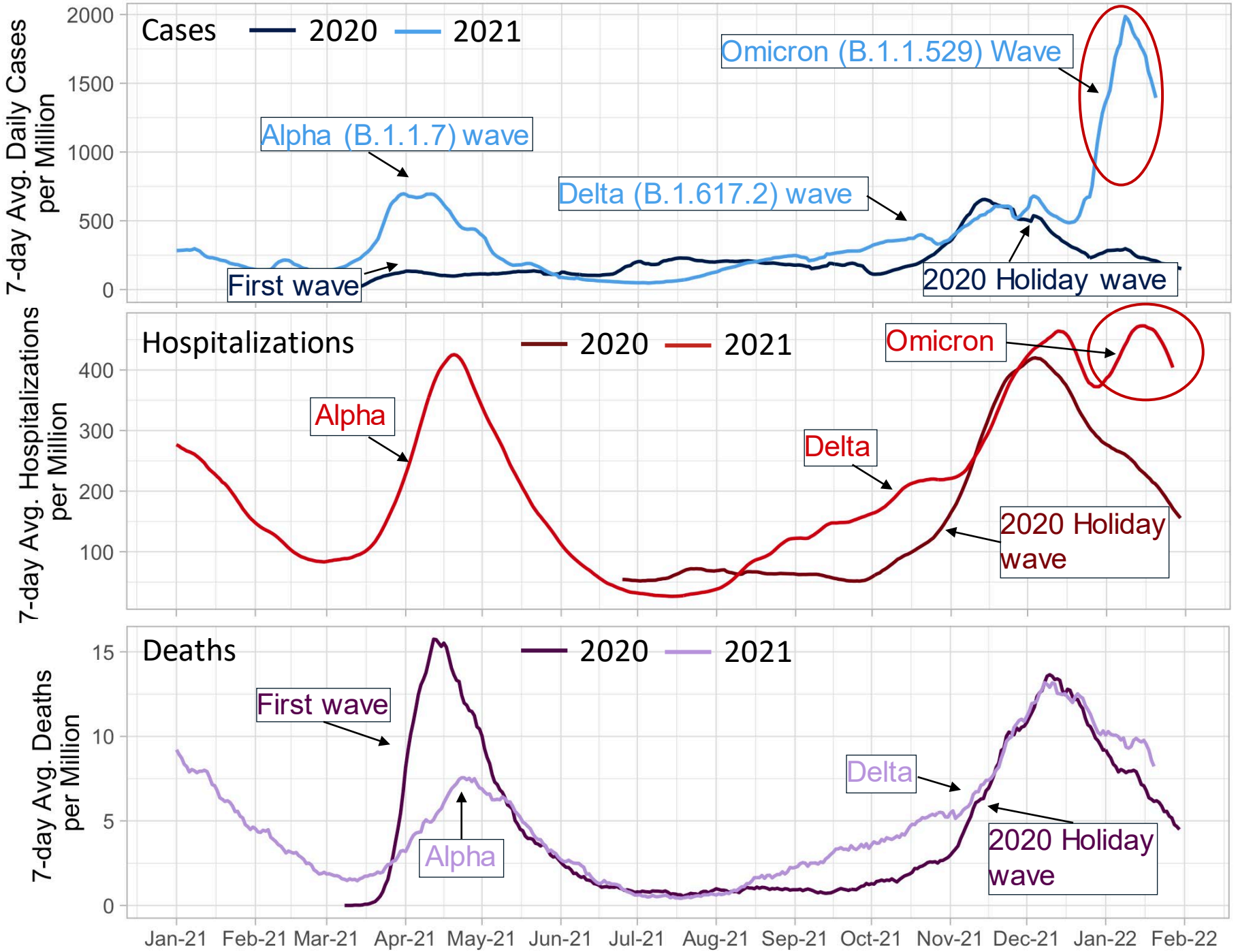
- CDC reclassifies variants as epidemiology shifts
- Variants are downgraded when there has been a significant and sustained reduction in prevalence, or variant no longer poses significant risk to public health
- Cumulative numbers of Delta are no longer included in county counts; solely counts of Omicron cases are listed here

Variant	MI Reported Cases	# of Counties	MDHHS VOC Sequenced Prev. ¶
B.1.617.2 (delta)	30,856	83	3%
B.1.1.529 (omicron)	1,904	68	97%

Data last updated Jan 31, 2022
Source: MDSS
¶ Sequence specimens are from the most recent week by onset date which may change as more specimens are sent in

Year-over-year comparisons: cases and hospitalizations are higher than last year

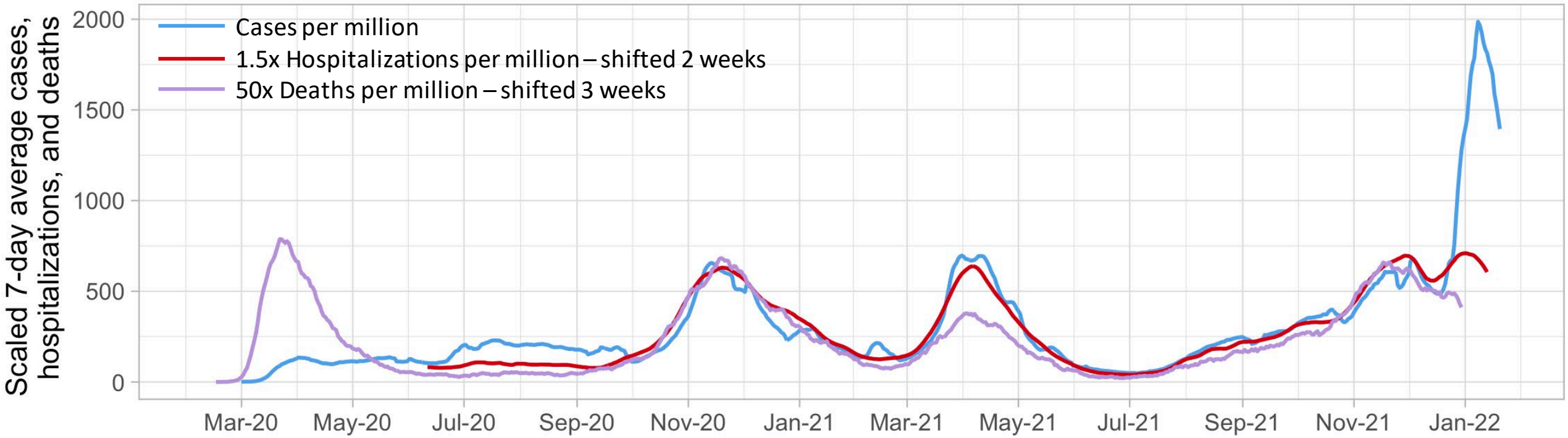
- Cases are showing a sharp increase compared to last year
- Hospitalizations are higher than last year
- Deaths are currently slightly higher than last year



Source: MDSS and EM Resource data

Cases, hospitalizations and deaths change together—but lagged by up to 3 weeks

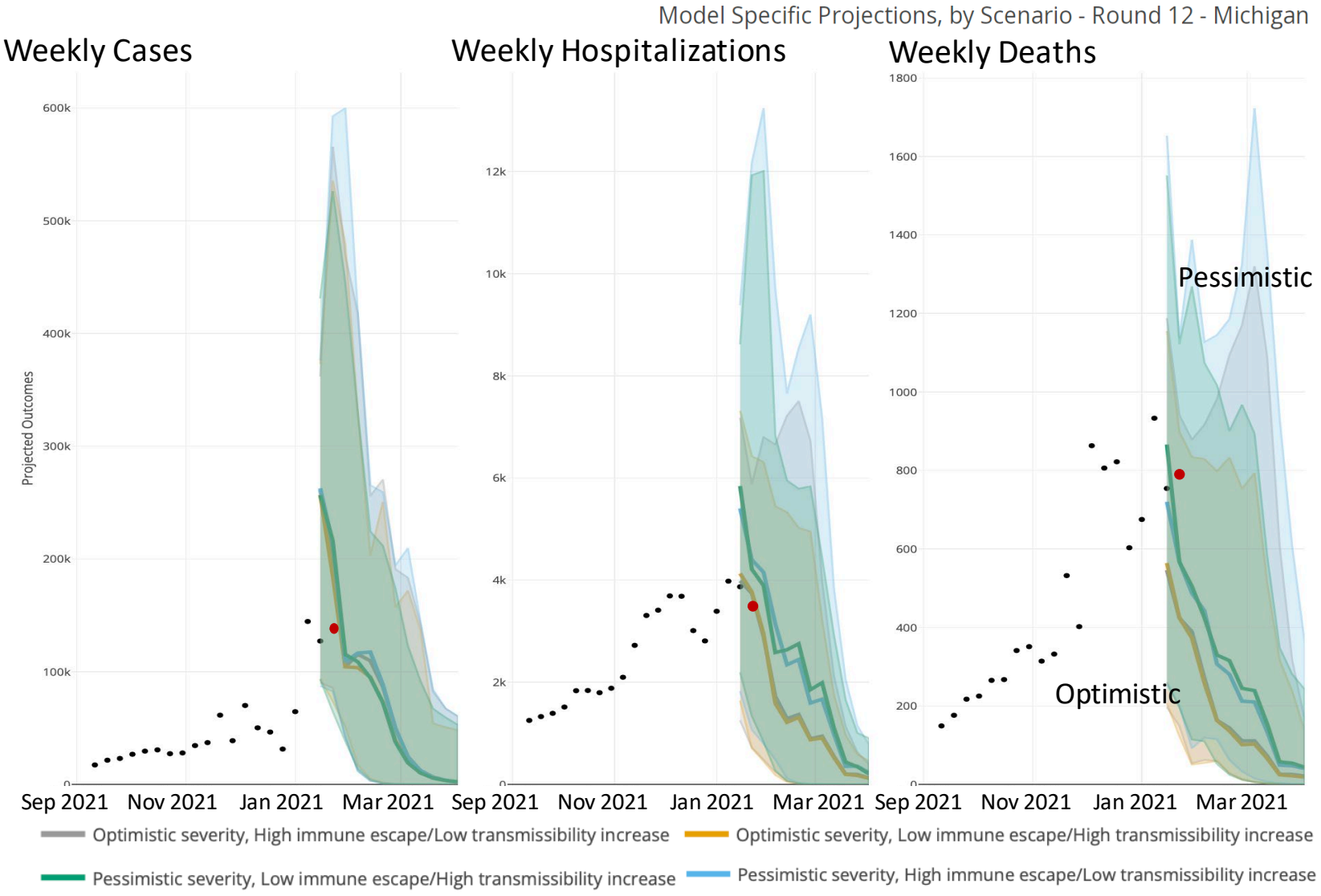
- Hospitalizations remain high, but appear to be showing a lower trend than cases, and potentially moving toward a decline
- Death trends are not yet fully clear, but potentially for a plateau or continued decline



Source: MDSS and EM Resource data

Where are we headed: models project potential for decreases in cases, hospitalizations, and deaths for Michigan

