MI COVID RESPONSE DATA AND MODELING UPDATE

February 15, 2022

Executive Summary

Current statistics and where we may be going

- Coming off highest case numbers of entire pandemic: All regions experiencing declines for positivity, cases rates, and hospitalizations
- Those 30–39-years-old continue to have the highest case rate of any age group
- Omicron reported in 75 counties in Michigan and accounts for 100% of all recent specimens sequenced
- Michigan wastewater dashboard publicly available to monitor trends and burden throughout Michigan

Preventing Death and Severe Outcomes

- Cases in long term care facilities are decreasing, crucial to get LTC residents and staff up to date on vaccination
- Death rates are declining but remain highest among the oldest age groups

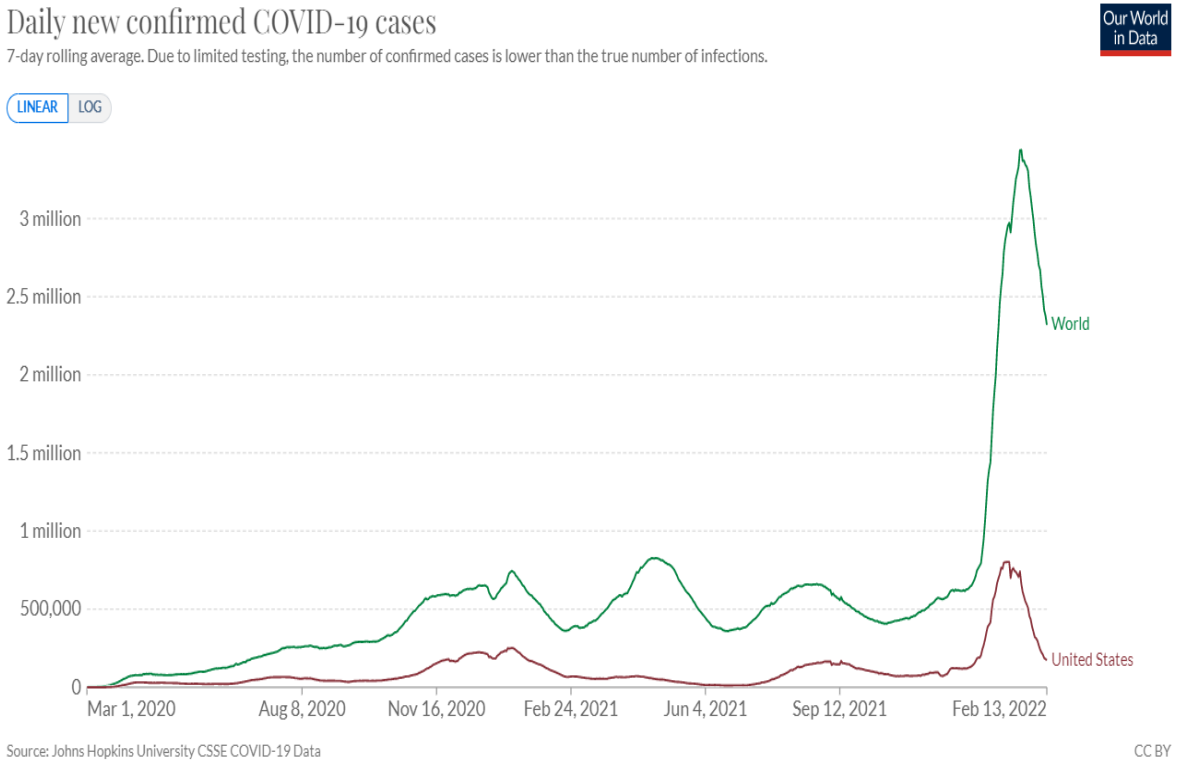
Protect Health Care Capacity

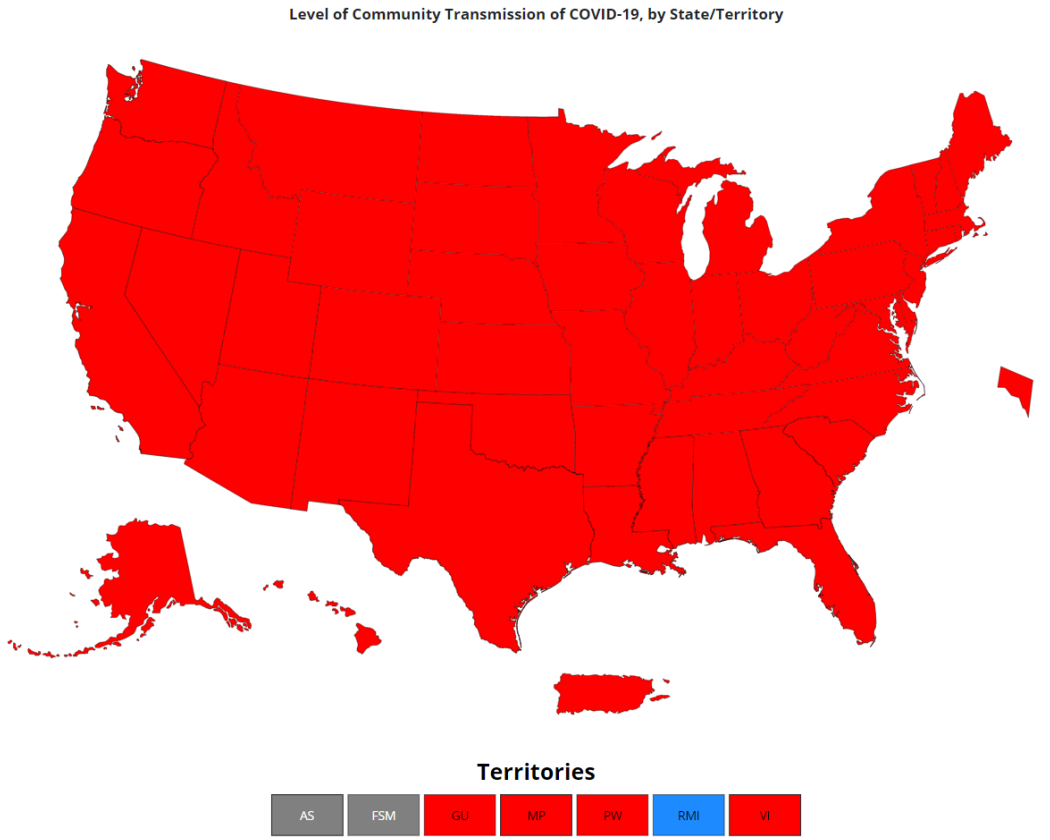
- COVID+ census in hospitals, including pediatric census, is declining in nearly all regions
- Several federal support teams are continuing to support hospitals through March
- The decrease in COVID-19 burden correlates with improving hospitalization metrics (e.g., more available beds and decreases in the number of hospitals reporting staff shortages)

Keep Vital Infrastructure Functioning

- Vaccination, Masking, Testing and Therapeutics are critical tools in our fight against the impact of COVID-19
- Newly available testing resources for vulnerable population in Michigan
- MDHHS has resources available for recommendations with quarantine and isolation updates
- Layered mitigations are effective at reducing transmission of SARS-CoV-2

Global and National Trends





Globally, 412,262,713 cases and 5,818,207 deaths (Data* through 2/14)

- Globally, cases are declining

United States: Reported cases (7-day average) have decreased over 40% since the prior week¶

- However, the U.S., and all 50 states, remain at High transmission level (**369.8** cases/100,000 in last 7 days; last week: 660.2 cases per/100,000)

Most Midwestern states are declining

- Minnesota and Wisconsin have the highest case rates *in Midwest* ; Michigan has returned to mid-December case rates and mid-November hospitalization occupancy

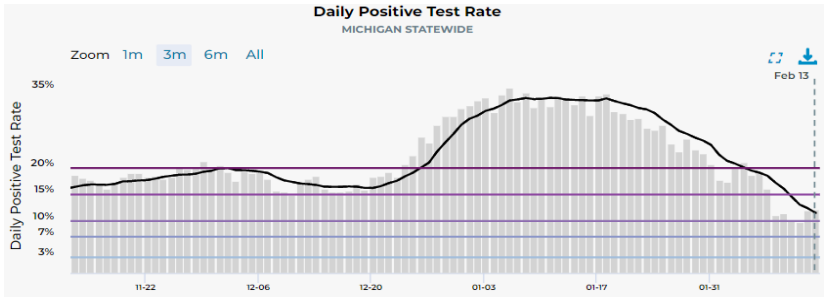
Source: *Johns Hopkins Coronavirus Resource Center; ¶ CDC COVID Data Tracker Weekly Review; † CDC COVID Data Tracker – CDC recently updated their methodology for reporting case rates

Recent statewide trends

Statewide trends

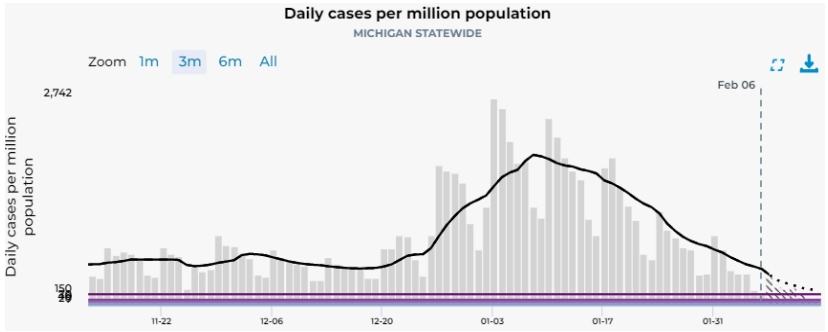
7-day average Daily values

Positivity, %



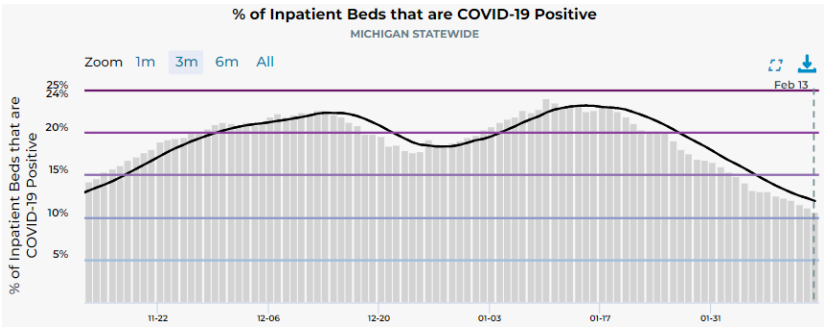
Current: 11.5%

Daily cases per million



Current: 401.1

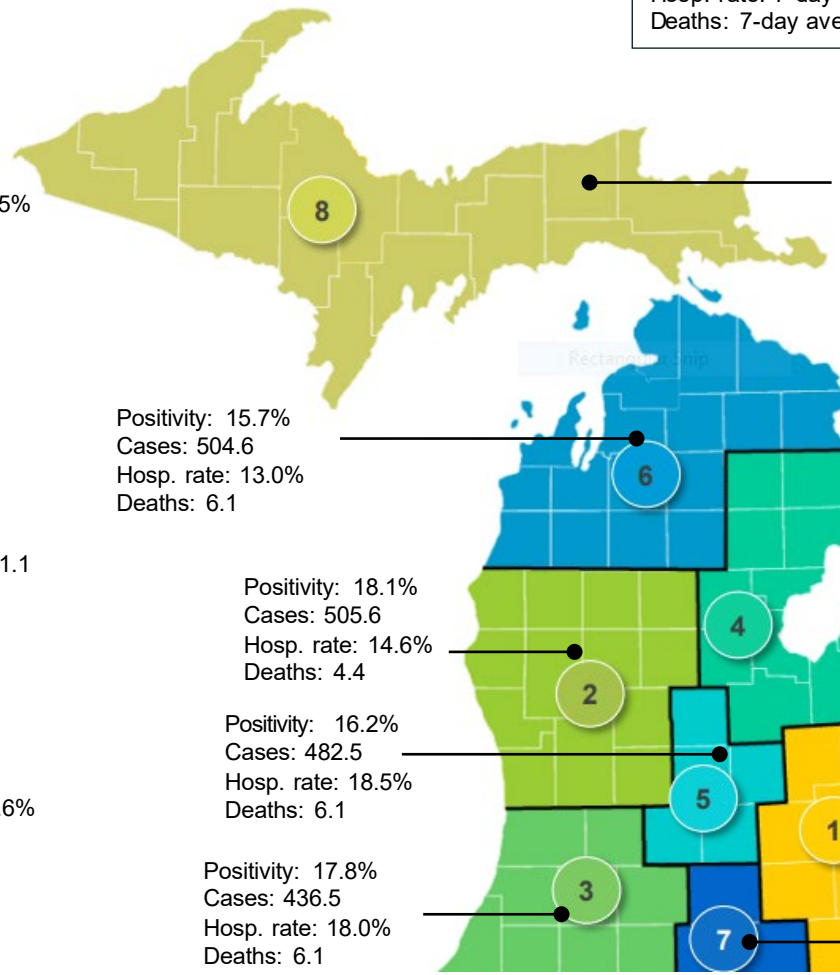
Daily hospitalization rate, %



Current: 11.6%

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: 16.2%
Cases: 580.3
Hosp. rate: 9.2%
Deaths: 3.8

Positivity: 15.7%
Cases: 504.6
Hosp. rate: 13.0%
Deaths: 6.1

Positivity: 18.1%
Cases: 505.6
Hosp. rate: 14.6%
Deaths: 4.4

Positivity: 17.6%
Cases: 535.6
Hosp. rate: 11.3%
Deaths: 8.2

Positivity: 16.2%
Cases: 482.5
Hosp. rate: 18.5%
Deaths: 6.1

Positivity: 8.2%
Cases: 318.9
Hosp. rate: 9.8%
Deaths: 4.7

Positivity: 17.8%
Cases: 436.5
Hosp. rate: 18.0%
Deaths: 6.1

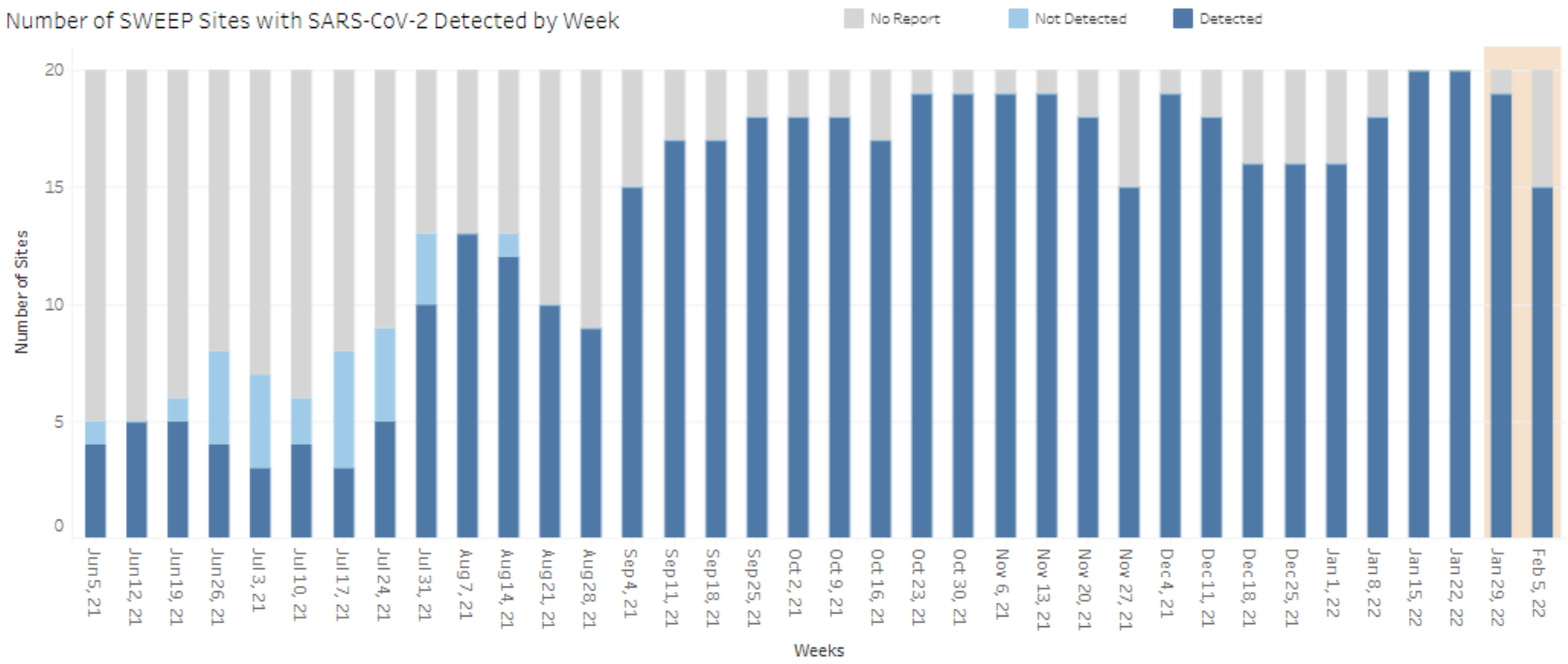
Positivity: 15.8%
Cases: 432.0
Hosp. rate: 15.9%
Deaths: 6.6

Source: https://mistartmap.info/

Michigan COVID-19 Sentinel Wastewater Dashboard

SARS-CoV-2 Detection

The graph below shows the presence or absence of SARS-CoV-2 at the 20 SWEEP sites over time. A detection of the virus indicates that at least one person in the sampled community is shedding the virus. If the virus is not detected, this indicates that either there is no virus in the sampled community, or the concentration of the virus in the sample is below the level that can be detected by the test.



The orange shaded region represents a period of delayed reporting. Data may change as additional reports are received.

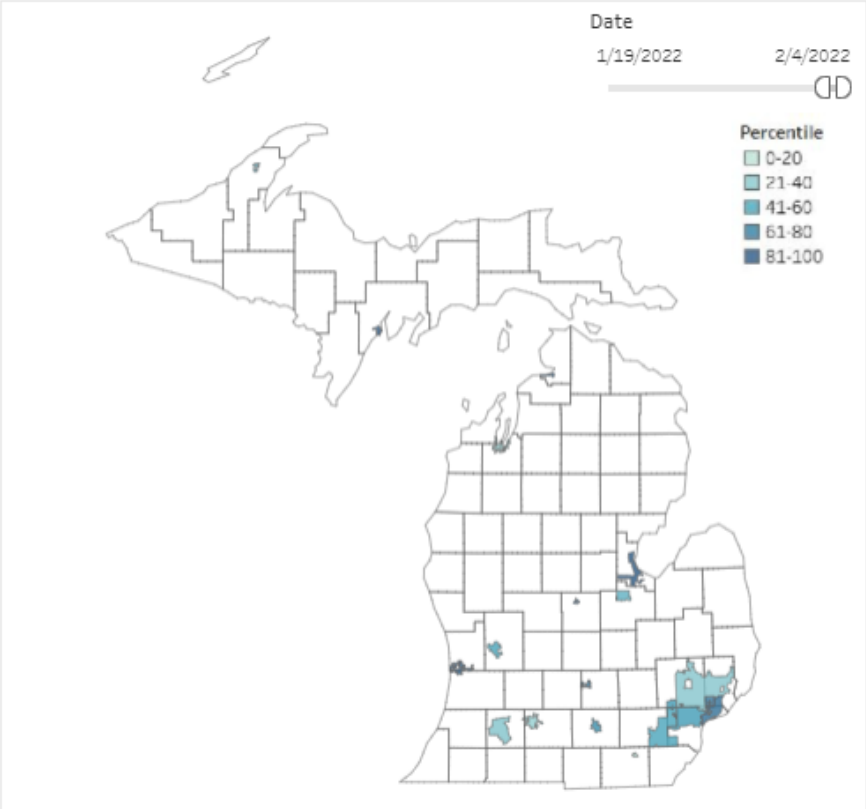
Wastewater sampling at each site started on different dates. All sites were sampling by 1/13/22.

