MI COVID RESPONSE DATA AND MODELING UPDATE

December 14, 2021

Executive Summary

Michigan remains at High Transmission

Percent positivity (16.9%) is decreasing (last week: 19.5%)

Case rate (593.0 cases/million) is increasing for over a month (522.9 cases/million prior week) but is down from a recent peak of over 650 (12/3)

In the last 7 days, Michigan reported the 3rd **most cases** (last week's rank: highest) and the 6th highest **case rate** (last week's rank: 2nd highest)

Cases among pediatric populations < 12 years have increased 10% since last week

Percent of inpatient beds occupied by individuals with COVID (22.4%) is increasing for 18 weeks (up from 21.3% last week)

In the last 7 days, no other state or territory has reported a higher inpatient bed utilization than Michigan (last week: highest) and 2nd highest adult ICU bed utilization (3rd highest last week)

Daily pediatric hospital census have plateaued but remain near 2021 highs

Death rate (9.7 deaths/million) is increasing for one week (8.5 last week). There were 675 COVID deaths between Nov 30-Dec 6

Michigan has the 6th most deaths (4th highest last week), and 16th highest death rate (8th highest last week) in the last 7 days

7-day average **state testing rate** is 4848.3 tests/million/day. **Daily diagnostic tests (PCR)** is 51.6K per day, and the weekly average for PCR and antigen tests conducted in Michigan is 65.9K.

Nearly 13.4 million **COVID-19 vaccine** doses administered, 55.8% of the population is fully vaccinated (5.5 million people)

152,610 initial dose administrations in 5- to 11-year-olds as of 12/13

SCIENCE ROUNDUP

29 states and territories in the United States have reported identification of the omicron variant

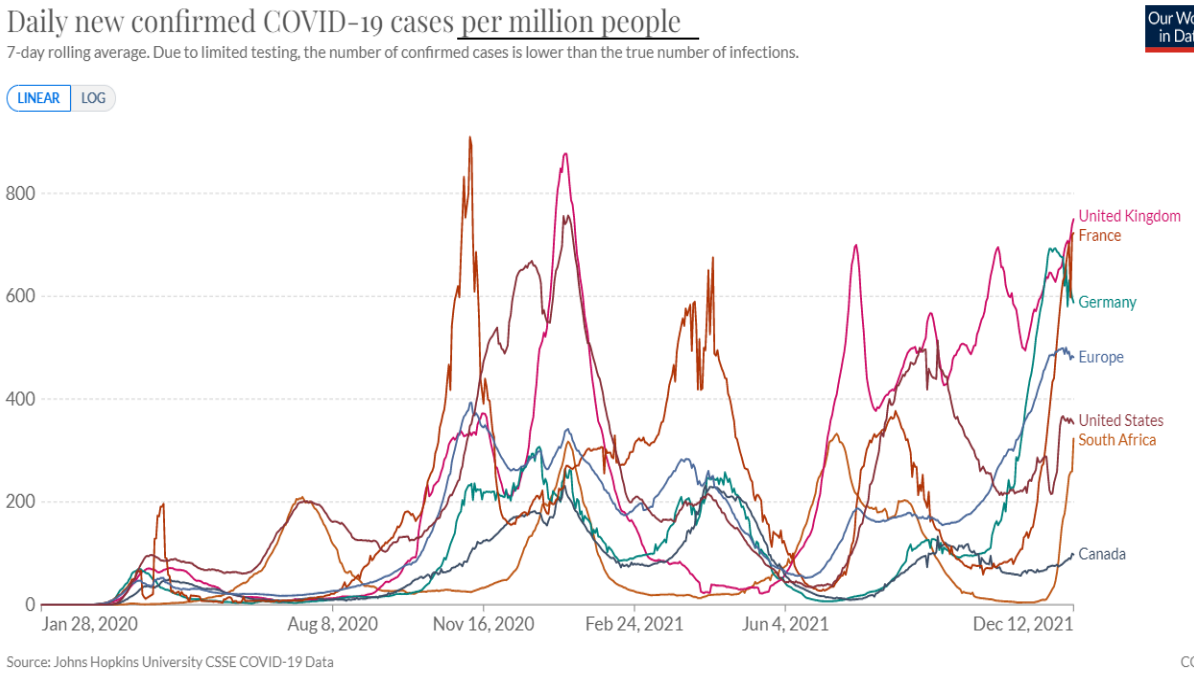
Importance of masking in indoor spaces - to address widespread community transmission that's impacting school age children

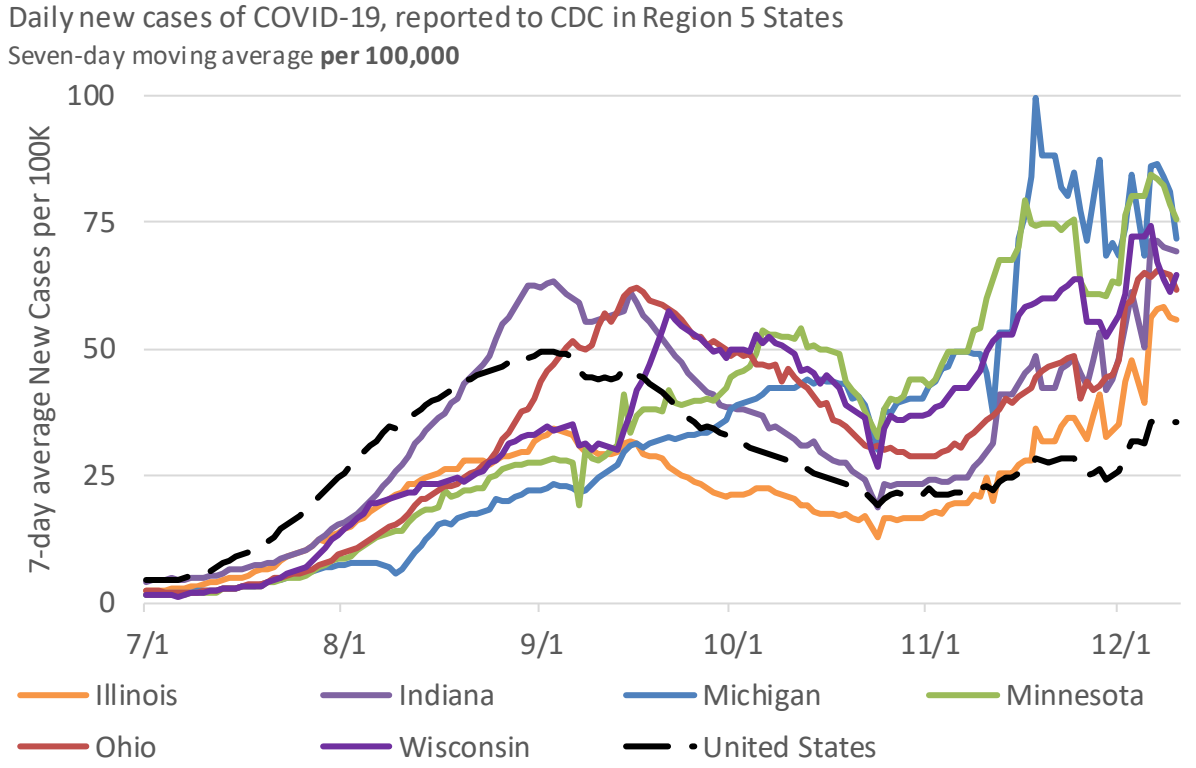
States with lower vaccine coverage have had higher case and death rates since July 2021

Vaccine coverage remains highly heterogeneous and varies widely within counties

Global, National and Michigan Trends

Global and National Trends





Globally, 270,299,784 cases and 5,308,864 deaths (Data* through 12/13/2021)

- European case rates recently plateaued but are levels of ≥500 cases/million; & cases in South Africa are increasing rapidly with identification of the Omicron

United States: Nearly all US jurisdictions have High or Substantial community transmission¶

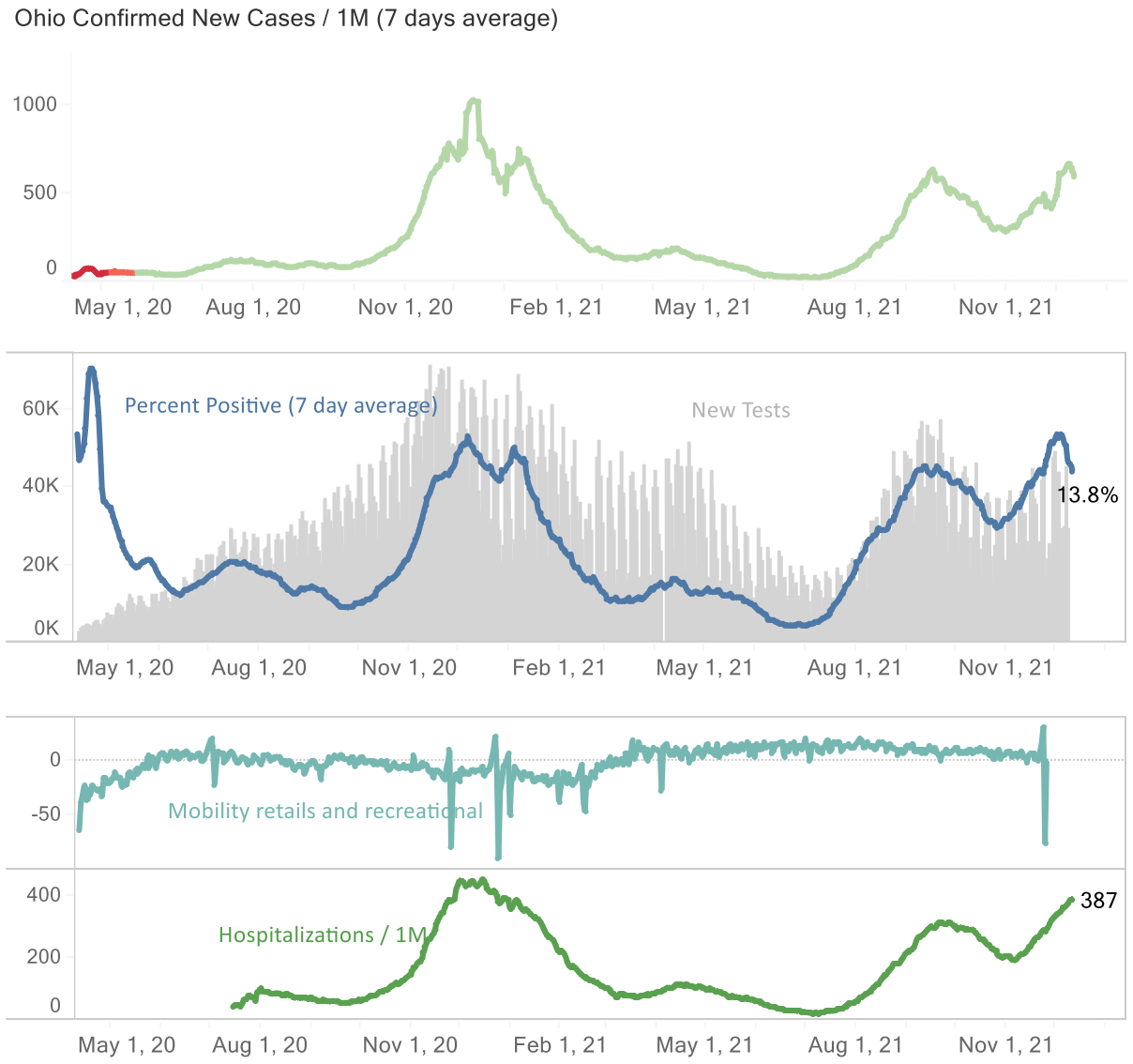
- The U.S. is at High transmission level (250 cases/100,000 in last 7 days)

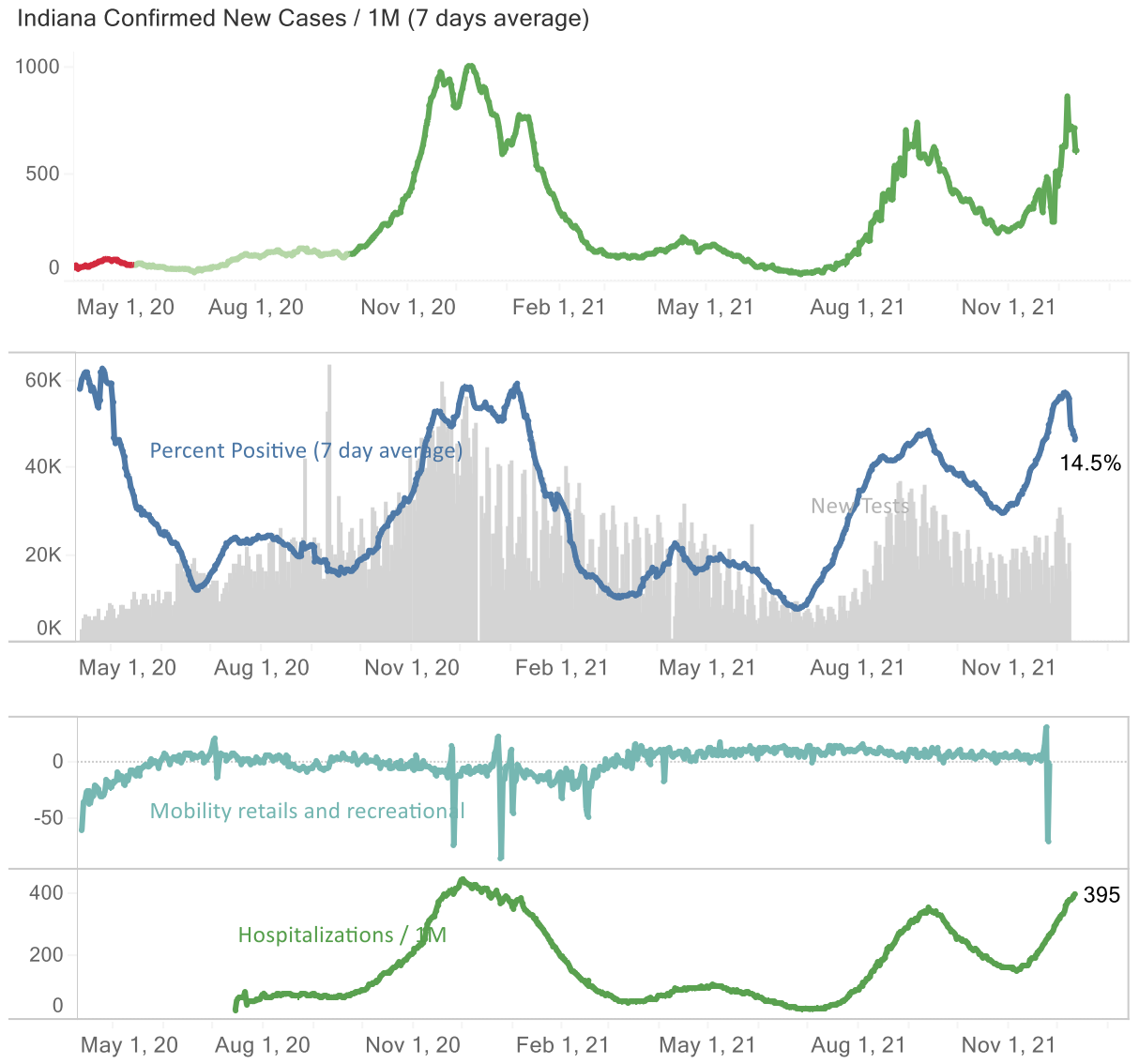
Midwest states maintain High transmission levels† and are increasing

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

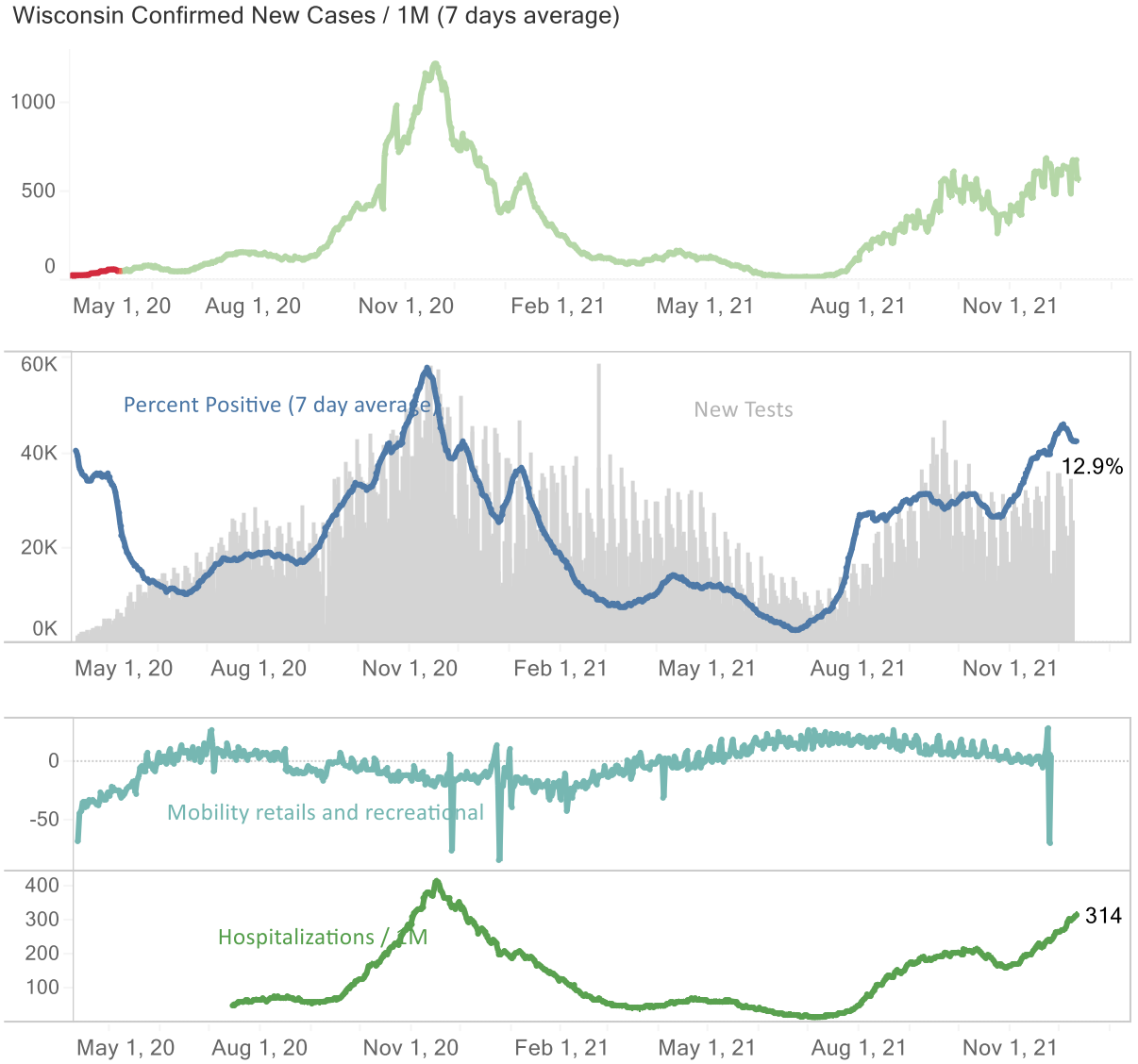
Source: * Johns Hopkins Coronavirus Resource Center; ¶ CDC COVID Data Tracker Weekly Review; † CDC COVID Data Tracker – CDC recently updated their methodology for reporting case rates

