MI COVID RESPONSE DATA AND MODELING UPDATE

December 7, 2021

Executive Summary

Michigan remains at High Transmission

Percent positivity (19.5%) is increasing (up from 18.9% last week)

Case rate (522.9 cases/million) has decreased for one week, but this is due to lull in reporting over Thanksgiving (556.9 cases/million prior week)

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

Cases among pediatric populations < 12 years have decreased 16% since last week

Percent of inpatient beds occupied by individuals with COVID (21.3%) is increasing for 18 weeks (up from 20.0% 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 3rd highest adult ICU bed utilization (7th highest last week)

Daily pediatric hospital census have increased from last week and are near 2021 highs

Death rate (8.5 deaths/million) is increasing for three weeks (6.3 last week). There were 594 COVID deaths between Nov 23-Nov 29

Michigan has the 4th highest number of deaths (6th highest last week), and 8th highest death rate (14th highest last week) in the last 7 days

7-day average **state testing rate** is 4326.0 tests/million/day. **Daily diagnostic tests (PCR)** is 43.1K per day, and the weekly average for PCR and antigen tests conducted in Michigan is 55.3K.

Nearly 13.1 million **COVID-19 vaccine** doses administered, 55.3% of the population is fully vaccinated (5.5 million people)

133,401 administrations in 5- to 11-year-olds as of 12/2

SCIENCE ROUNDUP

19 states and territories in the United States have reported identification of the Omicron variant

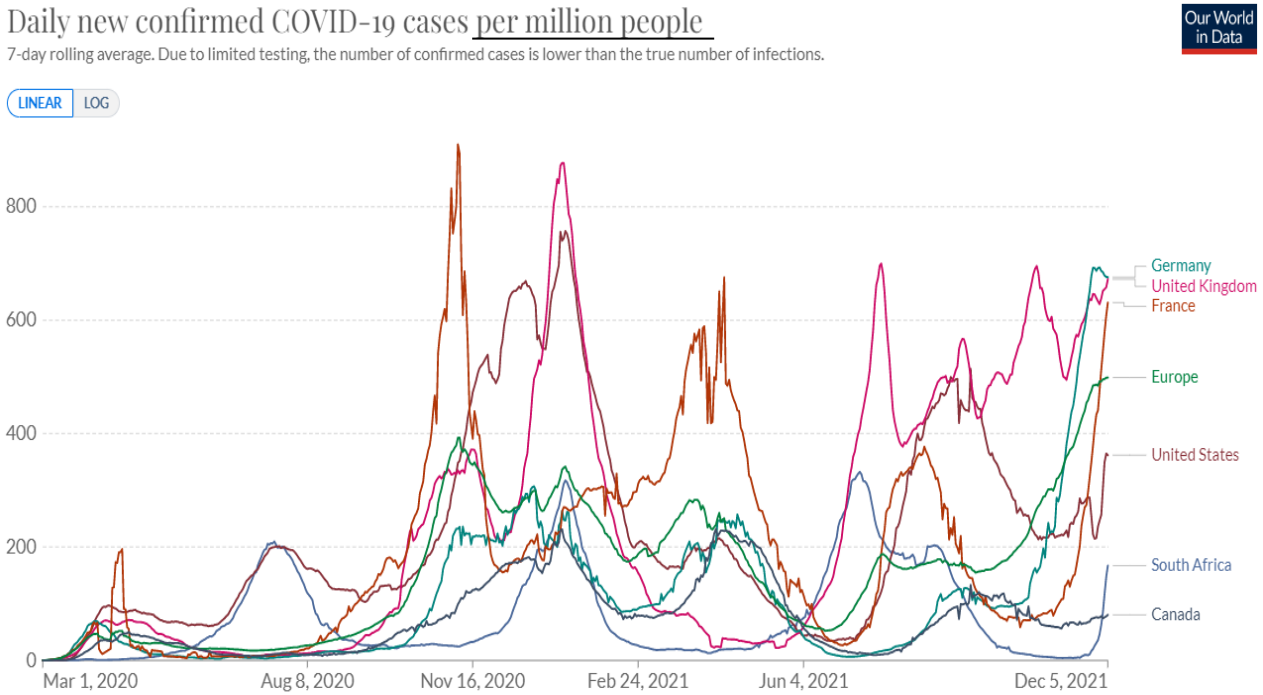
Non-pharmaceutical interventions remain effective against all variants of SARS-COV-2