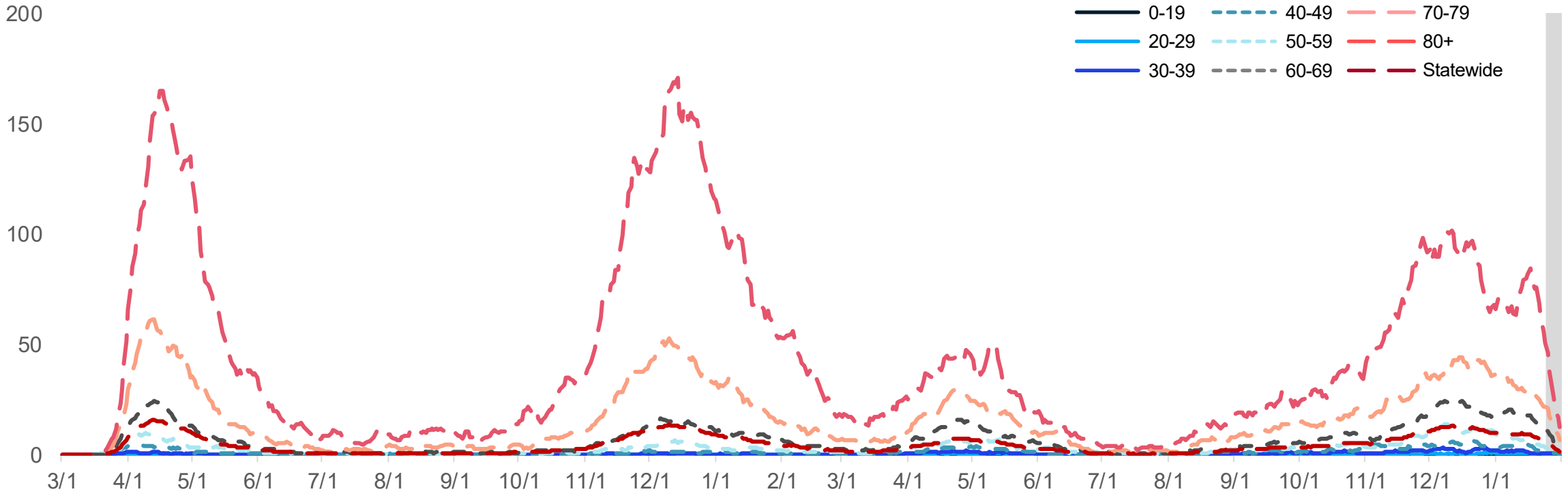
- Updated Model Scenarios (Round 12)
- Suggest we are near or at peak levels for all three metrics, though in some scenarios there is potential for a second peak in hospitalizations and deaths (in the 95% confidence intervals)
- Deaths appear more consistent with the more pessimistic scenarios so far
- All projections suggest that cases, hospitalizations and deaths will still be high over the coming weeks, even if declining



Source: COVID Modeling Scenario Hub. Uncertainty levels: 95%

Average and total new deaths, by age group

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

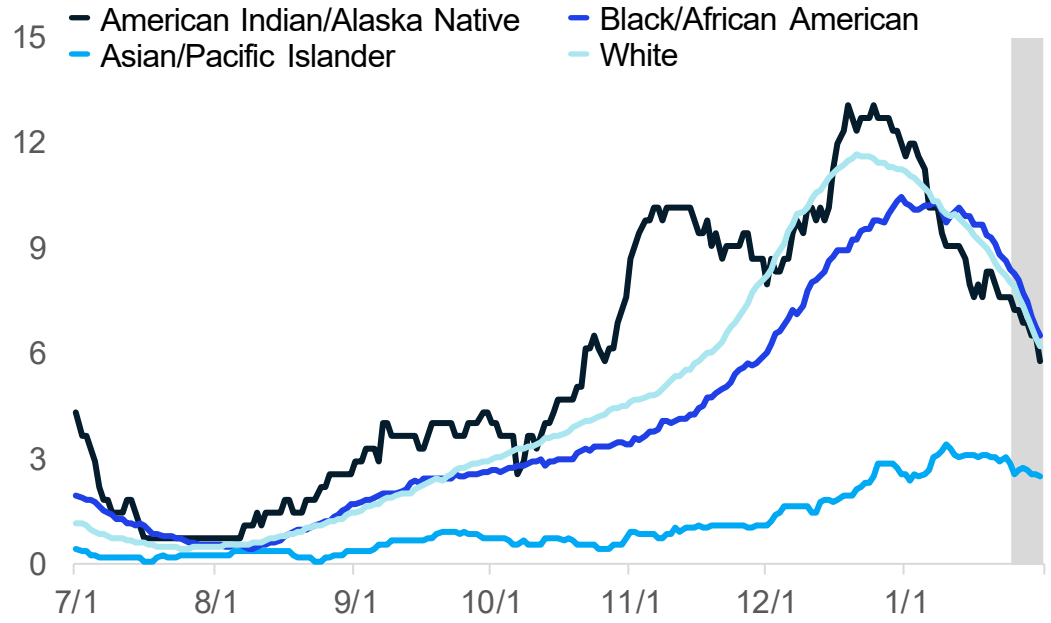


- Deaths are a lagging indicator
- Through 1/24, the 7-day avg. death rate is 50 daily deaths per million people for those over the age of 80
- Deaths rates have decreased over the last week for most age groups

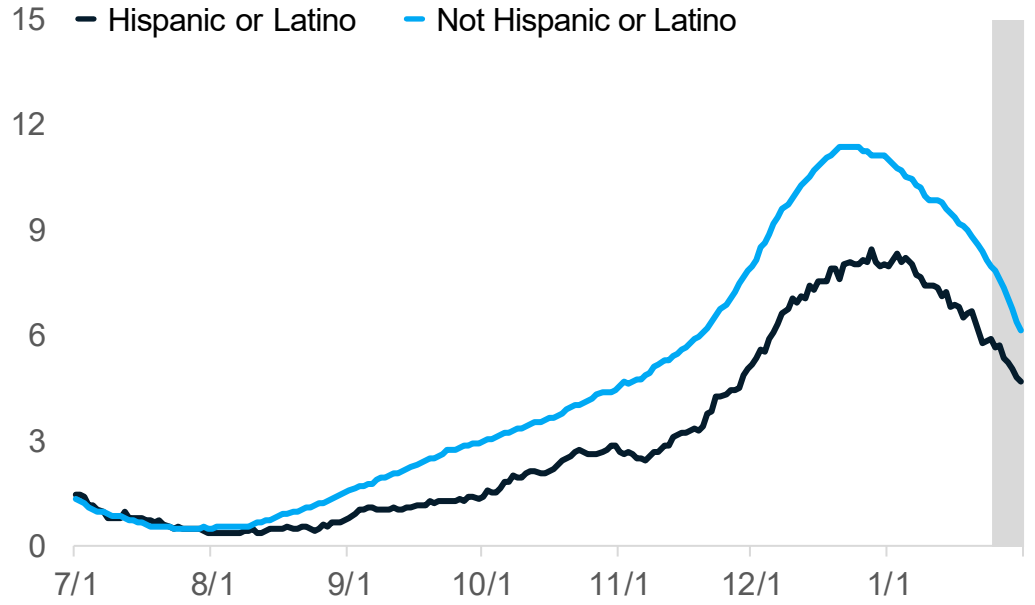
Note: Death information sourced from MDHHS and reflects date of death of confirmed and probable cases.
Source: MDHHS – Michigan Disease Surveillance System (MDSS)

30-day rolling average daily deaths per million people by race and ethnicity

Average daily deaths per million people by race



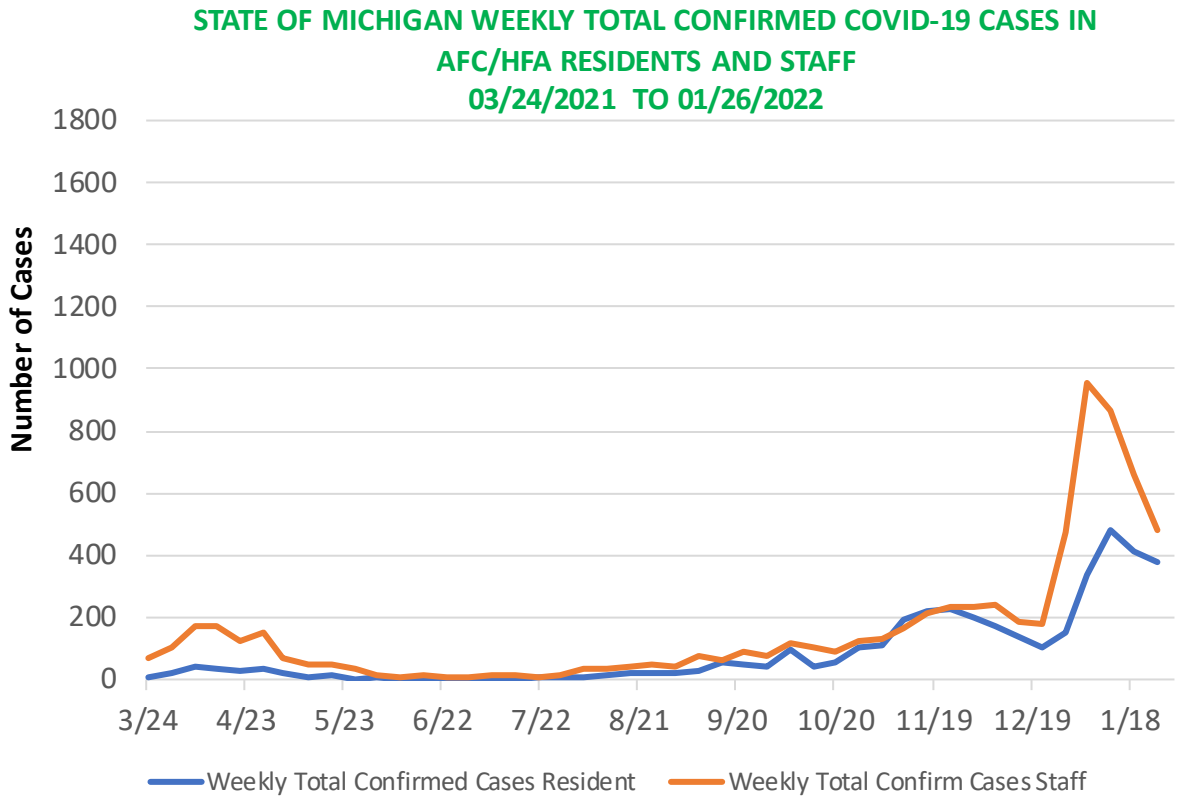
Average daily deaths per million people by ethnicity

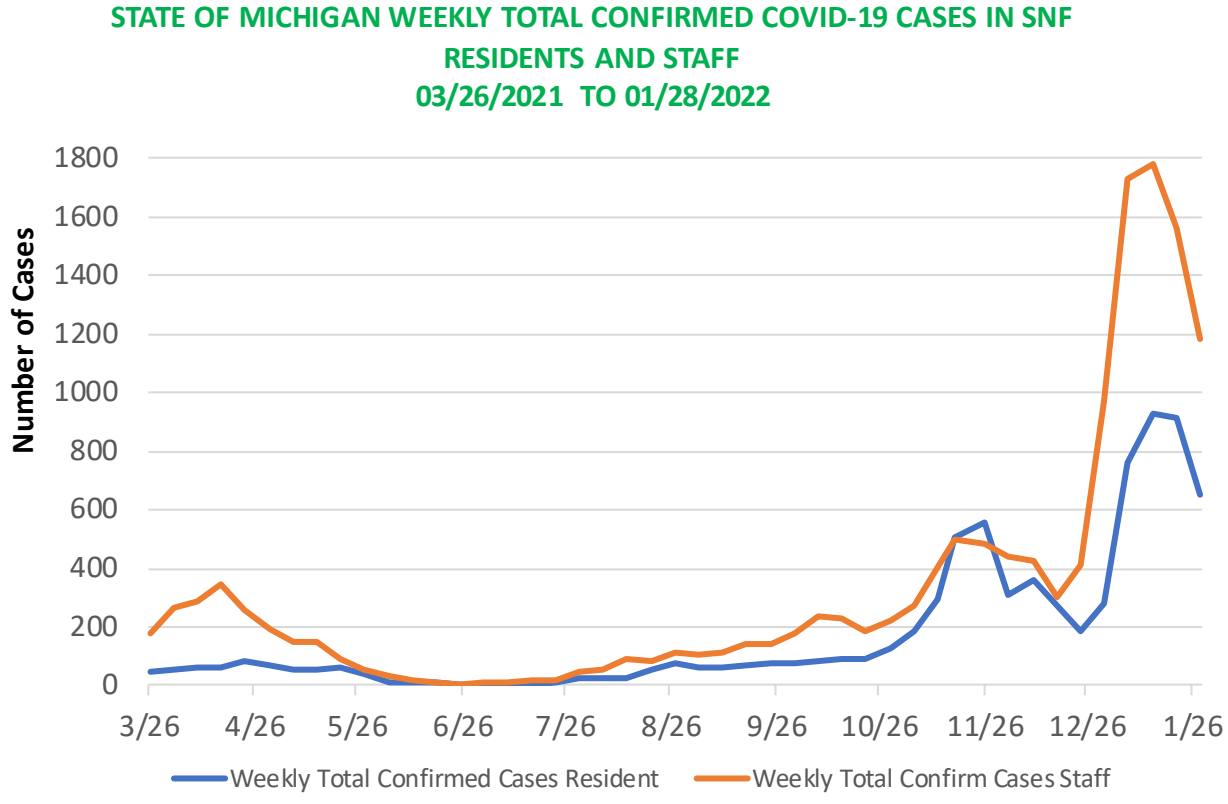


- Deaths are lagging indicator of other metrics
- Trends for daily average deaths are decreasing for all reported races and ethnicities
- Currently, Black/African Americans have the highest death rate (8.4 deaths/million)