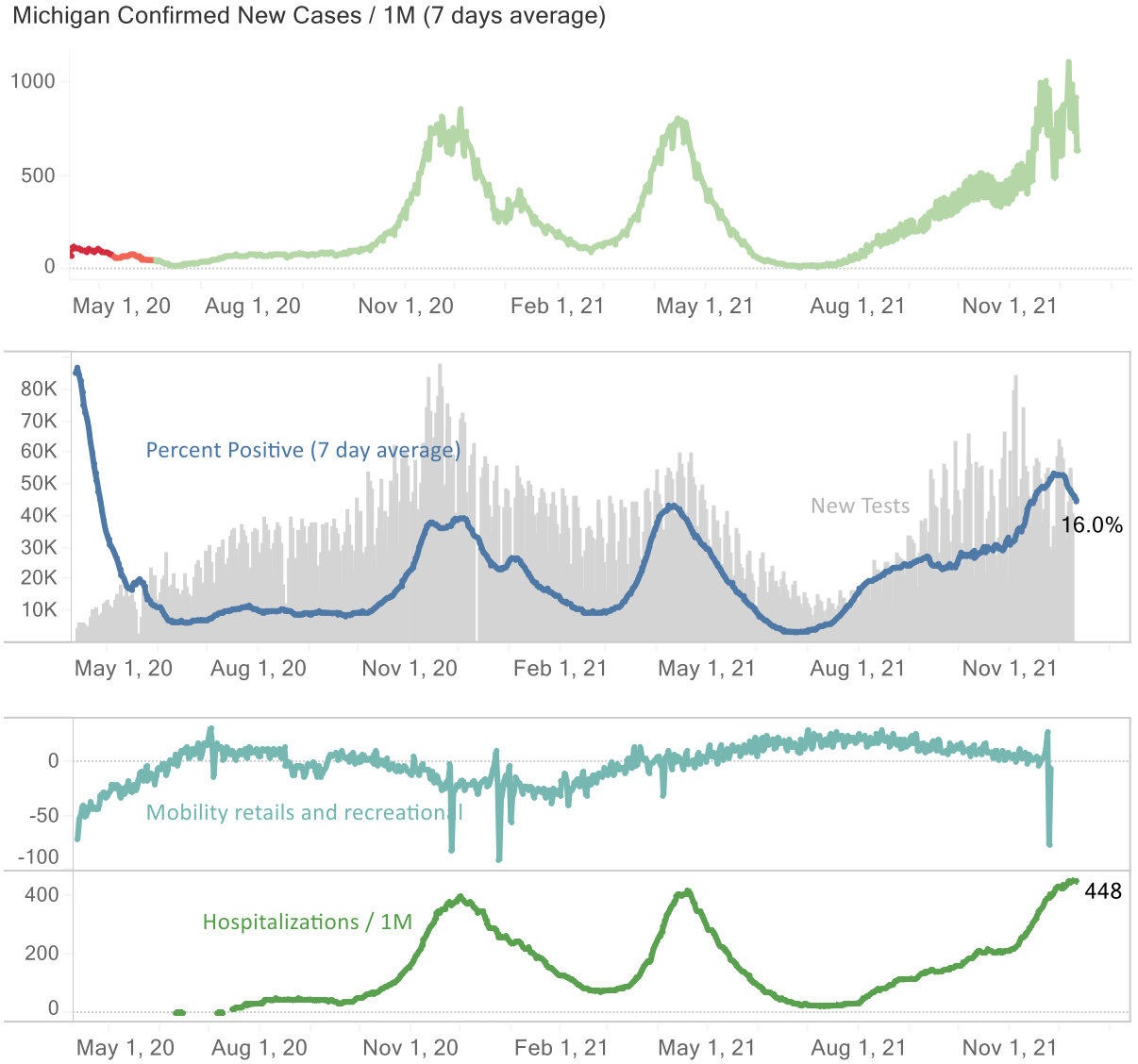
State Comparisons: Ohio and Indiana



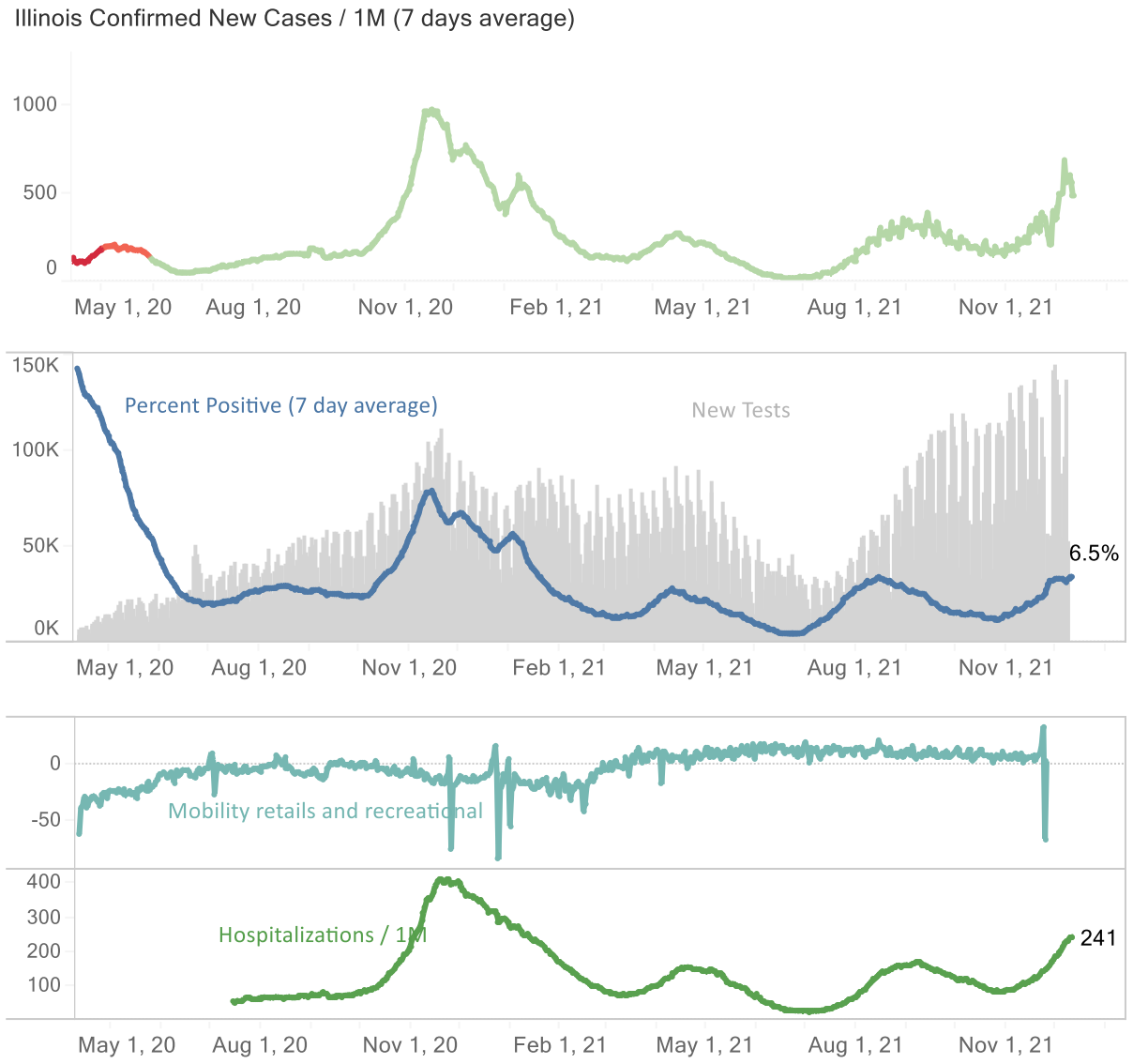


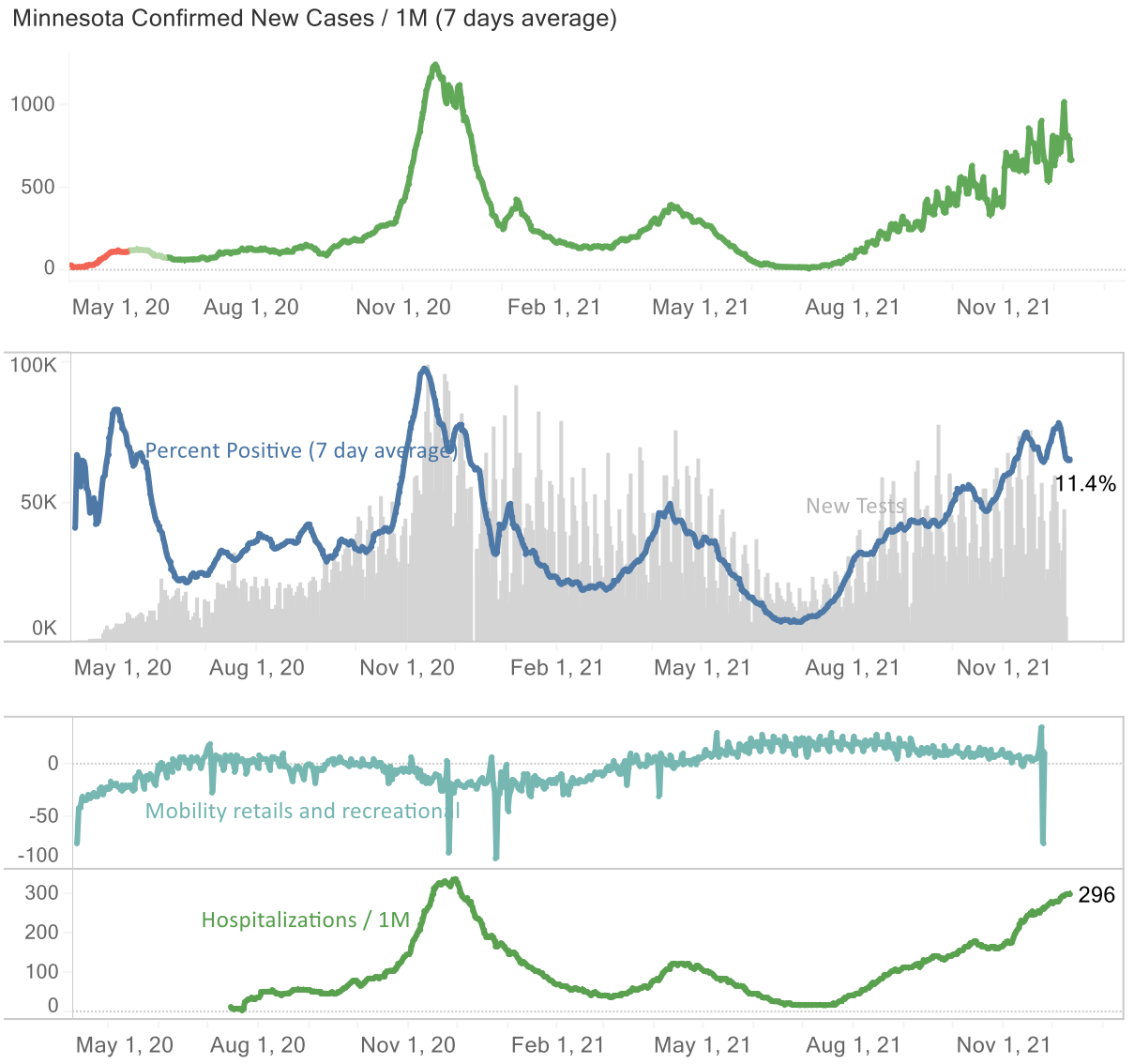
State Comparisons: Wisconsin and Michigan





State Comparisons: Illinois and Minnesota





Key Messages: All COVID-19 Transmission Metrics Increasing

Michigan continues above the High Transmission level

- All counties in Michigan are at High transmission level
- CDC recommends all individuals, regardless of vaccination status, should mask indoors

Statewide positivity is 16.9% (last week: 19.5%)

- The trend is decreasing for 1 week
- Positivity is increasing in most MERC regions
- Positivity in all regions is above 15% and three regions are above 20%

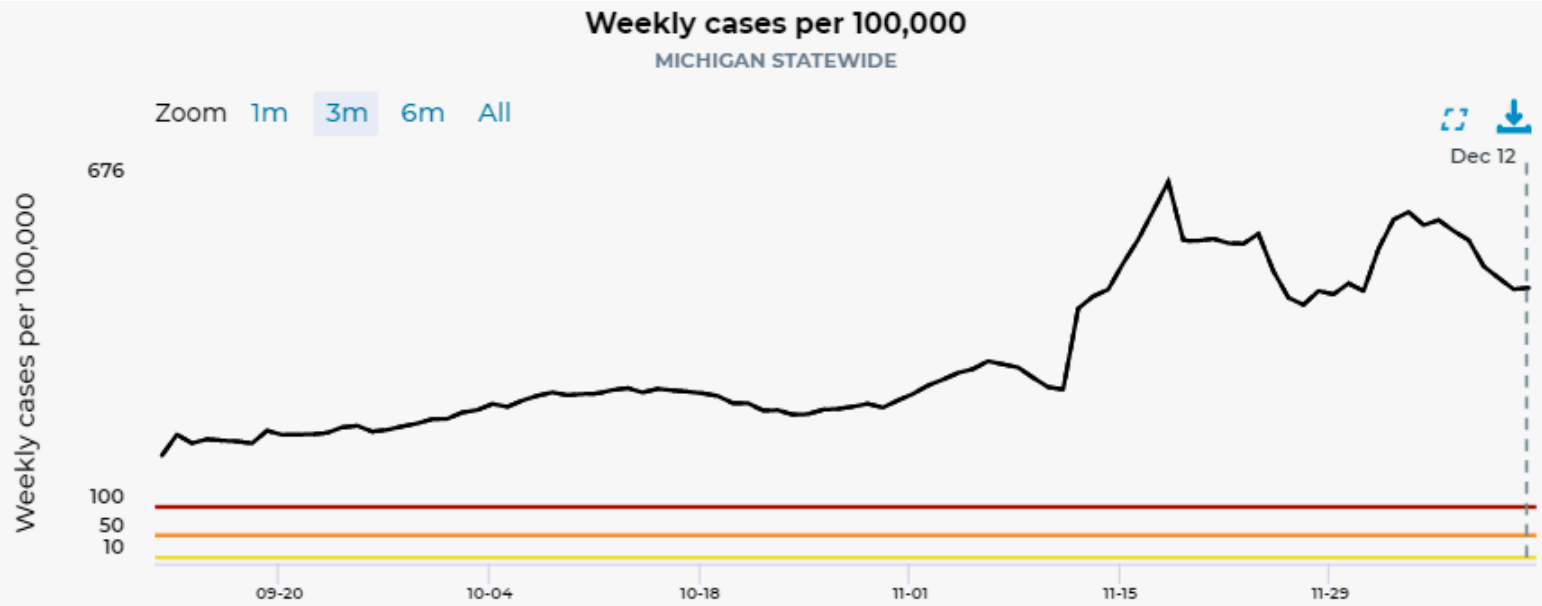
Case rate is 593.0 cases/million (last week: 522.9 cases/million):

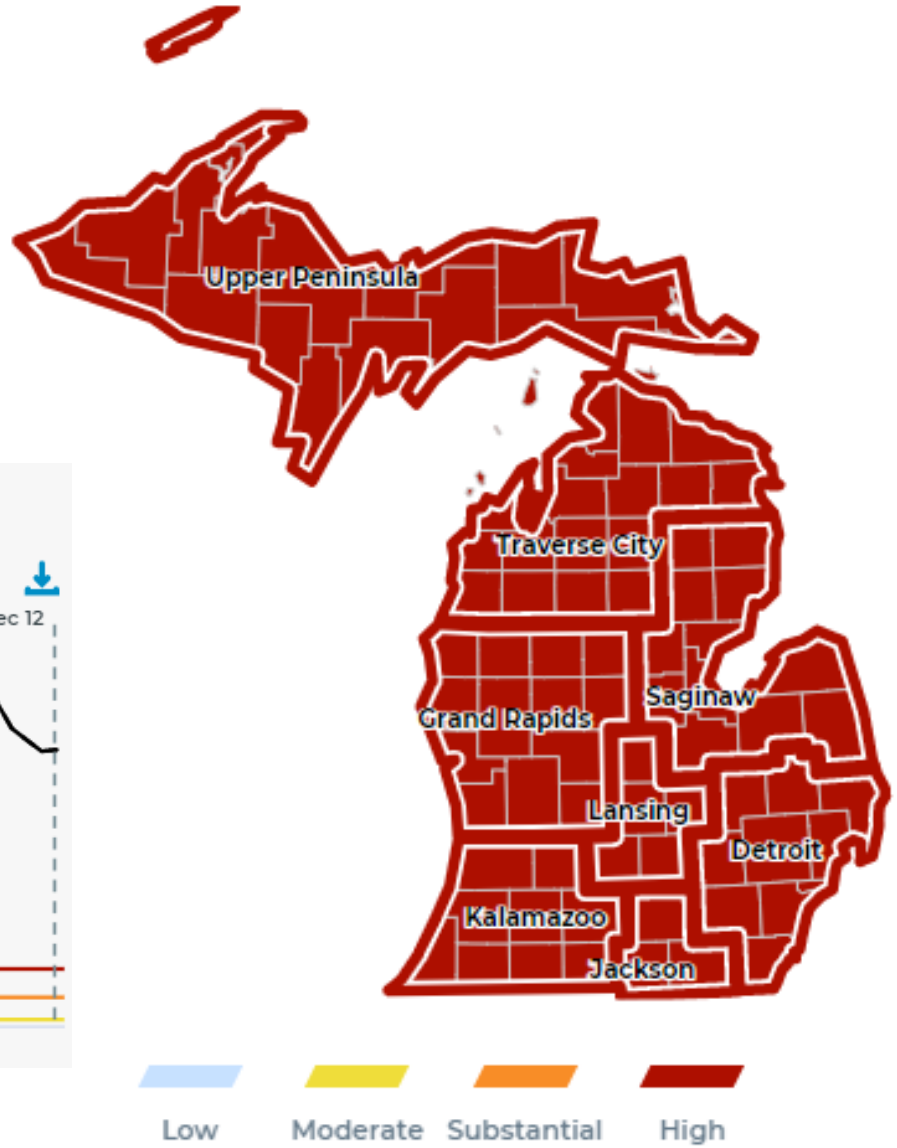
- Reported cases per million are delayed due to Thanksgiving holidays
- Cases per million are increasing among all age groups
- In the past 7 days, 30-39-years-olds are experiencing the highest number of cases (961.4 daily cases), and highest case rate (792.5 cases/mil)
- Approximately 2.0% of people who were fully vaccinated have been reported with a breakthrough infection

Cases and outbreaks saw decreases in the long-term care setting following the Thanksgiving Holiday

Michigan continuing to experience high daily case count during the pandemic

[Dashboard | CDC | MI Start Map](#) for most recent data by reporting date





- Referrals declined since December 4

Confirmed and probable case indicators

Table Date: 12/13/2021 (7 days from date table was produced: 12/06/2021)

Risk levels: Low A B C D E

	CDC Transmission Risk Level	Absolute Cases (per million)	CDC Case Trend	Average Percent Positivity	Positivity Trend	Tests (per million)	% IP Beds Occupied by COVID-19 Cases	% Occupied IP Beds Trend	Absolute Deaths (per million)	Death Trend
Detroit	High	590.7	decline [7 days]	15.8	Increase - 6wk	5514.6	21.3	Increase - 21wk	8.4	Increase - 4wk
Grand Rapids	High	602.1	decline [18 days]	22.3	Increase - 1wk	4343.0	25.0	Decrease - 1wk	11.2	Increase - 5wk
Kalamazoo	High	614.0	decline [12 days]	22.1	Increase - 6wk	3897.7	26.0	Increase - 6wk	10.0	Increase - 4wk
Saginaw	High	628.4	decline [12 days]	20.0	Increase - 6wk	3860.7	19.1	Increase - 6wk	14.2	Increase - 3wk
Lansing	High	592.9	decline [19 days]	17.6	Increase - 1wk	3700.3	30.2	Increase - 6wk	8.8	Increase - 1wk
Traverse City	High	531.1	decline [20 days]	17.7	Increase - 1wk	3053.3	20.7	Increase - 5wk	13.6	Increase - 4wk
Jackson	High	595.5	decline [21 days]	21.5	Decrease - 2wk	4414.1	34.2	Increase - 1wk	10.8	Increase - 1wk
Upper Peninsula	High	537.0	decline [19 days]	16.4	Increase - 2wk	2746.1	15.6	Increase - 2wk	8.5	Decrease - 1wk
Michigan	High	593.0	decline [12 days]	17.7	Increase - 6wk	4848.3	22.4	Increase - 21wk	9.7	Increase - 4wk

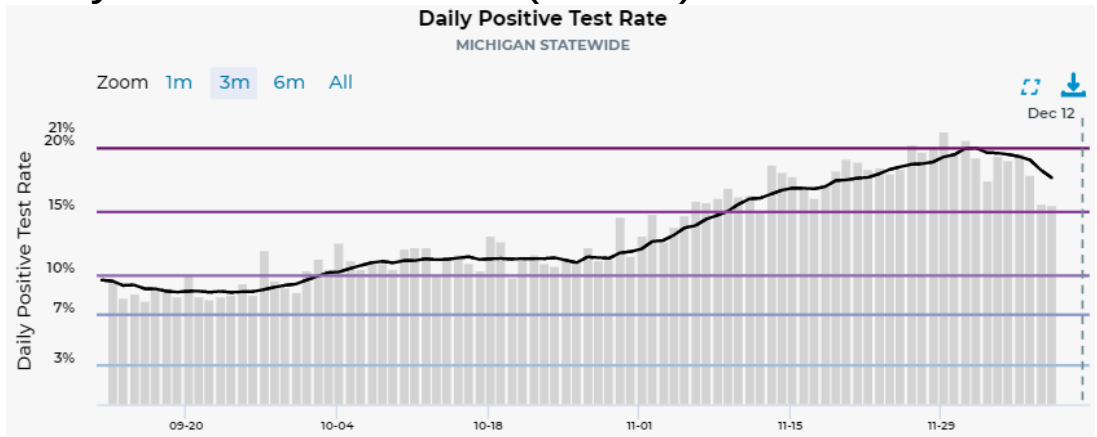
Cases Low: <7 | A: 7-20 | B: 20-40 | C: 40-70 | D: 70-150 | E: >=150

Positivity Low: <3% | A: 3-7% | B: 7-10% | C: 10-15% | D: 15-20% | E: >=20%

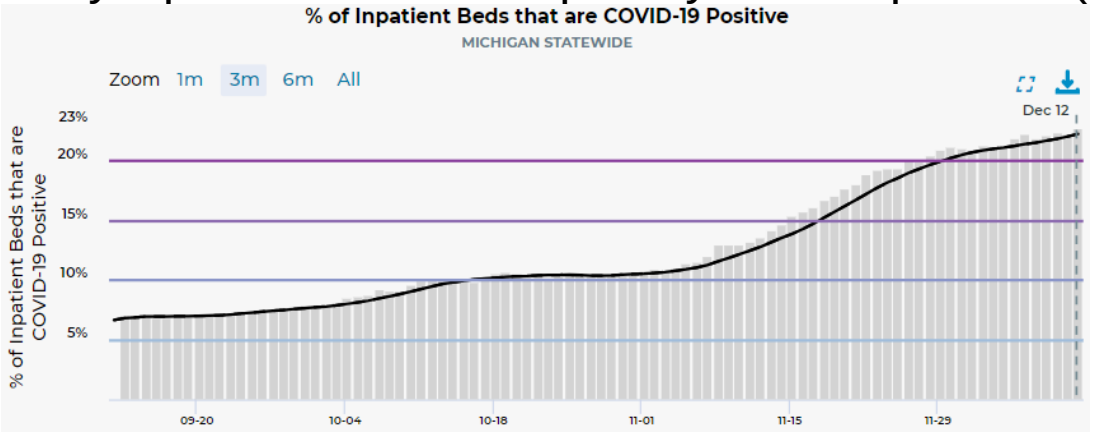
Time Trends – Positivity, Case Rates, Hospitalizations, Deaths

- Some COVID-19 indicators are plateauing, but burden remains high in MI

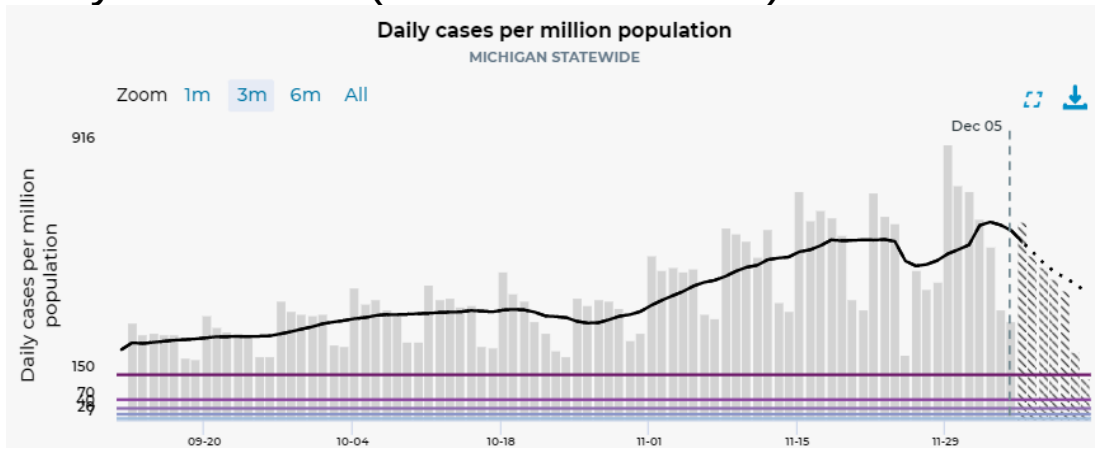
Daily Positive Test Rate (16.9%)



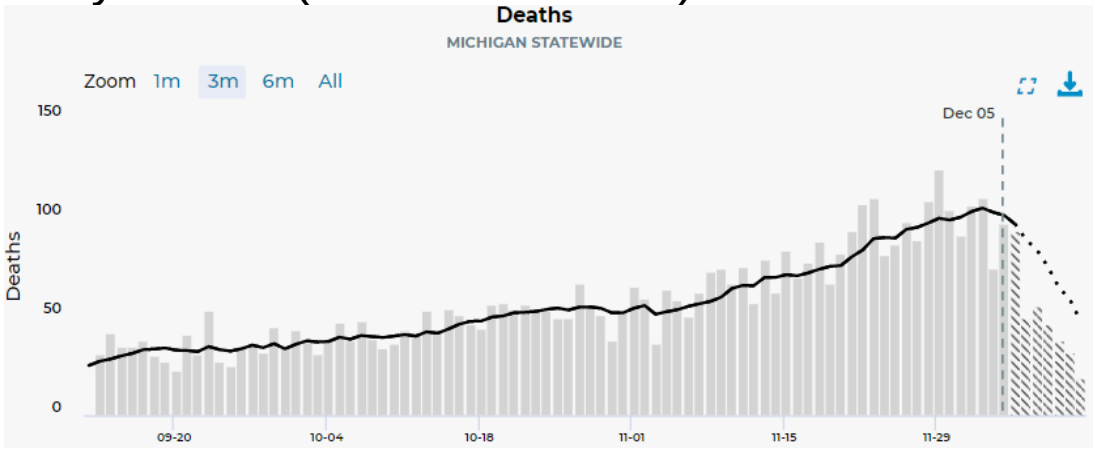
Daily Inpatient Beds Occupied by COVID patients (22.4%)



Daily Case Rate (593.0 case/million)



Daily Deaths (9.7 deaths/million)

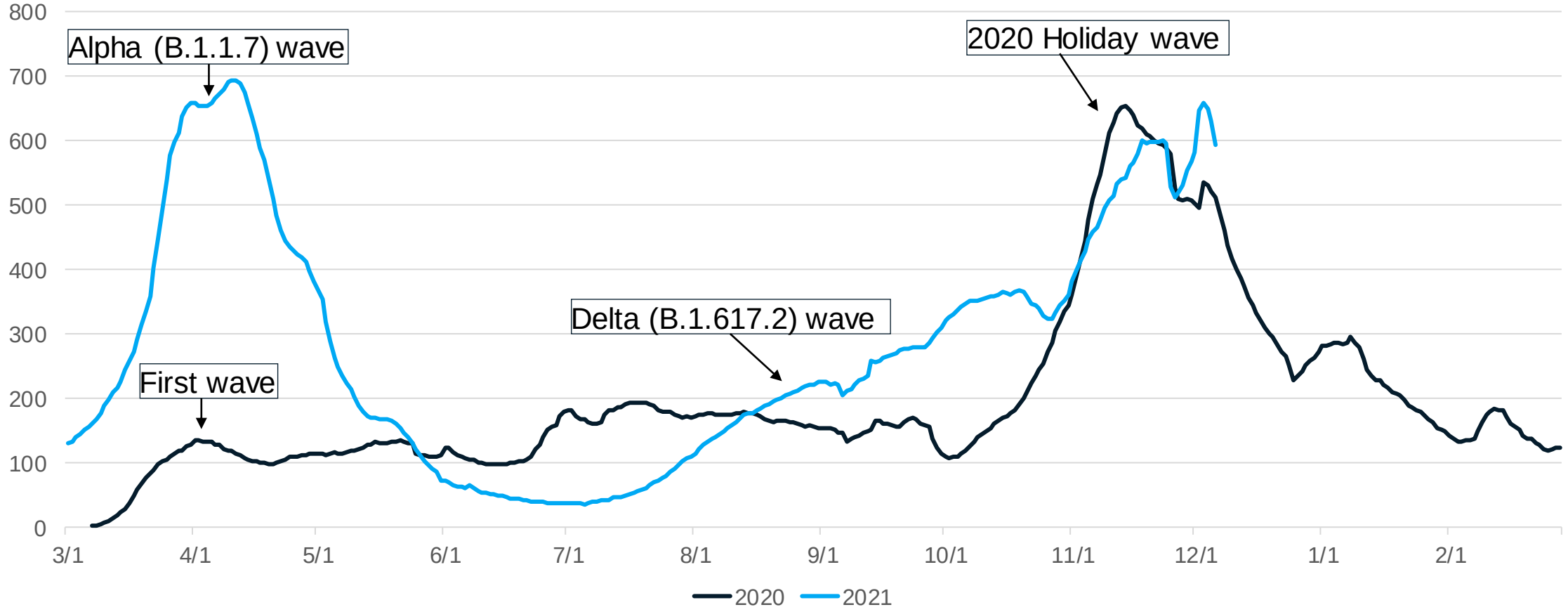


Source: Michigan Disease Surveillance System and https://www.mistartmap.info/mism-indicators