- Virus Detection tab which displays the number of sites reporting positive and negative test results to MDHHS each week

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

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	22	1/31/2022	
Battle Creek WWTP	51093	16	2/2/2022	
Bay City WWTP	34000	23	2/3/2022	
Delhi Township WWTP	22500	18	1/20/2022	
Escanaba WWTP	12600	23	2/2/2022	
GLWA Detroit River Interce..	492000	67	1/26/2022	
GLWA North Interceptor-	1482000	44	1/26/2022	
GLWA Oakwood-	840600	68	1/24/2022	
Grand Rapids WWTP	265000	26	2/3/2022	
Holland WWTP North	45606	28	2/2/2022	
Holland WWTP South	36912	28	2/2/2022	
Jackson WWTP	90000	28	2/3/2022	
Kalamazoo WWTP	150000	23	2/1/2022	
Petoskey WWTP	7900	28	2/3/2022	
Portage Lake WWTP	14000	21	2/2/2022	
Saginaw Township WWTP	40000	25	2/3/2022	
Tecumseh WWTP	8680	4	2/4/2022	
Traverse City WWTP	45000	26	2/3/2022	
Warren WWTP	135000	20	1/27/2022	
Ypsilanti WWTP	330000	28	2/3/2022	

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 2/9/2022. 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.

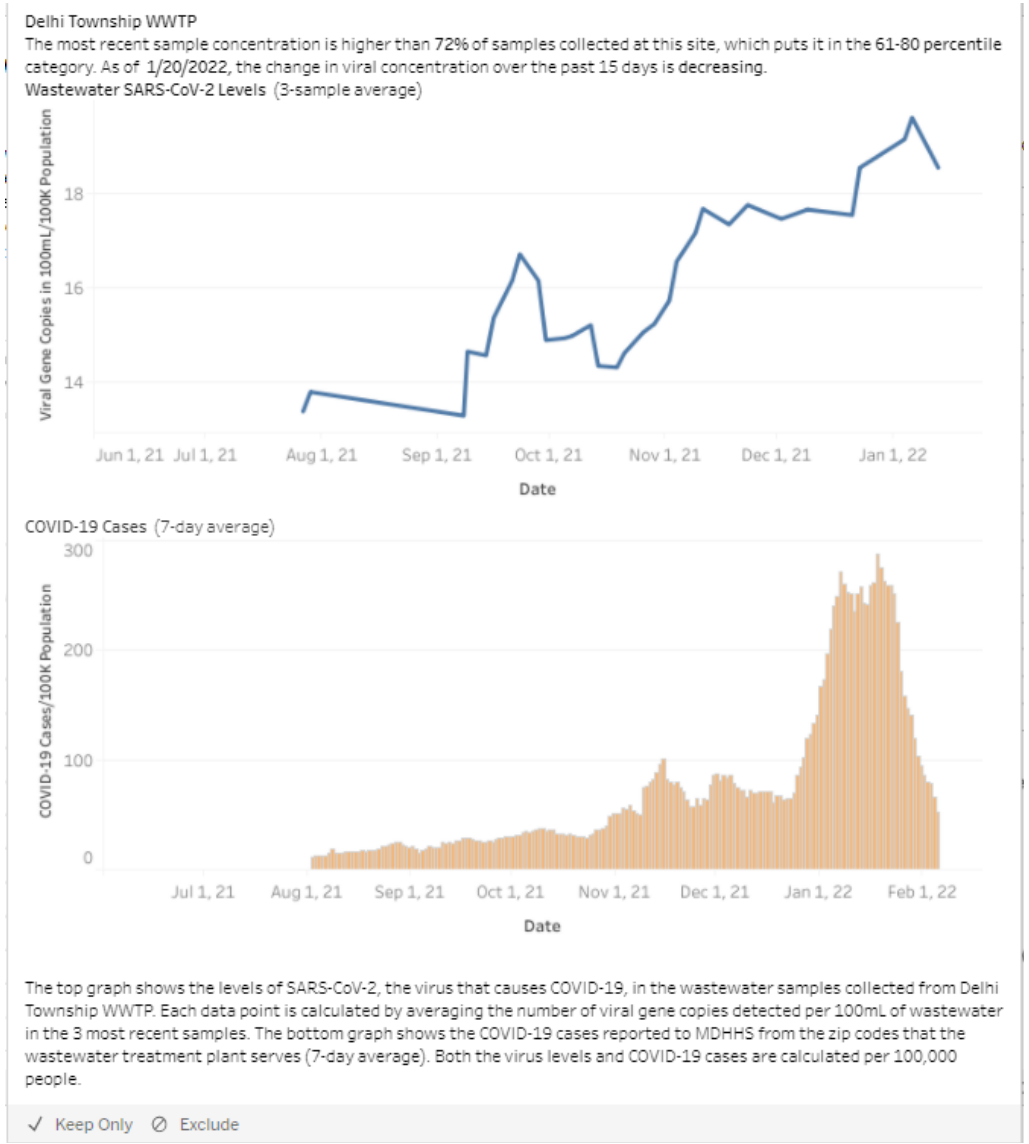
15-Day Trends
- 1000% or more
- 100% to 999%
- 10% to 99%
- 1% to 9%
- -9% to 0%
- -99% to -10%
- -100% to -999%
- -1000% or less

- Among the 400 wastewater testing sites, a subset of wastewater facilities are used to weekly monitor the presence of SARS-CoV-2 (n=20)
- The Sentinel Wastewater Epidemiology Evaluation Project (SWEEP) was created to give a regional and statewide overview of these efforts

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

Site-Specific Pop-Up

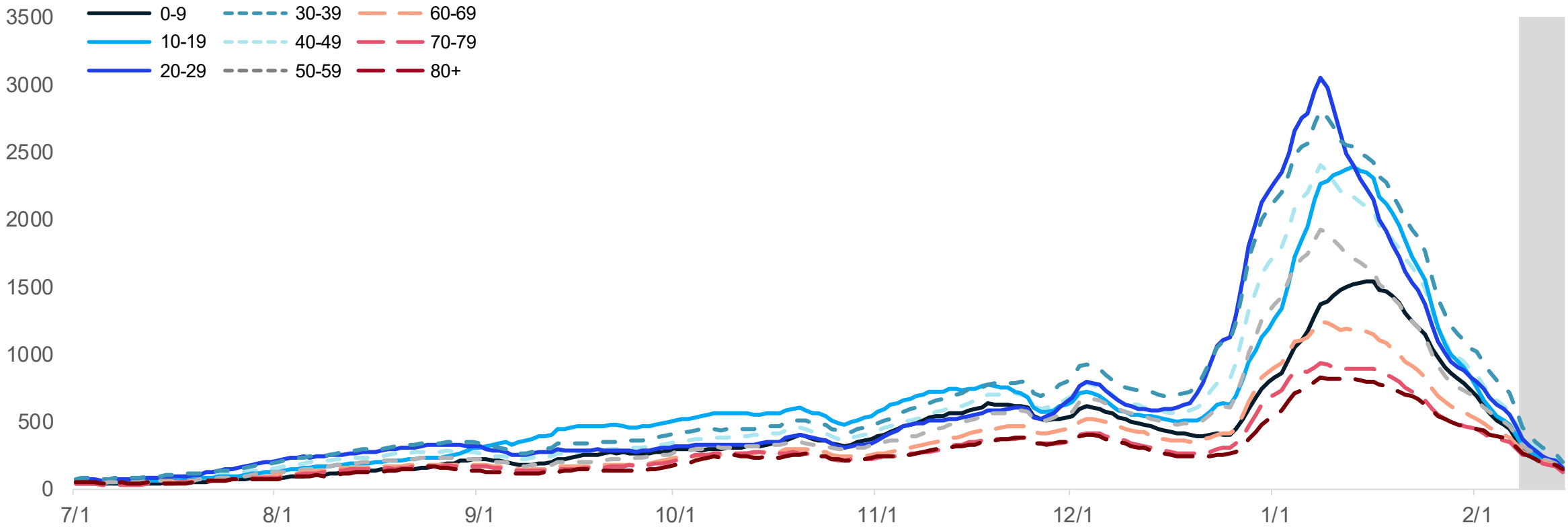
- Within the ‘SWEEP Data’ dashboard tab, additional site-specific is available when selecting individual sites from the map, including:
  - Percentile of the most recent sample collected
  - Rolling 3-day average of wastewater samples collected at the site over time
  - Rolling 7-day average of clinical COVID-19 cases reported from the zip codes that each WWTP serves



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

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 297 and 574 cases per million (through 2/7)
- Case counts and case rates are highest for 30-39-year-olds this week, followed by 40-49, and 20-29

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

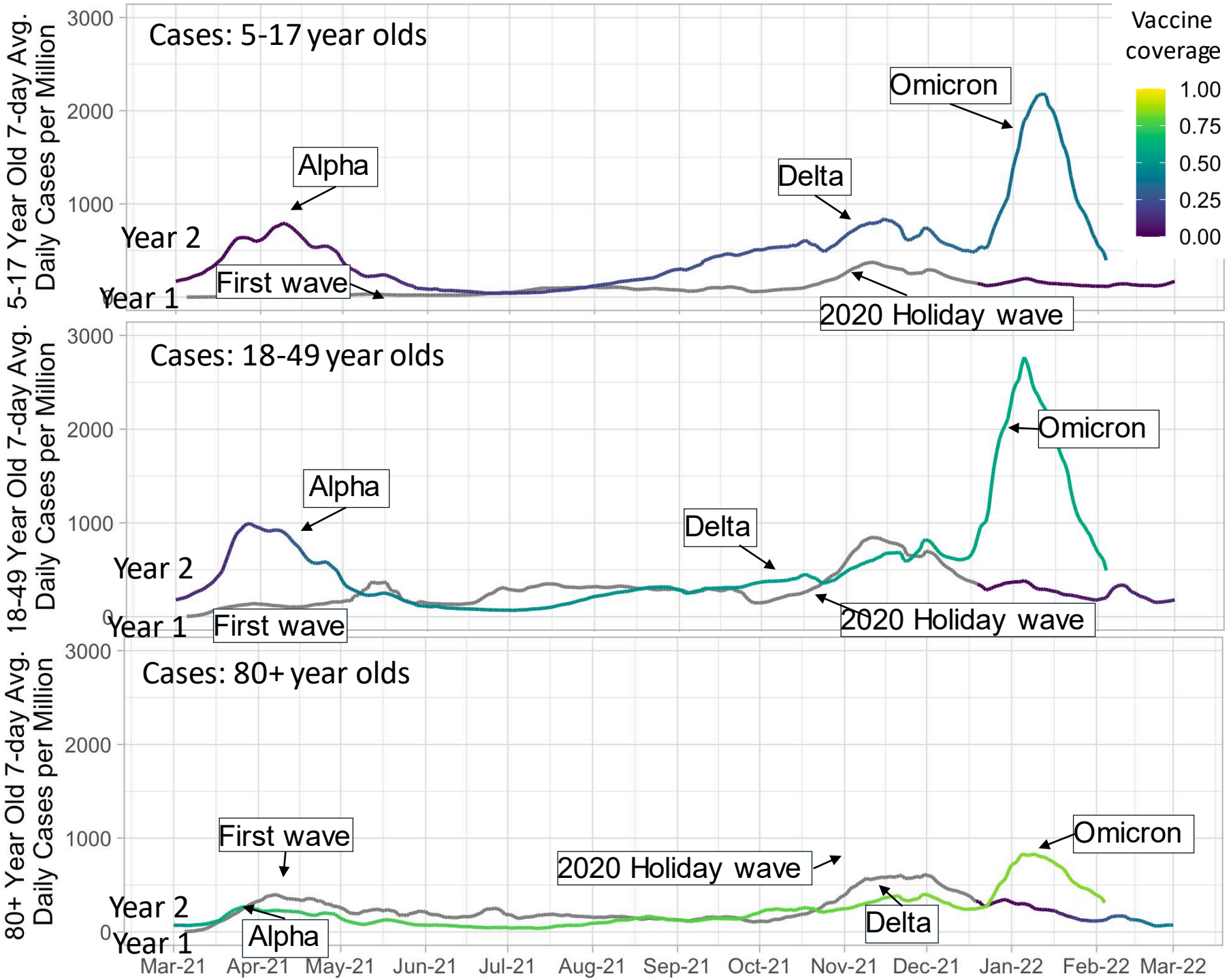
Year-over-year comparisons by age group

All age groups have seen their highest case rates of the entire pandemic during the omicron wave

Vaccine coverage is lower among younger age groups compared to middle and older age groups

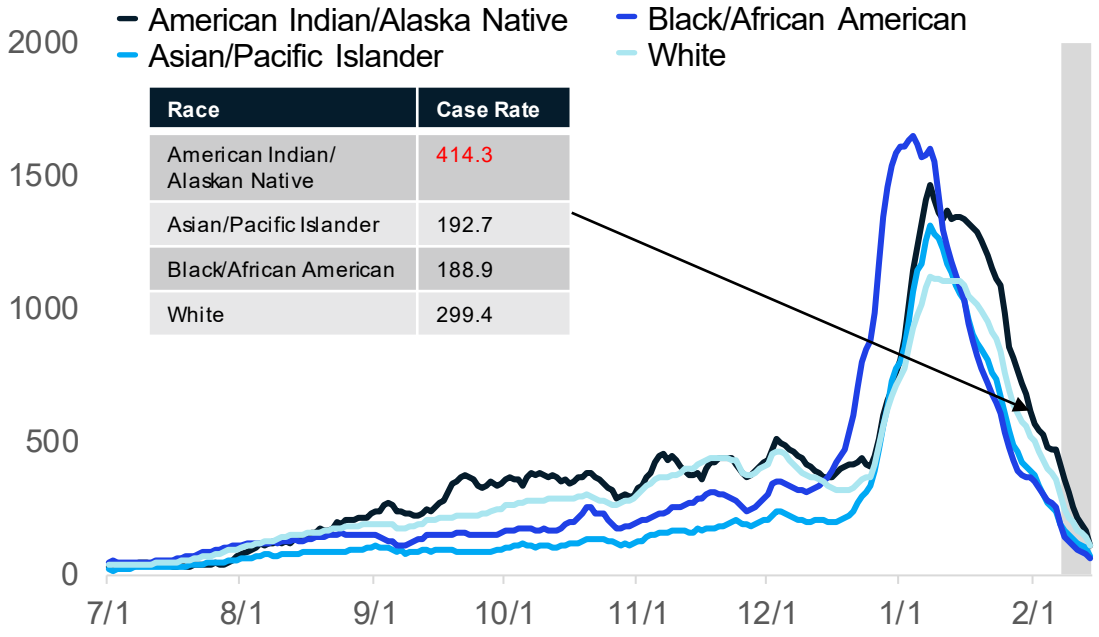
Older age groups have higher vaccine coverage and relatively lower case rates during the omicron wave

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



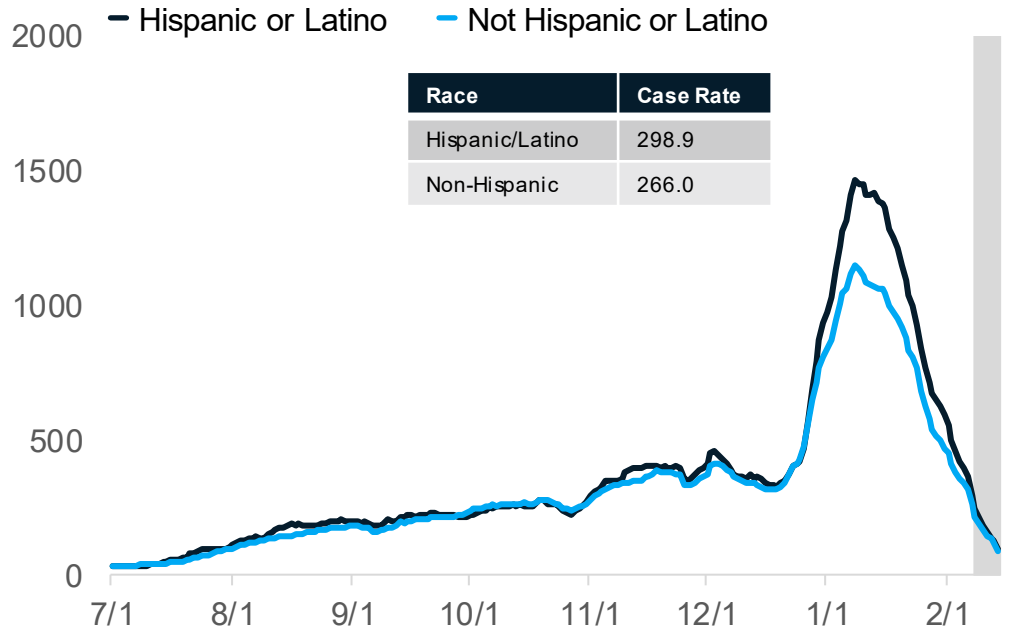
Case Rates by Reported Racial and Ethnic Group

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



Race	Case Rate
American Indian/ Alaskan Native	414.3
Asian/Pacific Islander	192.7
Black/African American	188.9
White	299.4

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



Race	Case Rate
Hispanic/Latino	298.9
Non-Hispanic	266.0

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, 28% (↓2%) of race data and 37% (↓2%) 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 30 – Feb 5 (NOWCAST)

USA

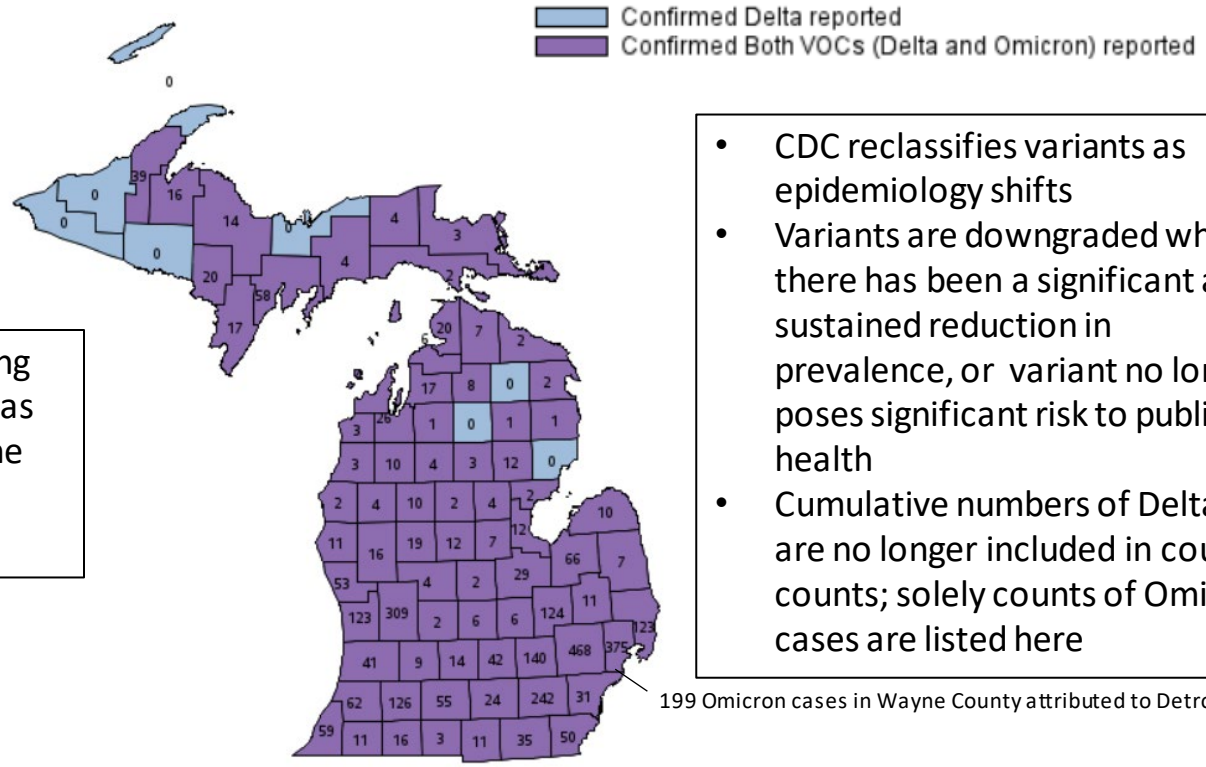
WHO label	Lineage #	US Class	%Total	95%PI
Omicron	BA.1.1	VOC	73.2%	69.0-77.1%
	B.1.1.529	VOC	22.9%	19.1-27.1%
	BA.2	VOC	3.9%	2.8-5.3%
Delta	B.1.617.2	VOC	0.0%	0.0-0.0%
Other	Other*		0.0%	0.0-0.0%

* 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 and BA.3 are aggregated with B.1.1.529. For regional data, BA.1.1 is also aggregated with B.1.1.529, as it currently cannot be reliably called in each region.