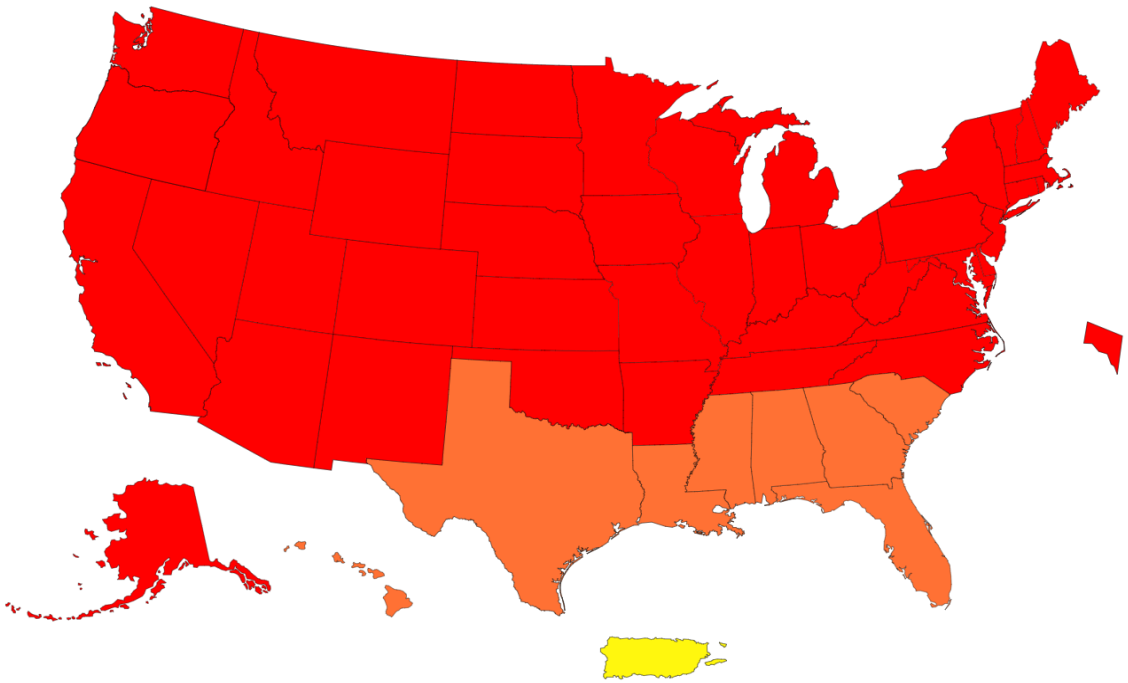
Vaccines remain effective public health measure to protect people from COVID-19, and slow transmission

Despite the increased attention of Omicron, Delta continues to be the main variant circulating in the United States

Global, National and Michigan Trends

Global and National Trends





Globally, 266,004,858 cases and 5,258,833 deaths (Data* through 12/6/2021)

- European case rates are increasing rapidly; & cases in South Africa are increasing rapidly following identification of Omicron variant

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

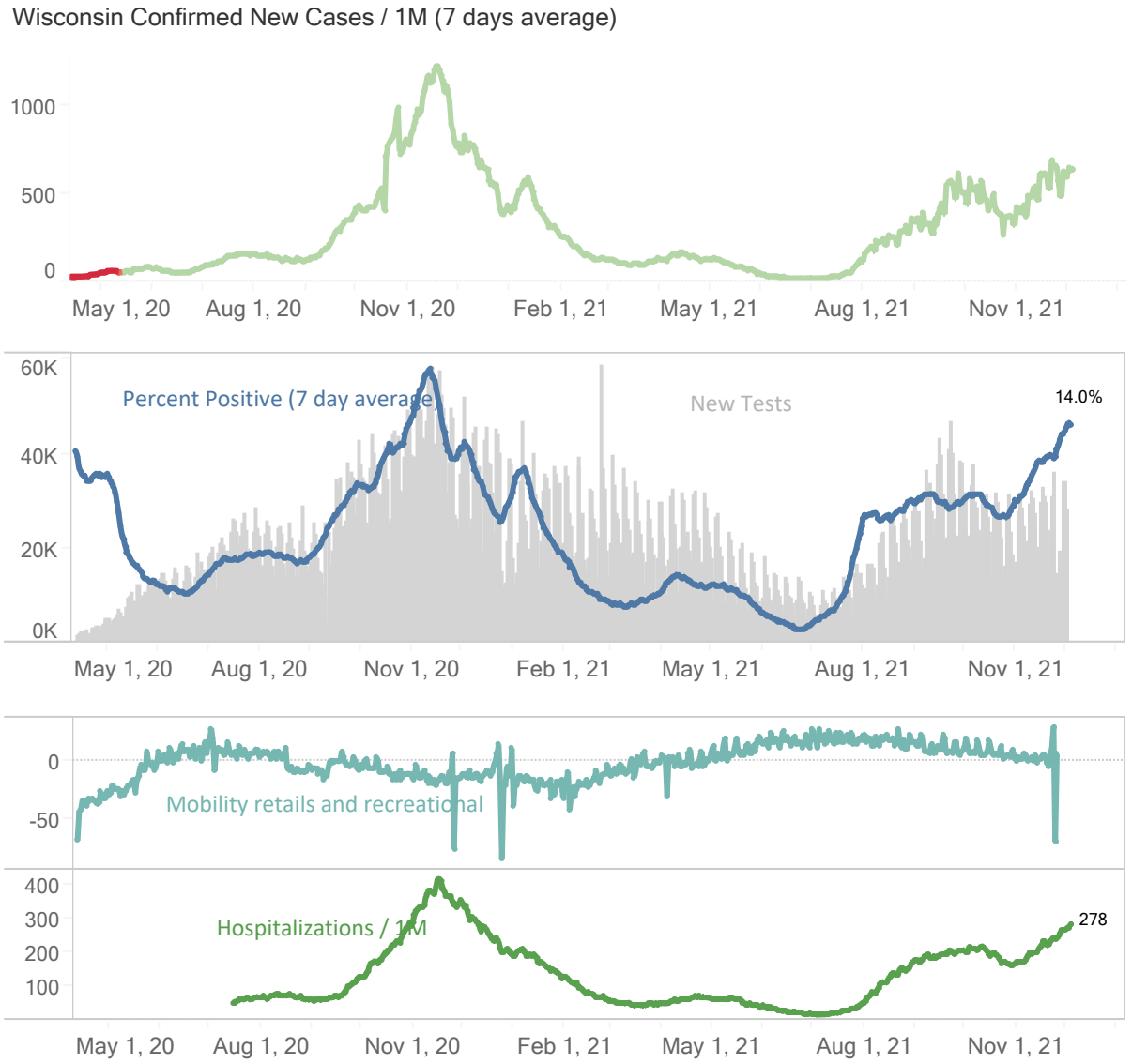
- The U.S. is at High transmission level (223.8 cases/100,000 in last 7 days); metrics are underestimates as reporting lags nationwide over the Thanksgiving holiday