Time Trends – Annual Comparison

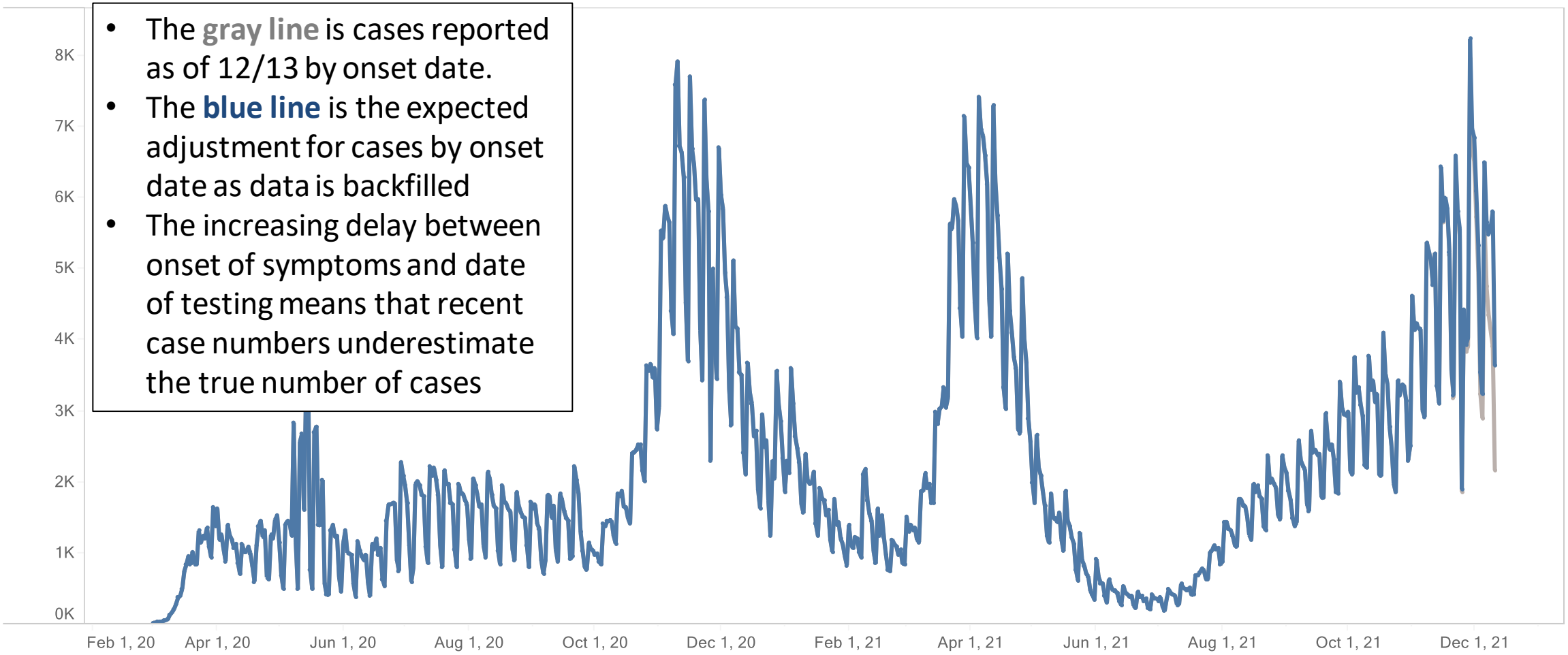
- Case rates are higher than this time last year (by onset date)

7- day rolling average of Rates 2020 vs 2021



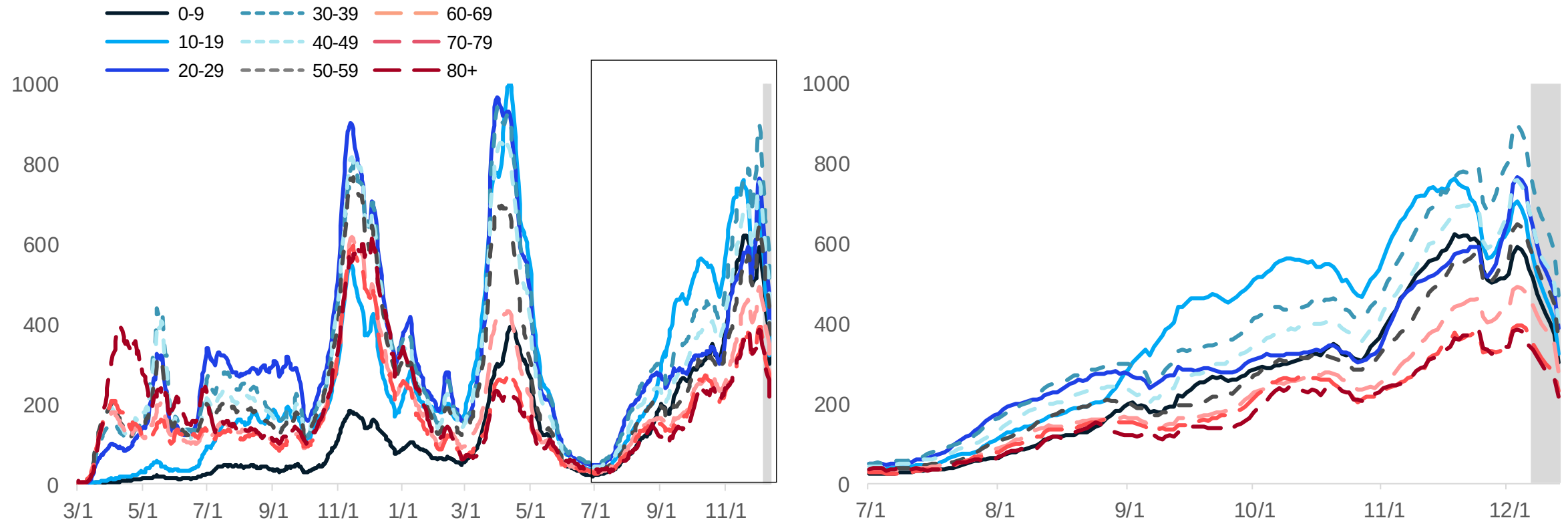
Michigan Lag-adjusted new COVID cases by onset date

New confirmed cases by onset actual and adjusted as of December 13, 2021 (-2 days)



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 most age groups saw increases following the Thanksgiving holiday but are decreasing again
- Case rates by onset date for all age groups are between 345 and 792 cases per million (through 12/6)
- Case counts and case rates are highest for 30-39-year-olds this week

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

Number of Cases and Case Rates by Age Group, data as of Dec 12

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

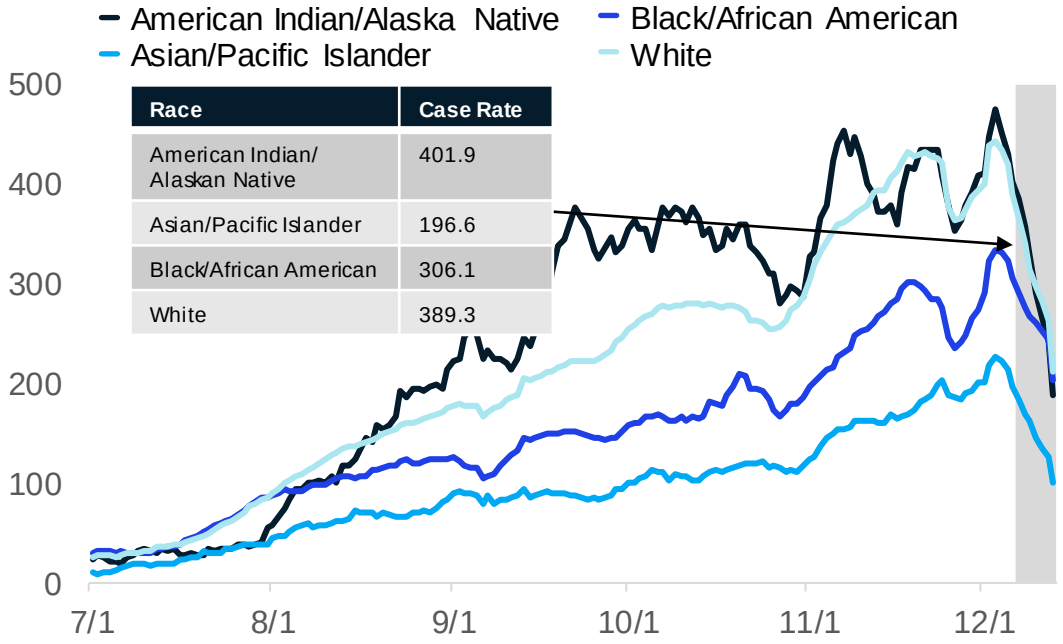
Age Group	Average† daily cases	Average† Daily Case Rate	One Week % Change (Δ #)*
0-9	619.7	537.6	+5% (+28)
10-19	765.7	**610.2**	+0% (+2)
20-29	944.6	**684.7**	+16% (+127)
30-39	**961.4**	**792.5**	+4% (+36)
40-49	809.4	**686.3**	+9% (+67)
50-59	804.0	**595.4**	+10% (+75)
60-69	583.4	457.3	+7% (+38)
70-79	281.3	366.8	+11% (+29)
80+	143.4	346.3	+3% (+4)
Total¶	**5,927.4**	**593.0**	**+7% (+402.3)**

† Rolling 7-day average; ¶ Total may not reflect state due to missing age data
Note: Case information sourced from MDHHS and reflects date of onset of symptoms
Source: MDHHS – Michigan Disease Surveillance System

- **Trend numbers and comparisons are being impacted by longer backfill times – the data in this table are comparing the two time points from the most recent data file**
- Average daily number of cases (961.4) and average daily case rate (792.5 case/mil) are highest for those aged 30-39
- Case rates are higher than rates from a week ago, but have decreased from recent peaks on December 4.

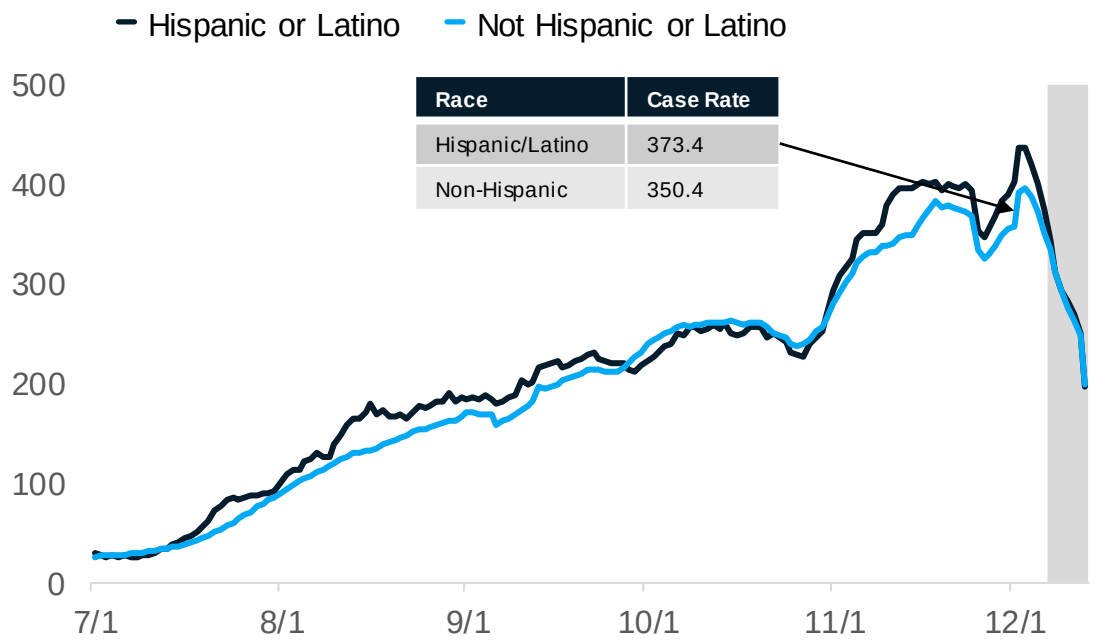
Case Rates by Reported Racial and Ethnic Group

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



Race	Case Rate
American Indian/ Alaskan Native	401.9
Asian/Pacific Islander	196.6
Black/African American	306.1
White	389.3

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



Race	Case Rate
Hispanic/Latino	373.4
Non-Hispanic	350.4

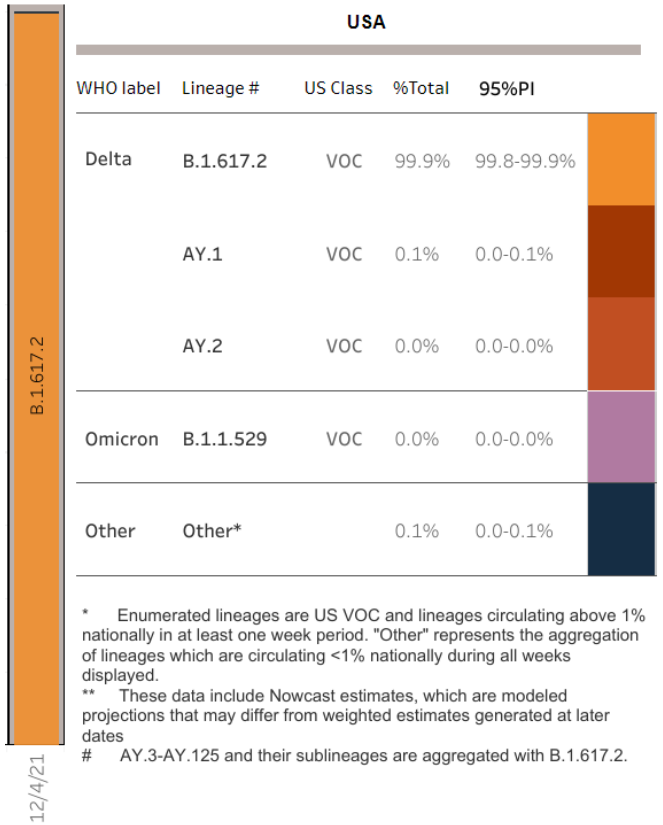
Updates since last week:

- Cases per million are decreasing for most reported racial and ethnic groups, but the delay in reporting is impacting trend analysis
- The high number of cases with missing race/ethnicity data, and those multiracial or other are also impacting the case rates shown here
- In the past 30 days, 29% (↑1%) of race data and 39% (↑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, Nov 27 – Dec 4 (NOWCAST)

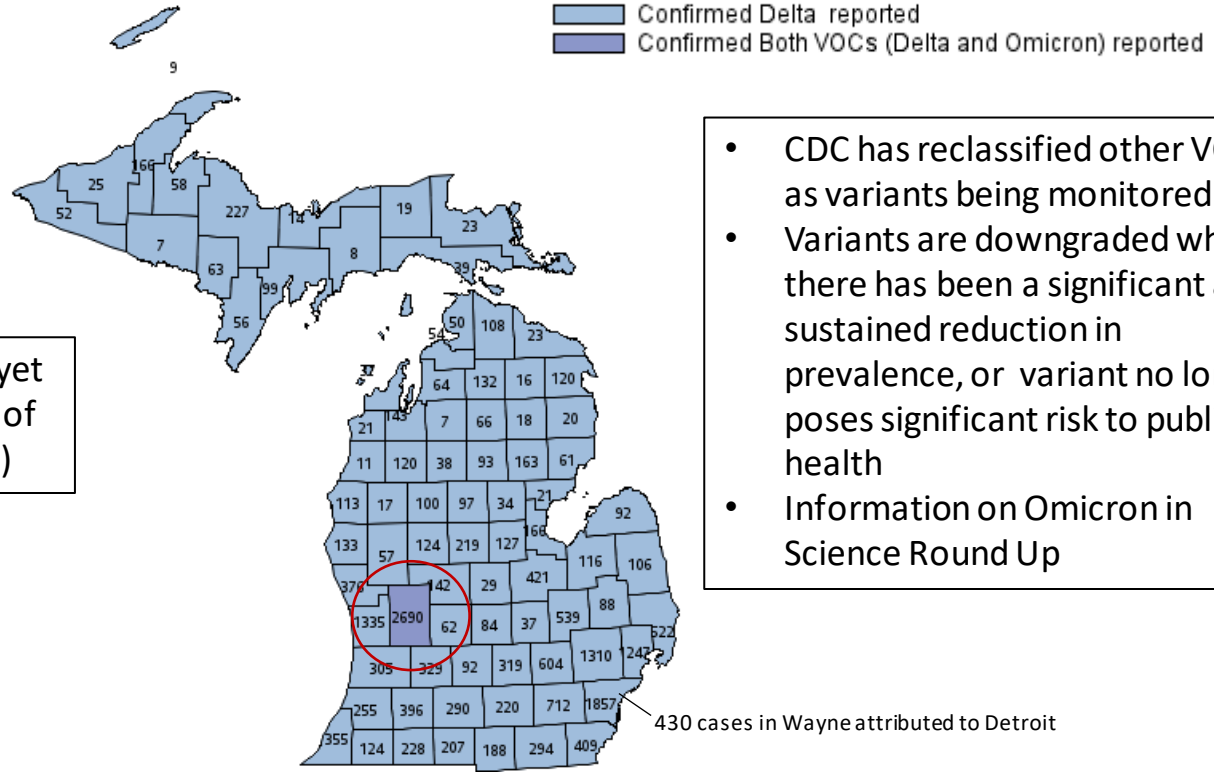


WHO label	Lineage #	US Class	%Total	95%PI
Delta	B.1.617.2	VOC	99.9%	99.8-99.9%
	AY.1	VOC	0.1%	0.0-0.1%
	AY.2	VOC	0.0%	0.0-0.0%
Omicron	B.1.1.529	VOC	0.0%	0.0-0.0%
Other	Other*		0.1%	0.0-0.1%

* Enumerated lineages are US VOC and lineages circulating above 1% nationally in at least one week period. "Other" represents the aggregation of lineages which are circulating <1% nationally during all weeks displayed.
** These data include Nowcast estimates, which are modeled projections that may differ from weighted estimates generated at later dates
# AY.3-AY.125 and their sublineages are aggregated with B.1.617.2.

Currently, CDC is not yet reporting prevalence of AY.4.2 (i.e., Delta plus)

Variants of Concern in Michigan, Dec 13



- CDC has reclassified other VOCs as variants being monitored
- Variants are downgraded when there has been a significant and sustained reduction in prevalence, or variant no longer poses significant risk to public health
- Information on Omicron in Science Round Up

Variant	MI Reported Cases¶	# of Counties	MDHHS VOC Sequenced Prev.
B.1.617.2 (delta)	19,954	83	>99%
B.1.1.529 (omicron)	1	1	<1%

Data last updated Dec 13, 2021
Source: MDSS

Overview of metrics for individuals < 12 and <18

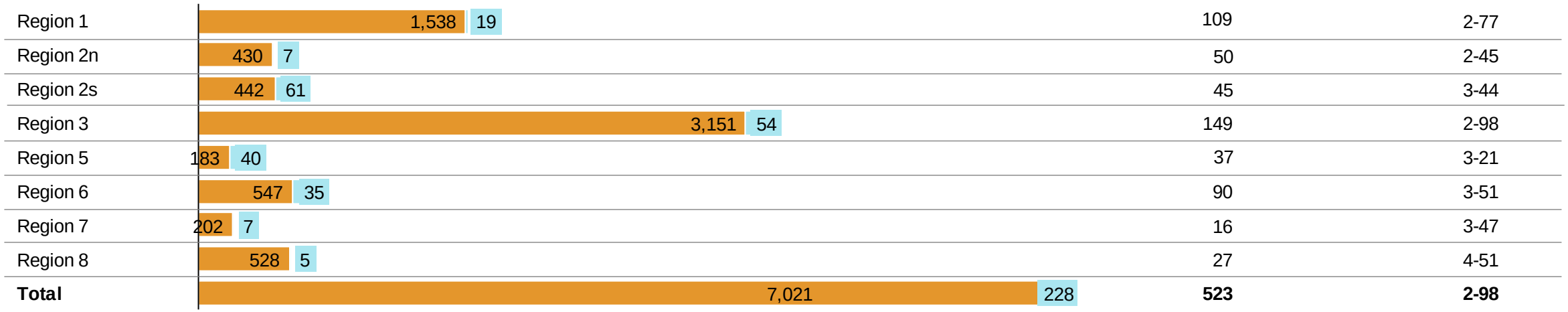
Region	Population (<12 yrs)	Population (<18 yrs)	Cumulative Case Count (<12 yrs)	7-day Average Daily Case Count (<12 yrs)	7-day Average Daily Case Rate per Million (<12 yrs)	7-day Average Daily Pediatric Hospitalization Count (<18 yrs)*	7-day Average Daily Pediatric Hospitalization Rate per Million (<18 yrs) *	7-day Average Daily Death Count (<12 yrs)	30-day Average Daily Death Count (<12 yrs)
Detroit	735529	1134247	63882	447.4	608.3	29.4	25.9	0	0.03
Grand Rapids	230120	350652	23293	126.9	551.5	12.7	36.2	0	0.07
Kalamazoo	140422	214801	11954	70.6	502.8	1.6	7.4	0	0.00
Saginaw	78759	122834	7590	43.1	547.2	0.3	2.4	0	0.00
Lansing	78140	119915	7804	46.7	597.6	2.3	19.2	0	0.00
Traverse City	53099	83462	4189	26.9	506.6	0.6	7.2	0	0.03
Jackson	41274	64091	3927	12.1	293.2	0.1	1.6	0	0.03
Upper Peninsula	34645	53875	3922	21.3	614.8	0.0	0.0	0	0.00
Michigan	1391988	2143877	126687	795.6	571.6	47.0	21.9	0	0.17

- Each day, 795 children under age 12 become infected with COVID-19, 70 more than last week
- Pediatric case rates increased to 571.6 cases/million (last week: 520.6 cases/million)
- Pediatric (<18) hospital census* is averaging approximately 47 per day (last week: 50 per day)

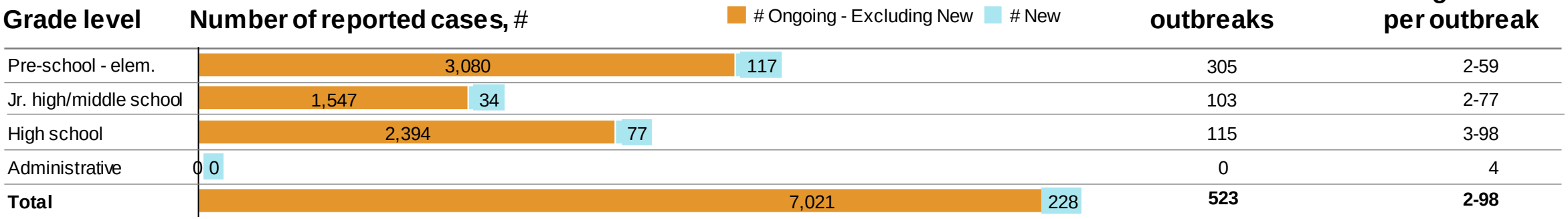
Note: Data as of 11/15; case data 11/8, hospitalization data 11/15. Hospitalization data is for pediatric patients (<18); * includes only confirmed COVID-19

K-12 school clusters and outbreaks, recent and ongoing, week ending Dec 9

Number of reported outbreaks/clusters decreased since last week (557 to 523), with decreases in Pre K-Elementary (323 to 305), Middle/Jr High (115 to 103), and High Schools (119 to 115). No Administration outbreaks reported this week



Region	Number of reported cases, #		Number of outbreaks	Range of cases per outbreak
Region 1	1,538	19	109	2-77
Region 2n	430	7	50	2-45
Region 2s	442	61	45	3-44
Region 3	3,151	54	149	2-98
Region 5	183	40	37	3-21
Region 6	547	35	90	3-51
Region 7	202	7	16	3-47
Region 8	528	5	27	4-51
Total	7,021	228	**523**	**2-98**



Grade level	Number of reported cases, #		Number of outbreaks	Range of cases per outbreak
Pre-school - elem.	3,080	117	305	2-59
Jr. high/middle school	1,547	34	103	2-77
High school	2,394	77	115	3-98
Administrative	0	0	0	4
Total	7,021	228	**523**	**2-98**