Currently, CDC is reporting B.1.1.529 (i.e., Omicron)as the dominant strain in the U.S.; sub-lineage BA-2 is now also being reported

Data last updated Feb 14, 2022
Source: MDSS
¶ Sequence specimens are from the most recent week by onset date which may change as more specimens are sent in

Variants of Concern in Michigan, Feb 14

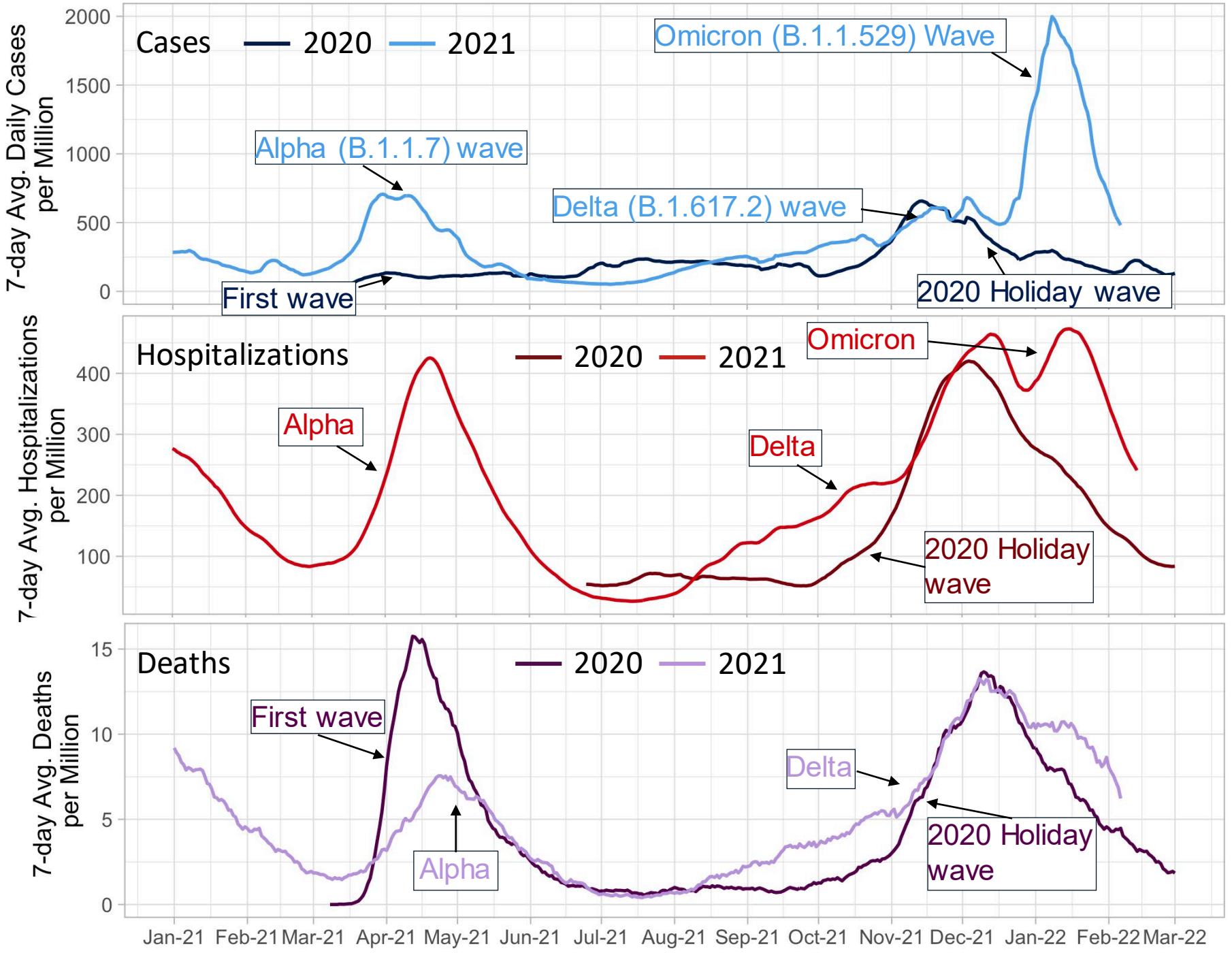


- CDC reclassifies variants as epidemiology shifts
- Variants are downgraded when there has been a significant and sustained reduction in prevalence, or variant no longer poses significant risk to public health
- Cumulative numbers of Delta are no longer included in county counts; solely counts of Omicron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

Variant	MI Reported Cases	# of Counties	MDHHS VOC Sequenced Prev. ¶
B.1.617.2 (delta)	30,945	83	0%
B.1.1.529 (omicron)	3,821	75	100%

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

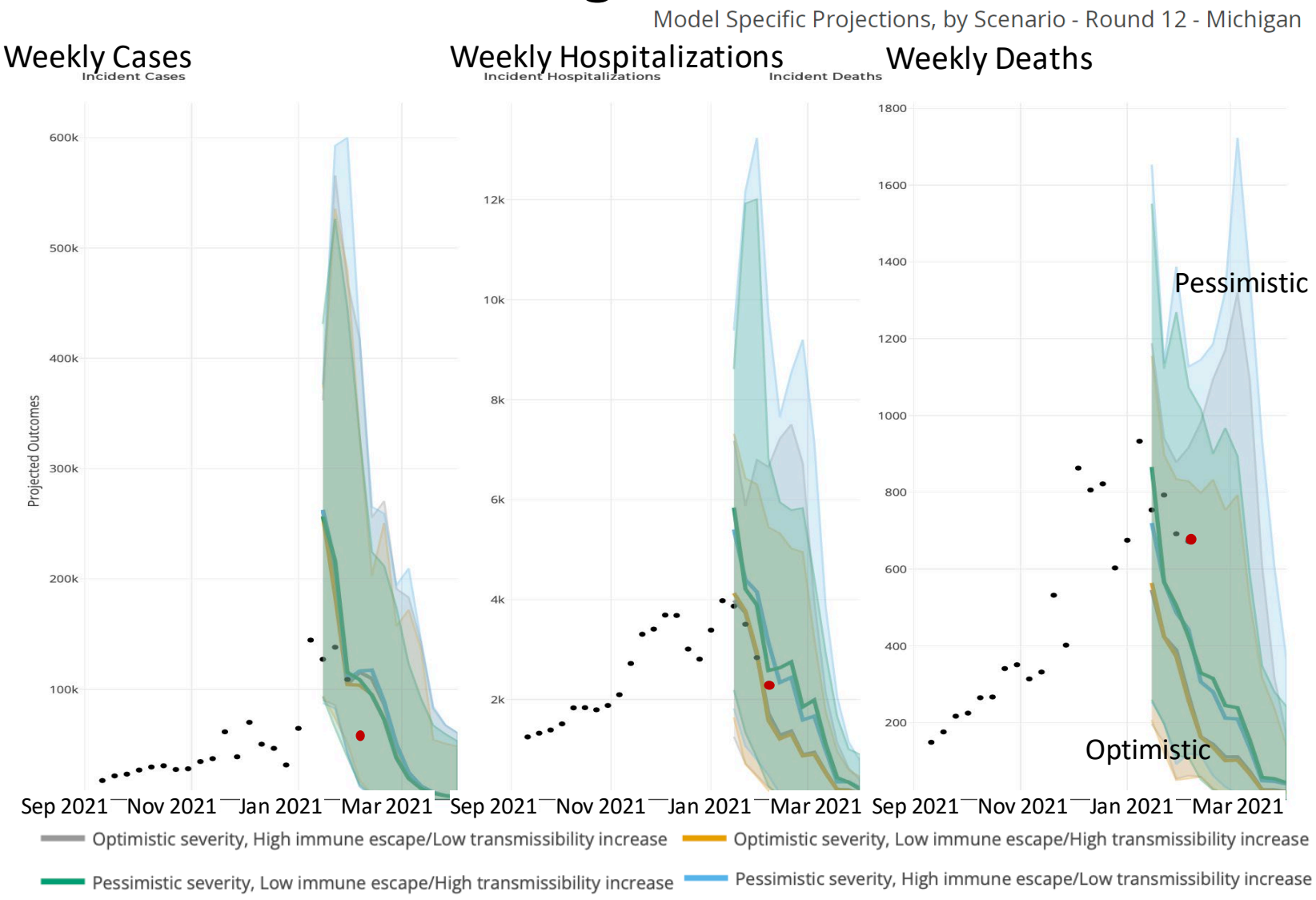
- Cases are still more than 2x the levels last year but are now lower than last year's holiday peak
- Hospitalizations are also higher than last year
- Deaths are currently slightly higher than last year



Source: MDSS and EM Resource data

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

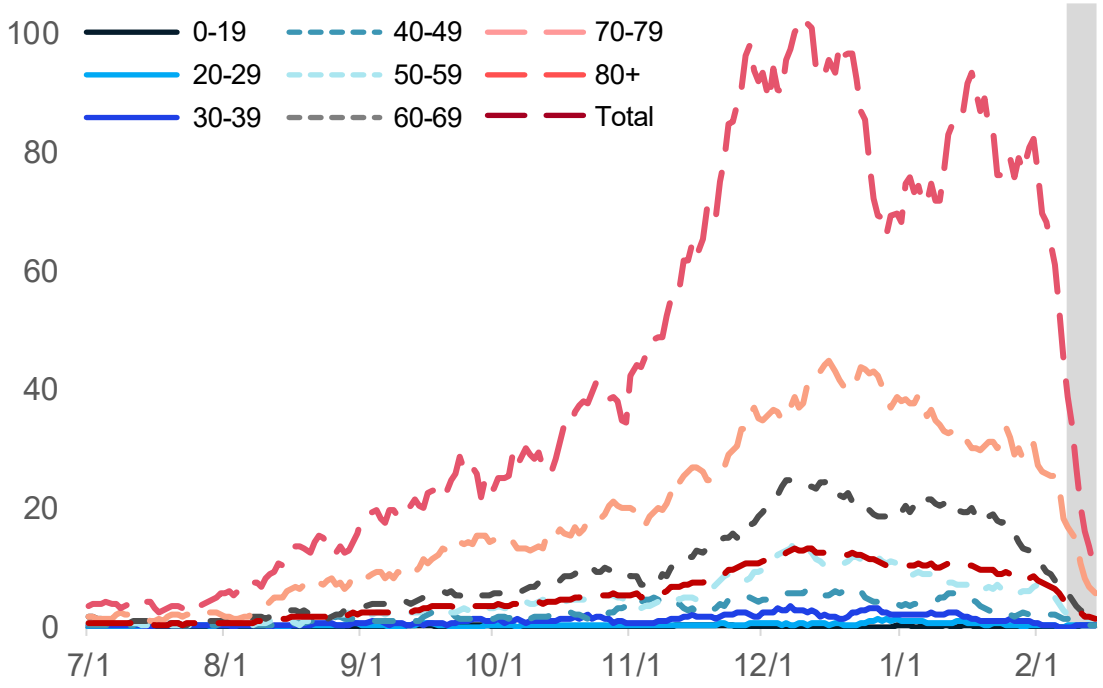
- Updated Model Scenarios (Round 12)
- Suggest we are declining or soon to decline for all three metrics, though in some scenarios there is potential for a second peak in hospitalizations and deaths (in the 95% confidence intervals)
- Cases and hospitalizations appear consistent with all four scenarios
- 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%

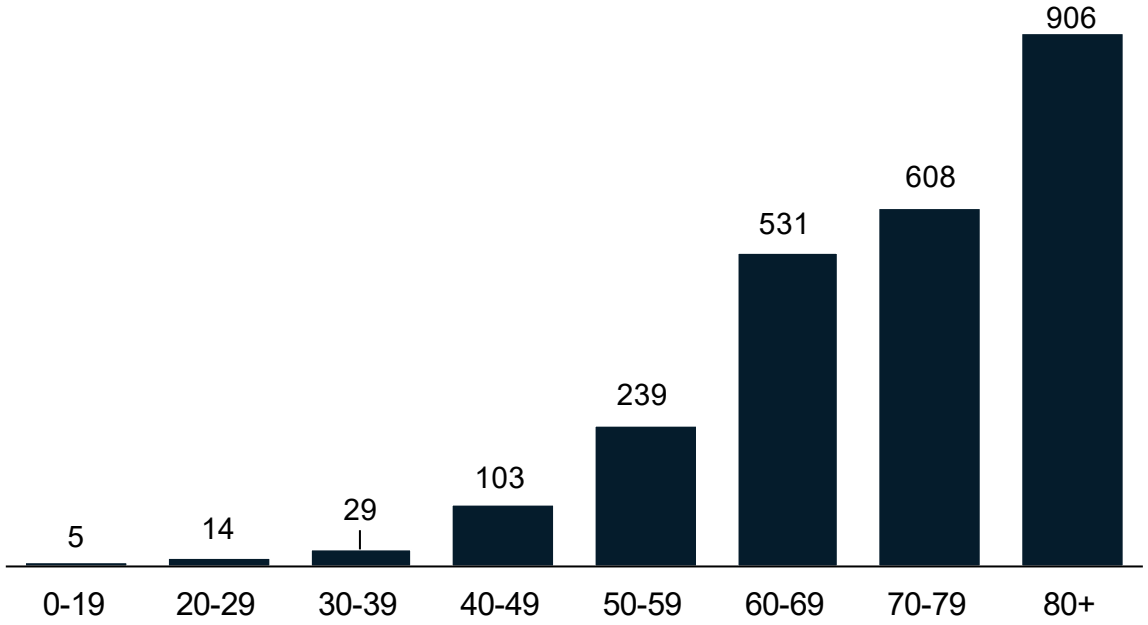
Average and total new deaths, by age group

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



Total COVID-19 deaths in confirmed and probable cases by age group (past 30 days, ending 2/7/2022)

- 16% of deaths below age sixty

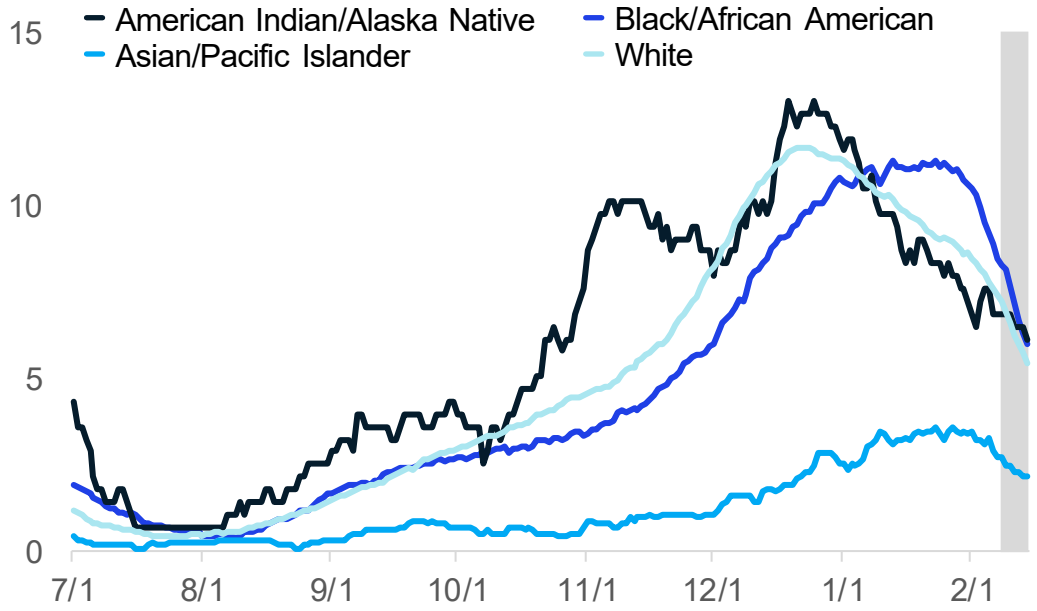


- Through 2/7, the 7-day avg. death rate is more than 45 daily deaths per million people for those over the age of 80
- In the past 30 days, there were 5 deaths among confirmed and probable COVID-19 cases under the age of 20
- 30-day proportion of deaths among those under 60 years of age is 16%