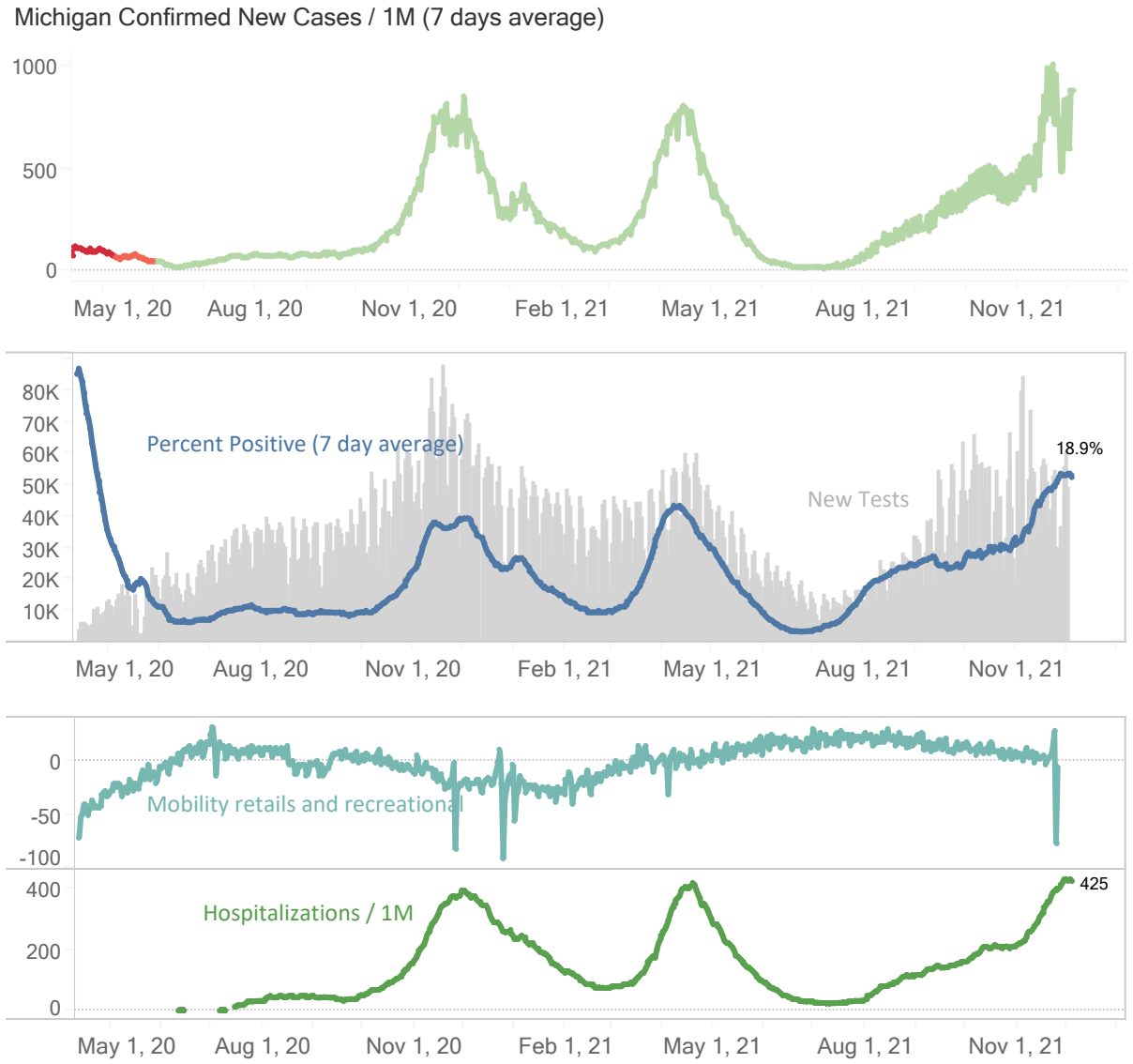
Midwest states maintain High transmission levels† and are increasing