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

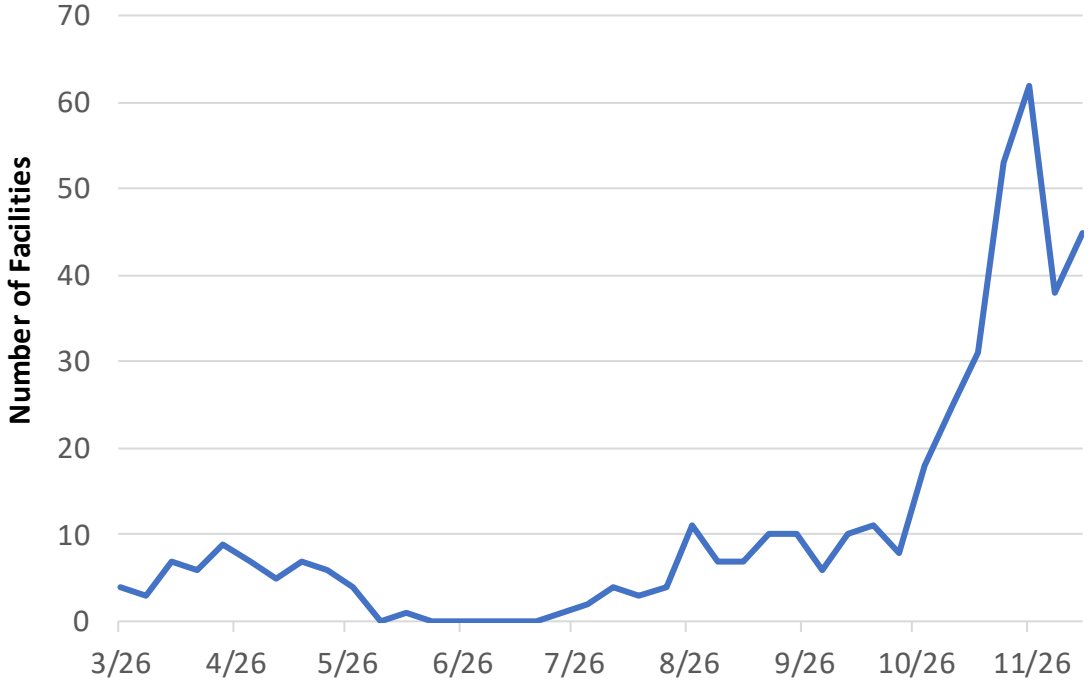
Source: LHD Weekly Sitreps

Long Term Care Facility Focus

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

Number of AFC/HFAs with 3 or more Confirmed Cases

Number of SNFs with 3 or more Confirmed Cases

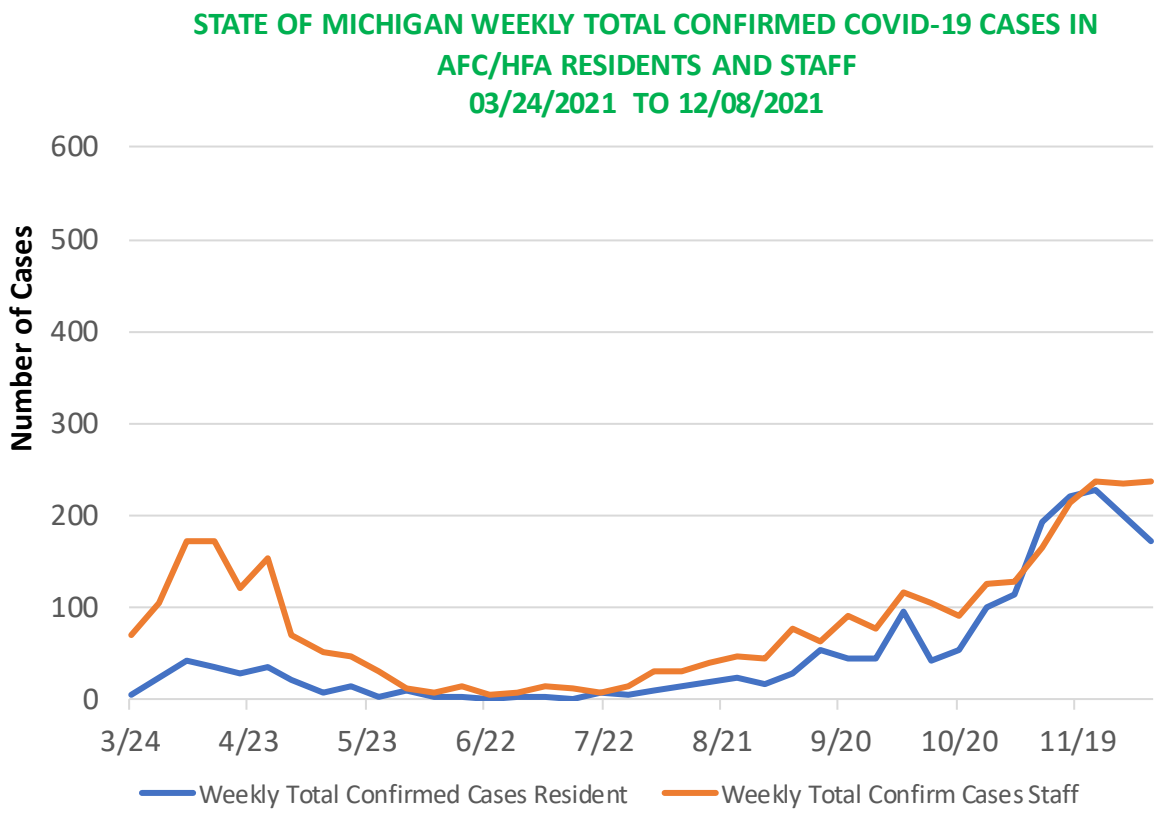


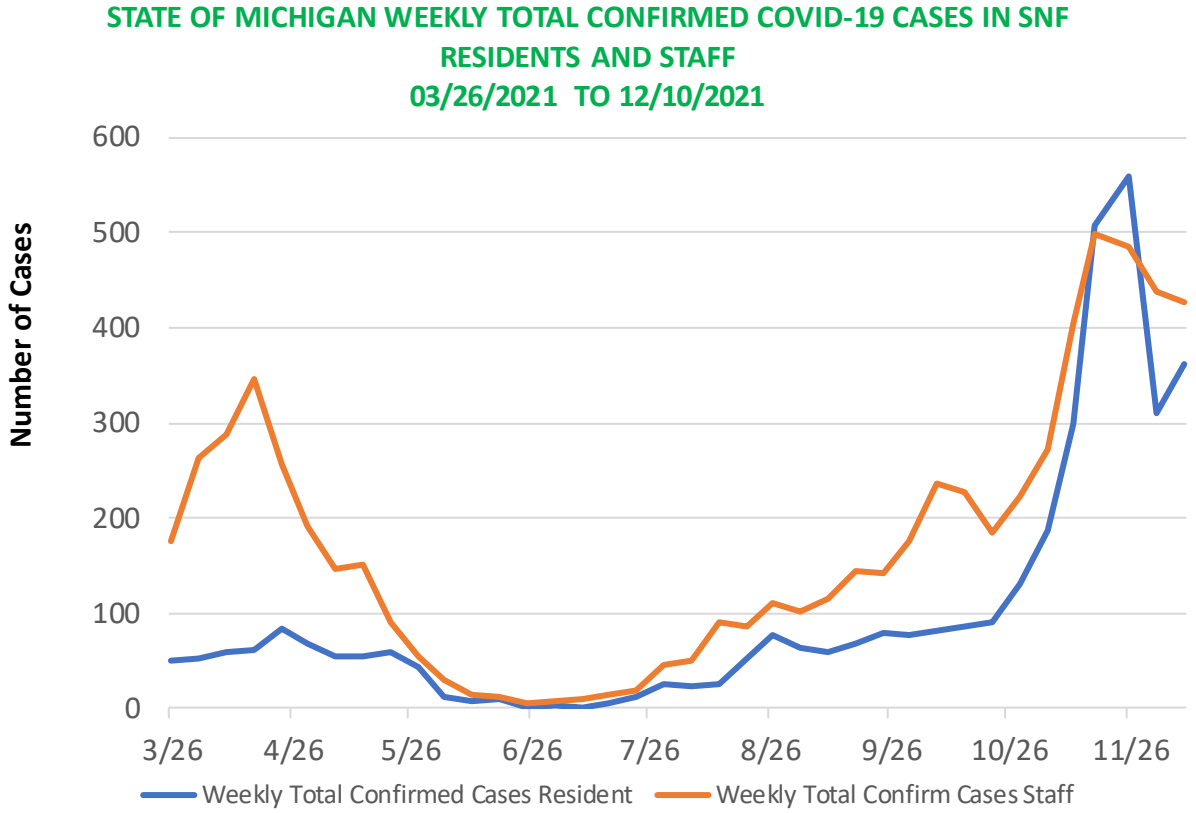
- The number of Long-Term Care Facilities reporting 3 or more cases within a single reporting period slightly increased to 45 from 38 for Skilled Nursing Facilities and continued to decline to 5 week low of 20 for AFC/HFA facilities in most recent data.

COVID-19 outbreaks within Long-Term Care Facilities are defined as three or more cases with an epidemiological linkage by place and time indicating a shared exposure outside of a household (https://www.michigan.gov/coronavirus/0,9753,7-406-98163_98173_102057---,00.html and https://www.michigan.gov/coronavirus/0,9753,7-406-98163_98173-526911--,00.html)

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

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



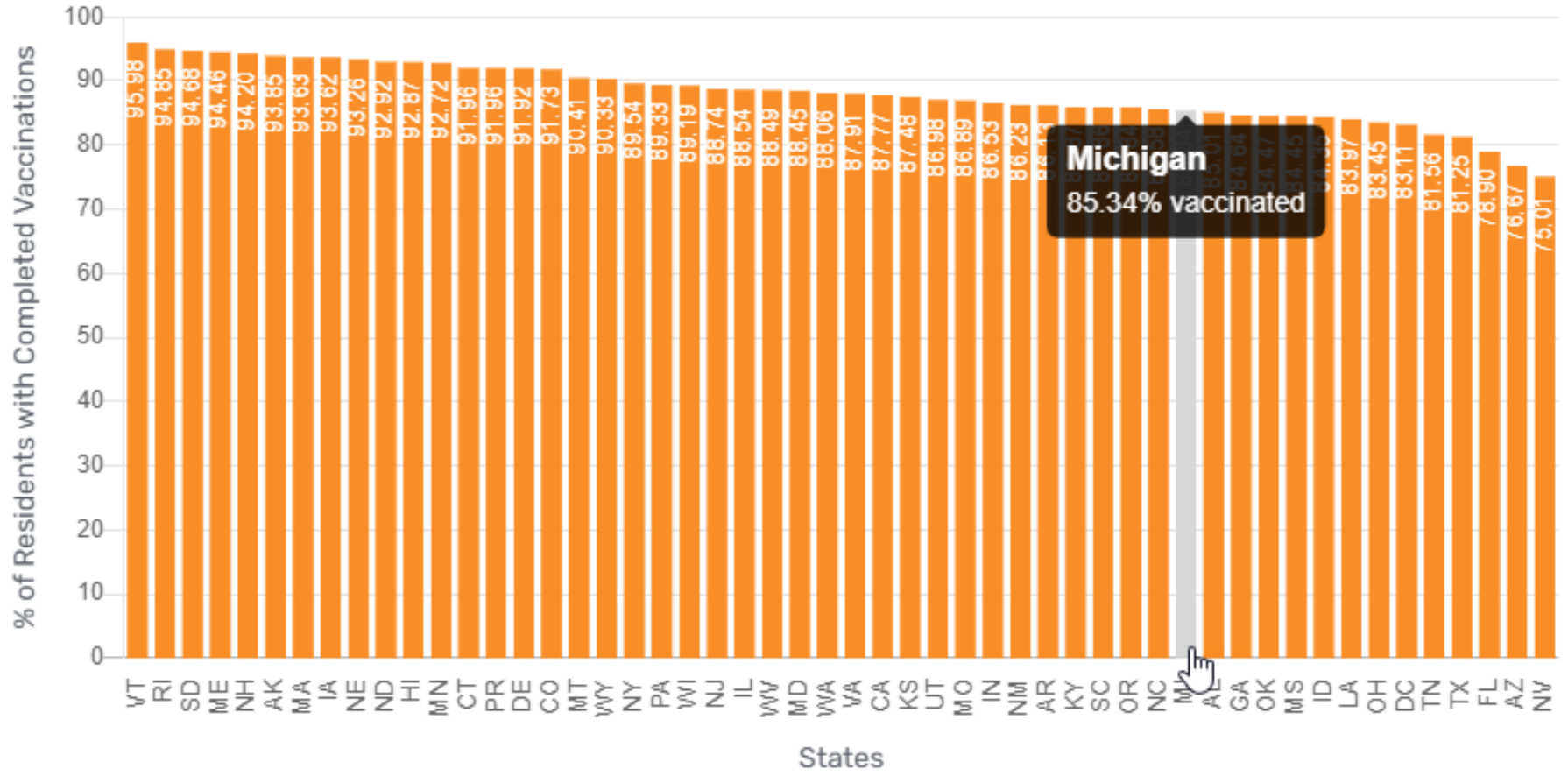


- Case count in residents and staff are trending downwards within LTCF among both residents and staff with slight increase in SNF residents and plateau in AFC/HFA staff
- Case counts in LTCF have maintained the typical pattern of more staff case count than residents case count.

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

Percent of Current Residents with Completed COVID-19 Vaccinations per Facility, Nursing Homes/Skilled Nursing Facilities

Note: This shows the average percentage among facilities who have reported vaccination data in the current or prior week.



https://data.cms.gov/covid-19/covid-19-nursing-home-data

Michigan Nursing Homes/Skilled Nursing Facilities with more or less than 75% of Staff Vaccinated

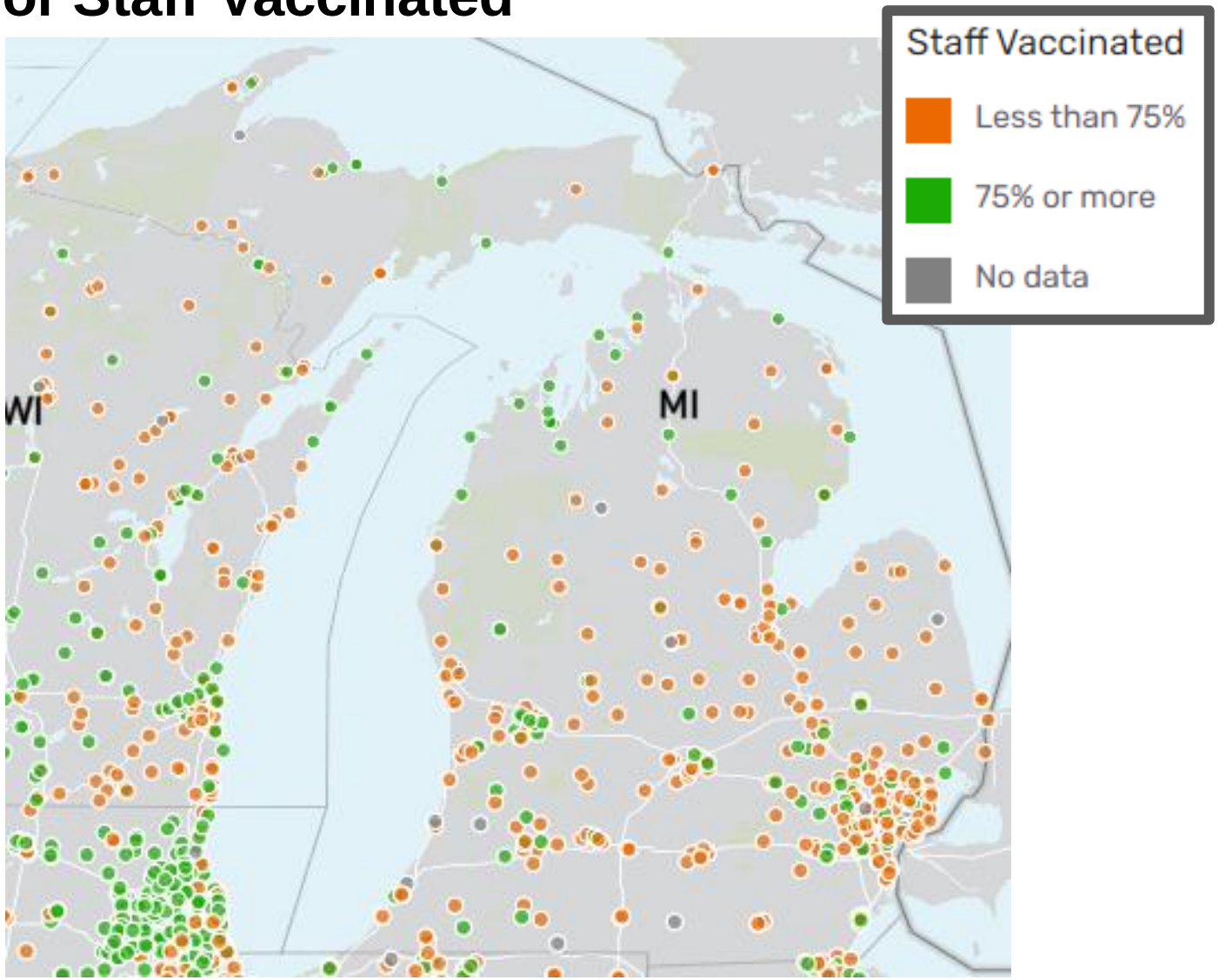
Data for individual facilities available through interactive map at Centers for Medicare and Medicaid Services (CMS) Nursing Home Data webpage

Map shows locations of skilled nursing facilities with 75% or more of staff vaccinated (green dots) or less than 75% of staff vaccinated (orange dots)

National average is **75.9%** staff vaccination coverage:

- Average in Michigan facilities is **64%**

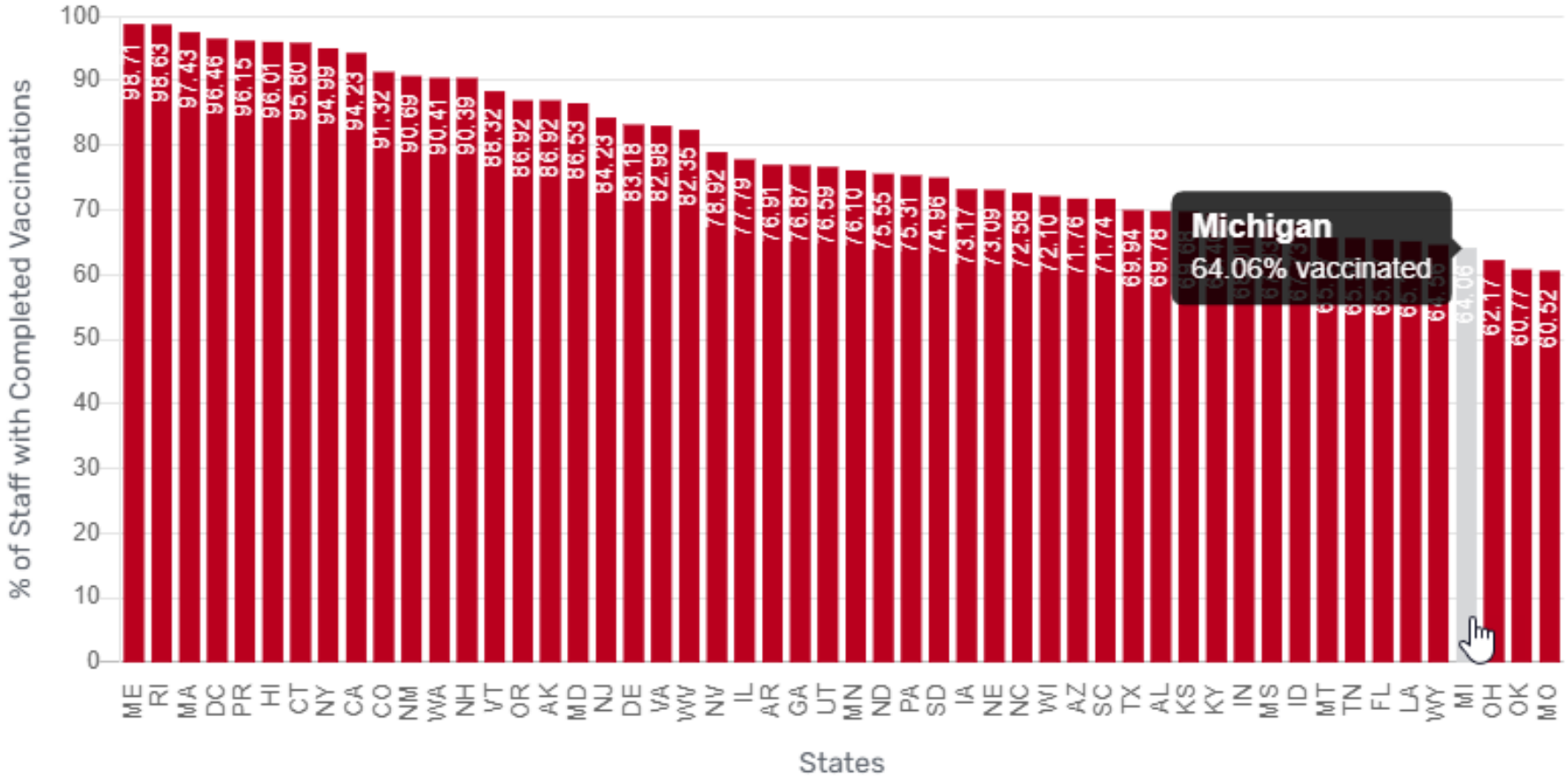
Facility-specific booster administration data can now be found on the CMS webpage



https://data.cms.gov/covid-19/covid-19-nursing-home-data

Percent of Current Staff (Healthcare Personnel) with Completed COVID-19 Vaccinations per Facility, Nursing Homes/Skilled Nursing Facilities

Note: This shows the average percentage among facilities who have reported vaccination data in the current or prior week.



https://data.cms.gov/covid-19/covid-19-nursing-home-data

COVID-19 Vaccination Coverage and Reporting among Staff in Nursing Homes, by Week - United States

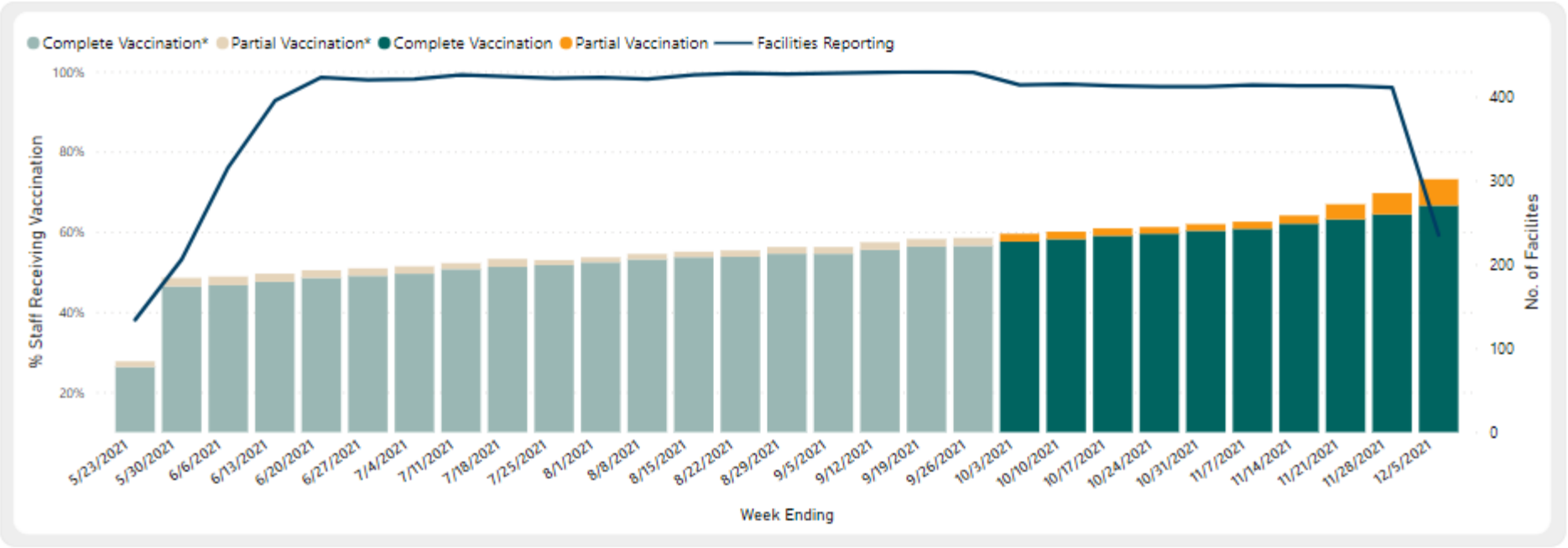
COVID-19 Vaccination Coverage and Reporting among Staff in Nursing Homes, by week—United States

Partial vaccination: 1 dose of a 2 dose mRNA vaccination series. **Complete vaccination:** All doses required to be fully vaccinated (two doses of a two-dose mRNA series or one dose of a single-dose vaccine).

Select By State: MI

Select By Region: All

Michigan-specific trend in nursing/skilled nursing facility staff vaccination coverage



Data are not displayed if less than 5 facilities reported in a state during time period of interest. All data can be modified from week to week by facilities. Exclusions: for best epidemiological understanding, data that appear inconsistent with surveillance protocols are excluded. Vaccination coverage is calculated as the total number of staff vaccinated divided by (the total number of staff minus the number of staff with medical contraindications) multiplied by 100. Differences in how each facility implements this COVID-19 vaccination data collection, including variation in which staff collect the data, may affect facility reporting patterns.

*As of week-ending 10/3/2021, the staff categories that make up the denominator for staff vaccination coverage were modified to match those used for reporting influenza vaccination coverage.

Data source: Centers for Disease Control and Prevention, National Healthcare Safety Network: **Accessibility**: [Right click on the graph area to show as table]

For more information: https://www.cdc.gov/nhsn/ltc/weekly-covid-vac/index.html

Data as of 12/6/2021 5:30 AM

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

- Michigan's LTC Visitation Guidance recently update to align with new standards from CMS
- Concept is that if core principles of infection control are met (see appendix), the risk of COVID-19 transmission as a result of visitation is low.