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

Reported Cases within Long Term Care Facilities: Adult Foster Care, Homes for the Aged, and Skilled Nursing Cases for Residents and Staff





- Case counts in residents trending downwards in both AFC/HFA (380) and SNF(655)
- Case counts in staff trending downwards in both AFC/HFA (481) and SNF (1185)
- Cases within LTCF continue to be higher among staff than residents

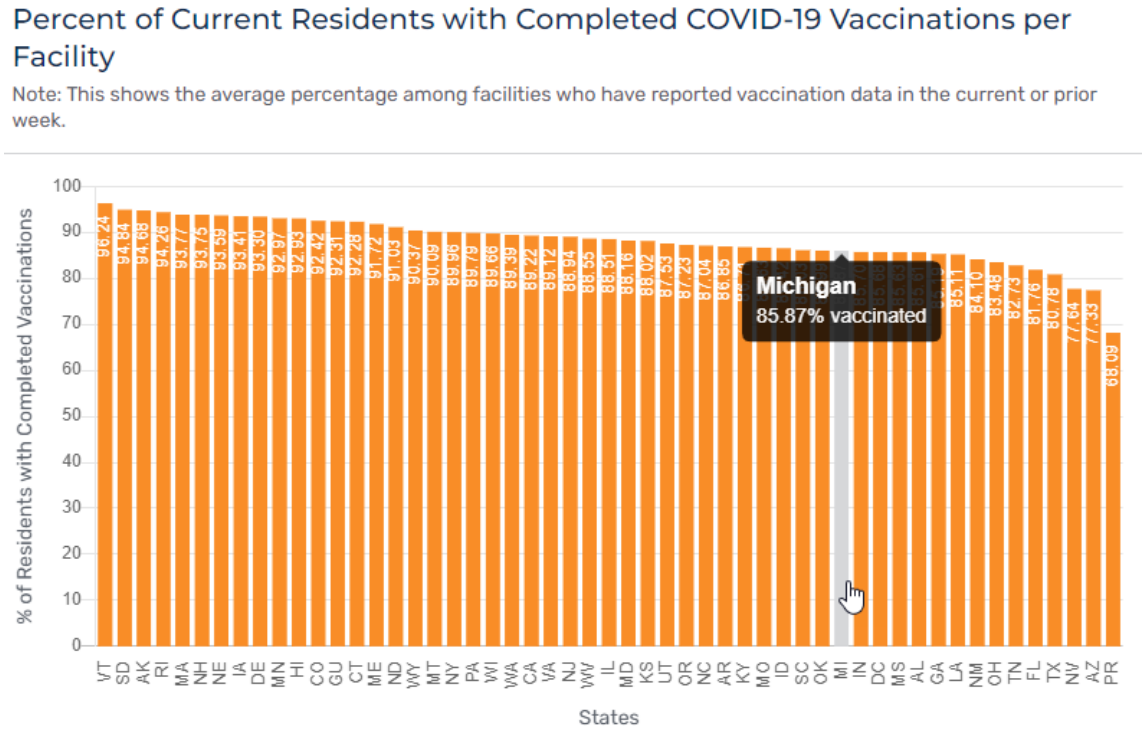
The data is from weekly reporting by facilities with bed occupancy of at least 13 beds.

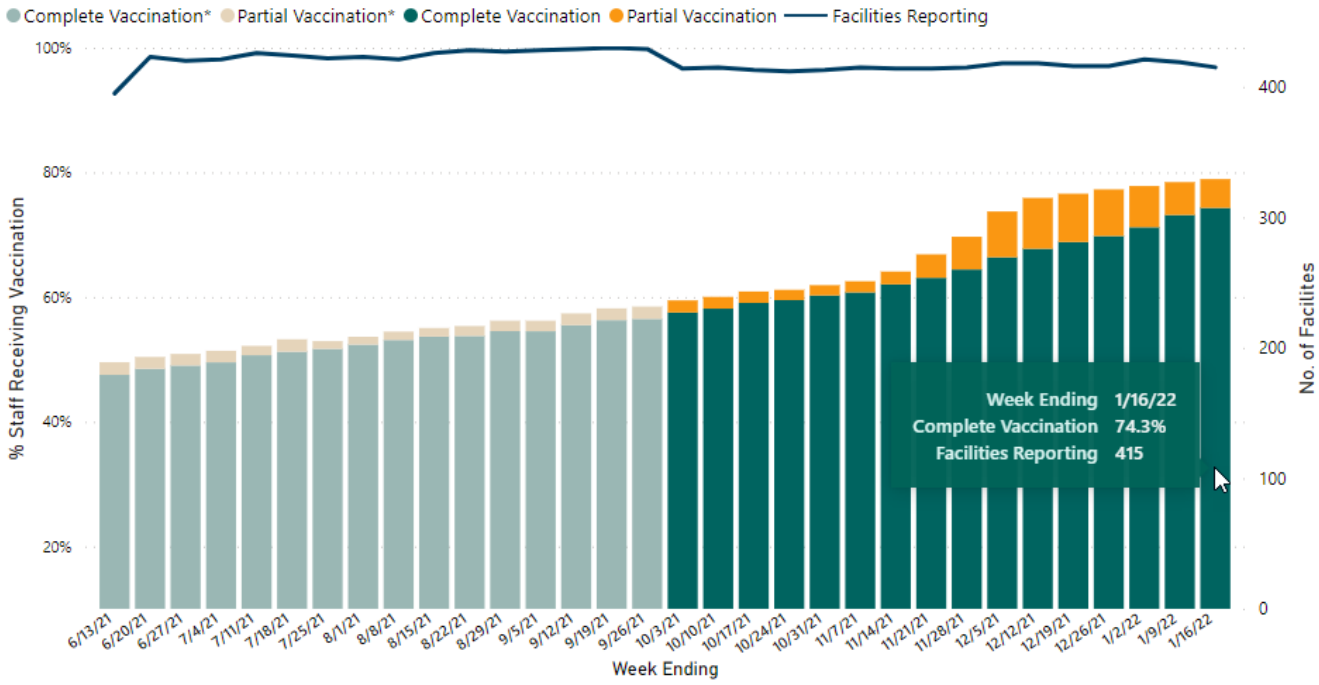
Completed vaccination among Skilled Nursing Cases for Residents and Staff

85.9% of SNF residents are fully vaccinated; 39 of 53 states/territories

73.1% of SNF staff are fully vaccinated, 48 of 53 states/territories

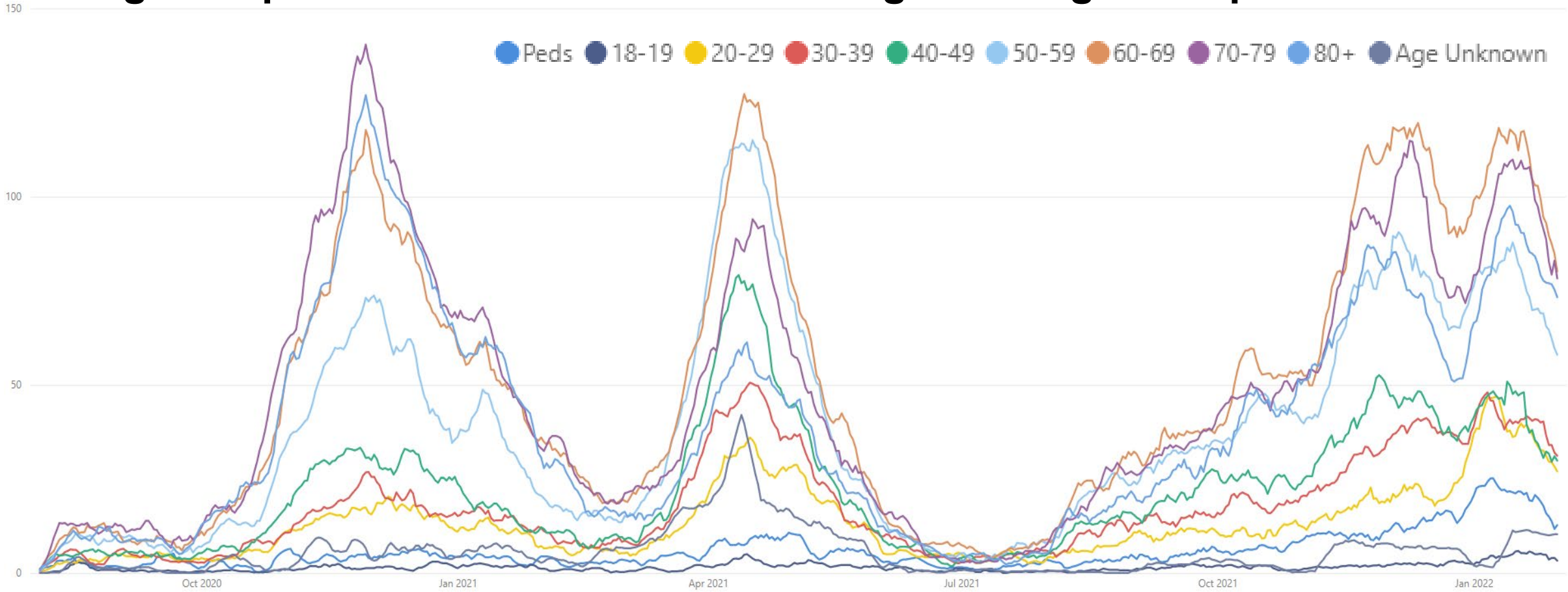
4.6% on SNF staff have initiated primary series





https://data.cms.gov/covid-19/covid-19-nursing-home-data
https://www.cdc.gov/nhsn/covid19/ltc-vaccination-dashboard.html