- Michigan has the highest case rate in Midwest

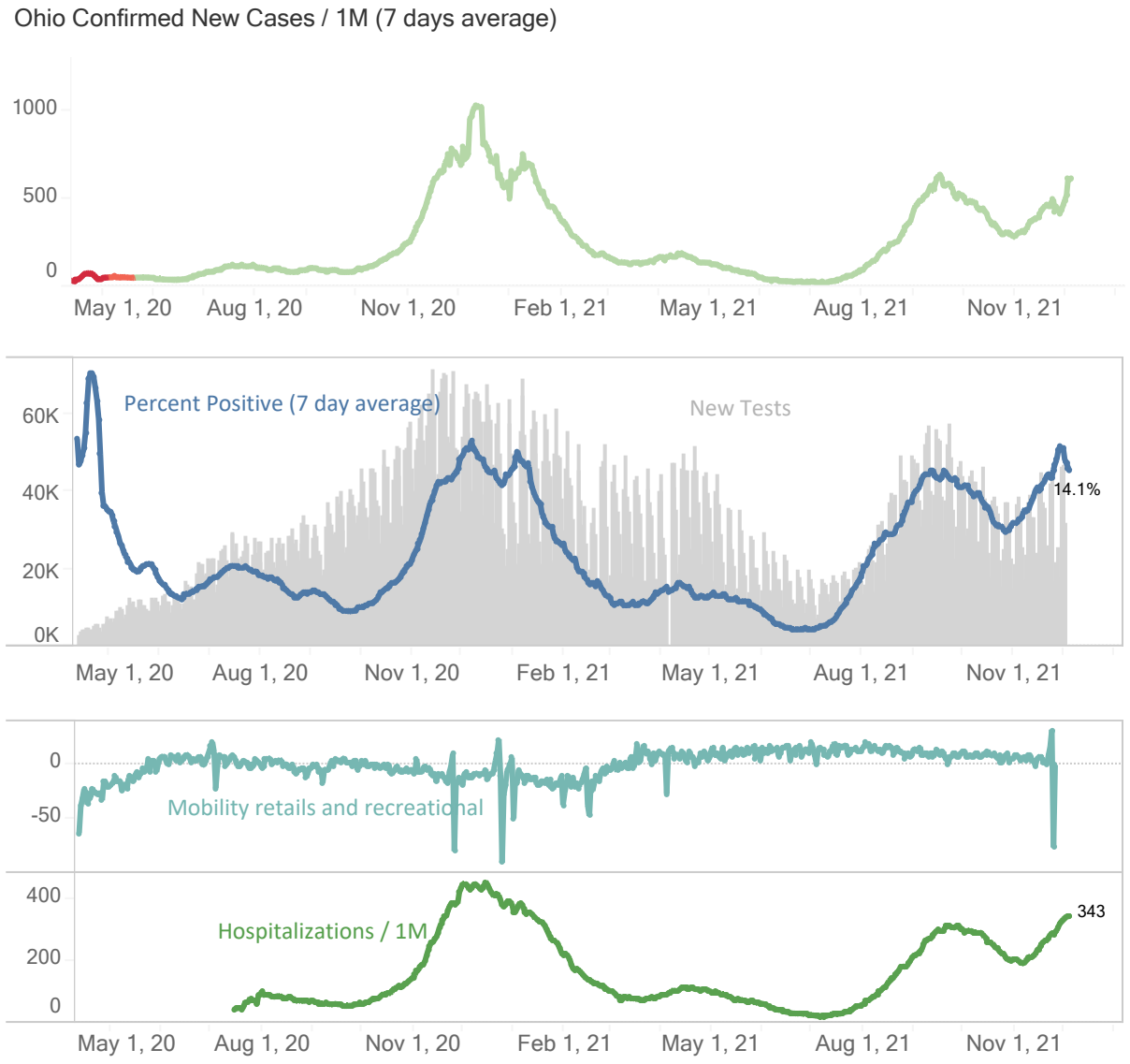
Source: *Johns Hopkins Coronavirus Resource Center; ¶ CDC COVID Data Tracker Weekly Review; † CDC COVID Data Tracker – CDC recently updated their methodology for reporting case rates