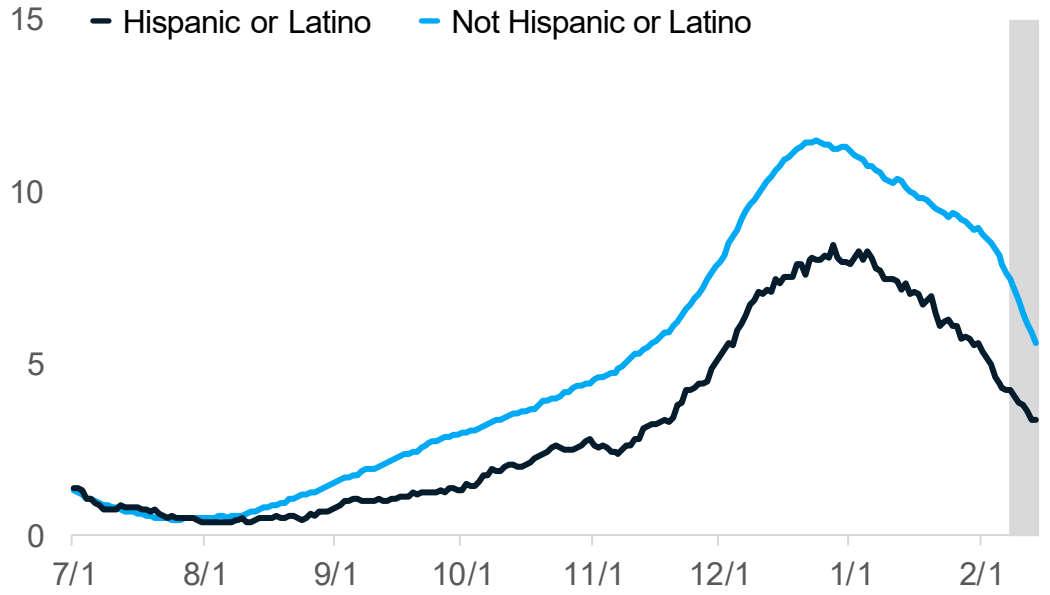
Note: Death information sourced from MDHHS and reflects date of death of confirmed and probable cases.
Source: MDHHS – Michigan Disease Surveillance System (MDSS)

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

Average daily deaths per million people by race



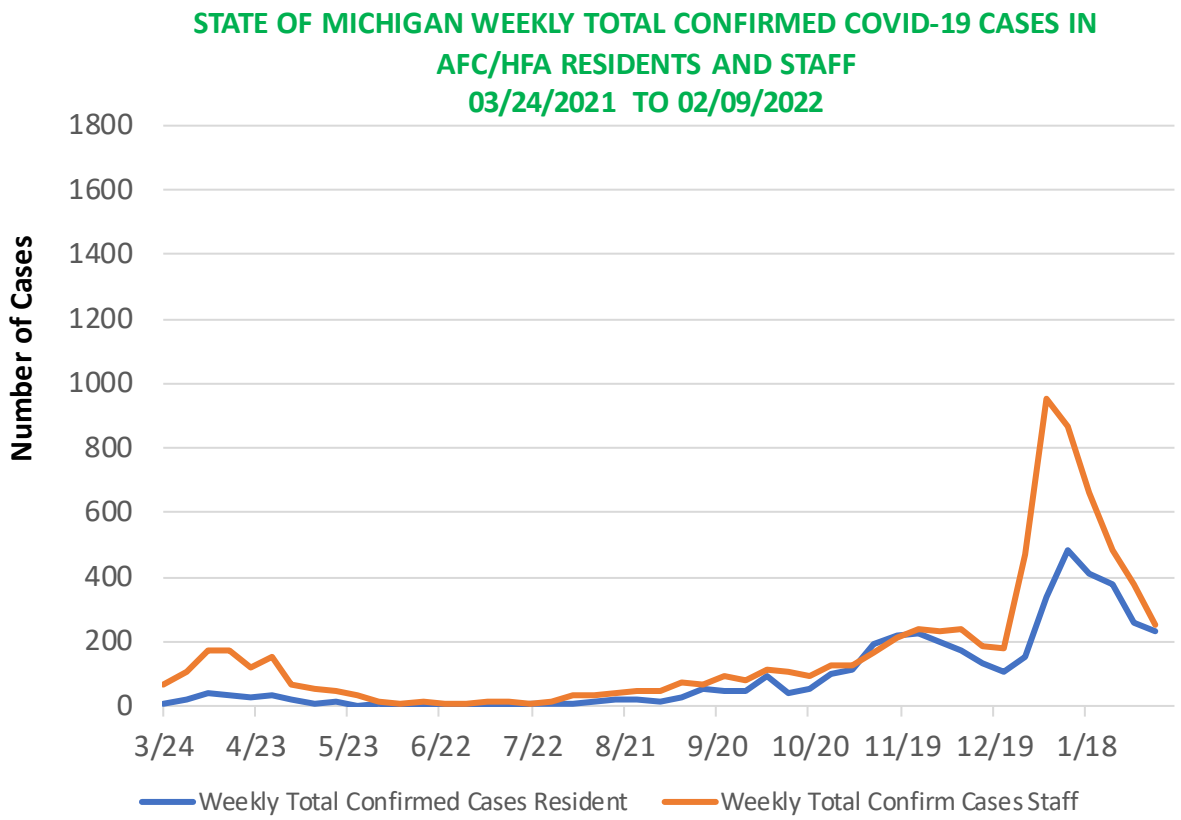
Average daily deaths per million people by ethnicity

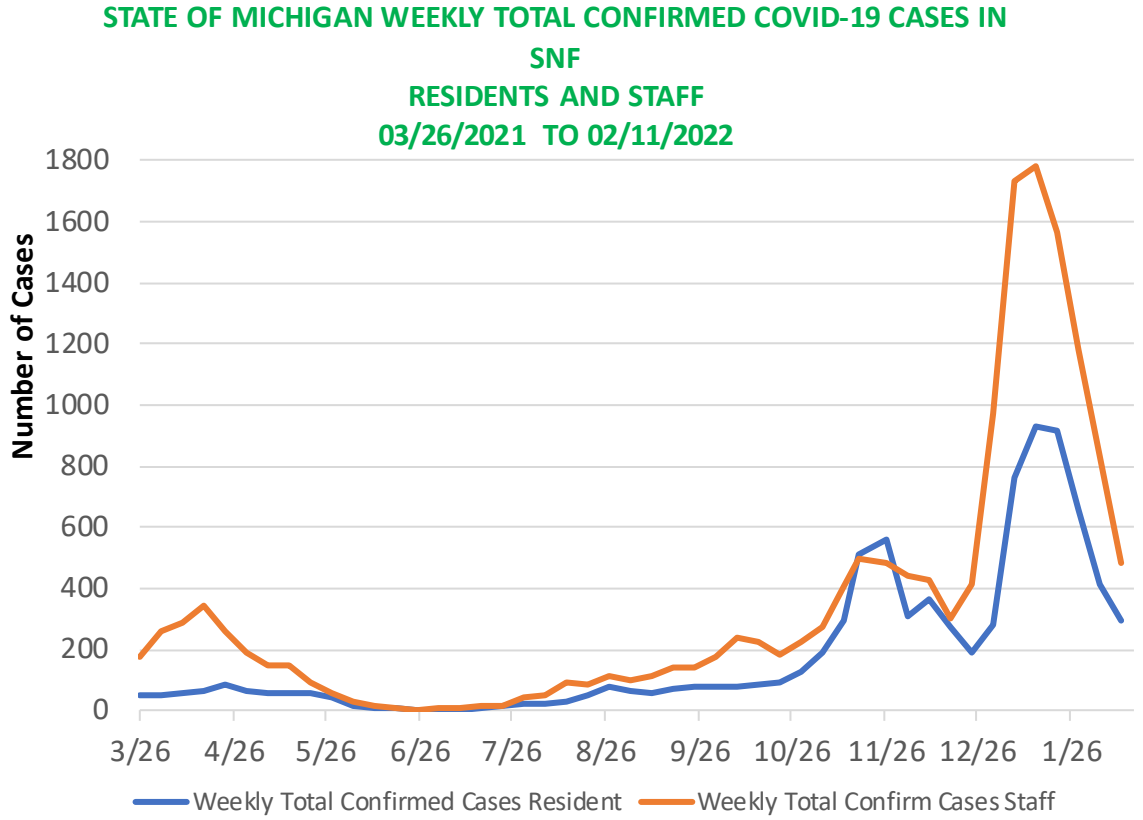


- Deaths are lagging indicator of other metrics
- Currently, Black/African Americans have the highest death rate (8.5 deaths/million)

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 (231) and SNF(297)
- Case counts in staff trending downwards in both AFC/HFA (251) and SNF (486)
- Cases within LTCF continue to be higher among staff than residents

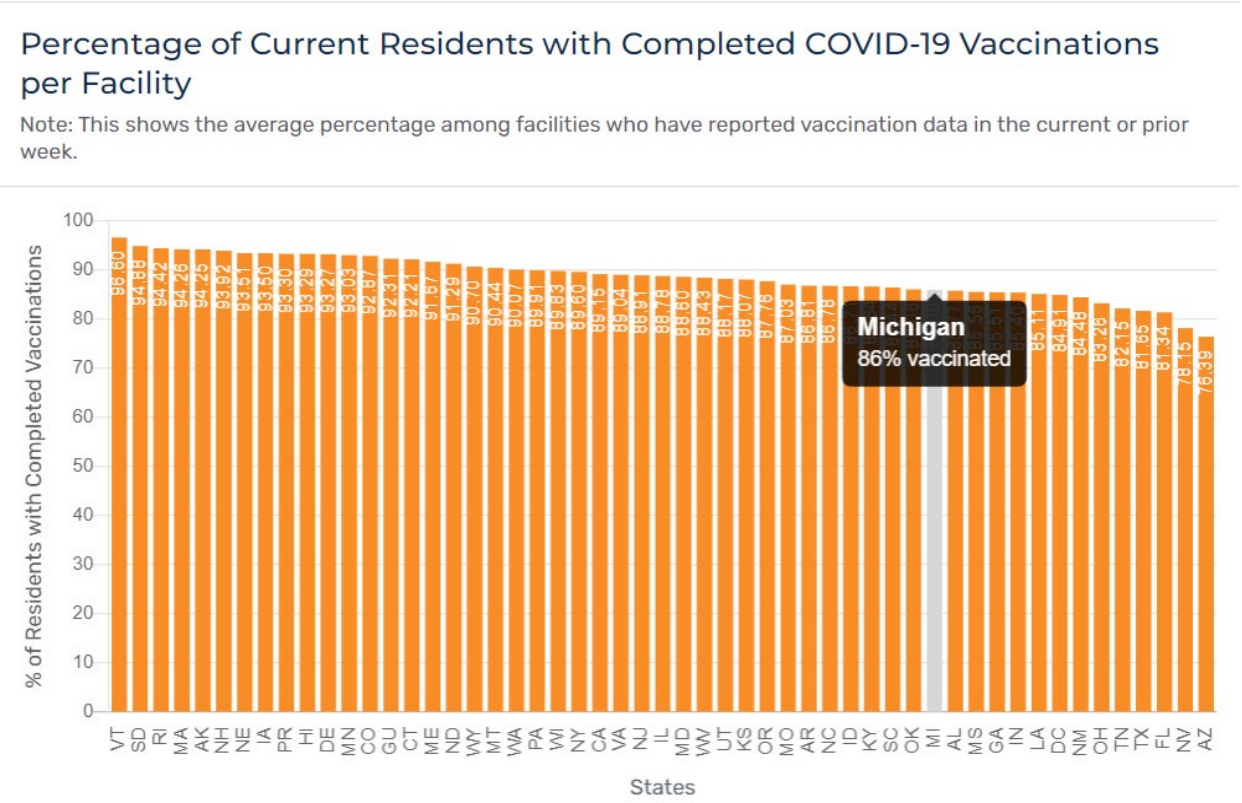
The data is from weekly reporting by facilities with bed occupancy of at least 13 beds.

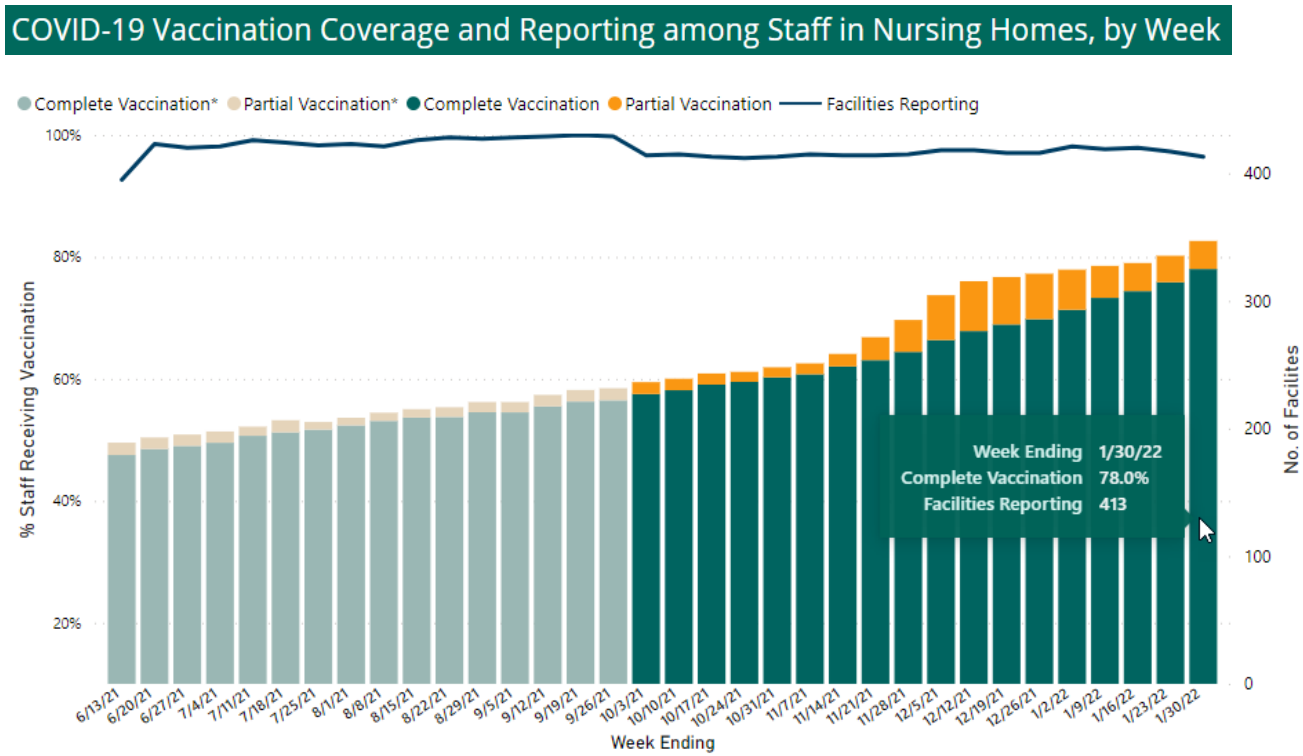
Completed vaccination among Skilled Nursing Cases for Residents and Staff

86.0% of SNF residents are fully vaccinated; 40 of 53 states/territories

78.0% of SNF staff are fully vaccinated, 46 of 53 states/territories

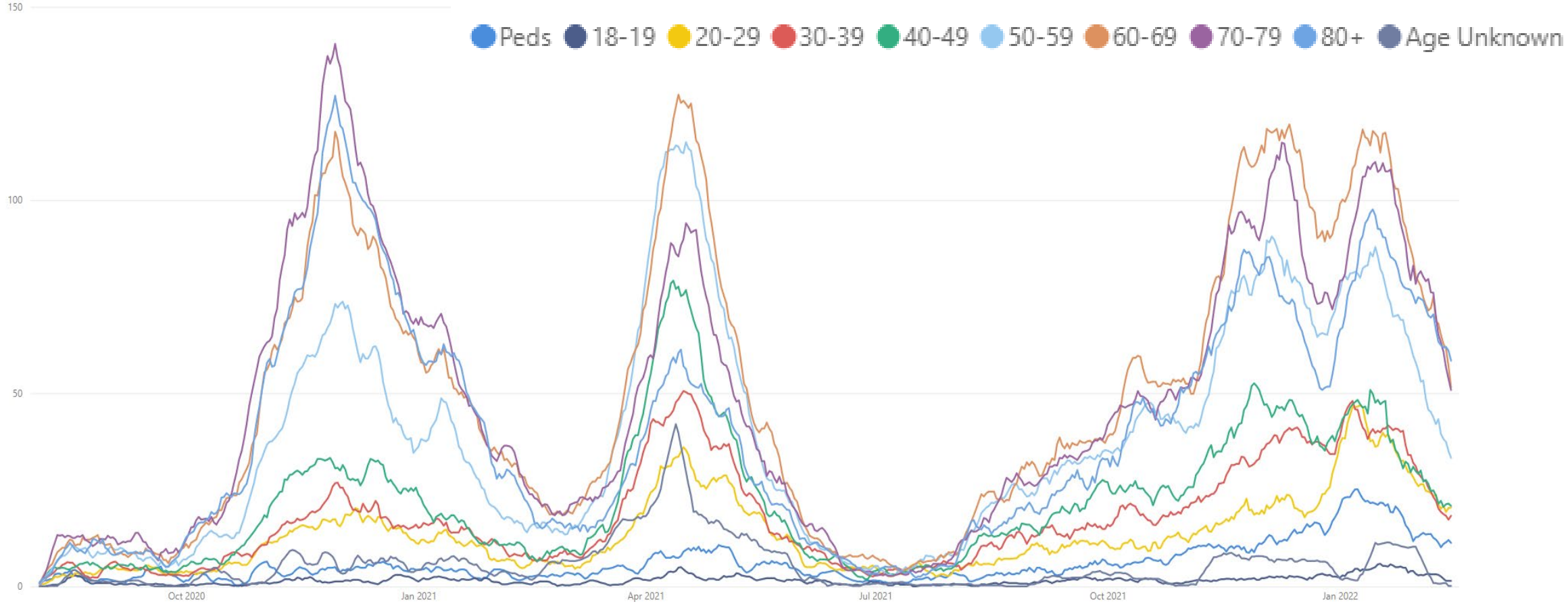
4.6% on SNF staff have initiated primary series