- Visitation should be allowed at all times
- Visitors and residents should wear masks
- MDHHS strongly recommends testing anyone entering the building, including visitors

https://www.michigan.gov/coronavirus/0,9753,7-406-98178_100722---,00.html

Core Principles of COVID-19 Infection Prevention

https://www.cms.gov/files/document/qso-20-39-nh-revised.pdf

Visitors who have a positive viral test for COVID-19, symptoms of COVID-19, or currently meet the criteria for quarantine, should not enter the facility. Facilities should screen all who enter for these visitation exclusions

Face covering or mask (covering mouth and nose) and physical distancing at least six feet between people, in accordance with CDC guidance

Hand hygiene (use of alcohol-based hand rub is preferred)

Instructional signage throughout the facility and proper visitor education on COVID19 signs and symptoms, infection control precautions

Cleaning and disinfecting high-frequency touched surfaces in the facility often, and designated visitation areas after each visit

Appropriate staff use of Personal Protective Equipment (PPE)

Effective cohorting of residents

Resident and staff testing conducted as required

Nursing Home/Skilled Nursing Facility COVID-19 Trend Summary

Michigan nursing homes/skilled nursing facilities are seeing increases in COVID-19 cases, outbreaks, and deaths

- Increases in **staff** cases have been identified prior to increases in cases among residents

This is not surprising given that staff may have healthcare as well as community exposures to COVID-19 and nursing home staff have low vaccination coverage (64%)

- Trends in staff vaccination coverage are not rapidly changing
- Michigan staff nursing home vaccination coverage ranks 50th of 53 U.S. states and territories

Trends demonstrate the urgent need for booster vaccination coverage of long-term care facility residents

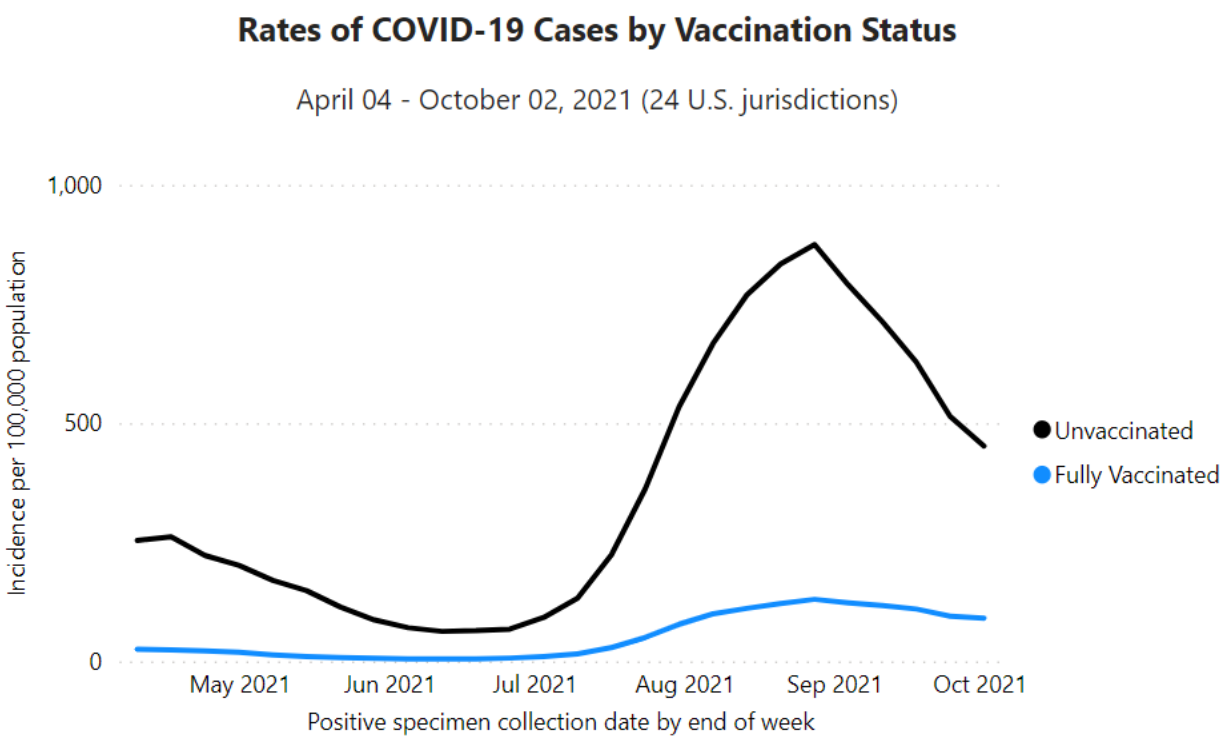
Breakthrough Cases

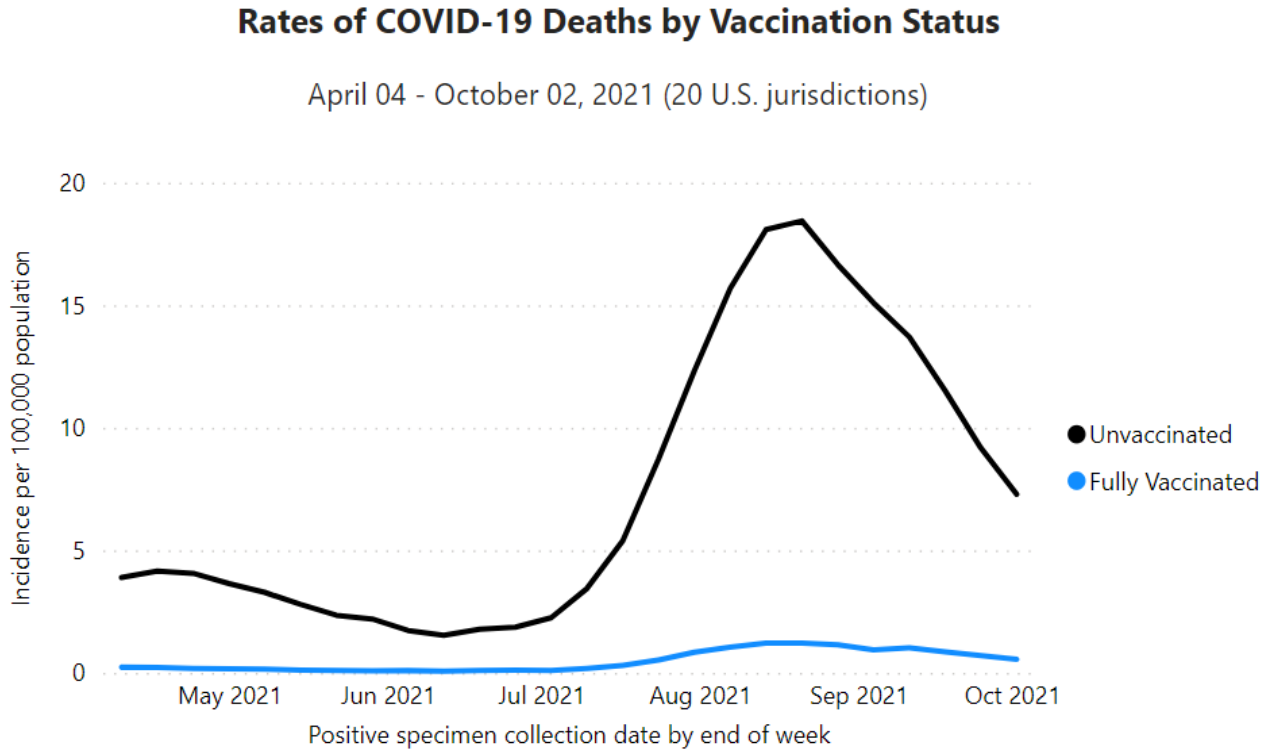
Cumulative COVID-19 Cases by Vaccination Status, Michigan, Jan 15 – Dec 3

Fully Vaccinated People (5,154,846)		
Cases	**Hospitalization**	**Deaths**
Percent of Cases In People Not Fully Vaccinated (711,227 / 835,960) **85.1%**	Percent of Hospitalizations In People Not Fully Vaccinated (17,706 / 20,101) **88.1%**	Percent of Deaths In People Not Fully Vaccinated (8,733/ 10,216) **85.5%**
711,227 Total Cases Not Fully Vaccinated	**17,706** Total Hospitalized Not Fully Vaccinated	**8,733** Total Deaths Not Fully Vaccinated
Total Breakthrough Cases **124,733**	Total Breakthrough Hospitalizations **2,395**	Total Breakthrough Deaths **1,483**
2.420% Percent of Fully Vaccinated People who Developed COVID-19 (124,733/ 5,154,846)	**0.046%** Percent of Fully Vaccinated People Who Were Hospitalized for COVID-19 (2,395 / 5,154,846)	**0.029%** Percent of Fully Vaccinated People Who Died of COVID-19 (1,483 /5,154,846)
14.9% Percent of Cases Who Were Fully Vaccinated (124,733 / 835,960)	**11.9%** Percent of Hospitalizations Who Were Fully Vaccinated (2,395 / 20,101)	**14.5%** Percent of Deaths Who Were Fully Vaccinated (1,483 /10,216)
Total Cases: **835,960**	Total Hospitalizations: **20,101**	Total Deaths: **10,216**

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.

National Age-Standardized Rates of COVID-19 Cases and Deaths by Vaccination Status





In September, unvaccinated persons had:

5.8X
Risk of Testing Positive for COVID-19

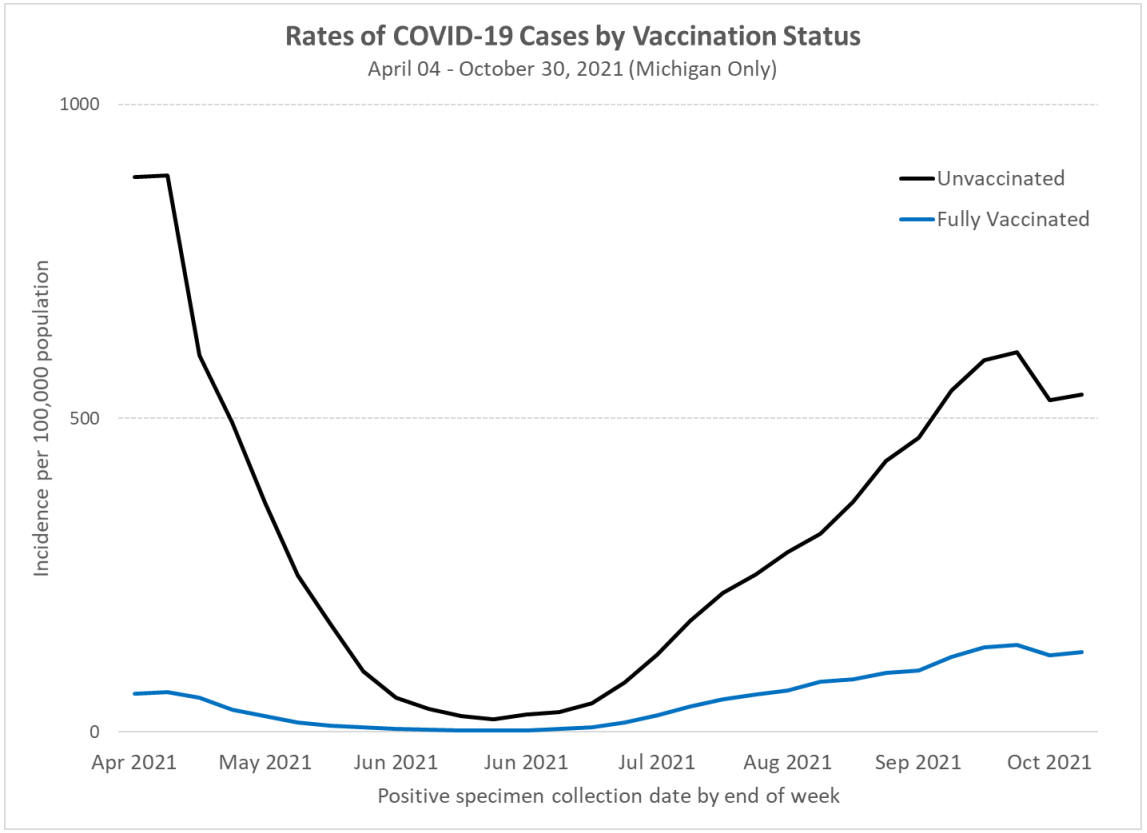
AND

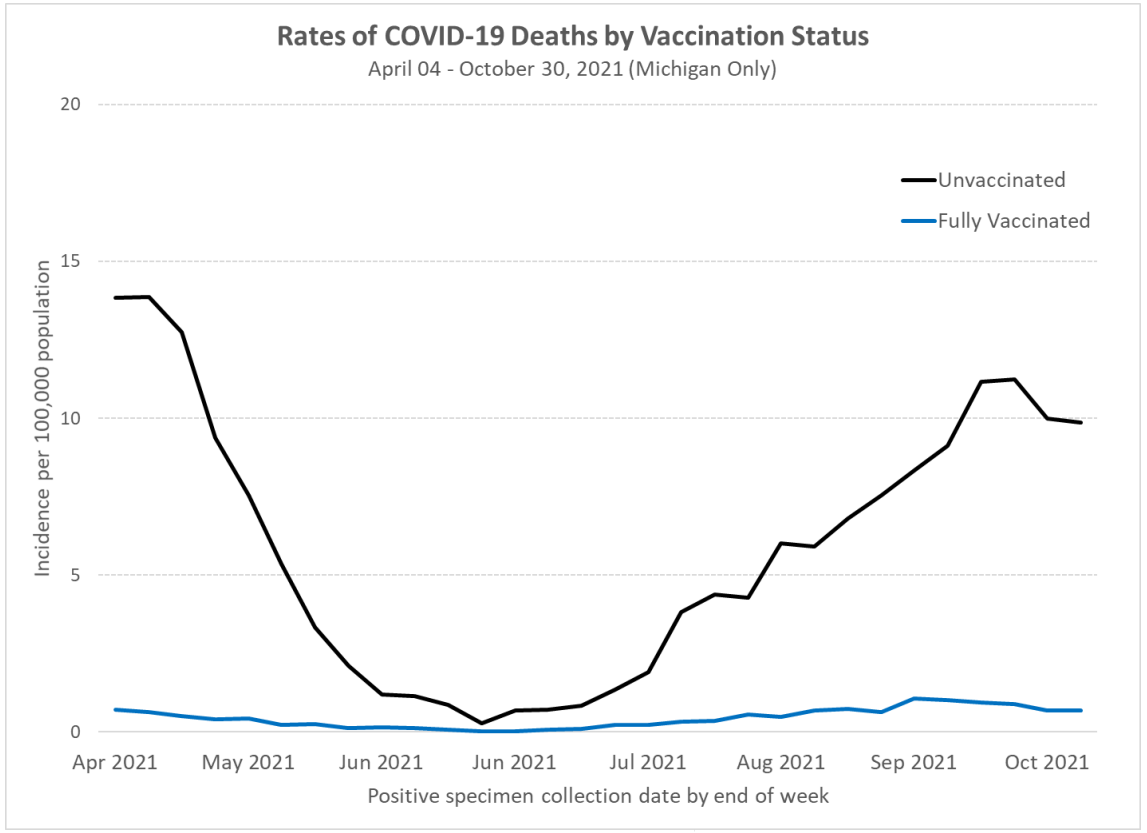
14X
Risk of Dying from COVID-19

compared to fully vaccinated persons

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





In October, unvaccinated persons had:

4.3 X
Risk of Testing Positive for COVID-19

AND

13.2 X
Risk of Dying from COVID-19

compared to fully vaccinated persons

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.

Key Messages: Healthcare Capacity and COVID Severity

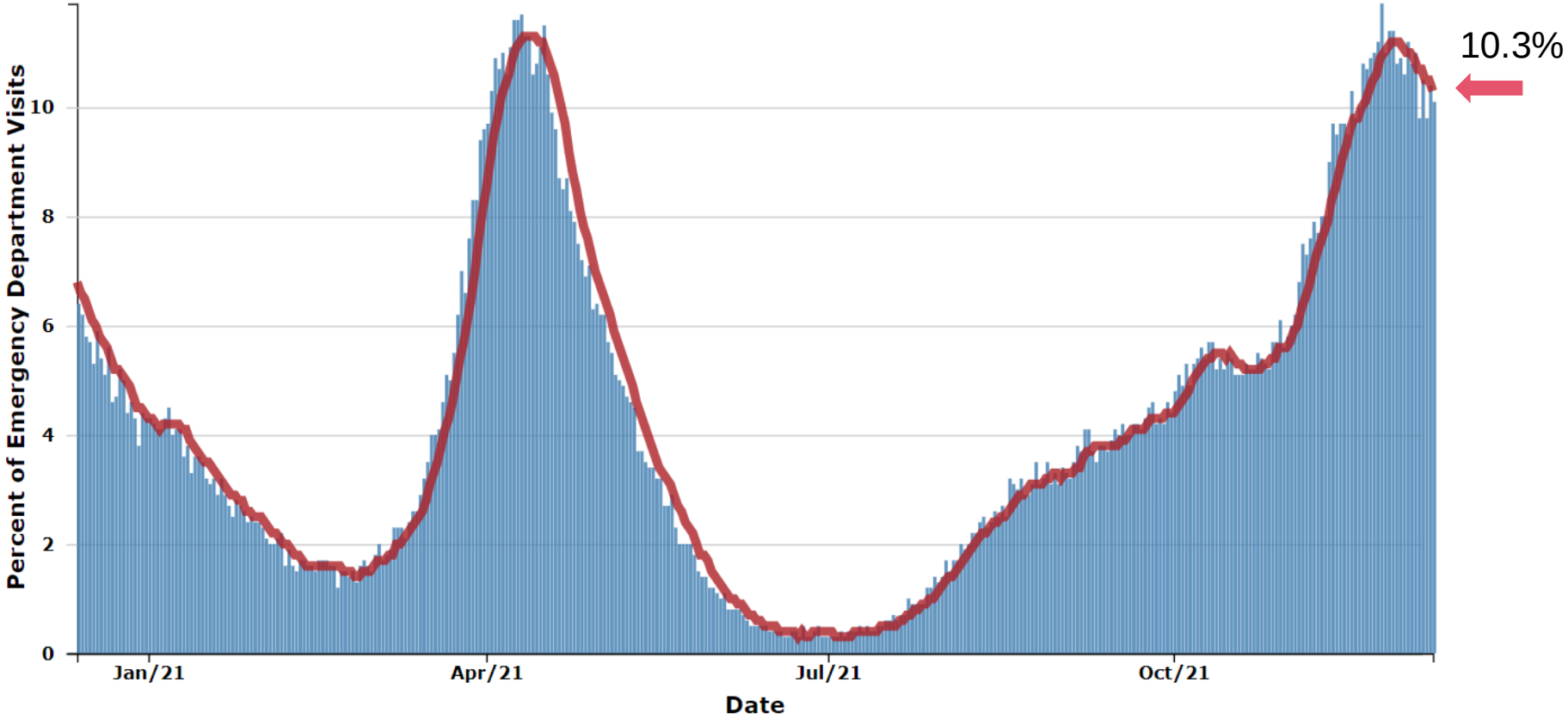
Emergency Department visits, Hospital Admissions, and Hospital Census for COVID are mixed

- 10.3% of ED visits are for COVID diagnosis (down from 10.6% last week)
- Hospital admissions for most age groups are plateaued over the past week
- Hospital census has increased 3% since last week (vs. 4% increase week prior)
- The current wave's hospitalizations are now at the highest point since the beginning of the pandemic
- Regions trends in hospital census this week are mixed
  - Four regions (1, 2N, 7, 8) are decreasing, another 4 (2N, 2S, 3, 6) have greater than 400/Million population hospitalized; Region 2S and 3 more than 500/Million
- Overall, volume of COVID-19 patients in intensive care has increased 2% (vs. 10% increase last week)
  - ICU census now exceeds the spring 2021 peak

Death rate is 9.7 daily deaths/million residents over last 7 days (Last week: 8.5 deaths/million)

- Trends for daily average deaths are increasing for most reported racial and ethnic groups
- In the past week, Whites have the highest death rate (8.3 deaths/million)
- In the past 30 days, the proportion of deaths among those over 60 is steady

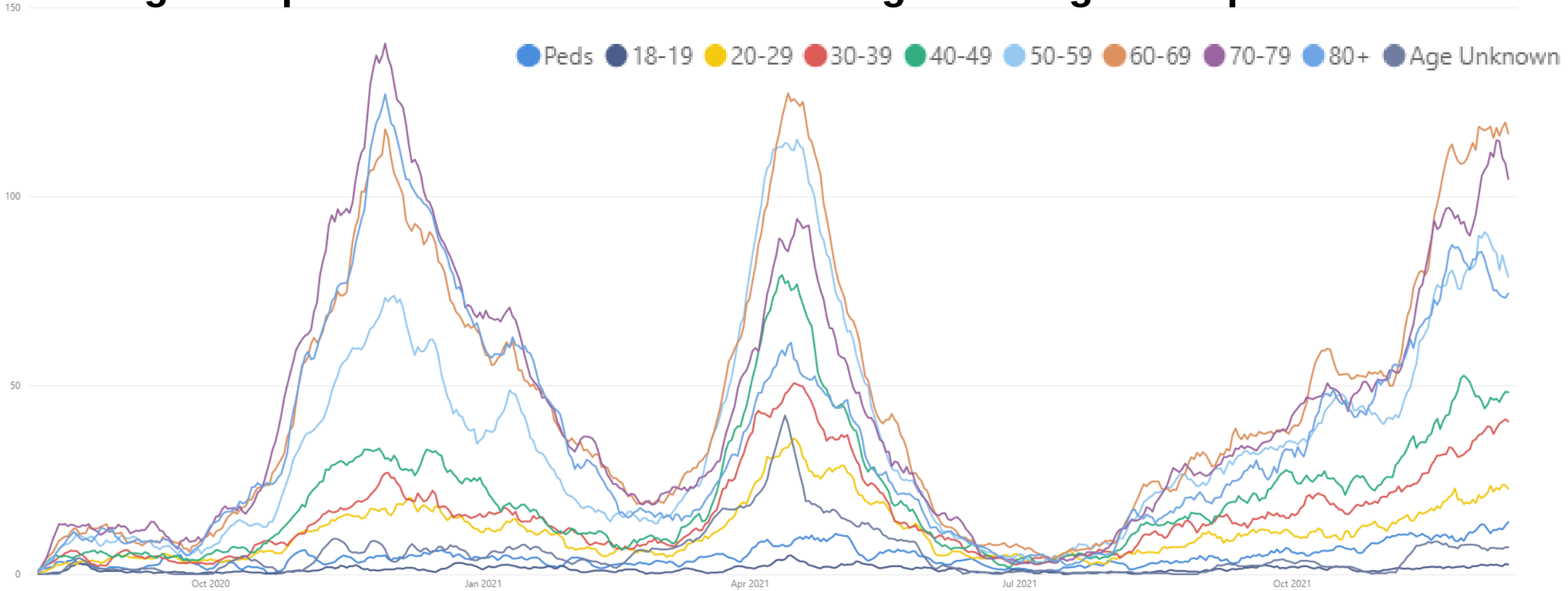
Michigan Trends in Emergency Department (ED) Visits for Diagnosed COVID-19



- Trends for ED visits have decreased to 10.3% since last week (down from 10.6% last week, and down from 11% on 11/29), but near Alpha surge high of 11.3%
- Over past week, those 50-64 years saw highest number of avg. daily ED CLI visits (14.3%), but those between 40+ all above state average

Source: https://covid.cdc.gov/covid-data-tracker/#ed-visits: data extracted on 10/18/2021