Average Hospital Admissions AreDecreasing for all Age Groups

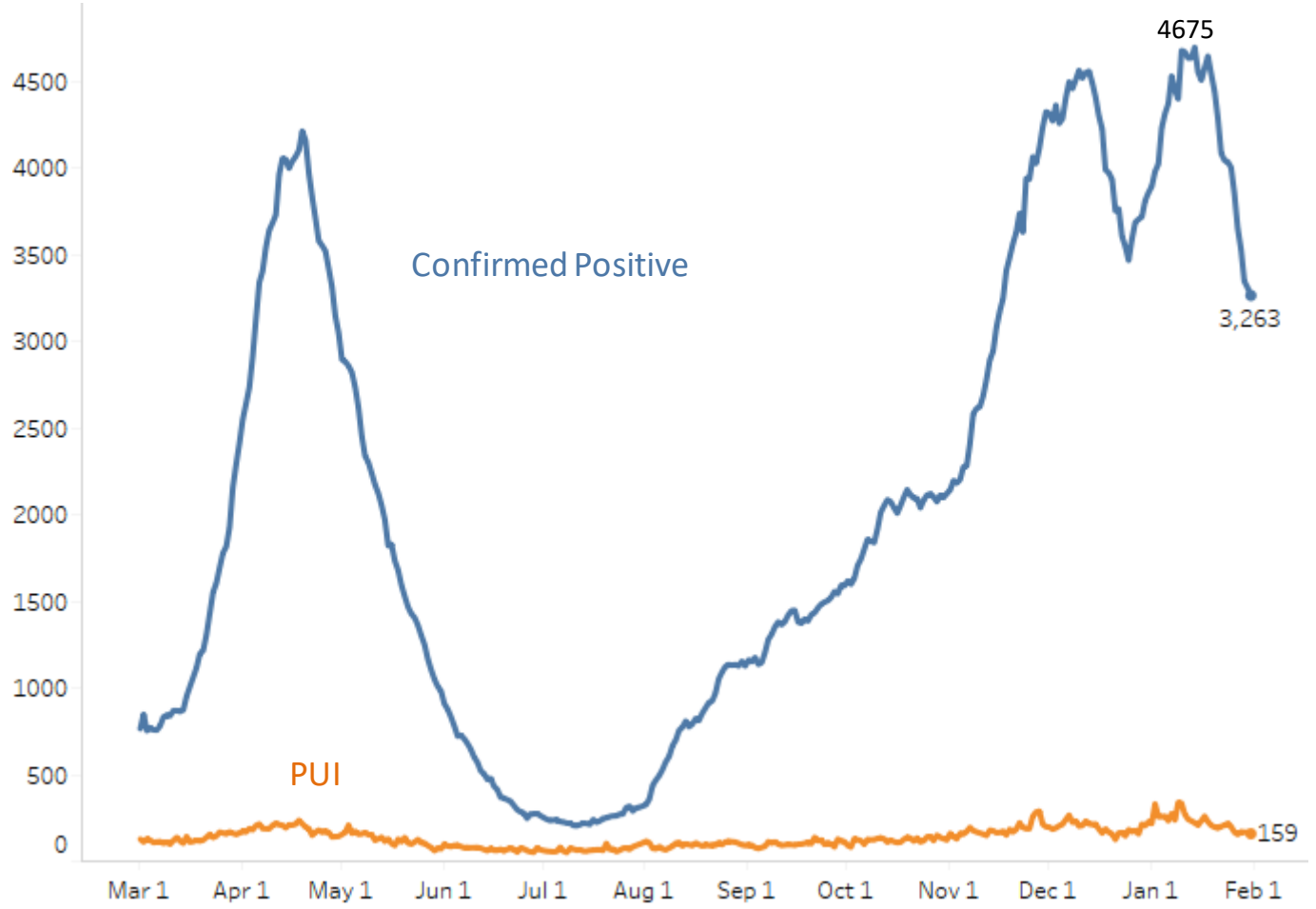


- Trends for daily average hospital admissions declined (-19%) since last week (vs. -10% prior week)
- Overall, most age groups saw declines or plateaus this week
- More than 70 daily hospital admissions was seen for each of the age groups of 60-69, 70-79, and 80+

Source: CHECC & EM Resource

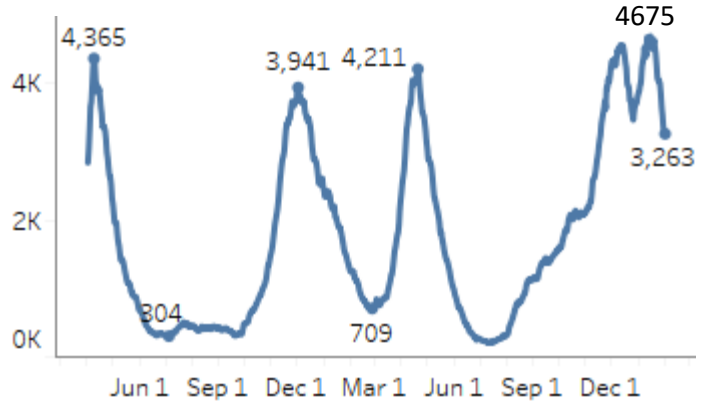
Statewide Hospitalization Trends: Total COVID+ Census

Hospitalization Trends 3/1/2021 – 1/31/2022
Confirmed Positive & Persons Under Investigation (PUI)



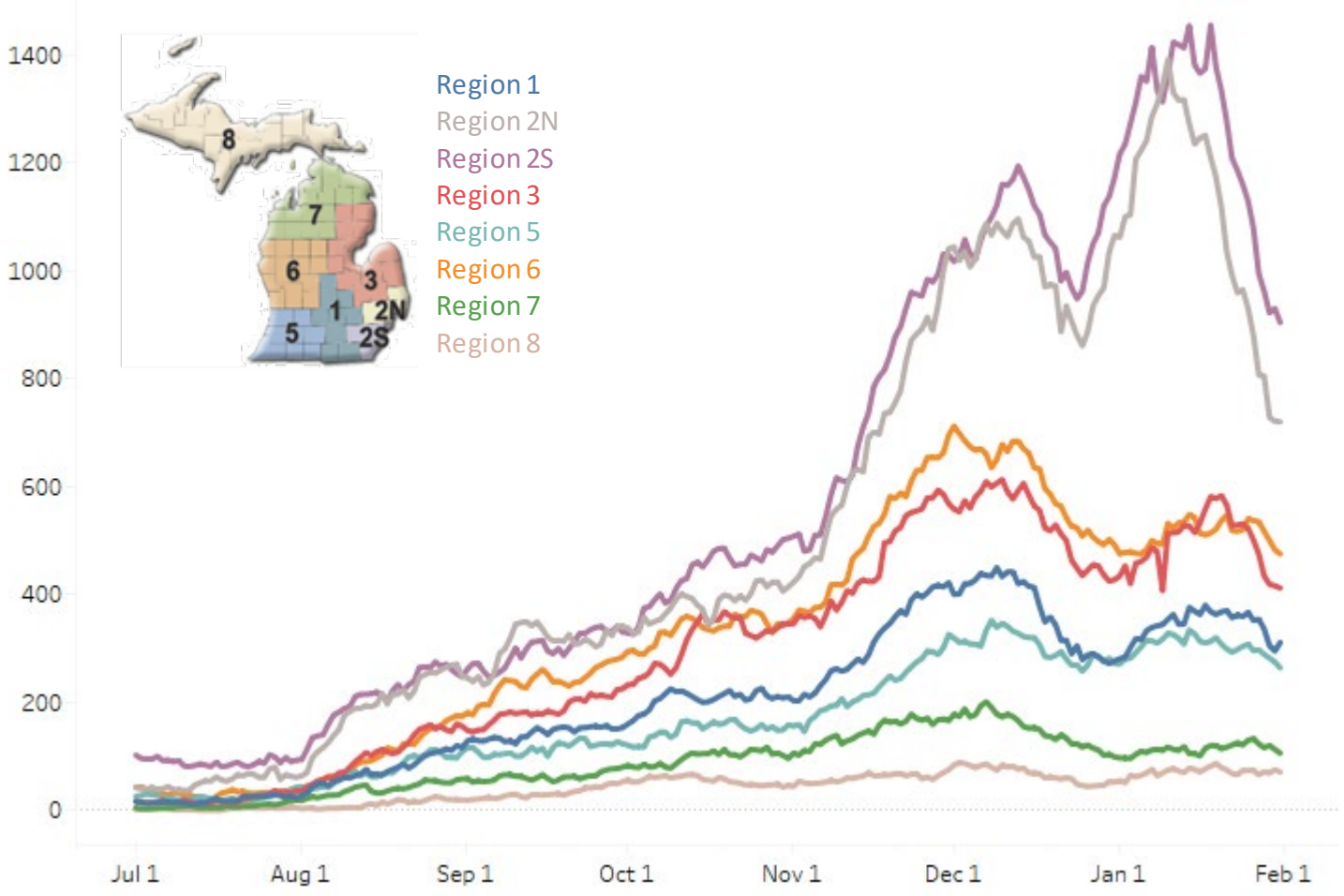
The COVID+ census in hospitals continues to decrease and is down 20% from last week (previous week was down 12%)

Hospitalized COVID Positive Long Term Trend (beginning March 2020)



Statewide Hospitalization Trends: Regional COVID+ Census

Hospitalization Trends 7/1/2021 – 1/31/2022
Confirmed Positive by Region



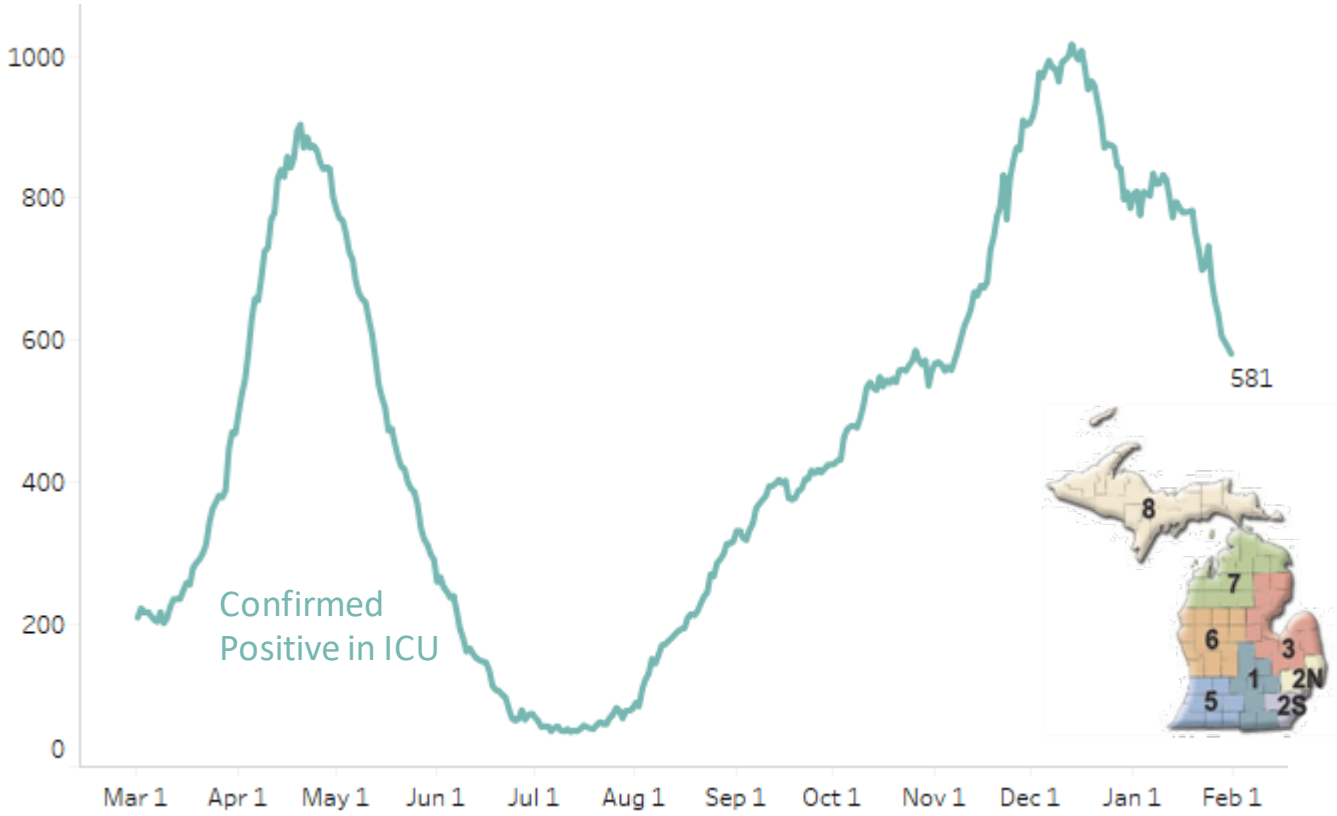
This week the COVID+ hospital census has declined in all regions.