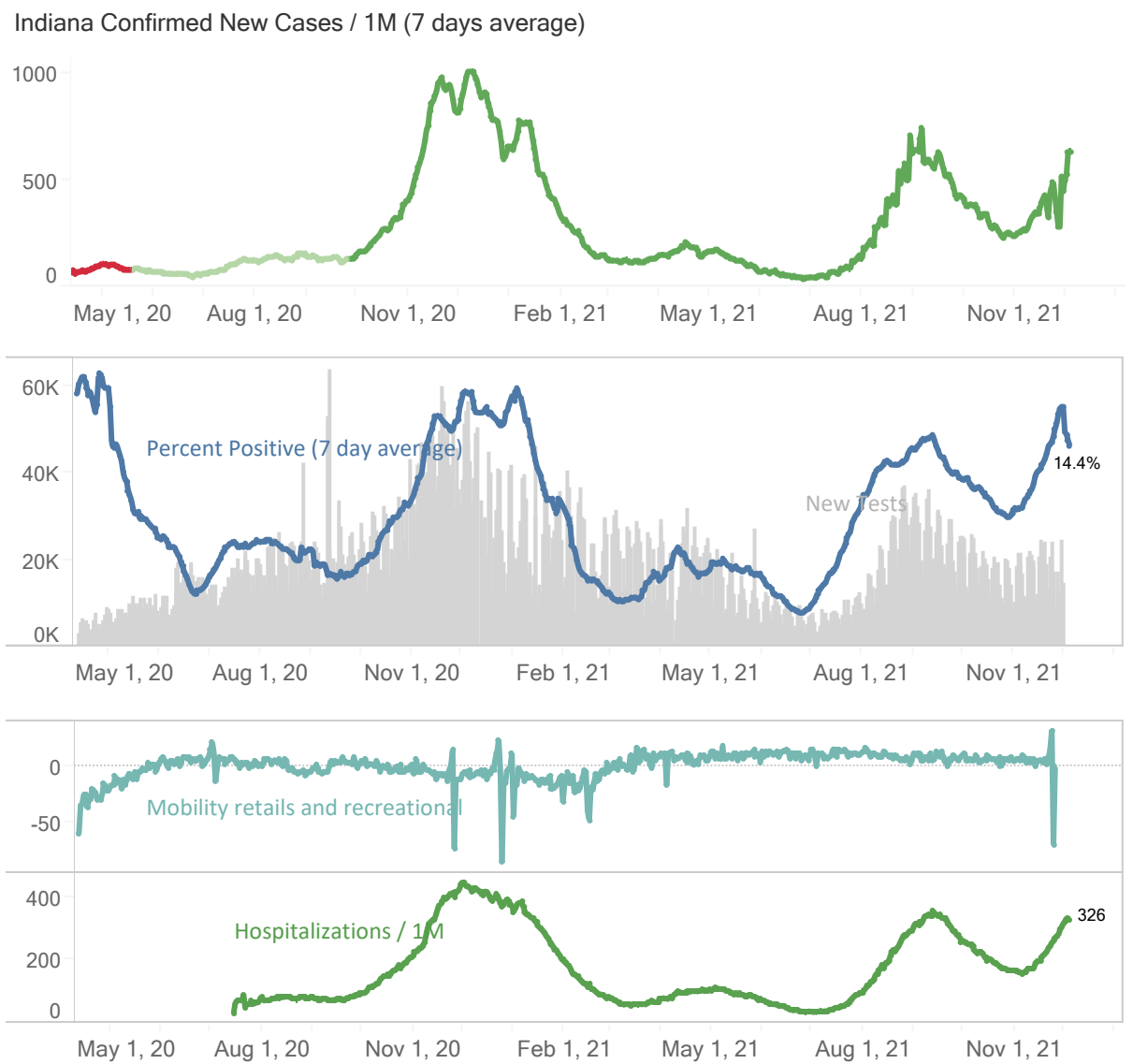
State Comparisons: Wisconsin and Michigan