Average Hospital Admissions Are Increasing for all Age Groups

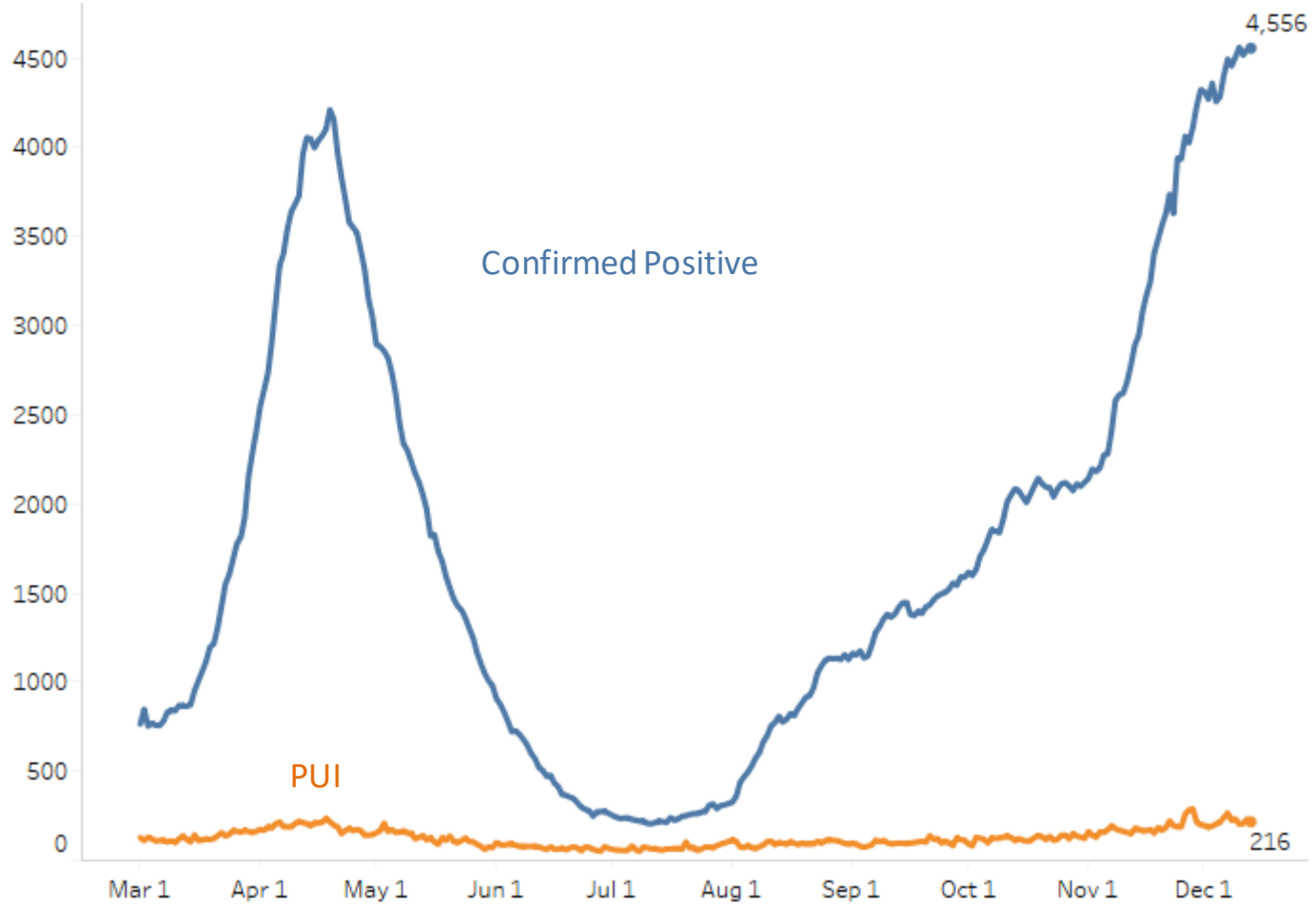


- Trends for daily average hospital admissions have decreased 2% since last week (vs. 7% increase prior week)
- Most younger age groups (<50 years) saw increases since last week, but many older age groups saw modest declines
- More than 70 daily hospital admissions was seen for each of the age groups of 50-59, 60-69, 70-79, and 80+

Source: CHECC & EM Resource

Statewide Hospitalization Trends: Total COVID+ Census

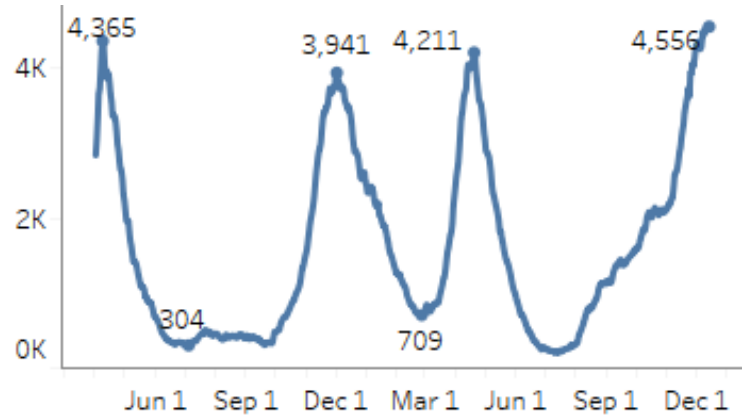
Hospitalization Trends 3/1/2021 – 12/13/2021
Confirmed Positive & Persons Under Investigation (PUI)



The COVID+ census in hospitals has increased by 3% in the past week (previous week was 4% growth). *This marks the 2nd week of slower week over week growth*.

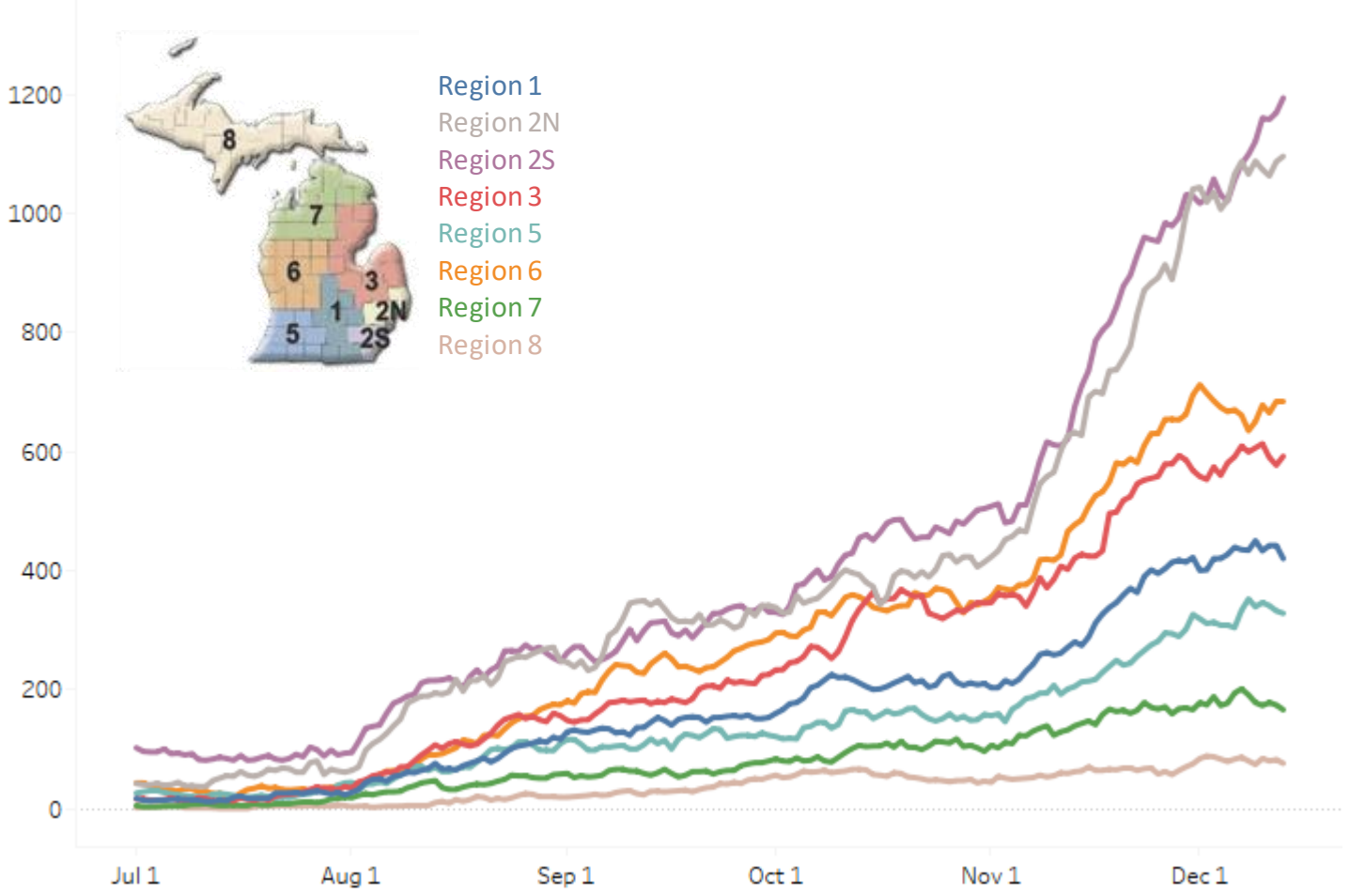
The current wave's hospitalizations continue to be at the highest point since the beginning of the pandemic.

Hospitalized COVID Positive Long Term Trend (beginning March 2020)



Statewide Hospitalization Trends: Regional COVID+ Census

Hospitalization Trends 6/1/2021 – 12/13/2021
Confirmed Positive by Region



The change in COVID+ census in hospitals was variable this week across regions. Regions 2S and 3 show the fastest growth this week while Region 7 and 8 showed the greatest rate of decline.

Regions 2N, 2S, 3 and 6 now have greater than 400/Million population hospitalized and Regions 2S and 3 have >500/Million.

Region	COVID+ Hospitalizations (% Δ from last week)	COVID+ Hospitalizations / MM
Region 1	420 (-6%)	388/M
Region 2N	1096 (-4%)	495/M
Region 2S	1194 (17%)	536/M
Region 3	592 (12%)	522/M
Region 5	328 (2%)	344/M
Region 6	684 (2%)	466/M
Region 7	166 (-14%)	332/M
Region 8	76 (-8%)	244/M

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	10.3	7.4	+26% (+2)
12-17	4.1	5.5	+32% (+1)
18-19	2.6	9.7	+0% (+0)
20-29	22.6	16.4	+7% (+2)
30-39	40.4	33.3	+4% (+1)
40-49	48.1	40.8	+7% (+3)
50-59	**78.7**	**58.3**	**-11% (-10)**
60-69	**116.6**	**91.4**	**+1% (+1)**
70-79	**104.6**	**136.4**	**-2% (-3)**
80+	**74.3**	**179.3**	**-9% (-8)**
Total¶	**509.4**	**51.0**	**-2% (-11)**

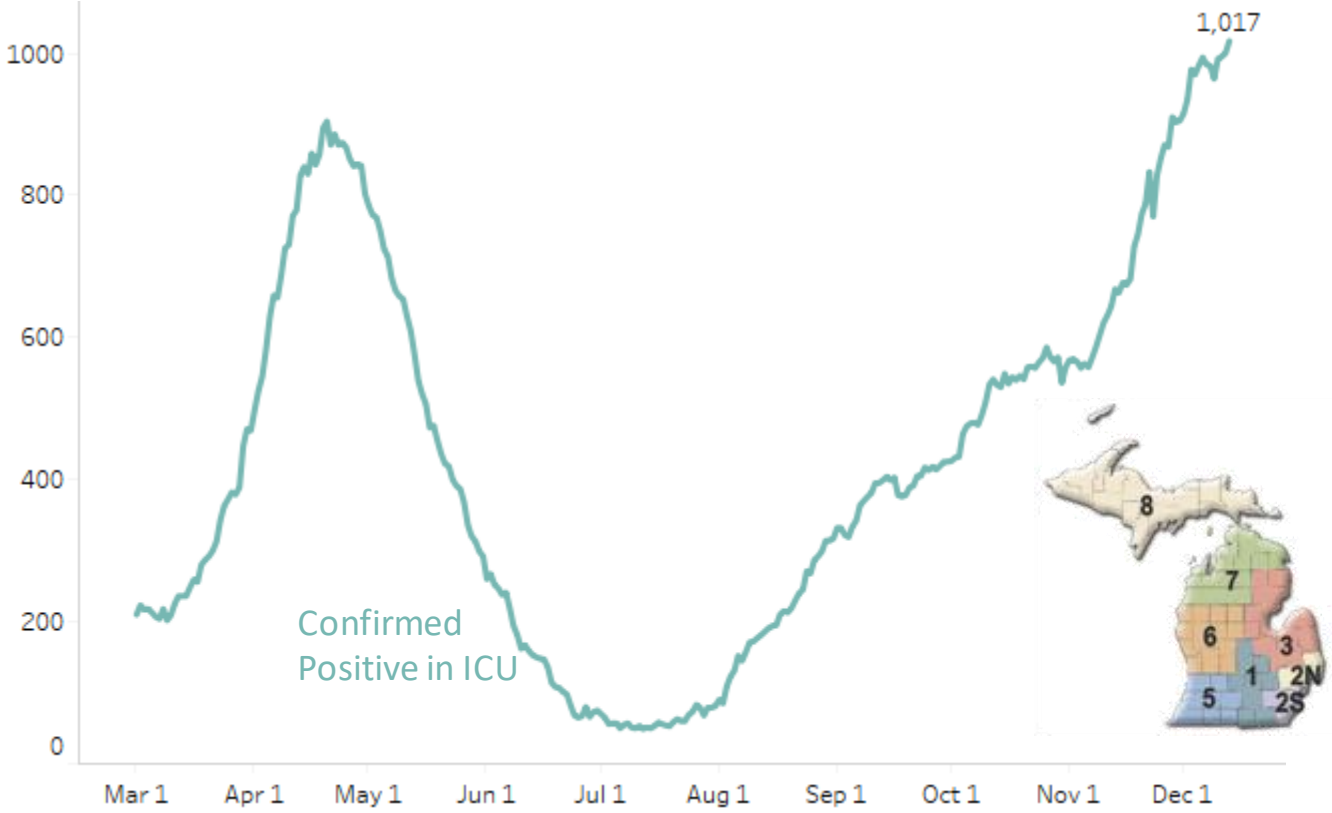
* Rate per 1 million residents; † Rolling 7-day average; ¶ Total may not reflect state due to missing age data
Note: Hospital Admission data reflects date data was submitted
Source: CHECC and EM Resource

- Through Dec 13, there were an average of 509.4 hospital admissions per day due to COVID-19; a decrease from last week (-2%, -11)
- Most age groups saw slight increases this week with modest declines among the oldest age groups
- The largest one-week decreases were among those 50-59 (-10, +11%)
- Average daily hospital admission count (117 hospital admissions per day) are highest among those 60-69
- Average daily hospital admission rate (179.3 hospital admissions/million) are highest for those aged 80+
- More than 70 daily hospital admissions were seen for those aged 50-59, 60-69, 70-79, and 80+

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

Statewide Hospitalization Trends: ICU COVID+ Census

Hospitalization Trends 3/1/2021 – 12/13/2021
Confirmed Positive in ICUs

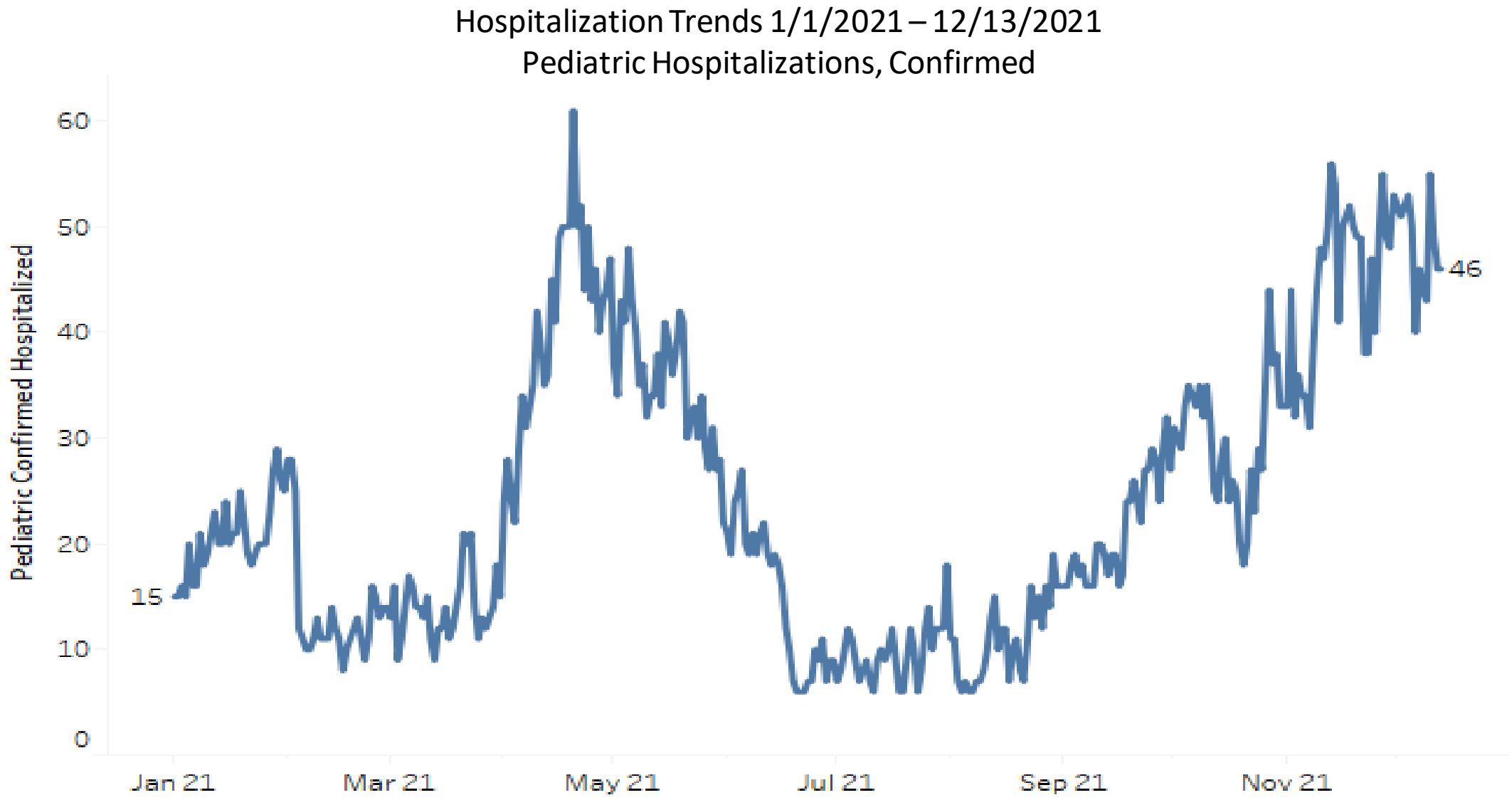


The census of COVID+ patients in ICUs has increased only 2% from last week. ICU census continues to exceed the spring 2021 peak.

Regions 1, 2S, 3, 6, and 7 have overall adult ICU occupancy greater than or equal to 85%, with Regions 1, 3, 6, 7 at or above 90% occupancy. All Regions outside the SE have >40% of adult ICU beds occupied with COVID+ patients.

Region	Adult COVID+ in ICU (% Δ from last week)	Adult ICU Occupancy	% of Adult ICU beds COVID+
Region 1	96 (-4%)	90%	46%
Region 2N	175 (-12%)	81%	30%
Region 2S	256 (16%)	88%	36%
Region 3	160 (27%)	95%	45%
Region 5	67 (2%)	80%	43%
Region 6	170 (-3%)	92%	55%
Region 7	68 (-16%)	92%	47%
Region 8	25 (0%)	75%	40%

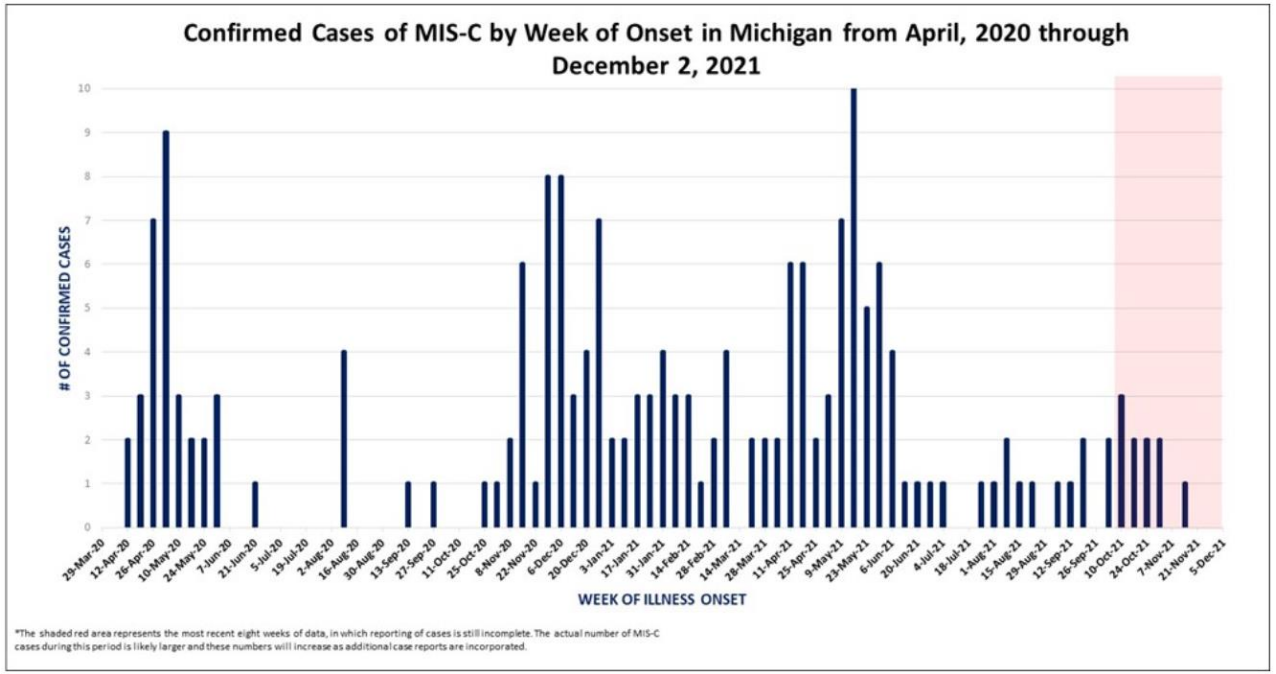
Statewide Hospitalization Trends: Pediatric COVID+ Census



Multisystem Inflammatory Syndrome in Children (MIS-C)

Michigan Surveillance

- Higher community transmissions is followed by higher incidence of MIS-C cases
- 187 cases identified in Michigan
- More than 60% of those children are elementary and pre-school aged
- Black/African American children are disproportionately impacted
- 70.6% children with MIS-C are treated in the ICU



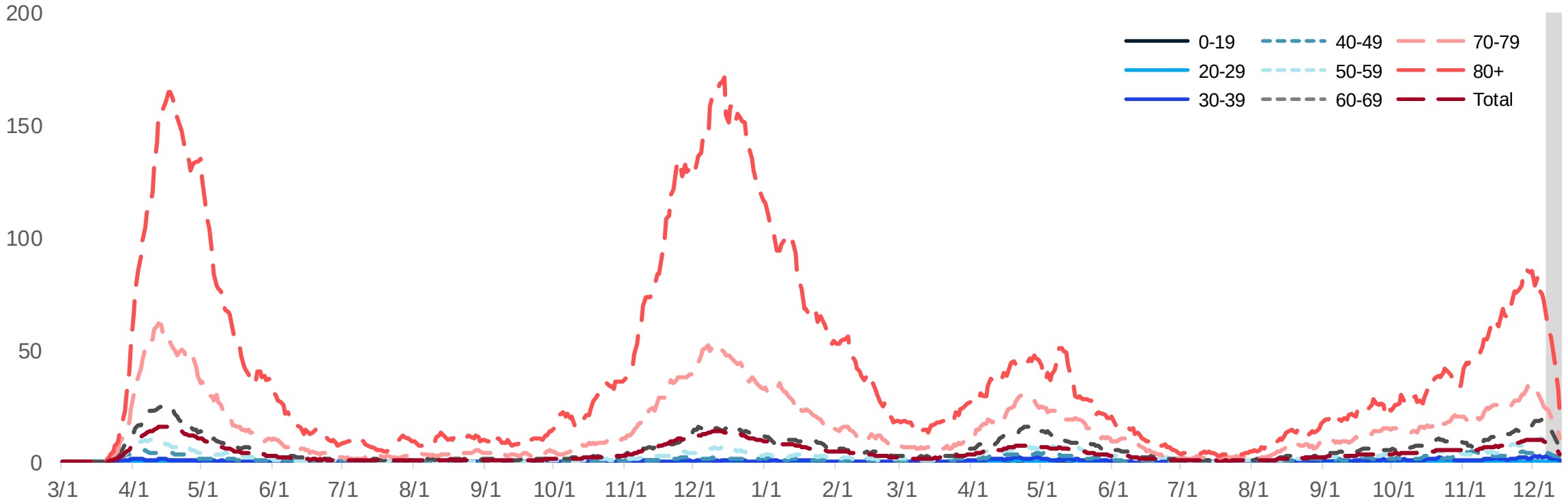
DEMOGRAPHIC INFORMATION (N=187)

Age Group	Count	%	Race	Count	%
0-4 yrs	49	26.2%	Black/African American	77	41.2%
5-10 yrs	76	40.6%	Caucasian	80	42.8%
>10 yrs	62	33.2%	All Others / Unknown	30	16.0%
Gender	Counts	%	Ethnicity	Count	%
Male	111	59.4%	Not Hispanic or Latino	136	72.7%
Female	76	40.6%	Hispanic or Latino	14	7.5%
Unknown	0	0.0%	Unknown	37	19.8%

Source: MDHHS and MIS-C Data and Reporting; Data through 12/2

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)