Region 2S remains the most impacted region in the state on a population basis with greater than 400/Million population hospitalized who are COVID+.

Region	COVID+ Hospitalizations (% Δ from last week)	COVID+ Hospitalizations / MM
Region 1	311 (-13%)	288/M
Region 2N	720 (-25%)	325/M
Region 2S	904 (-22%)	406/M
Region 3	412 (-22%)	363/M
Region 5	264 (-13%)	277/M
Region 6	475 (-9%)	324/M
Region 7	106 (-12%)	212/M
Region 8	71 (-4%)	228/M

Statewide Hospitalization Trends: ICU COVID+ Census

Hospitalization Trends 3/1/2021 – 1/31/2022
Confirmed Positive in ICUs

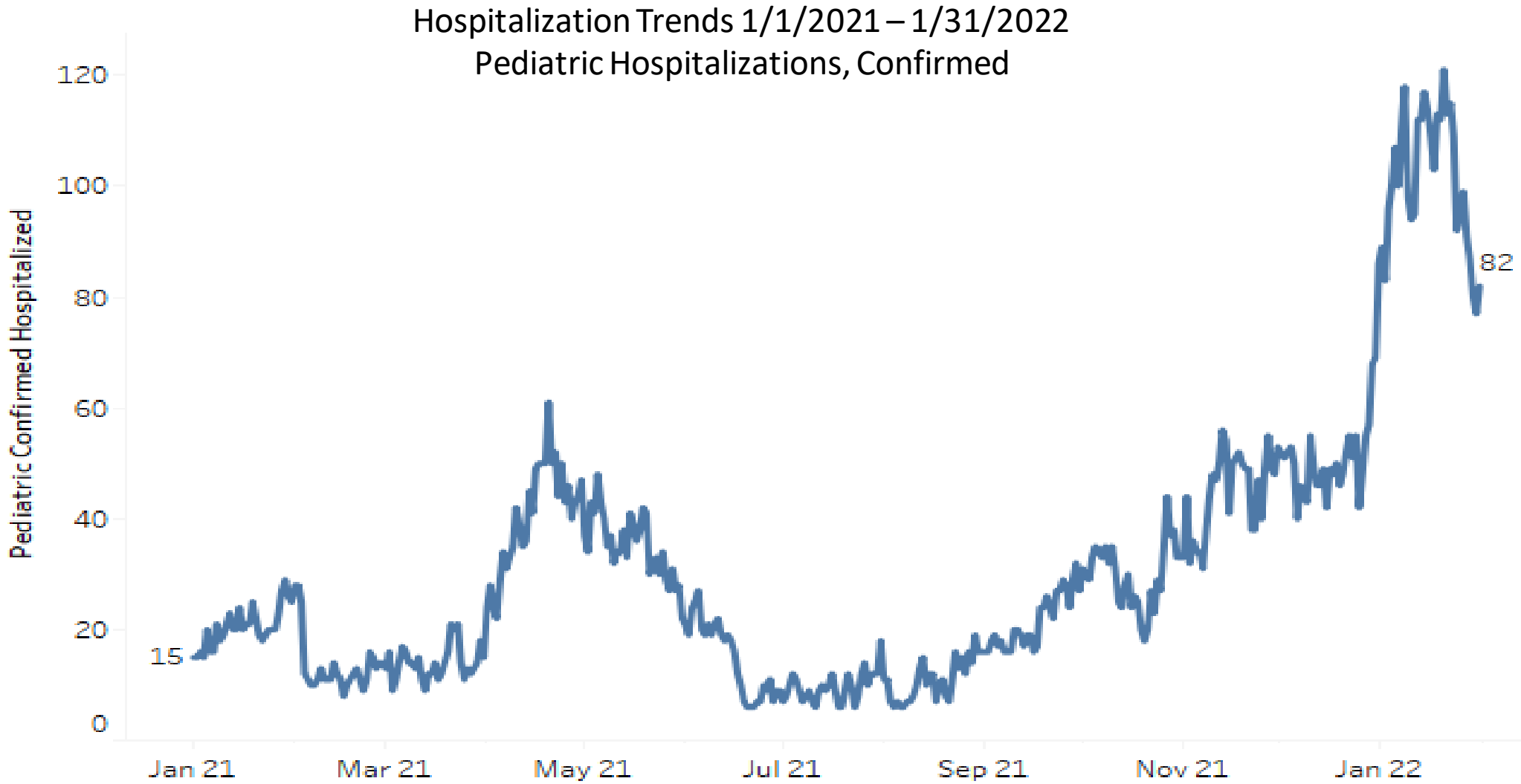


The census of COVID+ patients in ICUs has decreased by 21% from last week (previous week was down by 6%). While most regions show decreasing trends, the ICU census in Region 8 has increased by 50% from last week.

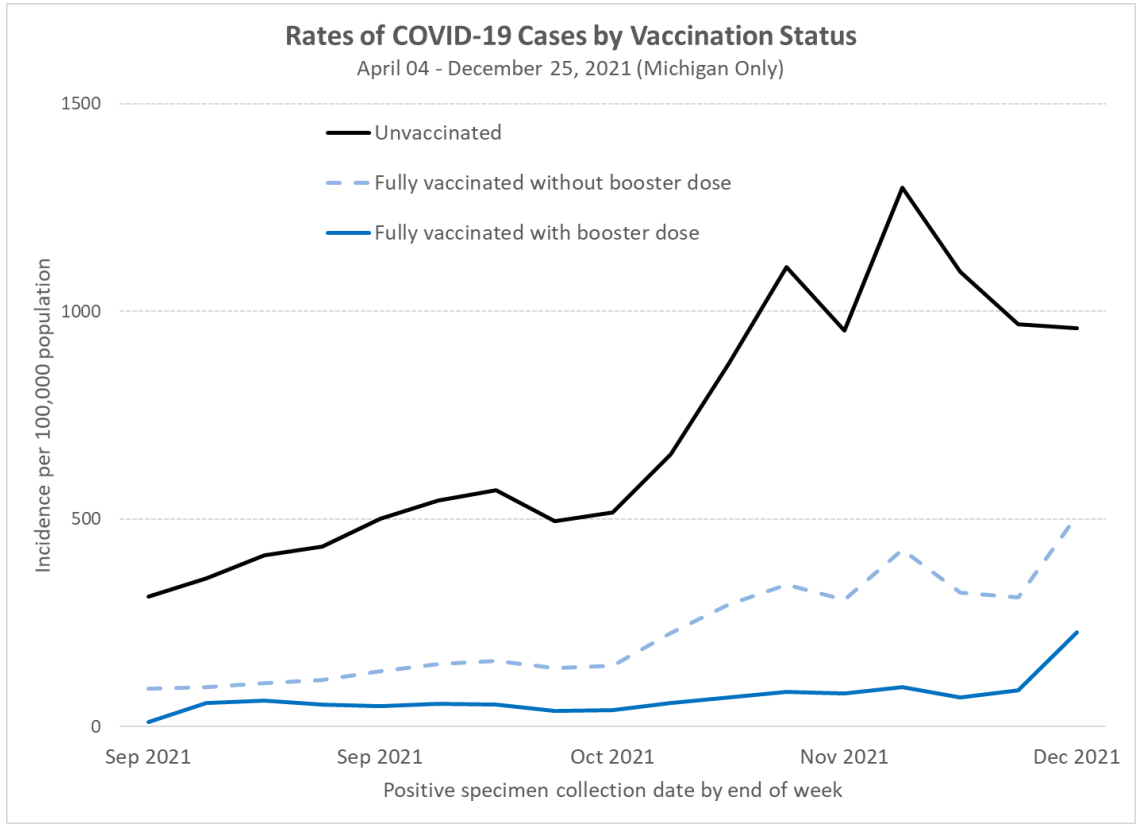
Regions 2S, 3 and 7 have >85% ICU occupancy. Regions 6 and 8 have >30% of Adult ICU Beds occupied with COVID+ patients.

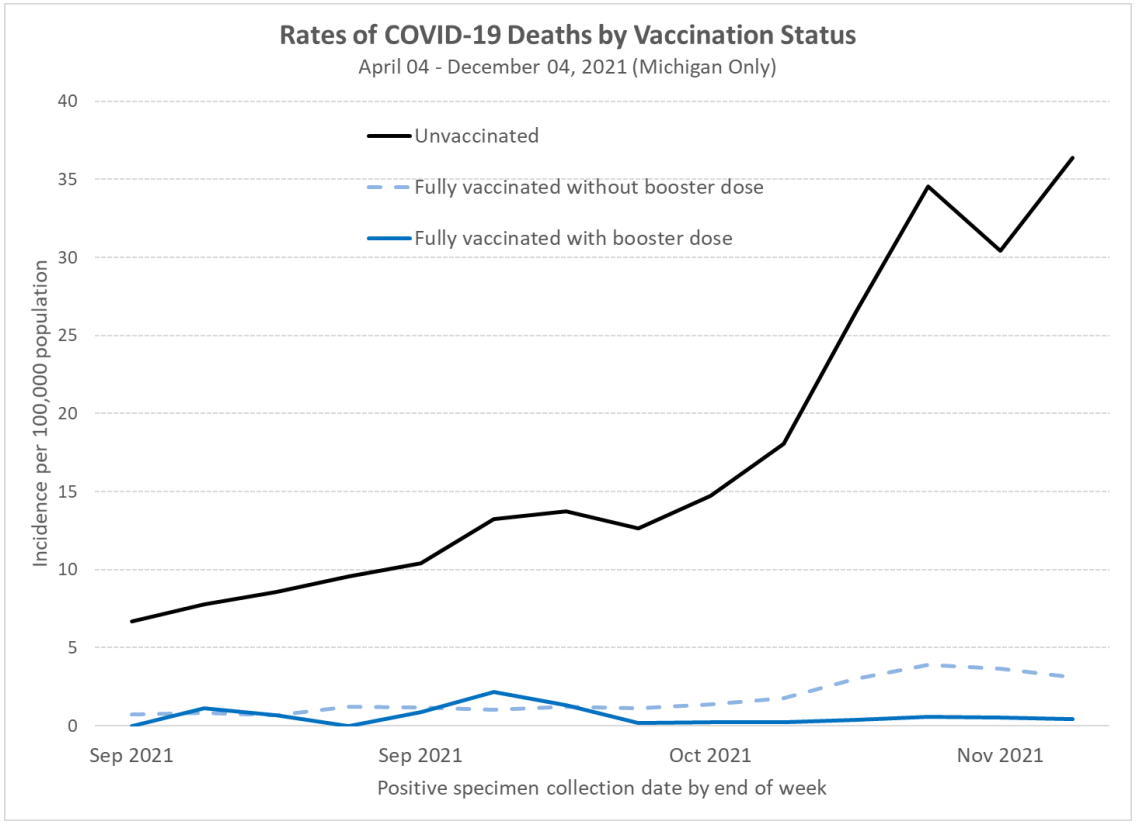
Region	Adult COVID+ in ICU (% Δ from last week)	ICU Occupancy	% of ICU beds COVID+
Region 1	41 (-41%)	81%	21%
Region 2N	119 (-20%)	77%	21%
Region 2S	149 (-32%)	86%	22%
Region 3	92 (-5%)	87%	28%
Region 5	39 (-9%)	69%	22%
Region 6	90 (-13%)	83%	33%
Region 7	27 (-25%)	85%	20%
Region 8	24 (50%)	71%	38%