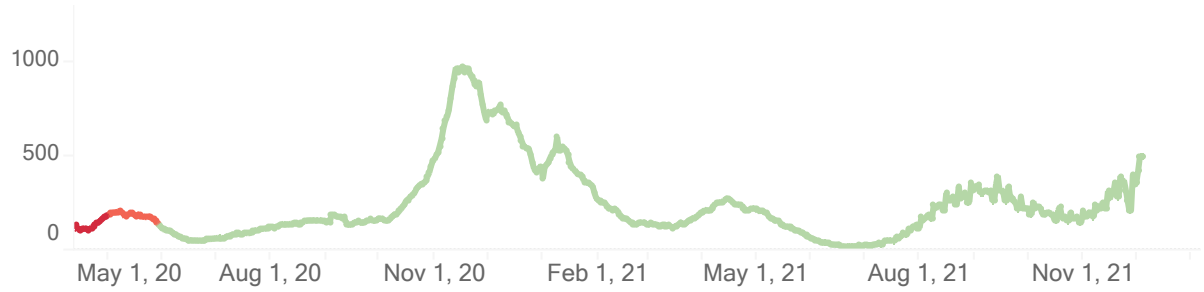
State Comparisons: Ohio and Indiana

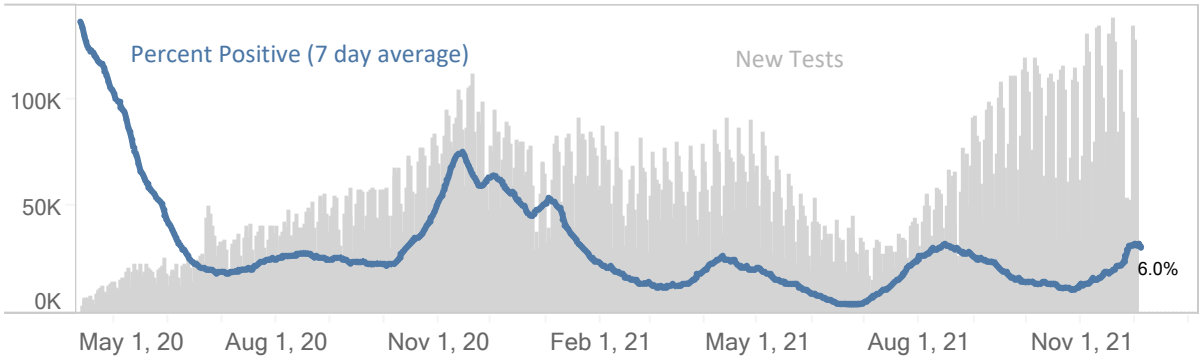


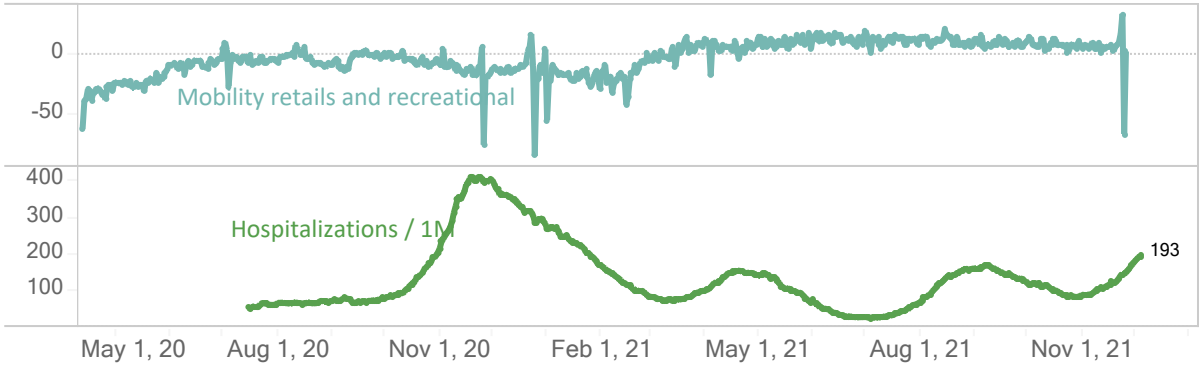


State Comparisons: Illinois and Minnesota

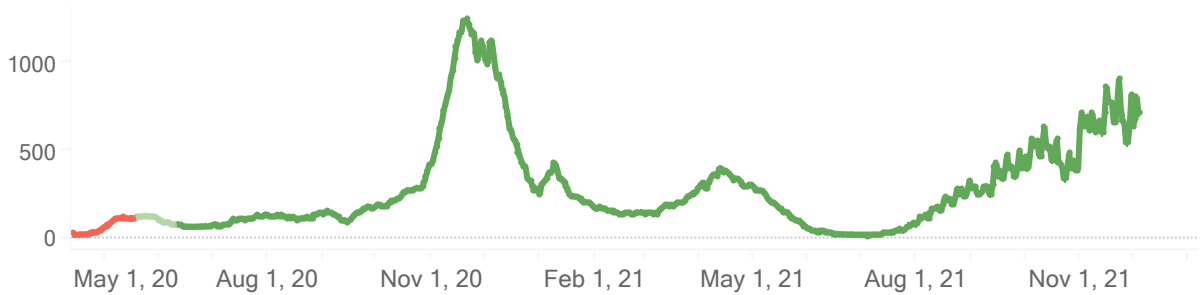
Illinois Confirmed New Cases / 1M (7 days average)