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

Average Hospital Admissions by Age Group

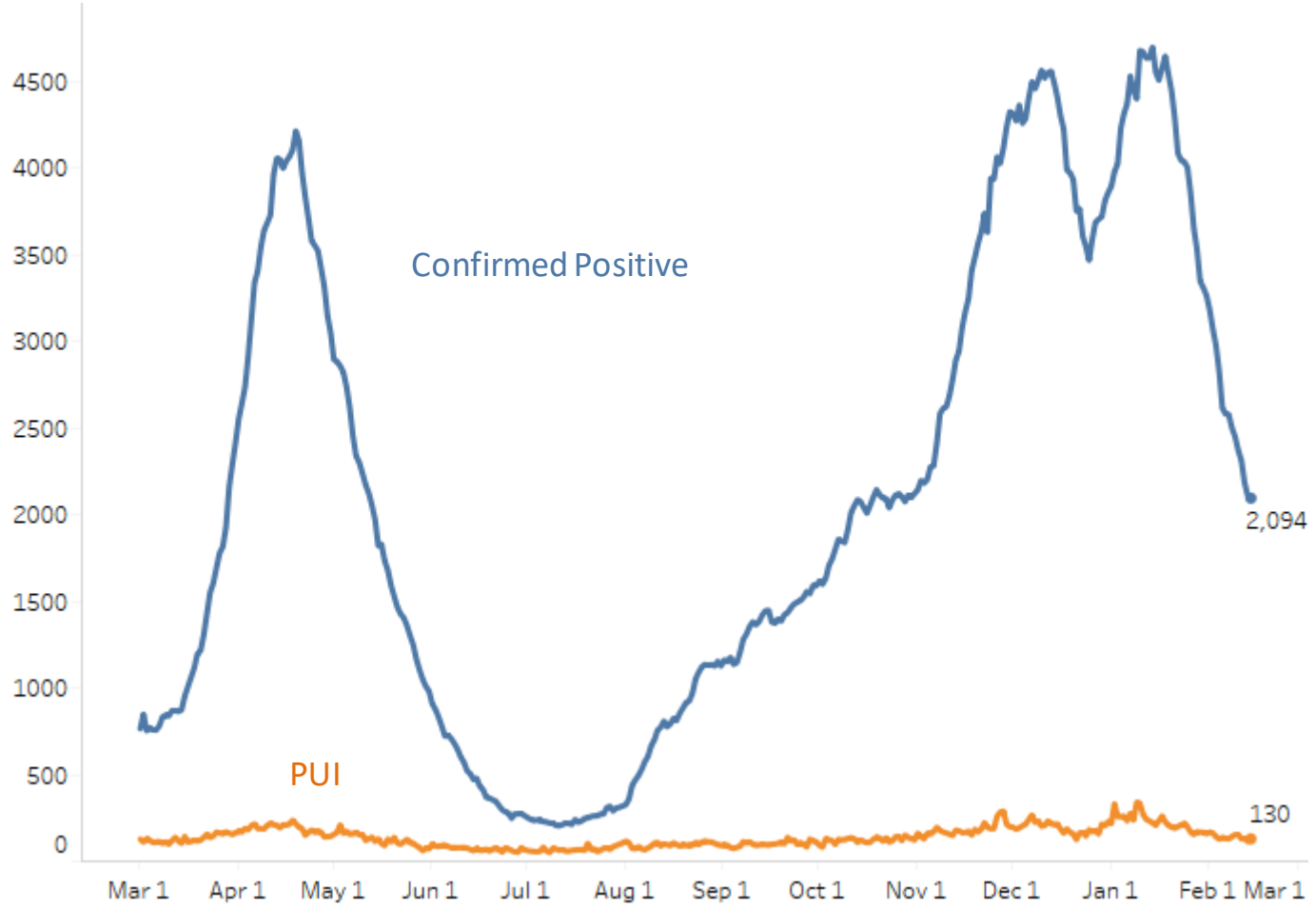


- Trends for daily average hospital admissions declined (-25%) since last week (vs. -14% prior week)
- Overall, most age groups saw declines this week
- More than 50 daily hospital admissions was seen for each of the age groups of 60-69, 70-79, and 80+

Source: CHECC & EM Resource

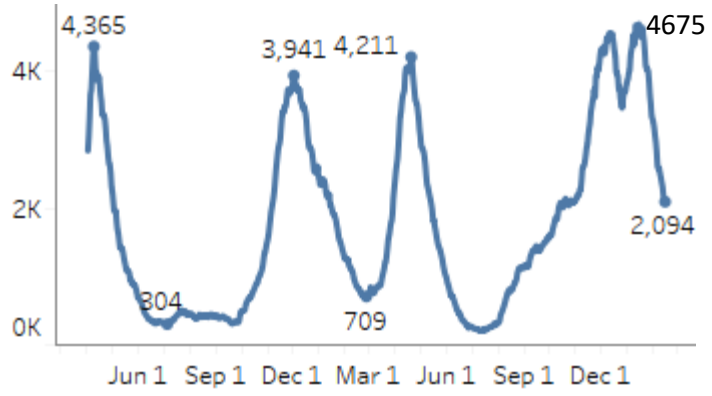
Statewide Hospitalization Trends: Total COVID+ Census

Hospitalization Trends 3/1/2021 – 2/14/2022
Confirmed Positive & Persons Under Investigation (PUI)



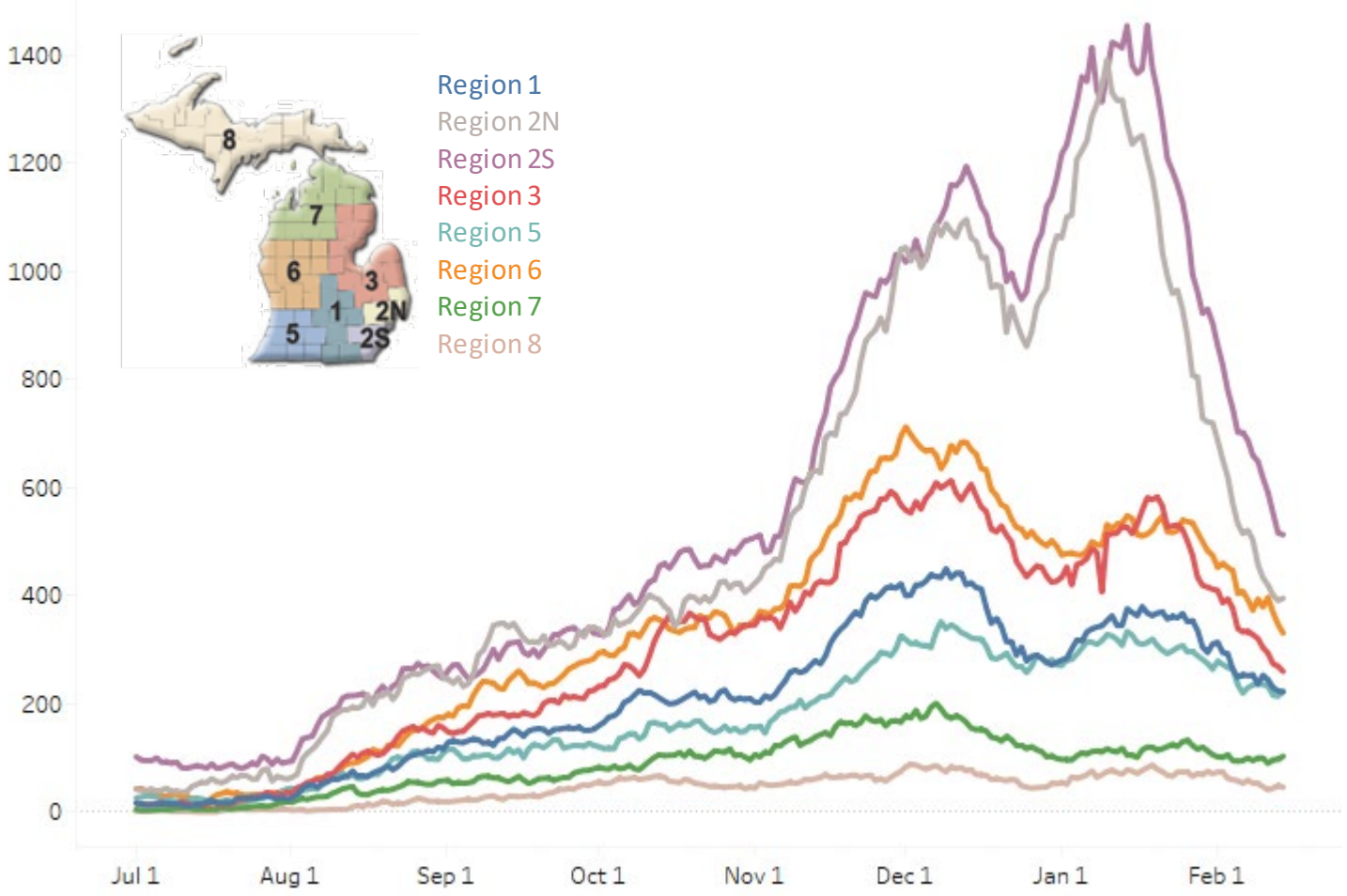
The COVID+ census in hospitals continues to decrease and is down 23% from last week (previous week was down 21%)

Hospitalized COVID Positive Long Term Trend (beginning March 2020)



Statewide Hospitalization Trends: Regional COVID+ Census

Hospitalization Trends 7/1/2021 – 2/14/2022
Confirmed Positive by Region



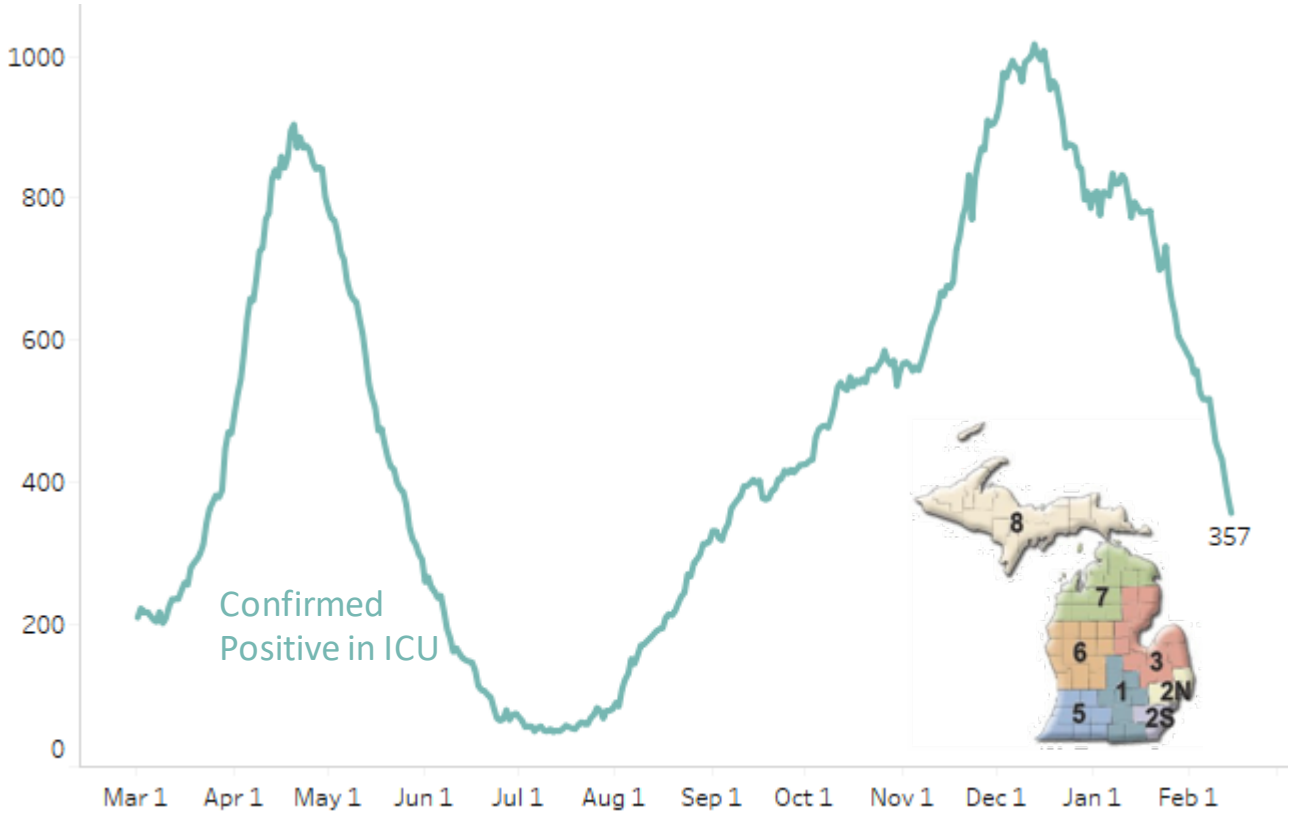
This week the COVID+ census in hospitals has decreased in all regions, except Region 7, which is slightly up from last week.

All regions have fewer than 300/Million population hospitalized with COVID.

Region	COVID+ Hospitalizations (% Δ from last week)	COVID+ Hospitalizations / MM
Region 1	222 (-12%)	205/M
Region 2N	395 (-24%)	178/M
Region 2S	513 (-25%)	230/M
Region 3	260 (-22%)	229/M
Region 5	224 (-3%)	235/M
Region 6	331 (-16%)	226/M
Region 7	103 (3%)	206/M
Region 8	46 (-22%)	148/M

Statewide Hospitalization Trends: ICU COVID+ Census

Hospitalization Trends 3/1/2021 – 2/14/2022
Confirmed Positive in ICUs



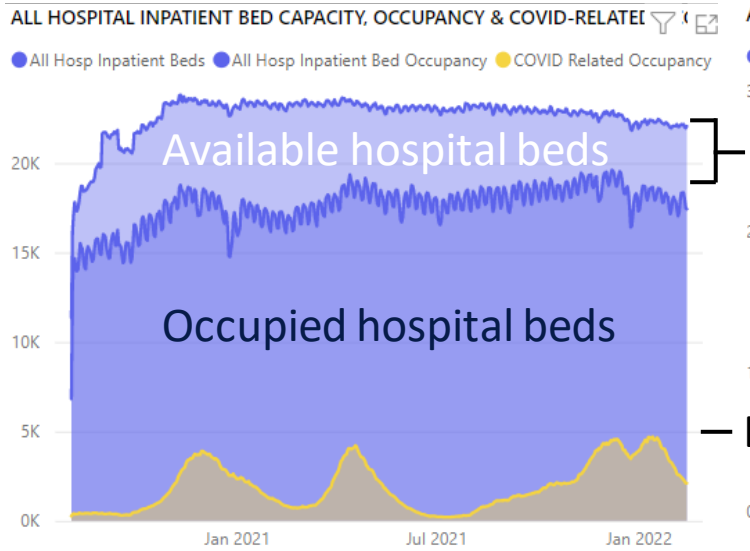
Overall, the census of COVID+ patients in ICUs has decreased by 31% from last week (previous week was down by 11%). All regions show decreasing trends in ICU census.

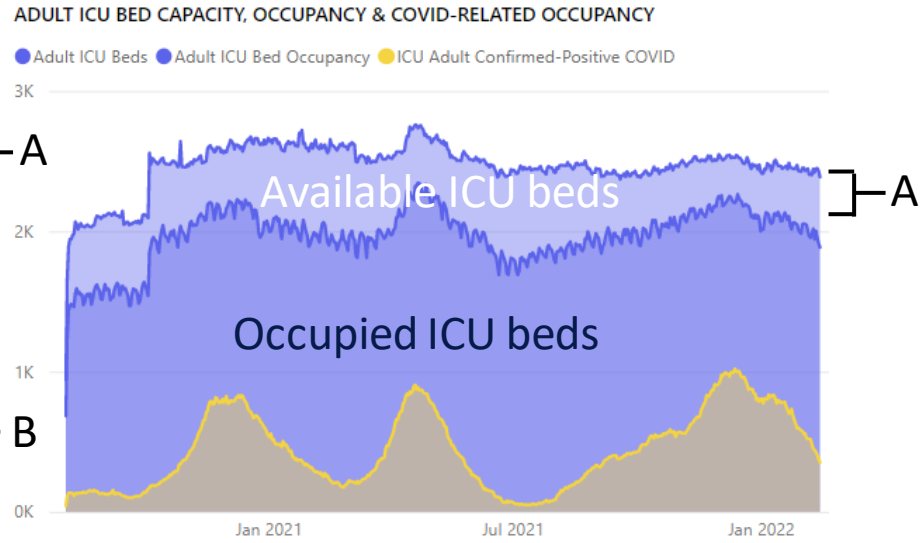
Regions 3 and 7 have ICU occupancy greater than 85%. All Regions are at or below 20% of Adult ICU beds occupied by COVID+ patients.

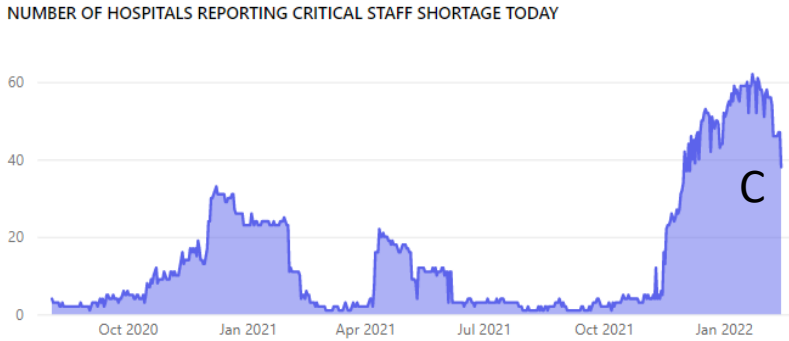
Region	Adult COVID+ in ICU (% Δ from last week)	ICU Occupancy	% of ICU beds COVID+
Region 1	33 (-27%)	75%	17%
Region 2N	62 (-38%)	71%	11%
Region 2S	97 (-30%)	83%	14%
Region 3	60 (-24%)	88%	19%
Region 5	26 (-35%)	69%	15%
Region 6	51 (-28%)	83%	20%
Region 7	21 (-19%)	90%	16%
Region 8	7 (-63%)	62%	11%

Statewide Hospitalization Trends: Pediatric COVID+ Census

Hospital, ICU, Ventilator Utilization, and Staffing Trends







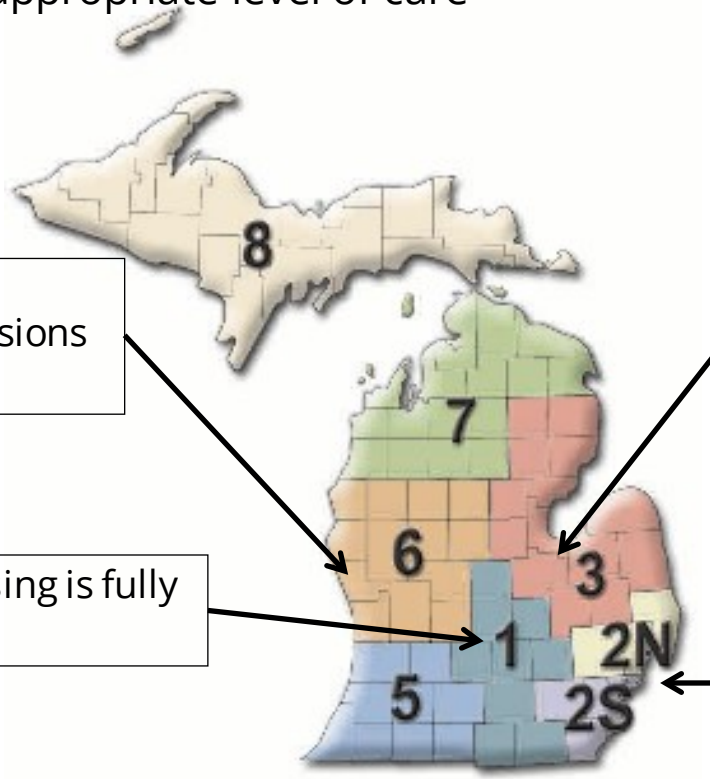
- Utilization for hospitals, ICUs, and mechanical ventilators are improving (Ventilators not shown)
- The number of available hospital and ICU beds is increasing with improving COVID trends (shown in A)
  - Compared to this time last year, we currently have 898 less staffed beds this year (4% decrease)
  - Compared to this time last year, we currently have 172 fewer ICU staffed beds this year (7% decrease)
- Following the Delta and Omicron surge over the holidays, COVID hospitalizations (shown in B) and ICU utilization have improved
- Sufficient staffing (38) remains most critically limited resource within healthcare but is improving since all-time high (C)