Statewide Hospitalization Trends: Pediatric COVID+ Census



Michigan Age-Standardized Rates of COVID-19 Cases and Deaths by Vaccination + Booster Status





In November, unvaccinated adults aged 18 years and older had:

11.7 X
Risk of Testing Positive for COVID-19

AND

59.2 X
Risk of Dying from COVID-19

compared to fully vaccinated adults with booster doses

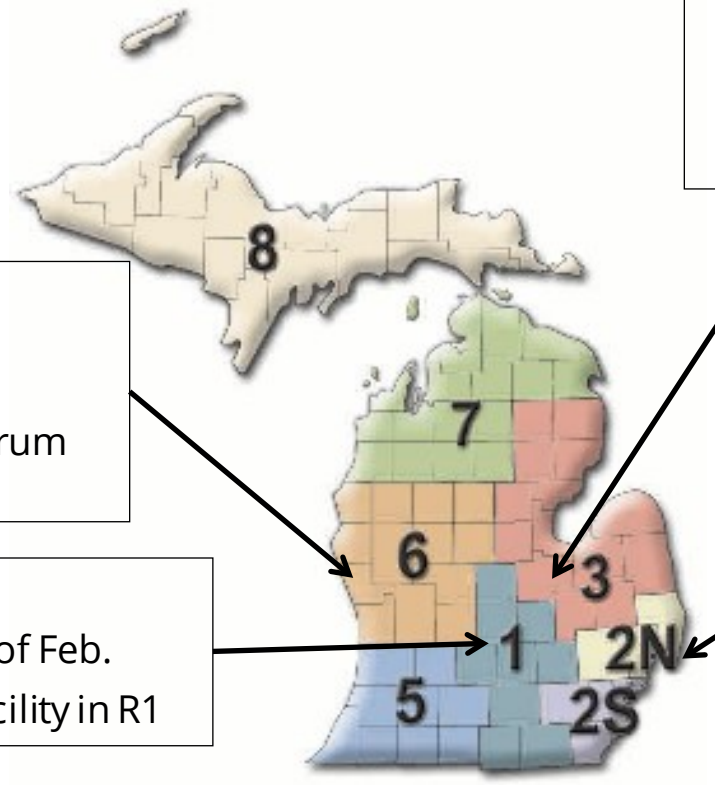
Footnotes: Incidence rates were age-standardized using the 2000 U.S. Census standard population; and rates are not adjusted for time since vaccination, underlying conditions, or other demographic factors besides age. Incidence rate ratios for the past one month were calculated by dividing the average weekly incidence rates among unvaccinated people by that among fully vaccinated people.

Michigan Strategy to Allocate Federal Staffing Resources

The regional strategy addresses:

- COVID hotspots
- Challenges with increased admissions
- Facilitating regional decompression and patient transfers

- North Central has seen an elevated level of COVID cases and hospitalizations.
  - DoD team allocated to Covenant Saginaw in R3
  - Facilities provide for regional decompression allowing for transfers of patients from outlying areas to the appropriate level of care.



- The West side of the state saw the highest initial COVID burden in the current surge.
  - DoD teams allocated to Spectrum and Mercy Muskegon in R6

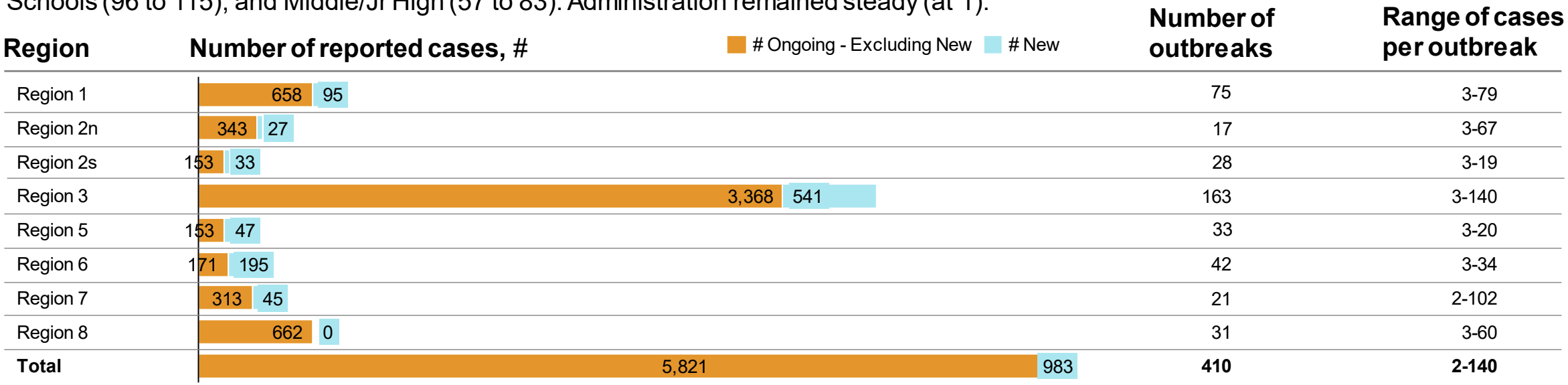
- DoD team allocated to Sparrow
  - Team will arrive the first week of Feb.
- Current requests fulfills a second facility in R1

- SE Michigan increased hospitalizations in the current surge and is now experiencing the highest number of cases and positivity in the state.
  - DoD team allocated to Beaumont Dearborn in R2S
- Disaster Medical Assistance Team (DMAT) assigned to Henry Ford – Wyandotte in R2S
  - An additional DoD will backfill the DMAT Team after their 14-day deployment is complete

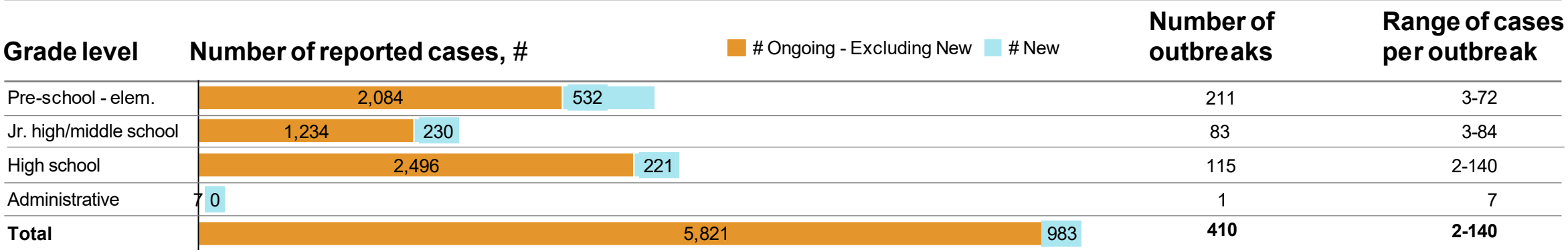
Source: Emergency Preparedness and Response

Vital Infrastructure: K-12 school clusters and outbreaks, week ending Jan 27

Number of reported outbreaks/clusters increased since last week (309 to 410), with increases in Pre K-Elementary (155 to 211), and High Schools (96 to 115), and Middle/Jr High (57 to 83). Administration remained steady (at 1).



Region	Number of reported cases, #		Number of outbreaks	Range of cases per outbreak
Region 1	658	95	75	3-79
Region 2n	343	27	17	3-67
Region 2s	153	33	28	3-19
Region 3	3,368	541	163	3-140
Region 5	153	47	33	3-20
Region 6	171	195	42	3-34
Region 7	313	45	21	2-102
Region 8	662	0	31	3-60
Total	5,821	983	**410**	**2-140**



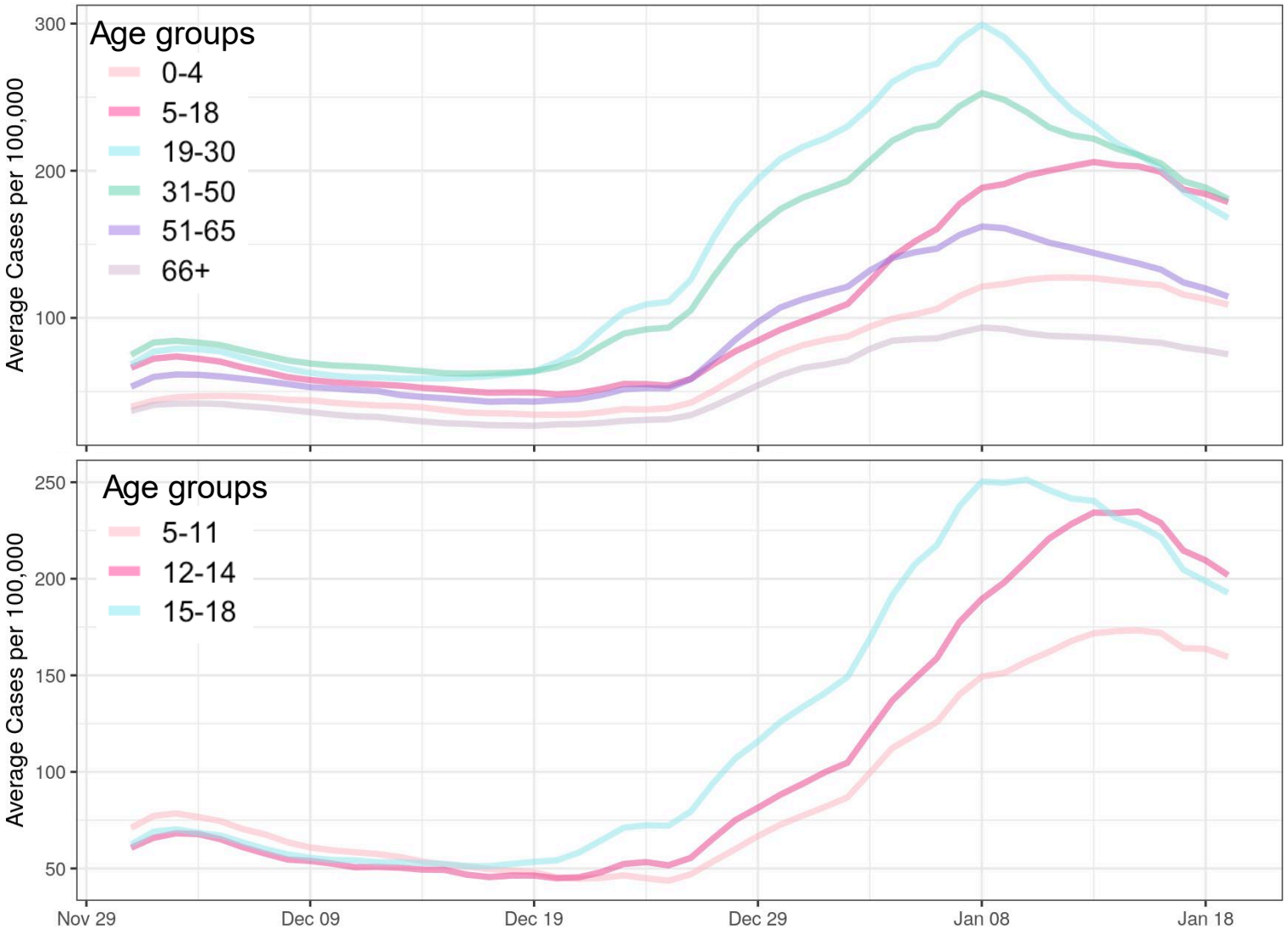
Grade level	Number of reported cases, #		Number of outbreaks	Range of cases per outbreak
Pre-school - elem.	2,084	532	211	3-72
Jr. high/middle school	1,234	230	83	3-84
High school	2,496	221	115	2-140
Administrative	7	0	1	7
Total	5,821	983	**410**	**2-140**