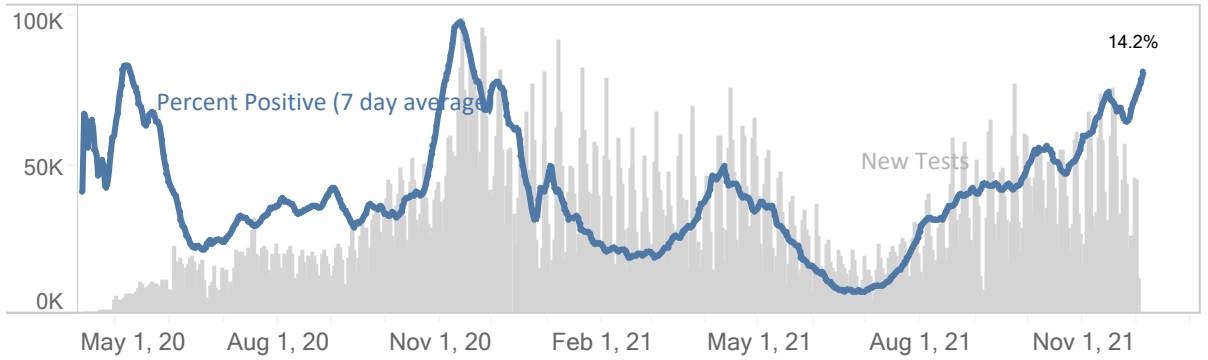


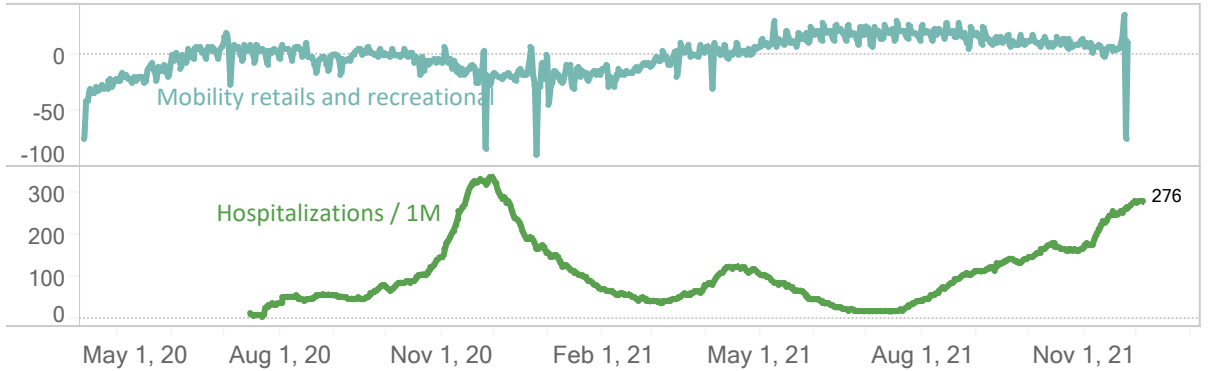




Minnesota Confirmed New Cases / 1M (7 days average)







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 19.5% (last week: 18.9 %)

- The trend is increasing for 6 weeks
- Positivity is increasing in most MERC regions
- Positivity in all regions is above 15% and five regions are above 20%

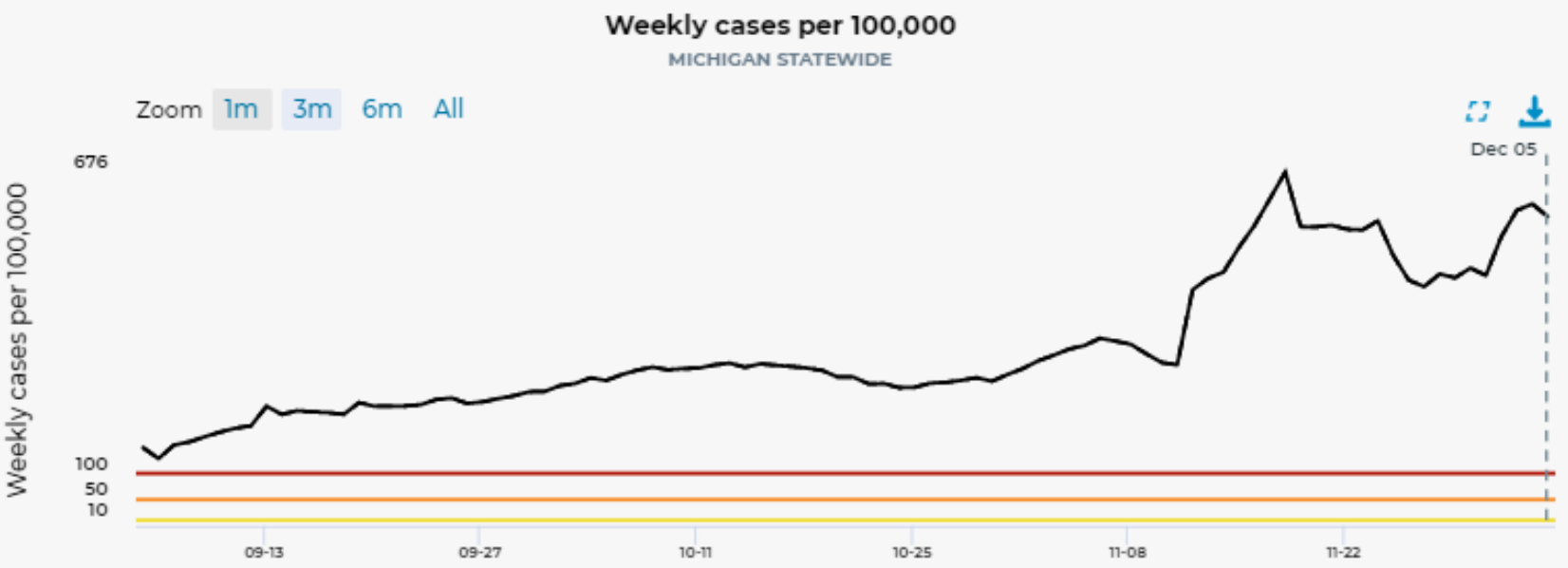
Case rate has decreased to 522.9 cases/million (last week: 556.9 cases/million):