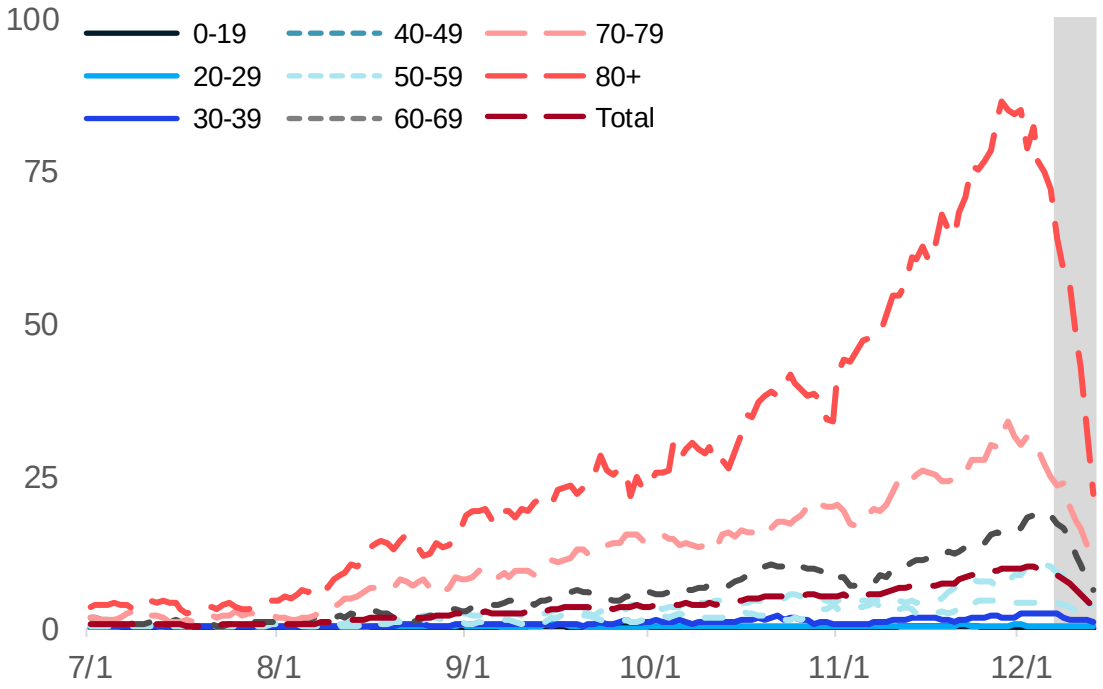


- Through 12/13, the 7-day avg. death rate is more than 70 daily deaths per million people for those over the age of 80
- COVID-19 death rates for those 60+ now are higher than the death rates during the Alpha (B.1.1.7) surge but not as high as the first two surges

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

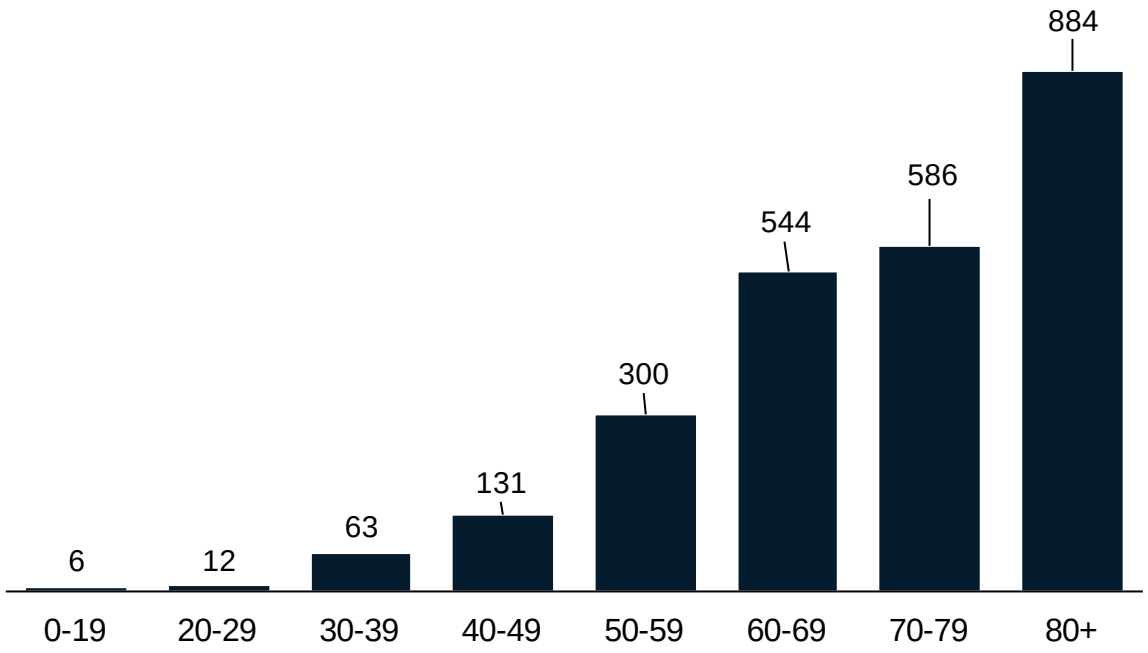
Average and total new deaths, by age group

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 12/6/2021)

- 20% of deaths below age sixty

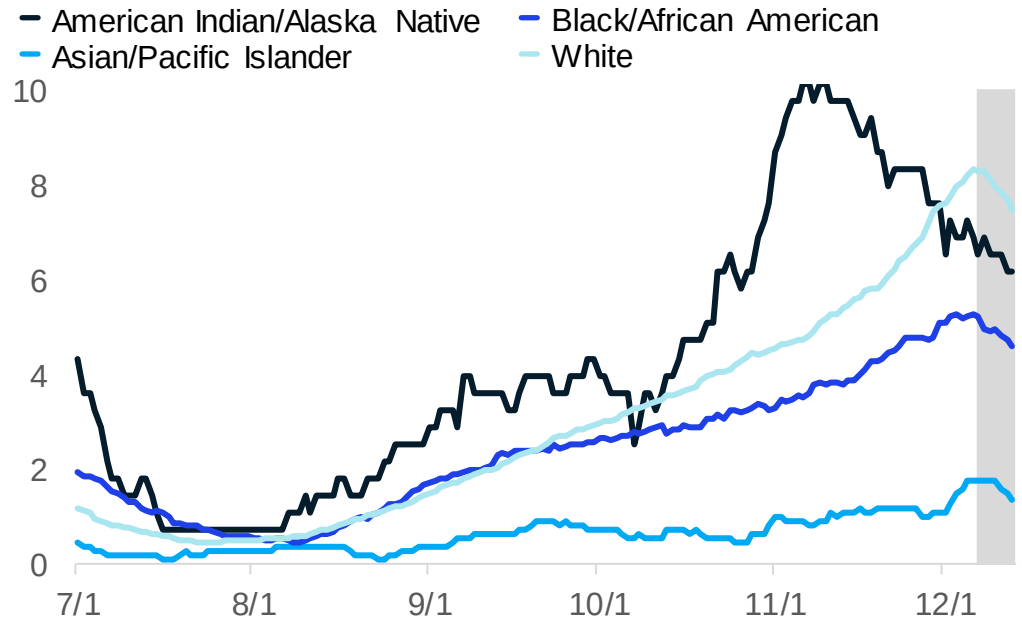


- Through 12/6, the 7-day avg. death rate is more than 70 daily deaths per million people for those over the age of 80
- In the past 30 days, the proportion of deaths among those over 60 is steady

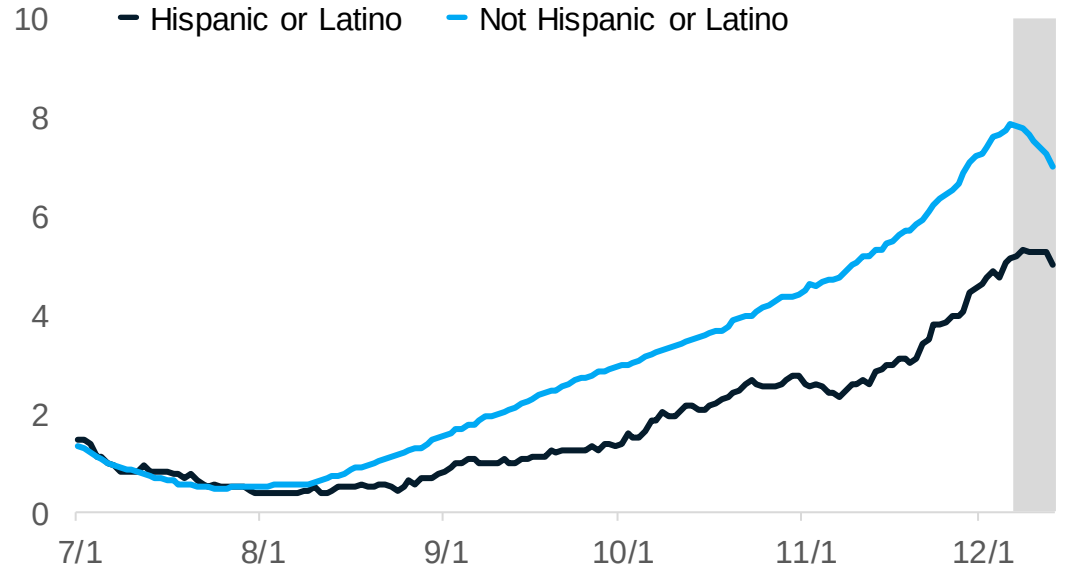
Note: Death information sourced from MDHHS and reflects date of death of confirmed and probable cases.
Source: MDHHS – Michigan Disease Surveillance System (MDSS)

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

Average daily deaths per million people by race



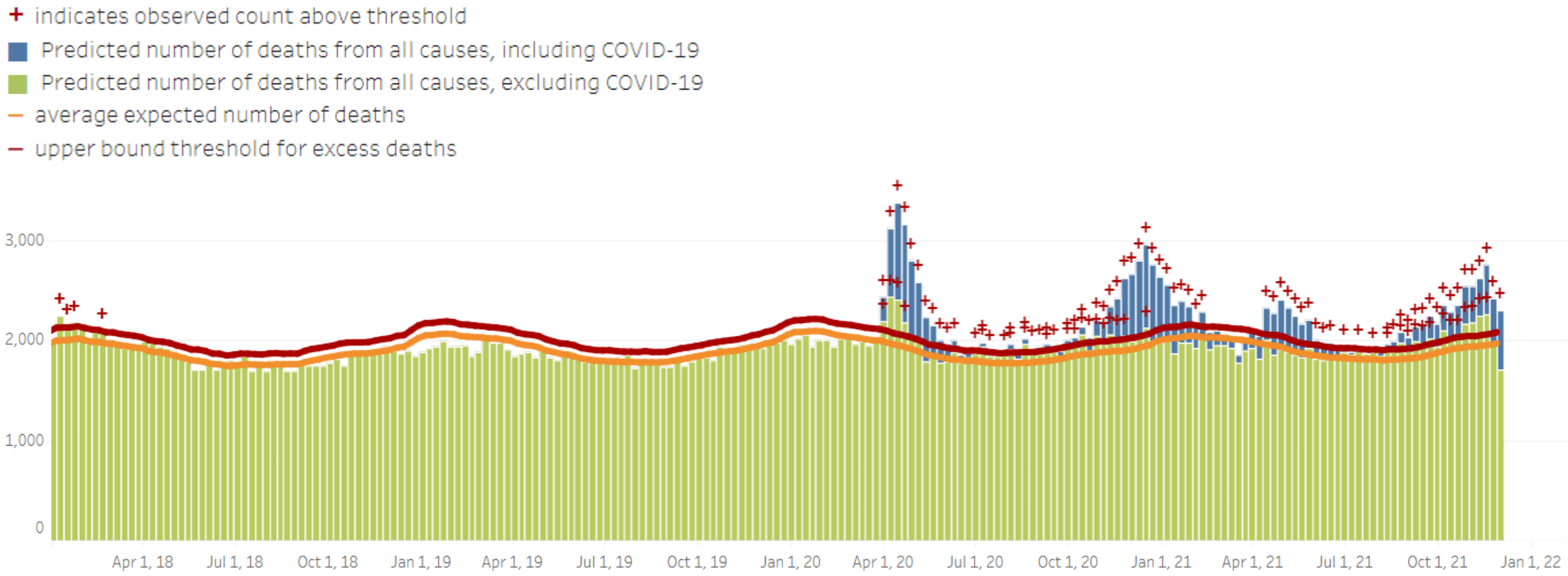
Average daily deaths per million people by ethnicity



- Deaths are lagging indicator of other metrics
- Overall trends for daily average deaths are increasing for most reported races and ethnicities
- Currently, Whites have the highest death rate (8.3 deaths/million)

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

Excess Deaths From All Causes in Michigan



- Excess deaths can occur from COVID-19 illness or indirectly when hospital capacity is overwhelmed
- Each of the COVID-19 case waves has resulted in a surge in excess deaths from all causes
- Non-covid deaths are higher than average expected number of deaths

Source: CDC Excess Deaths Associated with COVID-19: Provisional Death Counts for COVID-19

Key Messages: Public Health Response

COVID-19 Vaccination

- 6,623 first doses administered each day (7-day rolling average)
- Over 5.5 million people (55.8% of the population) in the state are fully vaccinated

COVID-19 Boosters

- Nearly 1.9 million people have received an additional/booster dose in Michigan
- More than 60% of fully vaccinated Michiganders over the age of 65+ have been administered a booster dose

Pediatric Vaccination

- Interactive dashboard now includes pediatrics vaccination doses (live updates effective 11/5)
- 152,610 initial dose administrations in 5- to 11-year-olds as of 12/13

Over 5.5 Million Michiganders fully vaccinated and 55.8% of total population fully vaccinated

Vaccination Coverage

5.57 million people in the state are fully vaccinated*

86.0% of people aged 65 and older have completed the series*

62.3% of total population initiated*

Booster Coverage

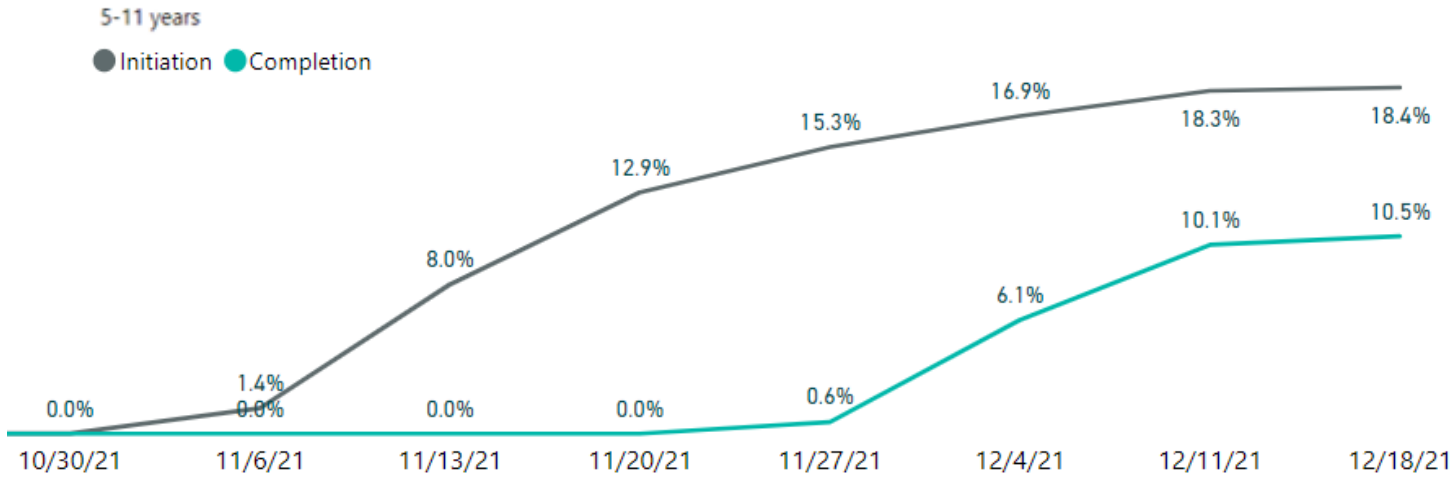
61% of fully vaccinated people aged 65 and older have received a booster dose

35% of Michiganders in the state who are fully vaccinated have received their booster dose

Vaccination Coverage in Michigan as of 12/12/21

Age Group	% At Least One Dose	% Fully Vaccinated	% Boosted**	Number Fully Vaccinated
Total Population	62.3%	**55.8%**	**35.0%**	5,570,795
≥ 5 years	66.0%	59.1%	N/A	5,570,747
≥ 12 years	70.6%	63.9%	N/A	5,494,220
≥ 18 years	72.8%	66.0%	37.6%	5,175,680
≥ 65 years	93.8%	86.0%	60.8%	1,518,381

**Percentage of the fully vaccinated population



Source: *CDC COVID Data Tracker > Vaccinations in the US, ¶ MCIR COVID-19 Vaccine Dashboard

Key Messages: Science Round Up

Omicron: A new variant identified

- 29 states and territories in the United States have reported identification of the omicron variant
- Vaccines, in combination with other mitigation measures like masking, and avoiding large indoor crowded settings, remain effective public health measure to protect people from COVID-19, slow transmission, and reduce the likelihood of new variants emerging
- Non-pharmaceutical interventions (e.g., masking, testing, physical distancing, and quarantine and isolation) remain effective against all variants of SARS-COV-2
- Despite the increased attention of Omicron, Delta continues to be the main variant circulating in the United States

Importance of masking in indoor spaces - to address widespread community spread that's impacting school age children

States with lower vaccine coverage have had higher case and death rates since July 2021

Vaccine coverage remains highly heterogeneous and varies widely within counties

Nationally, vaccination intent corresponds with surveilled vaccine coverage

Omicron – Update December 14, 2021

How easily does Omicron spread? Omicron variant likely will spread more easily

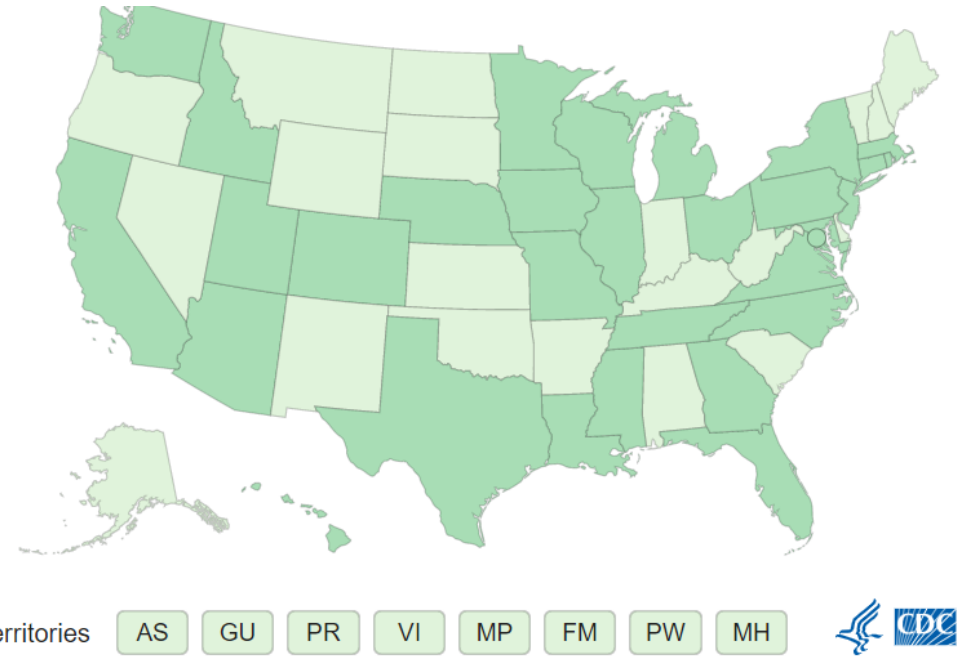
Will Omicron cause more severe illness? More data are needed

Will vaccines work against Omicron? Current vaccines, especially with booster, are expected to protect against severe illness, hospitalizations, and deaths

Will treatments work against Omicron? More data needed, but some treatments are likely to remain effective while others may be less effective

We have the Tools to Fight Omicron

- Vaccines especially with booster
- Masking
- Avoiding large indoor crowded settings
- Testing for COVID-19
- Using multiple levels of mitigation are more effective to prevent transmission

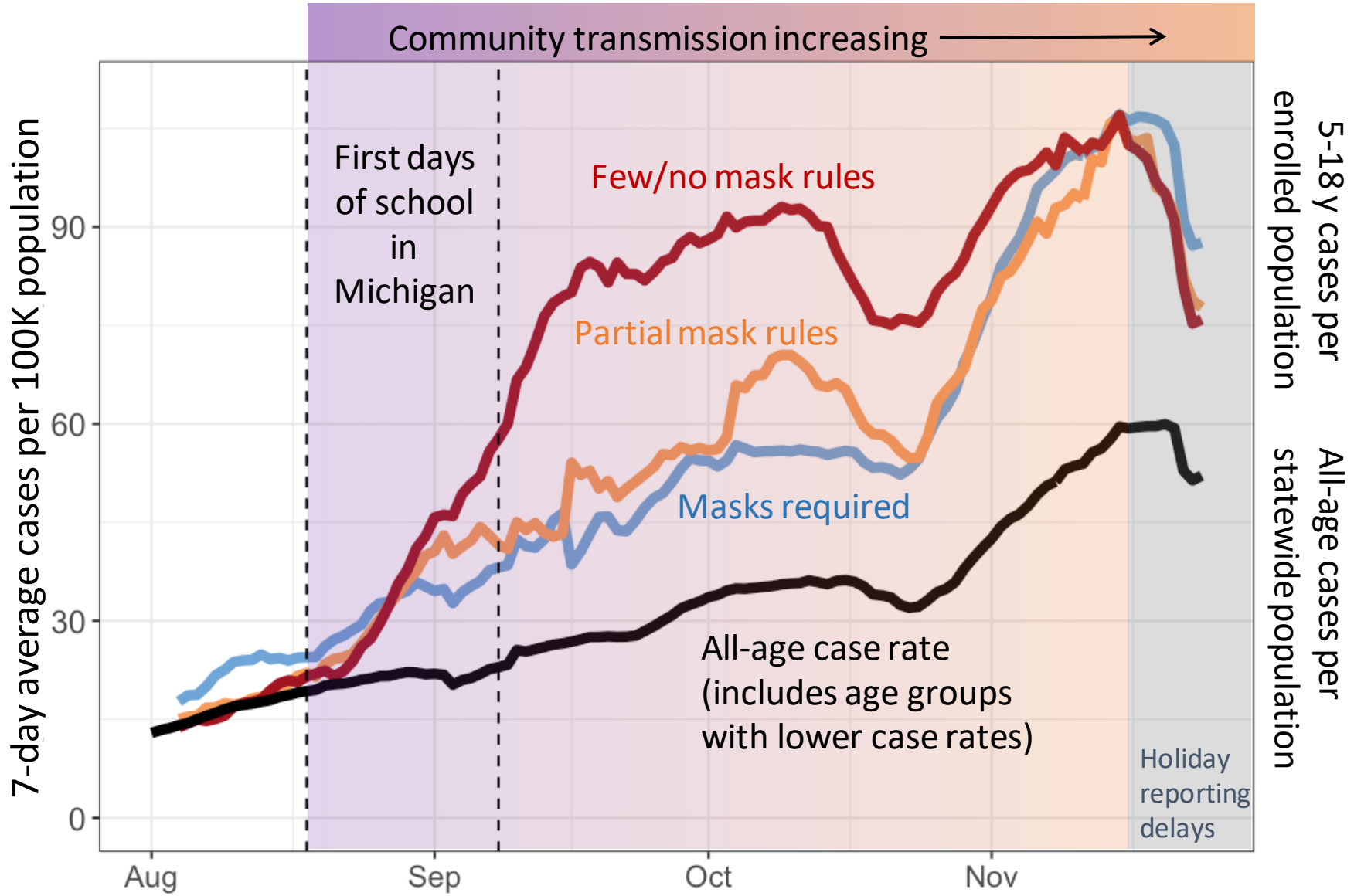


- As of Dec 14, 2021, 31 states and territories have reported identification of the Omicron variant
- As of Dec 13, 2021, at least one county in Michigan has identified a case with the Omicron variant

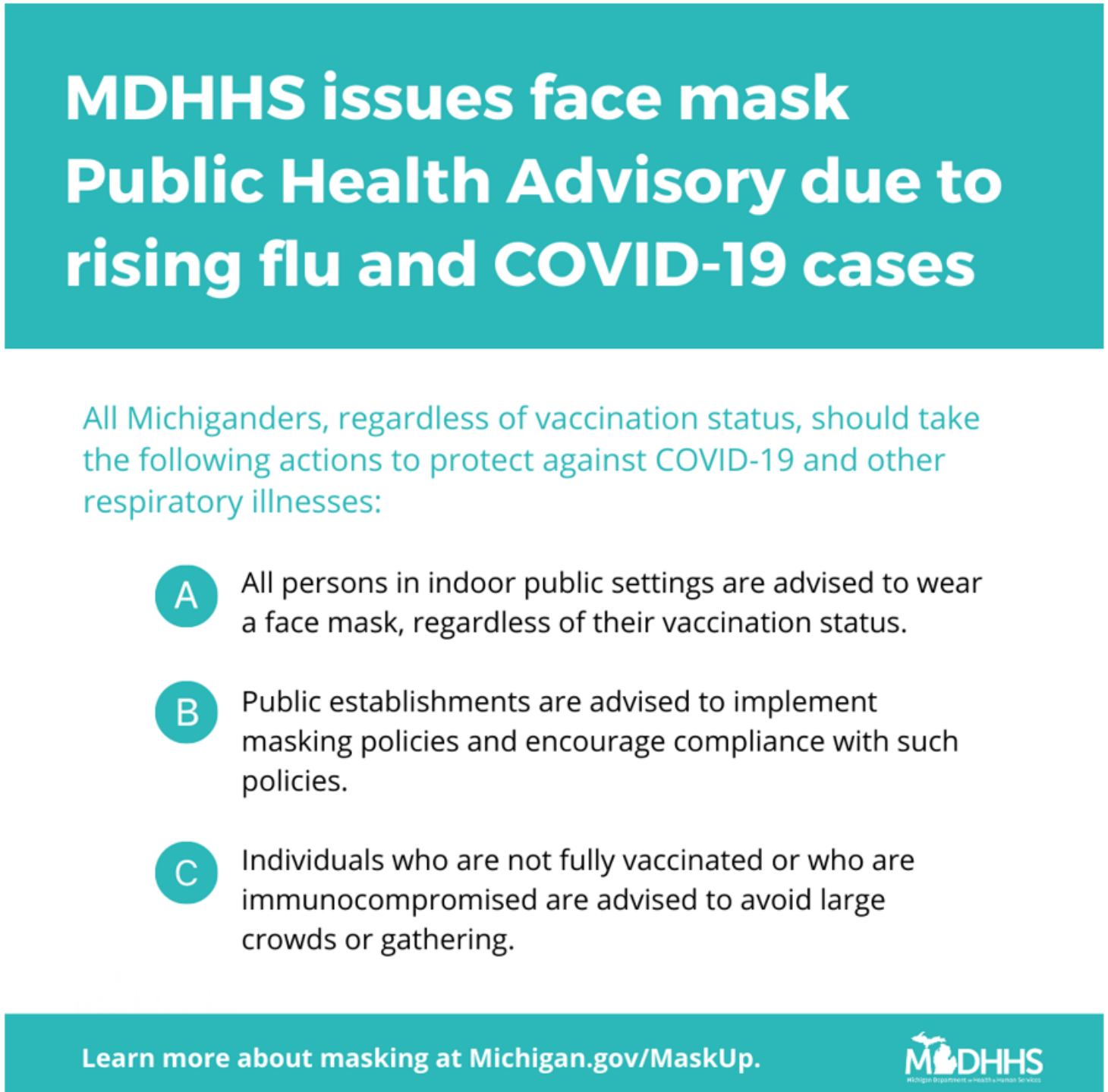
Source: CDC Omicron Variant: What You Need to Know

School-aged case rates have become more similar across mask rules as community transmission has increased

- Case rates are now highest in non-school-aged age groups (30–39-year-olds)
- Case rates in 5–18-year-olds have become more similar across mask rule types
- Differences due to masking potentially being washed out by transmission in other settings
- **It remains important to mask up in indoor settings (schools and otherwise) to prevent transmission**



Data Sources: MDSS/MDHHS case data through as of 12/3/21 geocoded to school district, EOG School District Mask Policy Tracker data. Note: Cases are among all 5-18 year olds, population is the school-enrolled population.