Source: EM Resource

Michigan Strategy to Allocate Federal Staffing Resources

The regional strategy addresses:

- COVID hotspots
- Challenges with increased admissions
- Facilitating regional decompression and patient transfers from outlying areas to the appropriate level of care



- DoD teams at Spectrum and Mercy Muskegon (R6) completed their missions on 2/3 and 1/28, respectively

- DoD team allocated to Sparrow Lansing is fully operational from 2/8 through 3/9

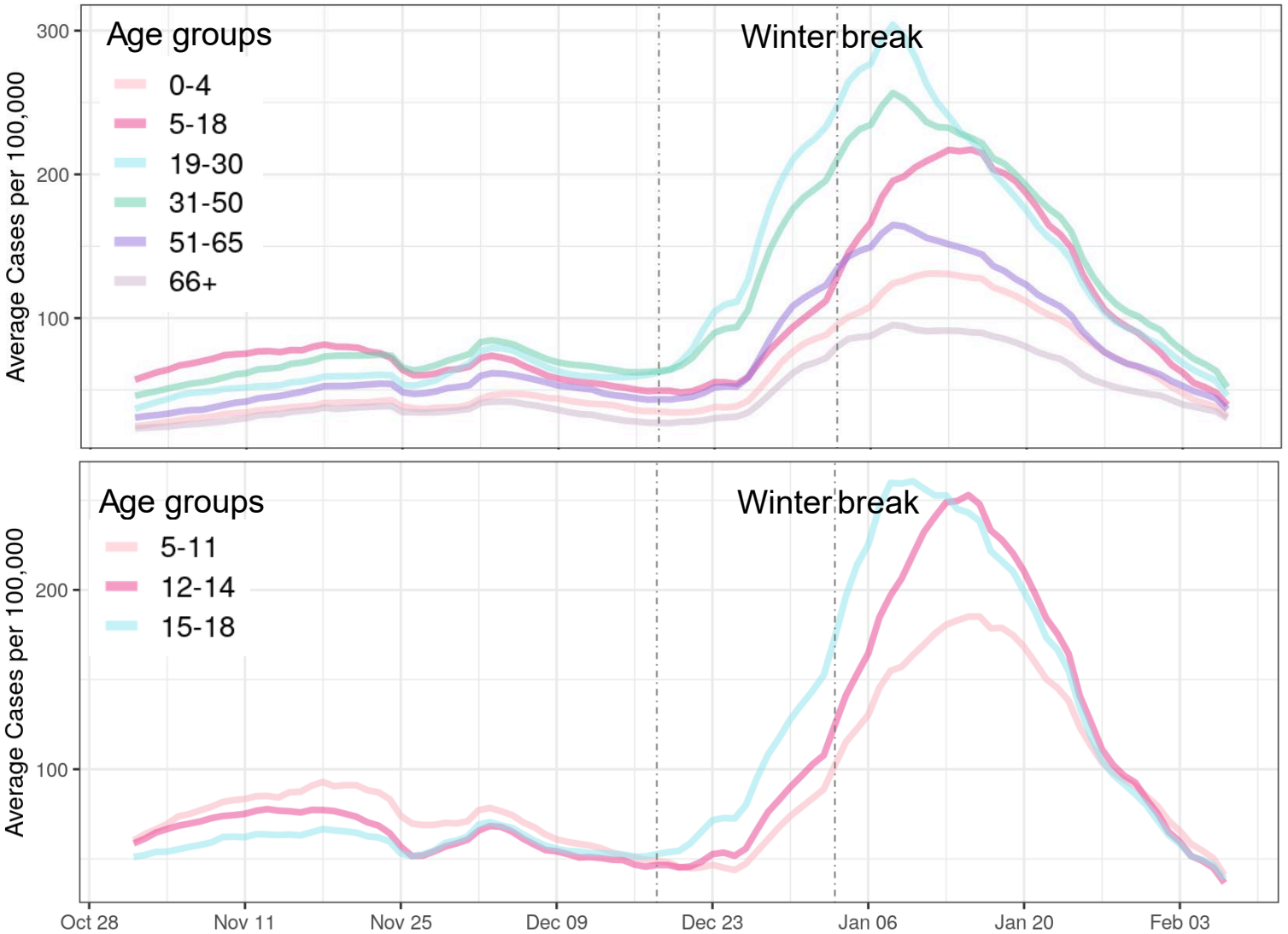
- DoD team allocated to Covenant Saginaw in R3 extended 14 days to 2/23

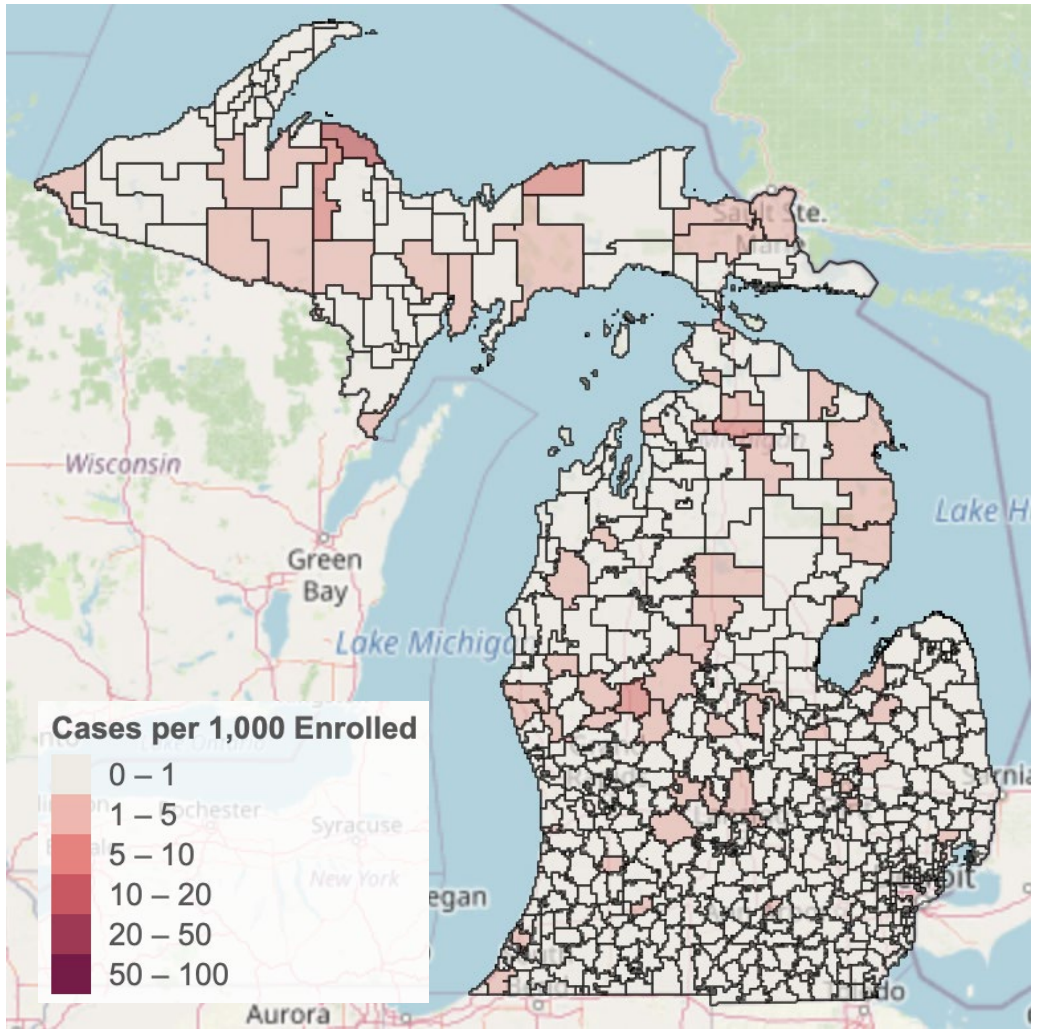
- DoD team at Beaumont Dearborn in R2S completed their mission on 1/29
- Henry Ford Wyandotte DoD was fully operational as of 1/24 and will be through 2/22

Source: Emergency Preparedness and Response

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 among all populations (school-aged and non) are currently declining





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.

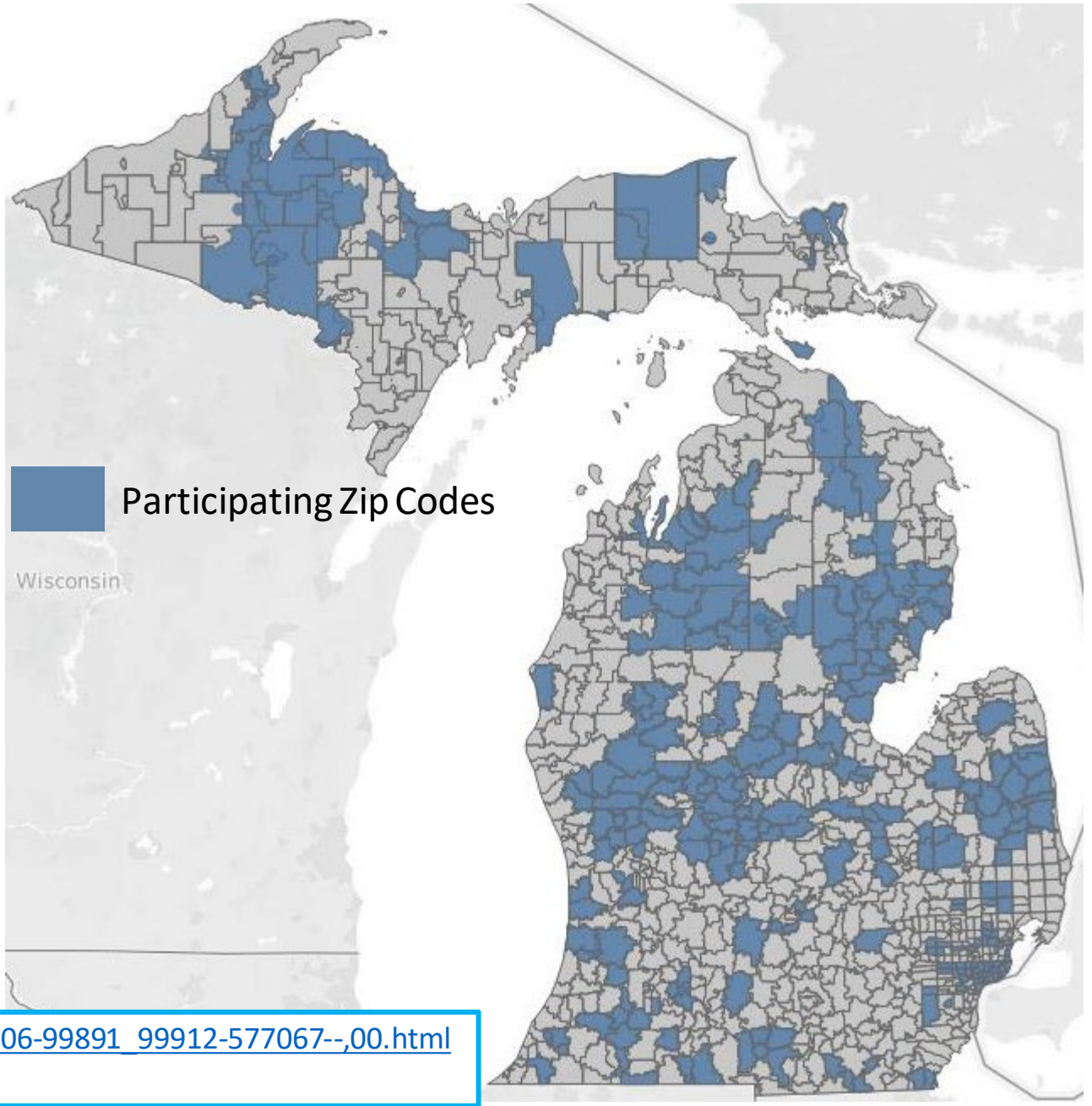
Free Direct-to-Consumer OTC Tests Available for Michigan Residents in High SVI Zip Codes through Partnership with the Rockefeller Foundation

The ROCKEFELLER FOUNDATION

Get your **FREE** at-home test kits!

We are offering free, rapid, at-home COVID-19 test kits to residents of eligible communities while supplies last. **Enter your zip code to see if tests are available in your area:**

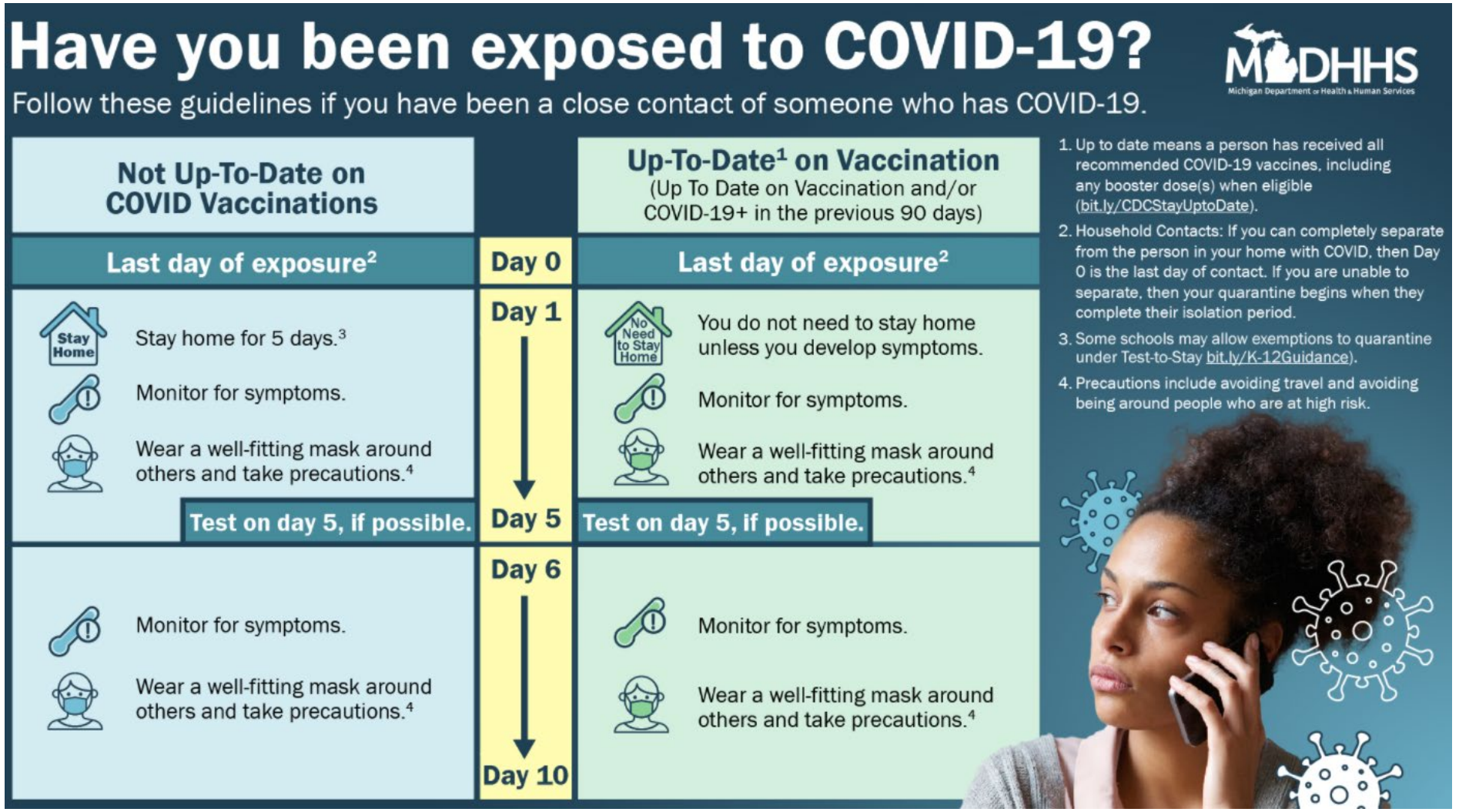
Enter zip code



- 250,000 test kits available at no cost
  - Over 170,730 tests already ordered
- Each order contains 5 test kits
- Recently expanded; 478 Zip codes can participate

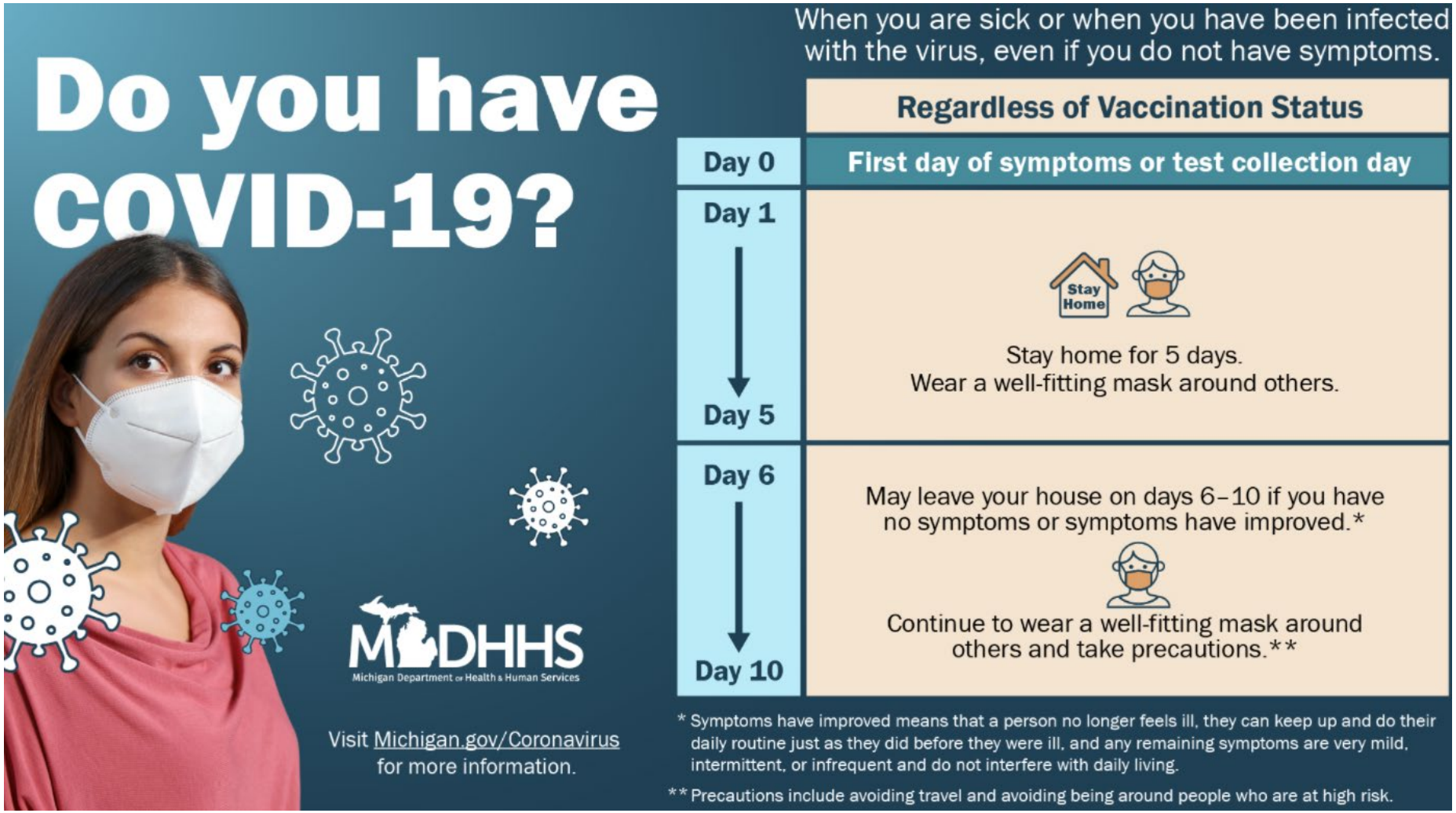
Check Participating Zip Codes: https://www.michigan.gov/coronavirus/0,9753,7-406-99891_99912-577067--,00.html
Order Tests: https://www.accesscovidtests.org/

Exposure/Quarantine Timeline and Recommendations



https://www.michigan.gov/images/coronavirus/Quarantine-04_747970_7.png

Isolation Timeline and Recommendations



https://www.michigan.gov/images/coronavirus/Isolation-02_747969_7.png

Outpatient therapy now available for those with COVID-19. Supplies may be limited.