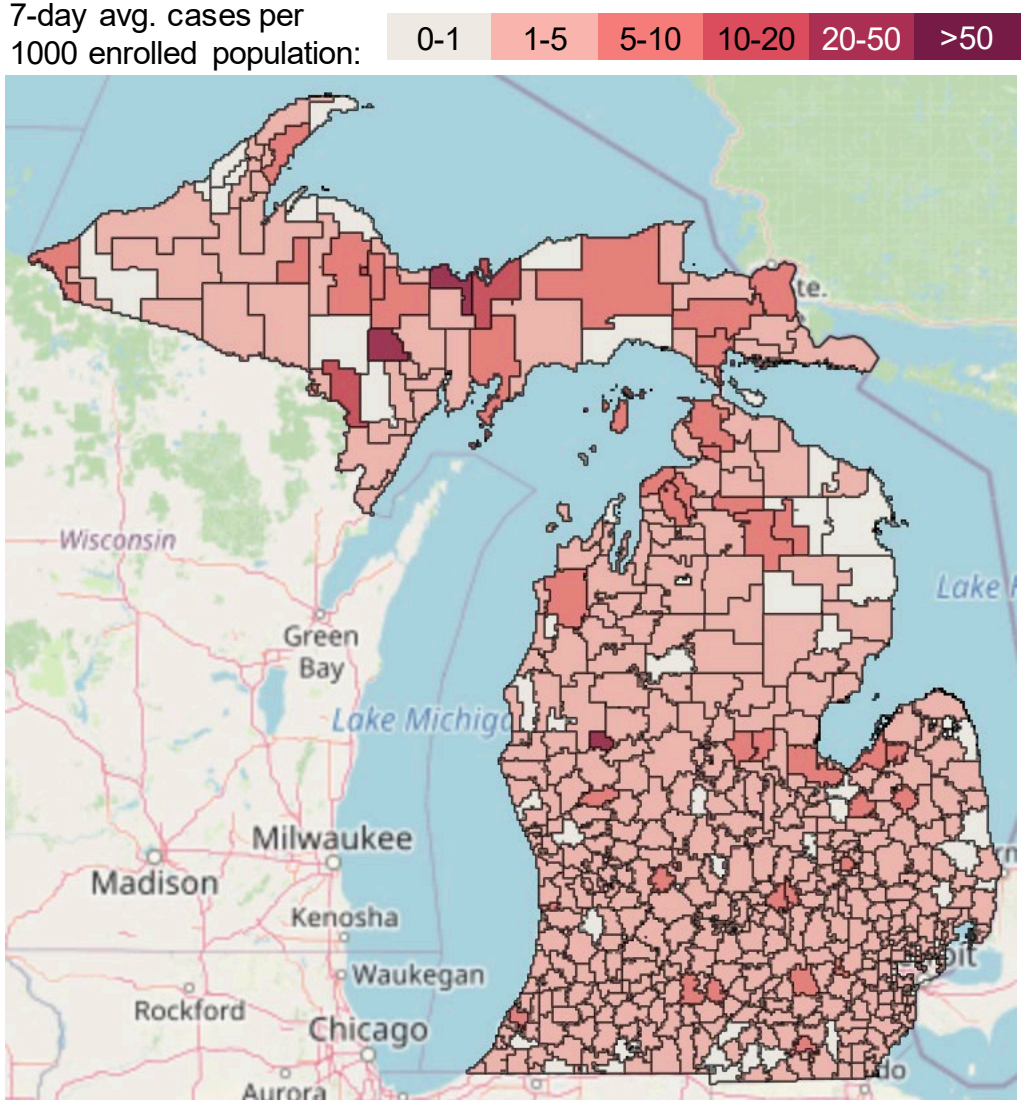
Many factors, including the lack of ability to conduct effective contact tracing in certain settings, may result in significant underreporting of outbreaks. This chart does not provide a complete picture of outbreaks in Michigan and the absence of identified outbreaks in a particular setting in no way 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

Case rates in the school-aged (5-18y) population statewide and by district

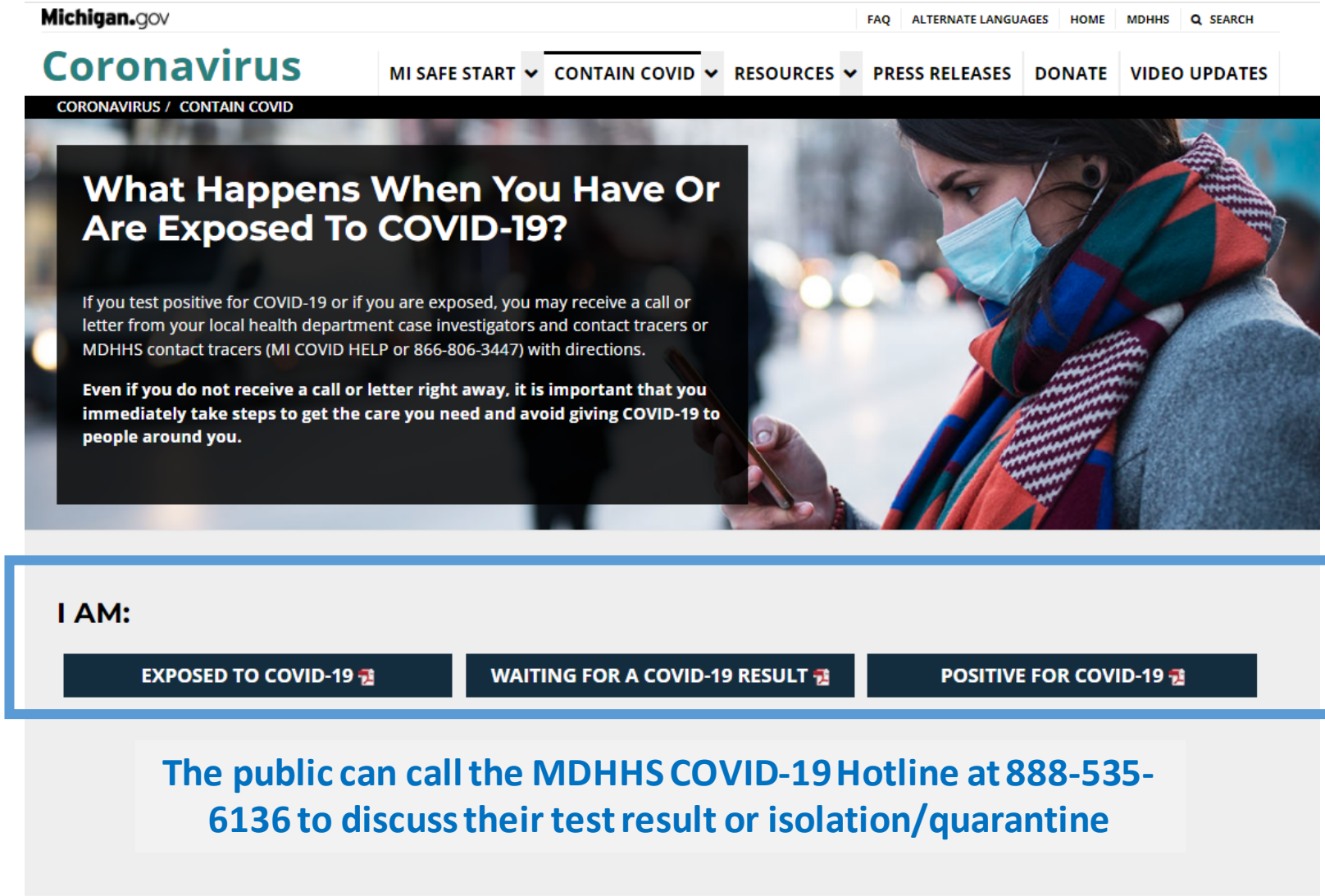
- Case rates in 5–18-year-olds have recently become more similar to 19–50-year-olds
- Case rates are currently highest among high school (15-18) and middle school (12-14) aged populations, followed by elementary school aged populations (5-11)





Sources: MDSS case data as of 1/26/2022 (data through 1/19/22), line charts use statewide age group population, map uses ISD enrolled populations from EOG mask tracker data.

Updates to the Contain COVID Webpage



The public can call the MDHHS COVID-19 Hotline at 888-535-6136 to discuss their test result or isolation/quarantine

Have you been exposed to COVID-19?*

If you are unvaccinated, **OR** not fully vaccinated **OR** not boosted (if eligible),

Get tested on day five after your exposure, even if you don't have symptoms. If symptoms develop after day five, test again.

Stay Home

Stay home and away from others in your home for five days from your last contact with a COVID+ person. Continue to wear a well-fitting mask that covers your nose and mouth around others for an additional five days. Even if you don't get a contact tracing call from the health department, quarantining and mask wearing is important to avoid infecting others.

Watch for fever (100.4°F), cough, shortness of breath, or other symptoms of COVID-19.

Wear well-fitting mask that covers your nose and mouth anytime you are around other people, even in your home.

If you are fully vaccinated* **AND** boosted (if eligible), **OR** if you tested positive for COVID-19 in the last 90 days,

You do NOT need to quarantine unless you have symptoms.

Get tested on day five after your exposure, even if you don't have symptoms. If symptoms develop after day five, test again.

Wear a well-fitting mask that covers your nose and mouth around others for 10 days. Even if you don't get a contact tracing call from the health department, mask wearing is important to avoid infecting others.

* People who received two Pfizer and Moderna vaccines within the last five months or one J&J vaccine within the last two months.

School and health care quarantine guidelines and requirements may be different.

Visit Michigan.gov/Coronavirus for information.

For questions, contact your local health department, dial 211 or call the COVID-19 Hotline at 888-535-6136.

MDHHS
Michigan Department of Health & Human Services

Testing Framework

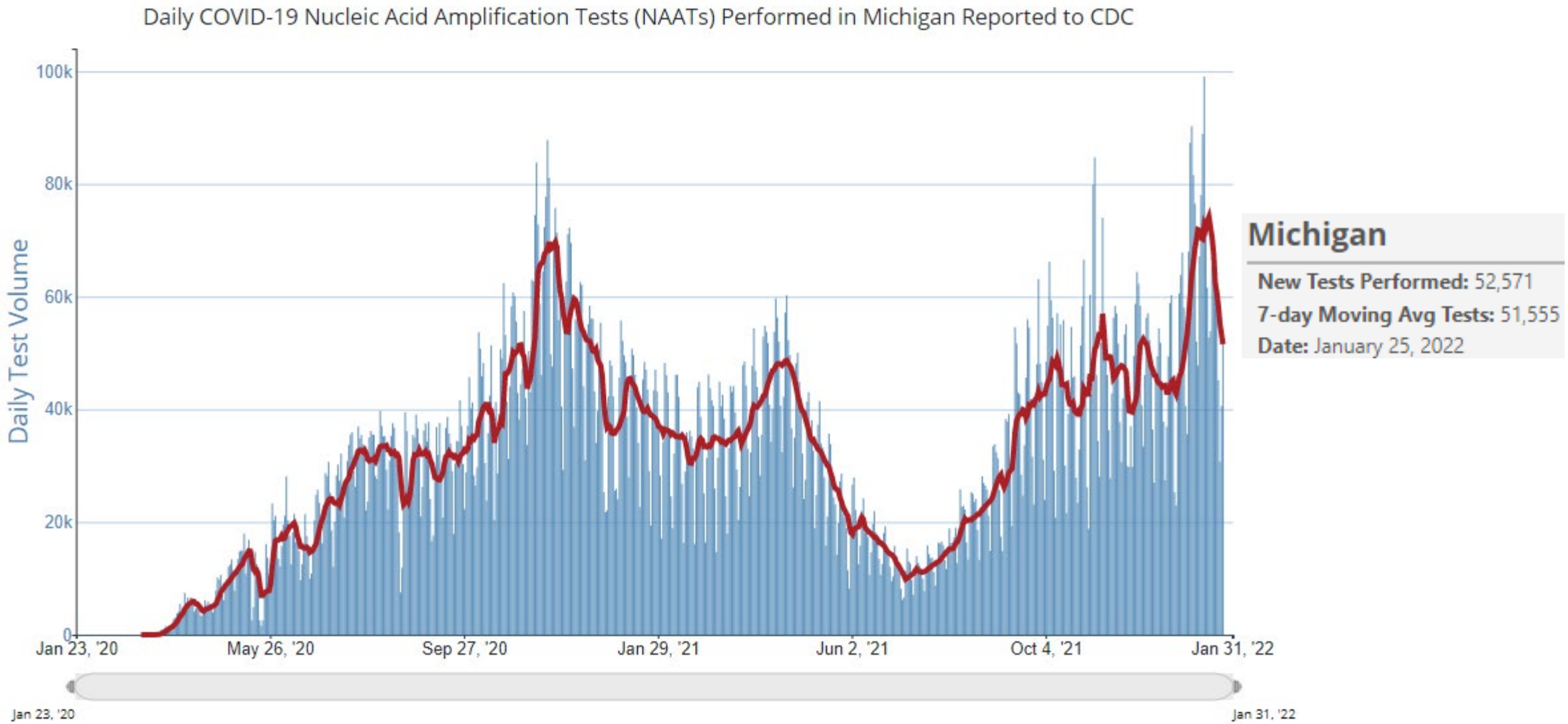
- Emphasis and maintenance of capacity to perform PCR testing in traditional healthcare/laboratory settings

- MDHHS supported distribution of administered rapid antigen tests to high priority settings (e.g. schools, long term care, corrections, neighborhood and community pop-up sites, etc.)