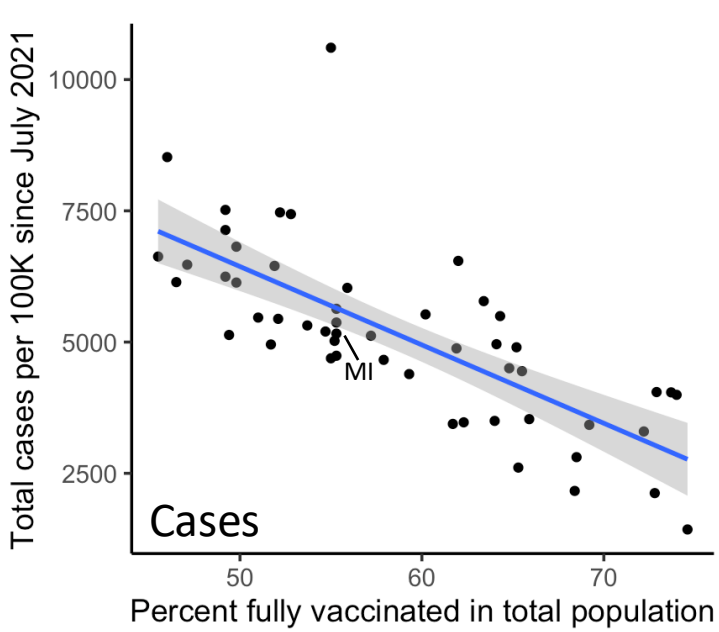
Public Health Advisory Issued 11/9/21

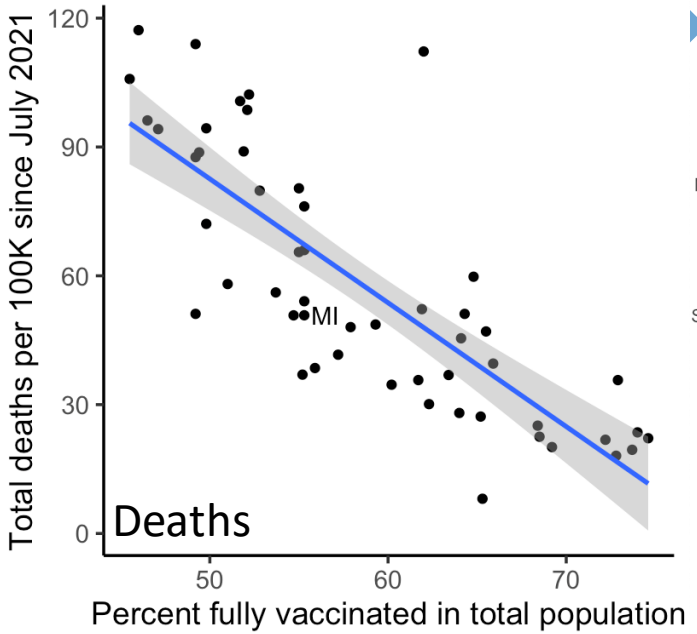
- While vaccination continues to be the most important public health action to end the COVID-19 pandemic, the surge in cases across Michigan has prompted the Michigan Department of Health and Human Services (MDHHS) to issue a public health advisory.
- Michigan is presently experiencing another wave of infection driven by the Delta variant, which is estimated to be twice as infectious as the original strain. The greatly increased infectiousness of the Delta variant has driven sharp increases in COVID-19 infections among both adults and children. In addition to COVID-19, Michigan is experiencing an uptick in cases of other respiratory illnesses, including influenza and respiratory syncytial virus (RSV). The widespread use of face masks would significantly reduce the spread of these viruses.

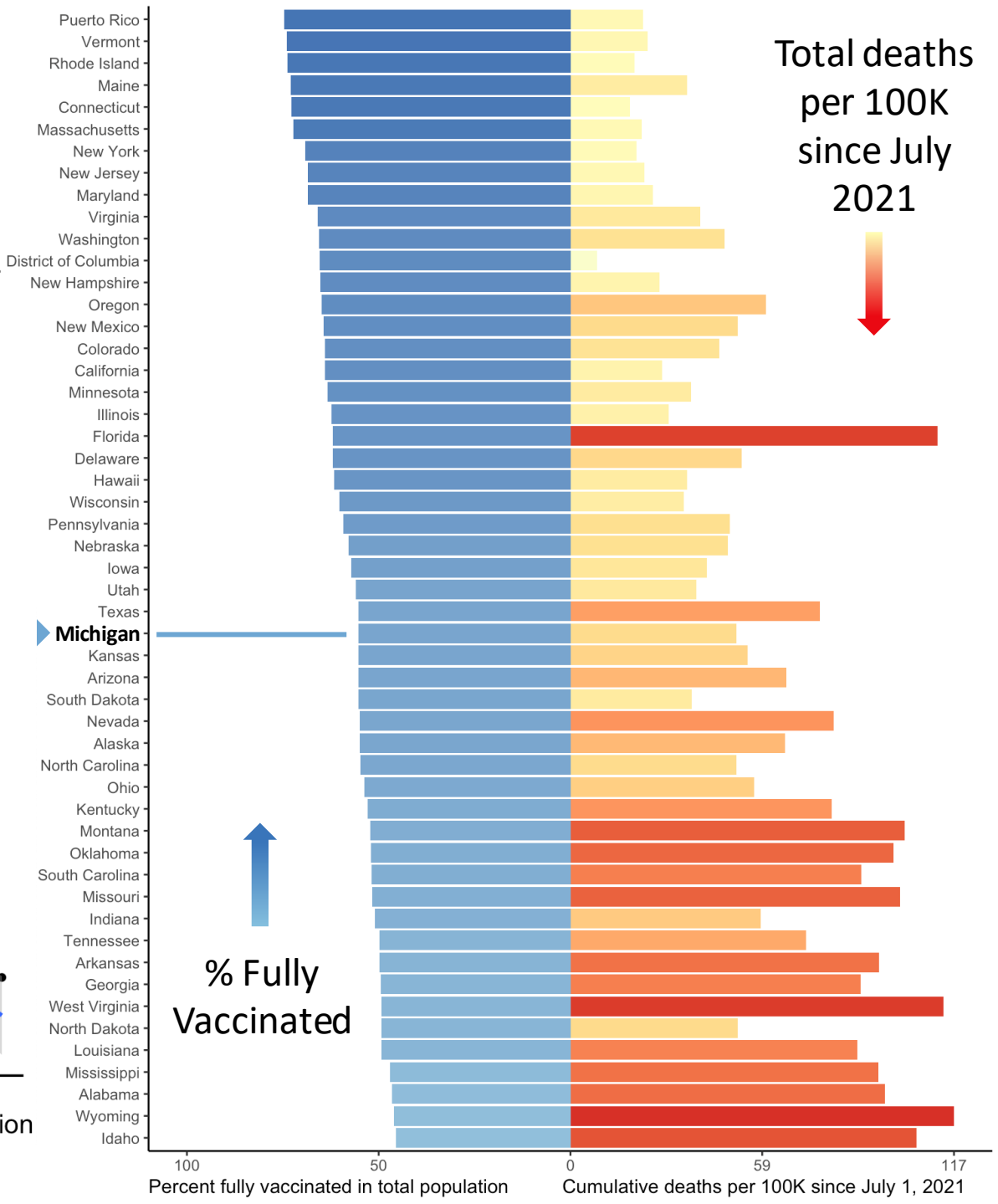
States with lower vaccine coverage have had higher case and death rates since July 2021

Michigan's vaccine coverage is lower than the most US states

- 37th of 52 (states plus DC & PR) in at least one dose coverage
- 29th of 52 in fully vaccinated coverage

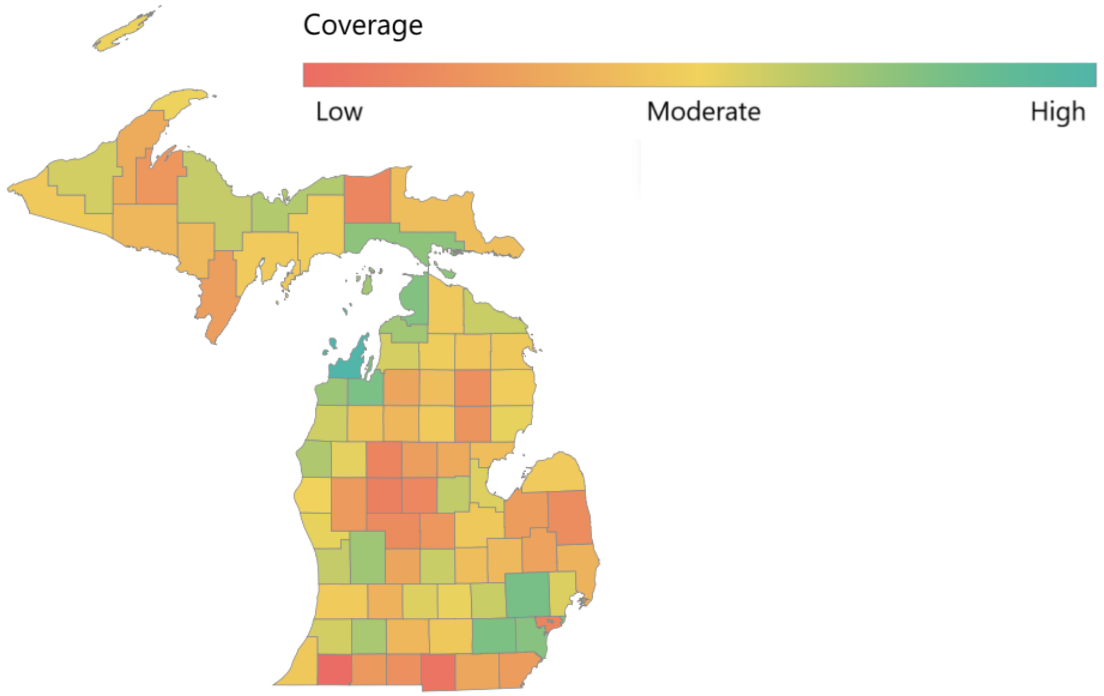




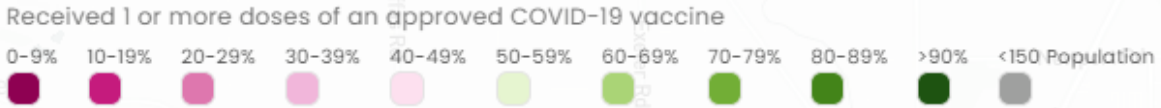


Source: CDC Data Tracker as of 12/7/2021

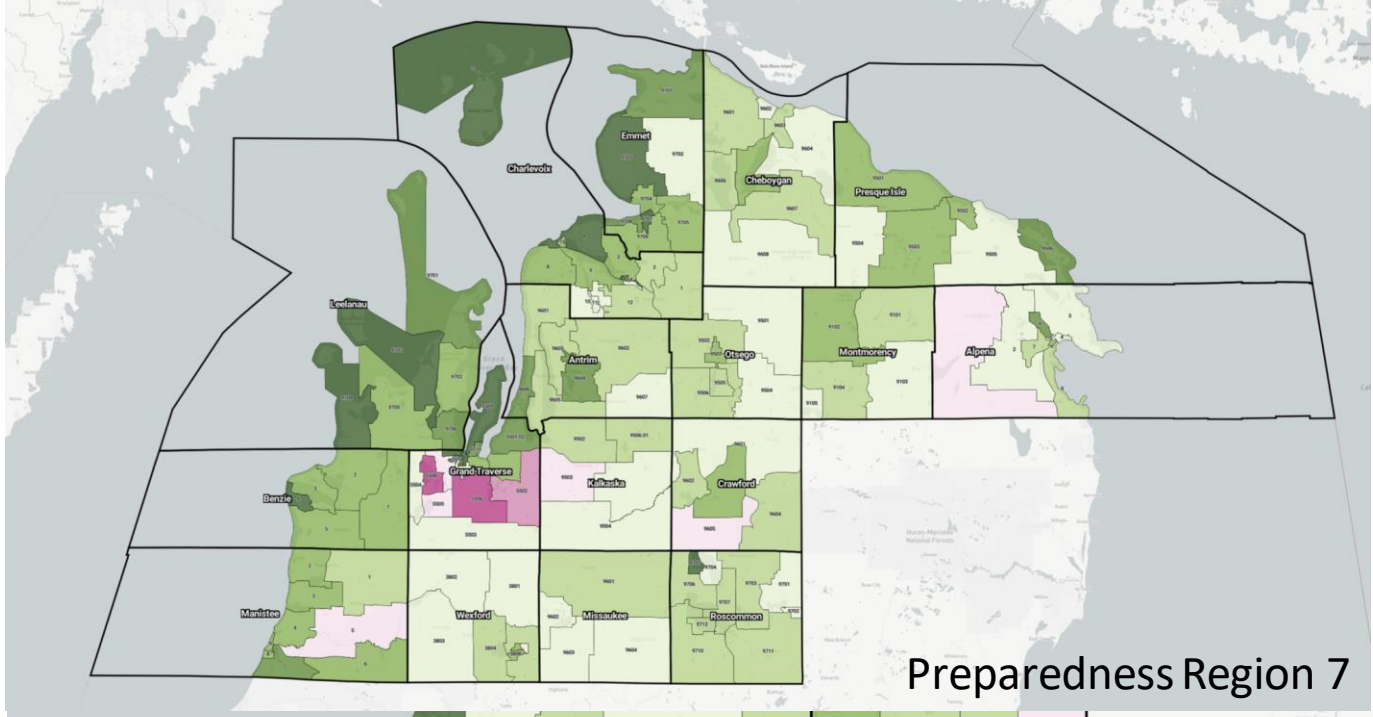
Vaccine coverage is highly heterogeneous and varies widely within counties



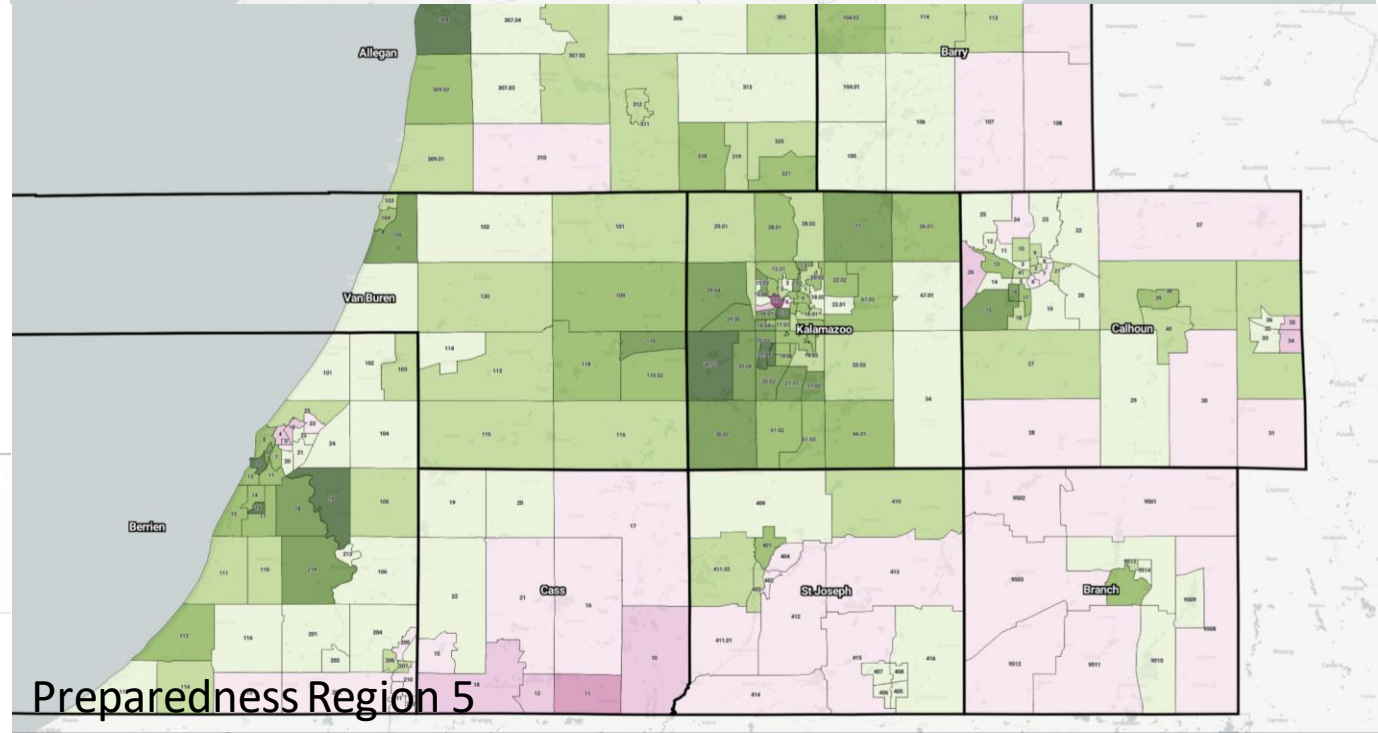
Legend - 16+ vaccine coverage by census tract



Data sources: [MDHHS vaccine dashboard](#) (12/10/21), MI Lighthouse census tract data as of (12/2/21).



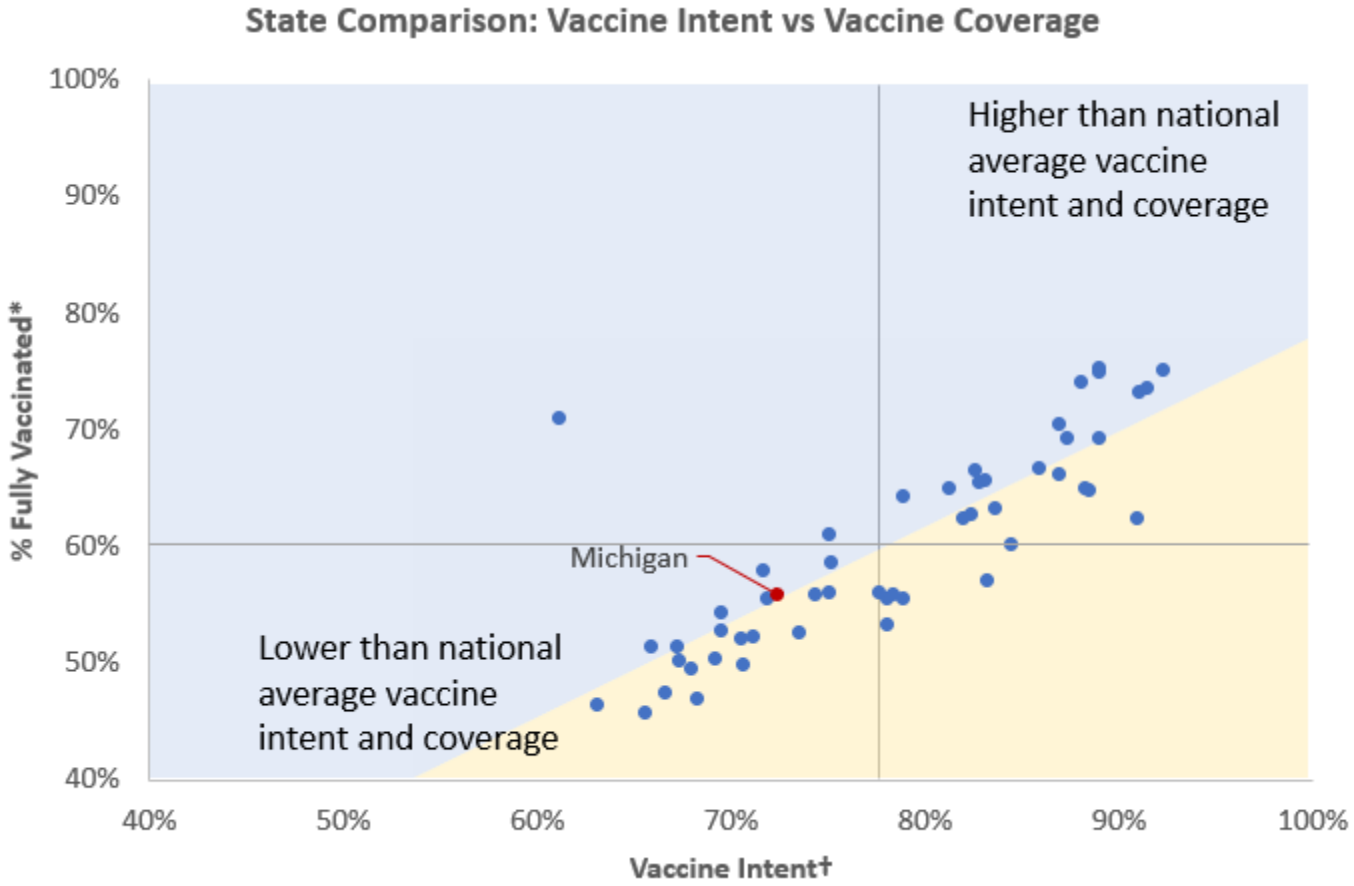
Preparedness Region 7



Preparedness Region 5

State by State Comparison: Vaccine Intent vs Fully Vaccinated Coverage

- States with population that indicated higher intent to vaccinate were more like have a greater proportion of their population fully vaccinated†
- Michigan is below the national average both in (1) intent to receive the COVID-19 vaccine (U.S. avg: 78%), and in the (2) percent of the population fully vaccinated (U.S. avg: 60%)



Footnotes: *CDC counts people as being "fully vaccinated" if they received two doses on different days (regardless of time interval) of the two-dose mRNA series or received one dose of a single-dose vaccine. When the vaccine manufacturer is not reported, the recipient is considered fully vaccinated with two doses. Data through 12/13/2021. † Vaccine Intent Included those who responded as they were 'Vaccinated (≥1 dose)' or 'Would Definitely Get Vaccinated'. Survey period is September 26 – October 30, 2021.

Source: CDC National Immunization Survey Adult COVID Module, CDC COVID Date Tracker: COVID-19 Vaccinations in U.S. Dashboard