Eligibility guidelines ensure those with the highest risks have priority access to treatments.

Those at highest risk

Treatment window after symptoms appear:	Paxlovid PO 5 days	Sotrovimab IV 10 days	Remdesivir IV 7 days	Molnupiravir PO 5 days
• 75+ years old and not up to date* • Moderately or severely immunocompromised regardless of vaccine status	✓	✓	✓	✓ *If other therapies not available or appropriate*
• 65–74 years old and not up to date* with MI priority risk factor** • Pregnant and not up to date*	✓	✓	✓	✓ *If other therapies not available or appropriate*
• 65–74 years and not up to date* • Under 65 years old and not up to date* with MI priority risk factor**	✓	✓	✓	✓ *If other therapies not available or appropriate*
• 75+ years old and up to date* • 65–74 years old and up to date* with MI priority risk factor**	✓	*Not currently eligible*	*Not currently eligible*	✓ *If other therapies not available or appropriate*
• 65–74 years old and up to date* with CDC risk factors	*Not currently eligible*	*Not currently eligible*	*Not currently eligible*	✓
• 65–74 years old and up to date* • Younger than 65 years old and up to date* with CDC risk factors	*Not currently eligible*	*Not currently eligible*	*Not currently eligible*	✓

**Up to date means a person has received all recommended COVID-19 vaccines, including booster dose(s) when eligible (bit.ly/CDCStayUptoDate).*

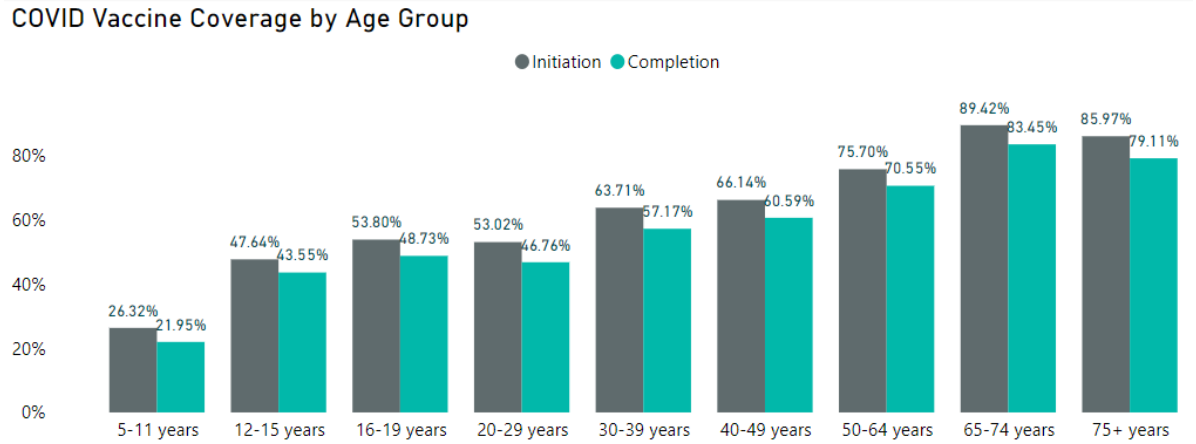
***MI priority risk factors include:*
Obesity (Body Mass Index >35), chronic respiratory disease, pregnancy (note: in pregnancy, molnupiravir should not be used and Paxlovid and remdesivir should be used with caution when sotrovimab is unavailable), chronic kidney disease (special considerations with Paxlovid), cardiovascular disease, and diabetes.

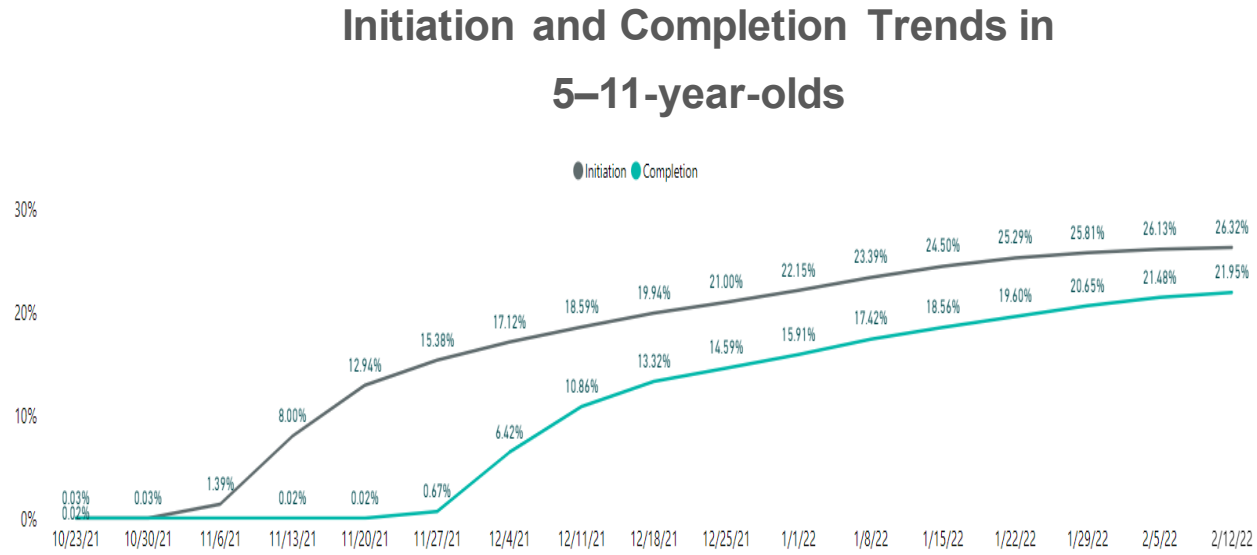
MDHHS Michigan Department of Health & Human Services

Talk to your health care provider or visit Michigan.gov/COVIDtherapy to learn more.

Vaccinations and Boosters

- Over 14.9 million COVID-19 vaccine doses have been administered in Michigan
  - Over 6.5 million Michiganders have received at least one dose (65.7%)
  - Over 5.8 million Michiganders have completed a primary series (58.8%)
  - Over 2.95 million additional/booster doses have been administered in Michigan
    - 50.2% of the fully vaccinated population has received a booster
    - 73.4% 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

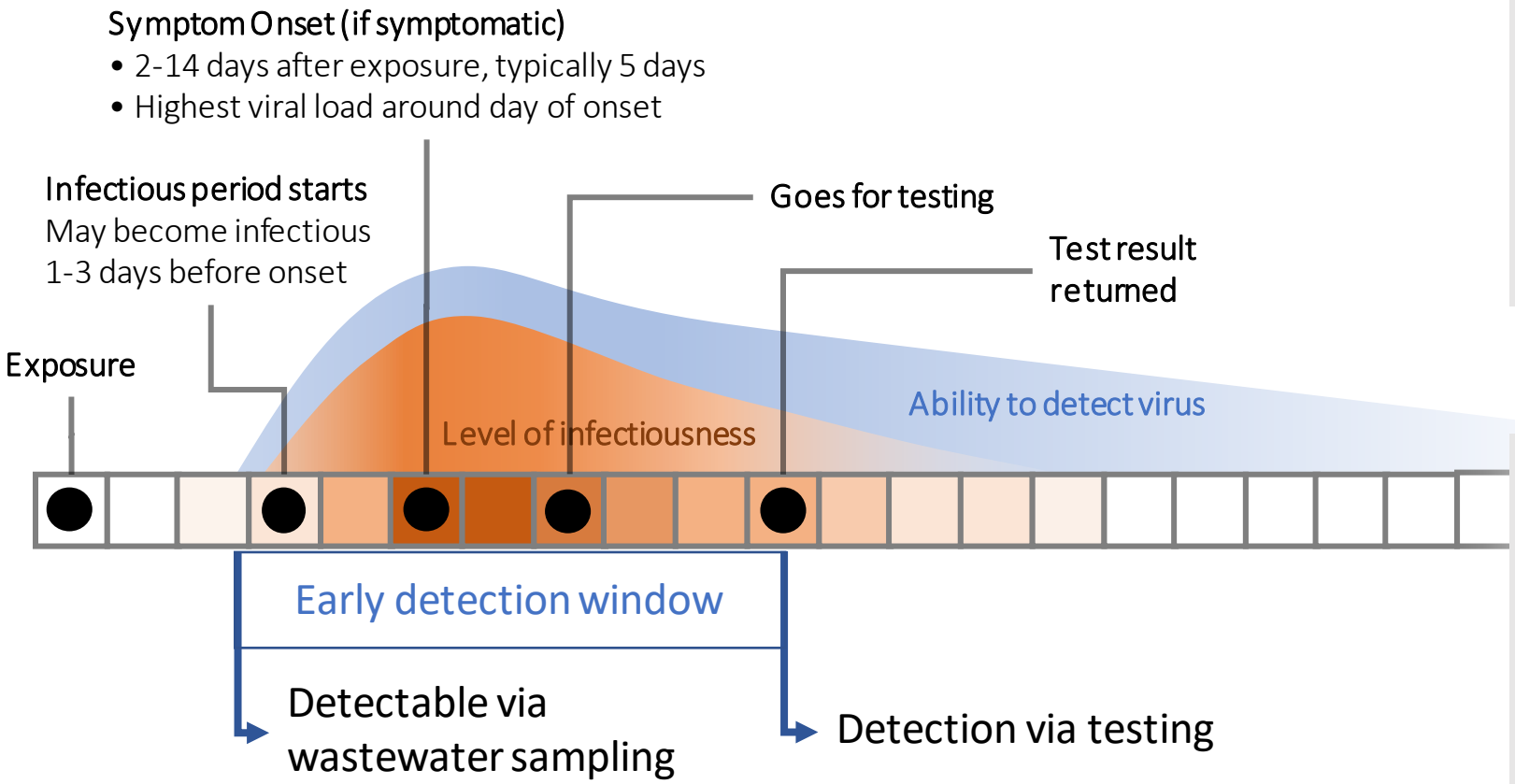
Treatment

Protect against severe outcomes

Oral antivirals and monoclonal antibody infusions are available

APPENDIX

Wastewater can provide early warnings and a monitoring system for COVID in communities when testing is low



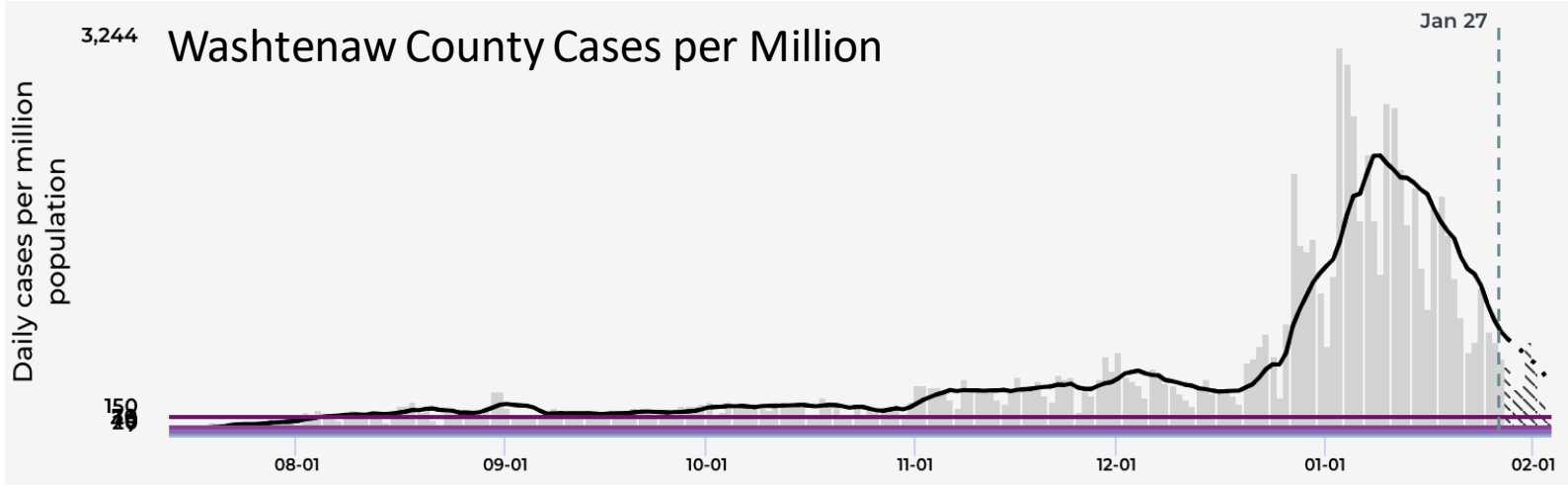
- Potential to detect clusters early
- Can detect asymptomatic and presymptomatic individuals
- Data not impacted by clinical testing behaviors/availability
- Has been used to detect, intervene and stop transmission—e.g. University of Arizona [1]

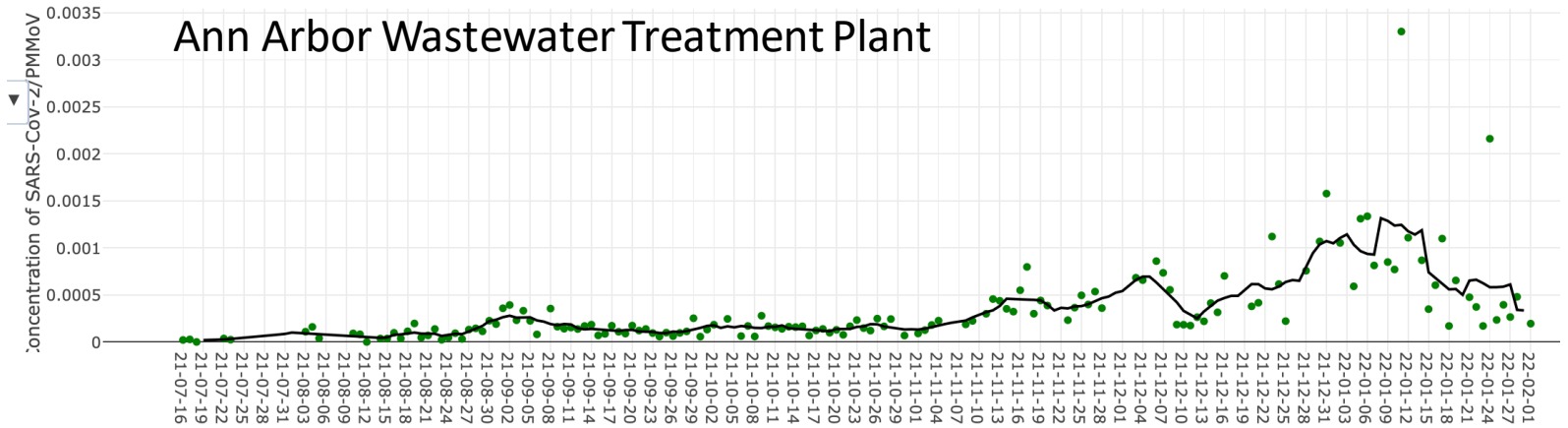
- However, wastewater does not capture all populations (e.g. individuals on septic tank systems)
- Can be difficult to directly compare concentrations across different locations due to differences in sampling and processing methods and underlying population sizes

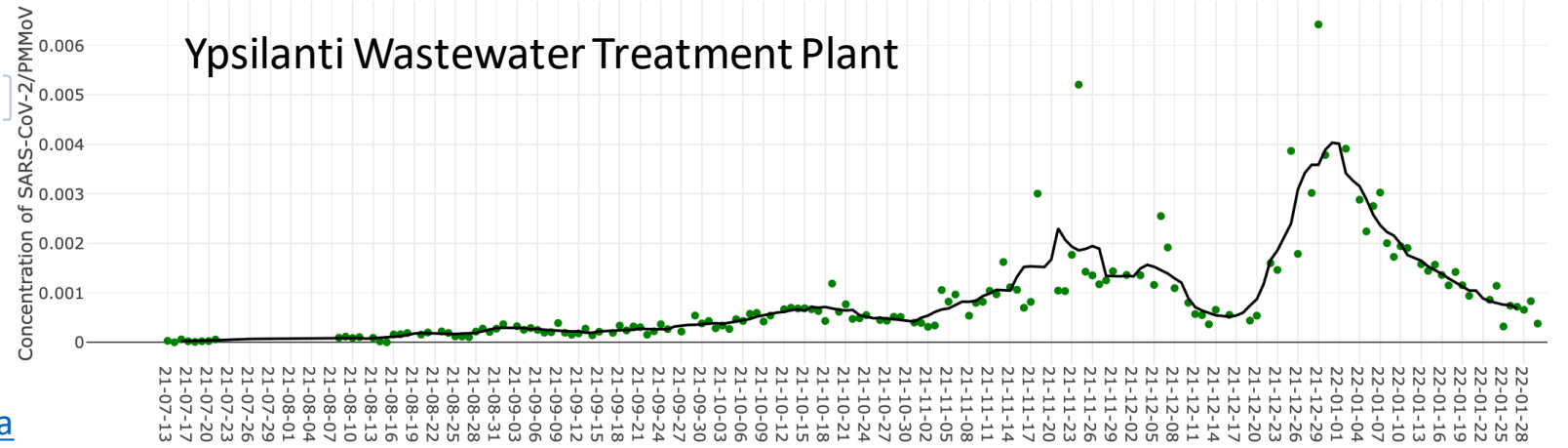
Sources: WHO transmission overview, WHO isolation guidelines, CDC isolation guidelines, [1] Science 2020