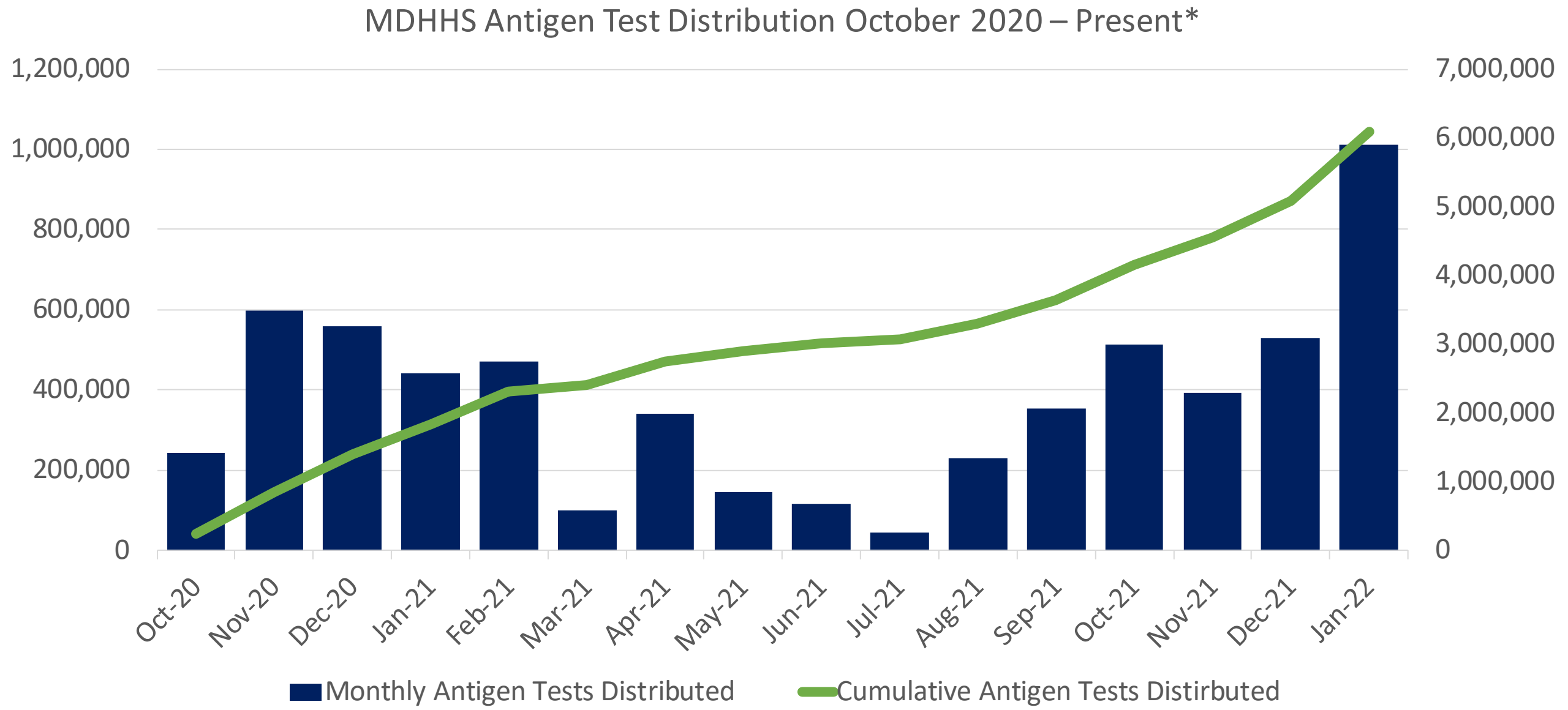
- MDHHS support for expanded distribution of At-Home or Over-the-Counter (OTC) tests through select venues (schools, community action agencies, libraries)

- Federal distribution of OTC Tests started January 18th : https://www.covidtests.gov/

COVID-19 PCR Testing declining after all-time high



Current Trends and Projections | Prevent Death and Severe Outcomes | Protect Healthcare Capacity | **Keep Vital Infrastructure Functioning**



*Excludes tests shipped for Spring 2021 School Sports Testing Mandate

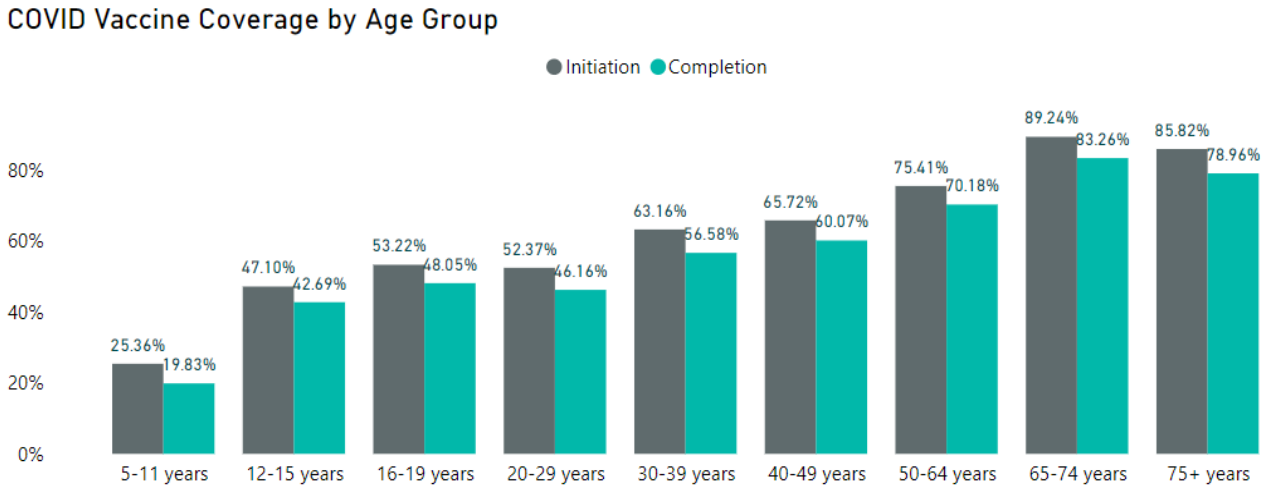
Testing Resources in Michigan

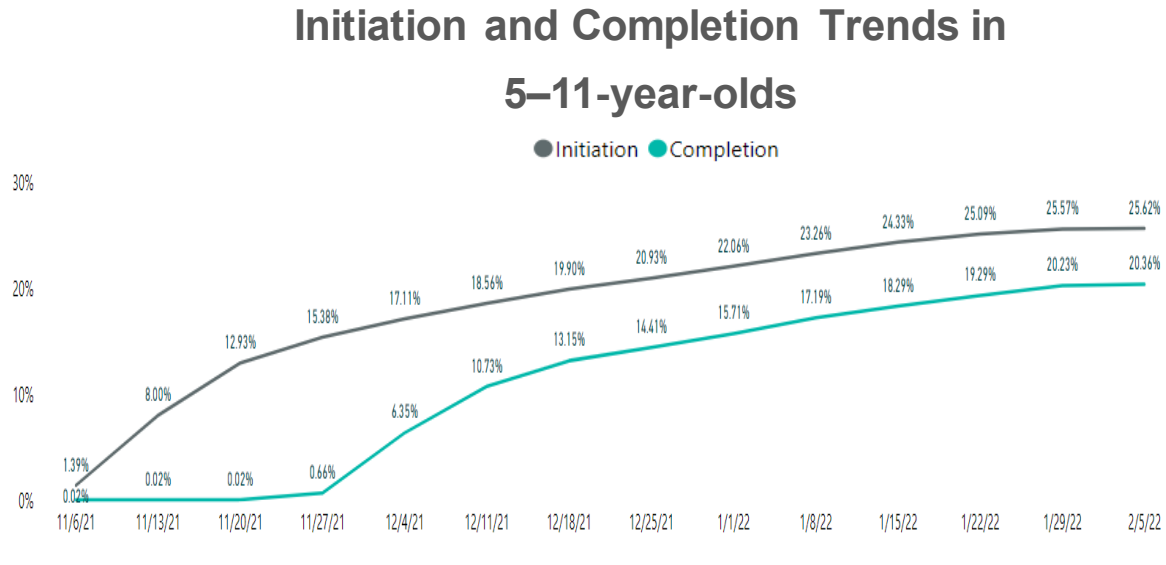
Testing Options:

- Identify a testing location near you using the Solv website
- Identify an MDHHS supported Point of Entry/Welcome Center/Airport Testing site, or Neighborhood or Community popup testing site
- MI Safe Schools Testing program – for schools to administer tests on site for students and staff to 'test to stay'
  - Schools can order tests through the Mi Safer Schools: School Antigen COVID Test Ordering form
- MI Backpack Home Test Program – schools can sign up to be distributed 'At Home' or 'Over-the-Counter' Tests for students to take home for personal use
  - Schools can express interest here: https://forms.office.com/g/is9FYDMRzn
- More to come as Michigan sustains and expands At Home Test distribution through Michigan Libraries
- Order free at home tests through the federal government: https://www.covidtests.gov/

Vaccinations and Boosters

- Over 14.7 million COVID-19 vaccine doses have been administered in Michigan
  - Over 6.5 million Michiganders have received at least one dose (65.2%)
  - Over 5.8 million Michiganders have completed a primary series (58.2%)
  - Over 2.8 million additional/booster doses have been administered in Michigan
    - 48.3% of the fully vaccinated population has received a booster
    - 72.1% of the fully vaccinated population 65 years of age or older has received a booster





https://covid.cdc.gov/covid-data-tracker/#vaccinations
https://www.michigan.gov/coronavirus/0,9753,7-406-98178_103214_103272-547150--,00.html

Vaccines

Protect against severe outcomes

Boosters are more important than ever, and available for individuals 12+

Masks, Distancing & Ventilation

Prevent spread

Well-fitting, high-quality masks in all indoor public or crowded settings are more important than ever

Tests

Prevent spread

We encourage testing before gatherings, with symptoms, and after exposure

Treatment

Protect against severe outcomes

Oral antivirals and monoclonal antibody infusions are available