Wastewater data correlates with case data at the community level

- Washtenaw County COVID-19 cases show matching time trends compared to normalized SARS-CoV-2 levels at the Ann Arbor and Ypsilanti wastewater treatment plants (Bakker/Wigginton labs, UM)
- Wastewater monitoring provides an alternate view of transmission levels in a community, and can capture some of the heterogeneity across the community



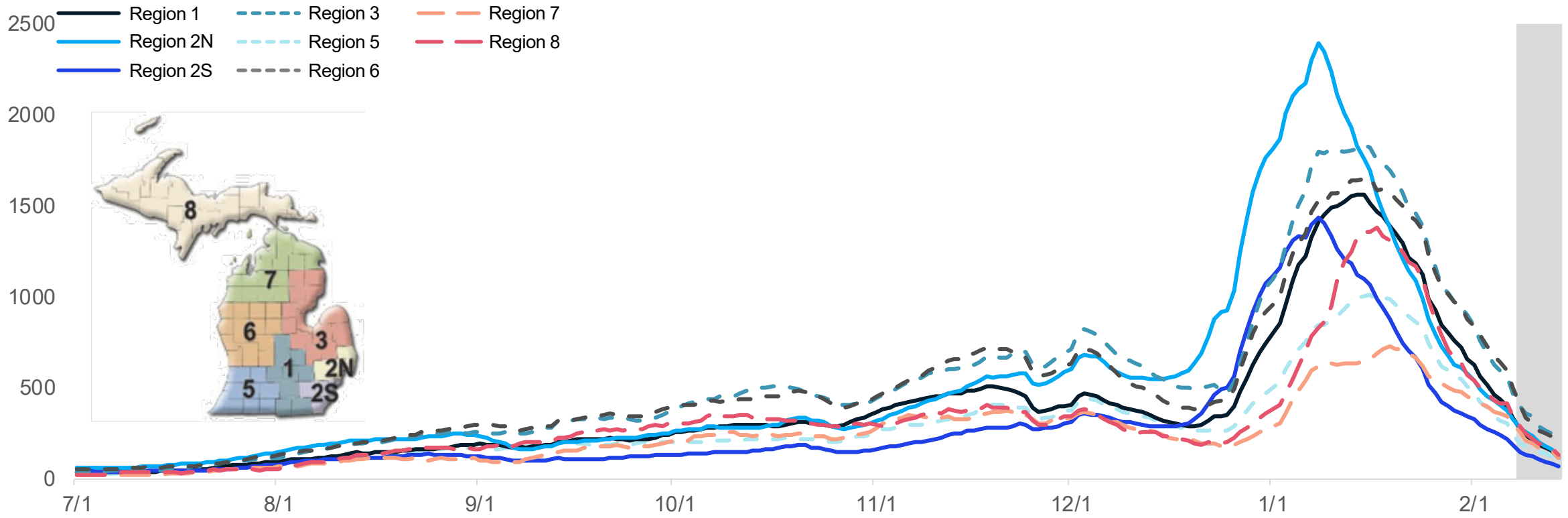




Data sources: mistartmap.info, Bakker/Wigginton wastewater dashboard, MDHHS/EGLE wastewater data

Case Rate Trends by Emergency Preparedness Region

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

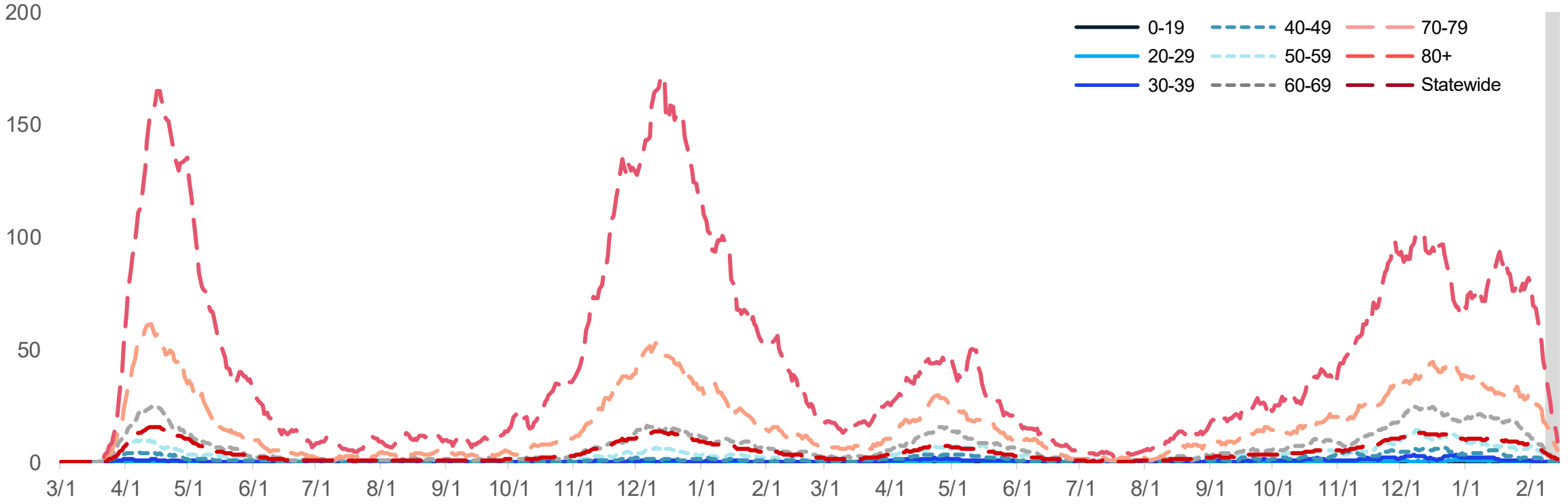


- Case rate trends for all preparedness regions are declining
- Case rates by onset date for all preparedness regions are between 183 and 500 cases per million (through 2/7)
- Case rates are highest in Region 6, followed by Region 3, 8, and 1

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

Average daily death rates, by age group

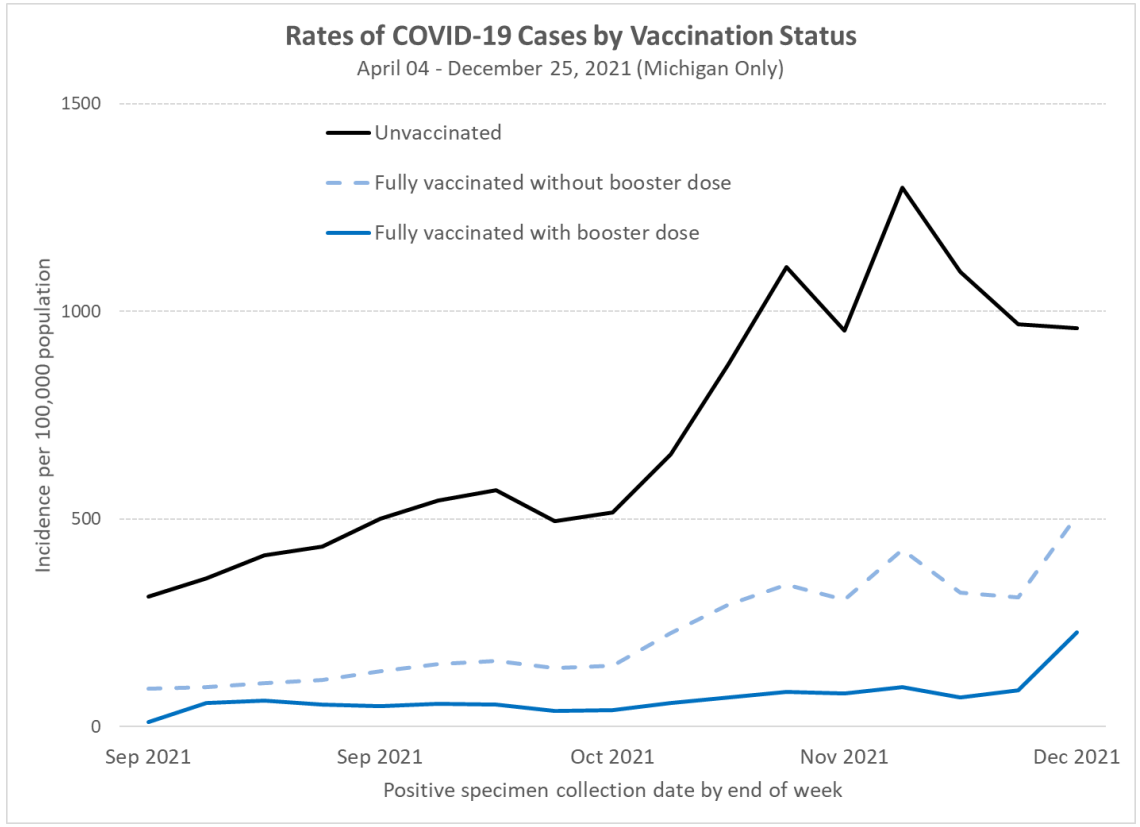
Daily COVID-19 deaths in confirmed and probable cases per million by age group (7 day rolling average)

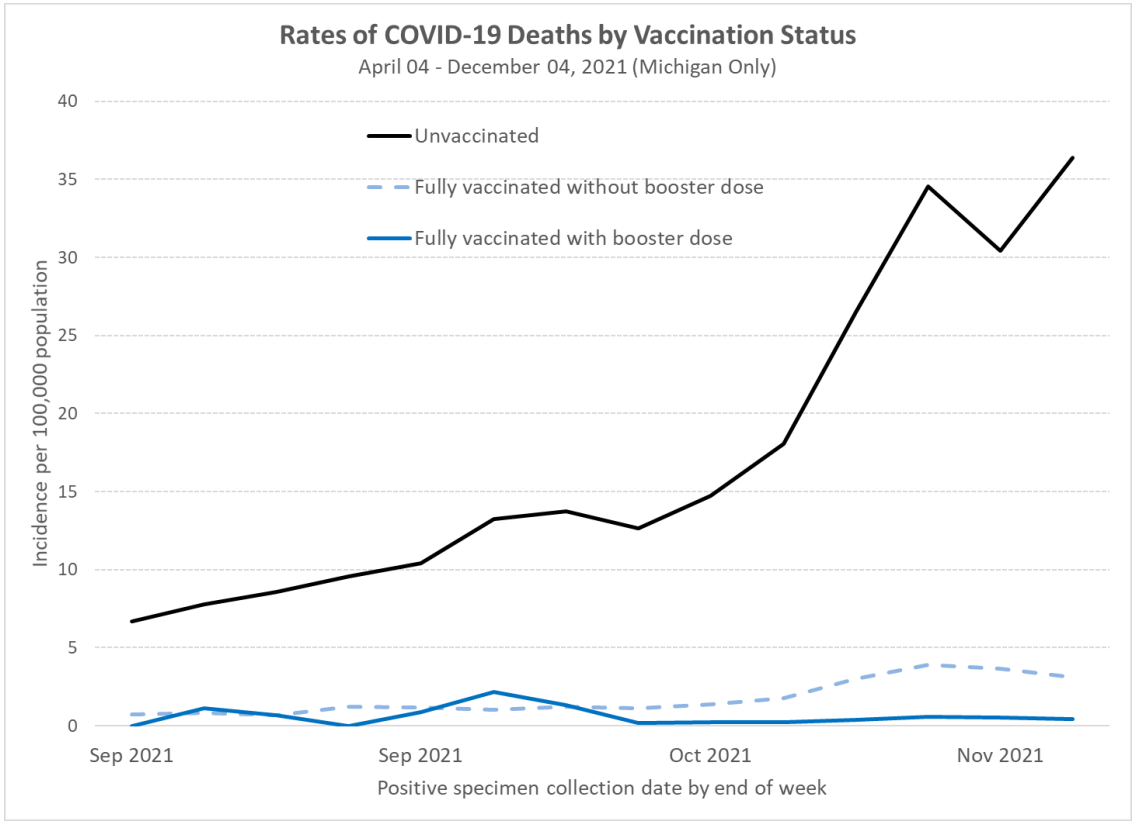


- Deaths are a lagging indicator
- Through 2/7, the 7-day avg. death rate is 45 daily deaths per million people for those over the age of 80

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

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.

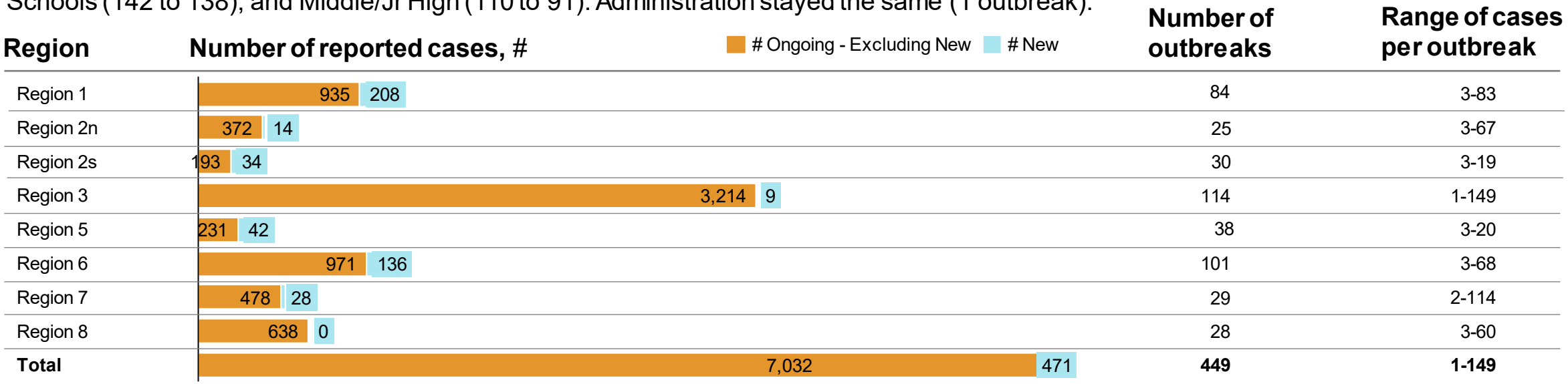
Cumulative COVID-19 Cases by Vaccination Status, Michigan, 1/15/21–1/28/22

Fully Vaccinated People (5,469,137)		
Cases	**Hospitalization**	**Deaths**
Percent of Cases In People Not Fully Vaccinated (1,293,416 / 1,683,256) **76.8%**	Percent of Hospitalizations In People Not Fully Vaccinated (26,312 / 31,249) **84.2%**	Percent of Deaths In People Not Fully Vaccinated (13,577 / 16,589) **81.8%**
1,293,416 Total Cases Not Fully Vaccinated	**26,312** Total Hospitalized Not Fully Vaccinated	**13,577** Total Deaths Not Fully Vaccinated
Total Breakthrough Cases **389,840**	Total Breakthrough Hospitalizations **4,937**	Total Breakthrough Deaths **3,012**
7.13% Percent of Fully Vaccinated People who Developed COVID-19 (389,840 / 5,469,137)	**0.090%** Percent of Fully Vaccinated People Who Were Hospitalized for COVID-19 (4,937 / 5,469,137)	**0.055%** Percent of Fully Vaccinated People Who Died of COVID-19 (3,012 / 5,469,137)
23.2% Percent of Cases Who Were Fully Vaccinated (389,840 / 1,683,256)	**15.8%** Percent of Hospitalizations Who Were Fully Vaccinated (4,937 / 31,249)	**18.2%** Percent of Deaths Who Were Fully Vaccinated (3,012 / 16,589)
Total Cases: **1,683,256**	Total Hospitalizations: **31,249**	Total Deaths: **16,589**

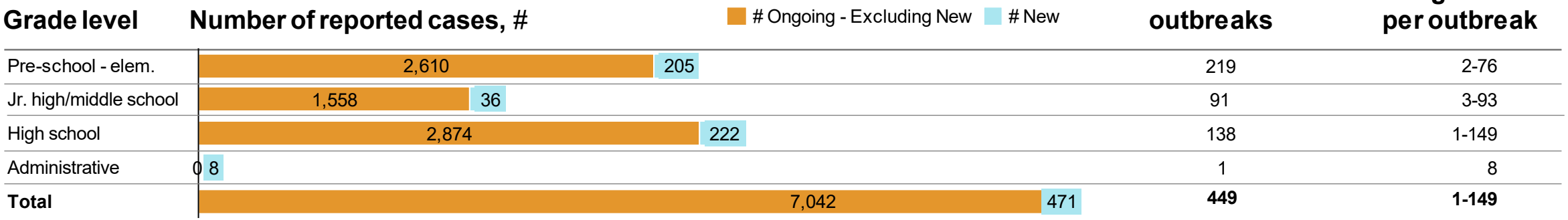
Michigan Disease Surveillance System may underestimate the frequency of COVID-19 hospitalizations:
- Case investigation and follow-up is more difficult for individuals who get hospitalized (e.g., they are too ill to speak to investigators, don't answer their phone, or otherwise).
- These hospitalizations include individuals who are hospitalized for issues other than COVID19 (the same as breakthrough COVID-19).
- Individuals who get hospitalization will lag after infection and may occur after case investigation.

Vital Infrastructure: K-12 school clusters and outbreaks, week ending Feb 10

Number of reported outbreaks/clusters decreased since last week (490 to 471), with decreases in Pre-K-Elementary (238 to 219), and High Schools (142 to 138), and Middle/Jr High (110 to 91). Administration stayed the same (1 outbreak).



Region	Number of reported cases, #		Number of outbreaks	Range of cases per outbreak
Region 1	935	208	84	3-83
Region 2n	372	14	25	3-67
Region 2s	193	34	30	3-19
Region 3	3,214	9	114	1-149
Region 5	231	42	38	3-20
Region 6	971	136	101	3-68
Region 7	478	28	29	2-114
Region 8	638	0	28	3-60
Total	7,032	471	**449**	**1-149**



Grade level	Number of reported cases, #		Number of outbreaks	Range of cases per outbreak
Pre-school - elem.	2,610	205	219	2-76
Jr. high/middle school	1,558	36	91	3-93
High school	2,874	222	138	1-149
Administrative	0	8	1	8
Total	7,042	471	**449**	**1-149**

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

Face Mask and Respirator Use in Indoor Public Settings Prevents SARS-CoV-2 Infection

- Face masks or respirators (N95/KN95) effectively filter virus-sized particles
- Consistent use of a face mask/respirator was associated with reduced odds of SARS-CoV-2 positive result
- **Use of respirators with higher filtration capacity was associated with the most protection**
- Consistently wearing a face mask in indoor public settings protects against acquisition of SARS-CoV-2

Source: Andrejko KL, Pry JM, Myers JF, et al. Effectiveness of Face Mask or Respirator Use in Indoor Public Settings for Prevention of SARS-CoV-2 Infection — California, February–December 2021. MMWR Morb Mortal Wkly Rep. ePub: 4 February 2022. DOI: http://dx.doi.org/10.15585/mmwr.mm7106e1