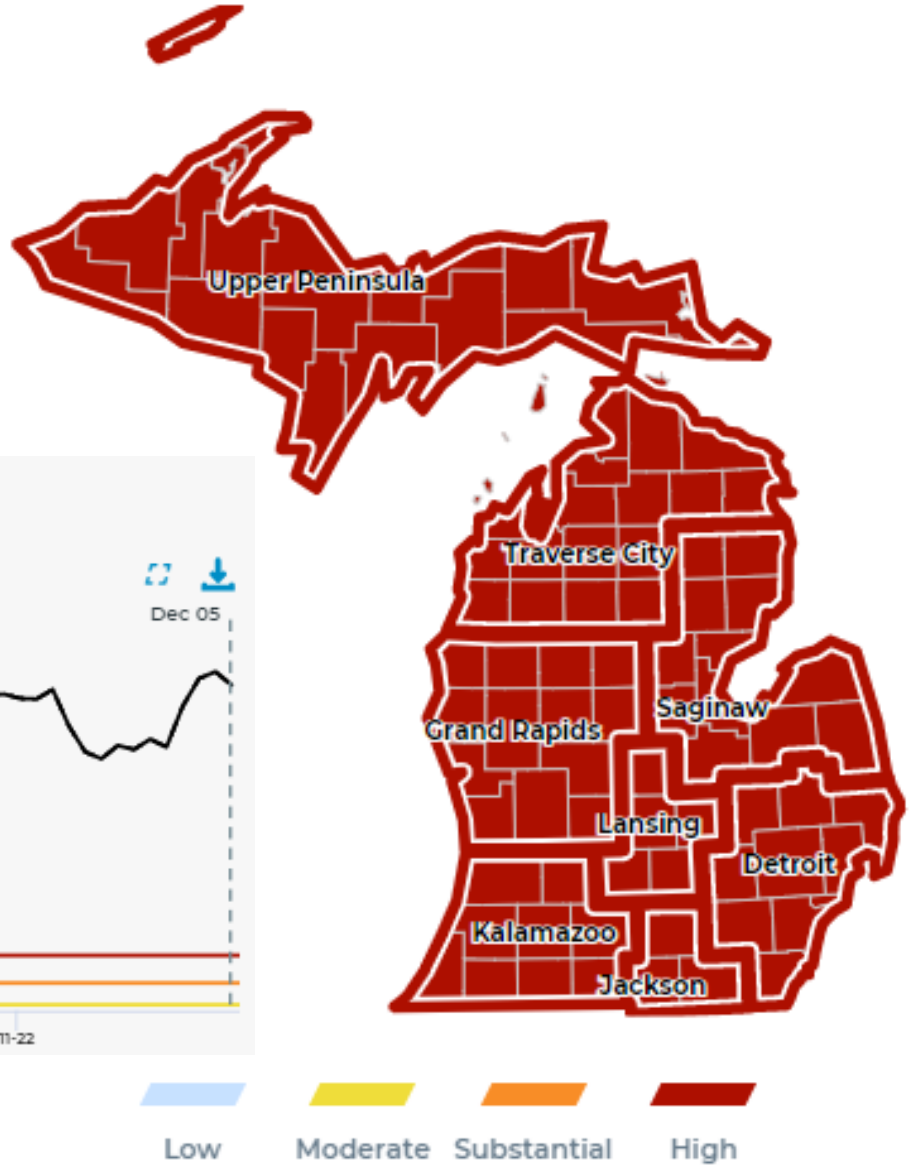
- Reported cases per million are delayed due to Thanksgiving holidays
- Cases per million are decreasing among all age groups
- In the past 7 days, 30-39-years-olds are experiencing the highest number of cases (876.3 daily cases), and highest case rate (722.3 cases/mil)
- Approximately 2.0% of people 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 experiencing highest daily case count of pandemic

Dashboard | CDC | MI Start Map for most recent data by reporting date

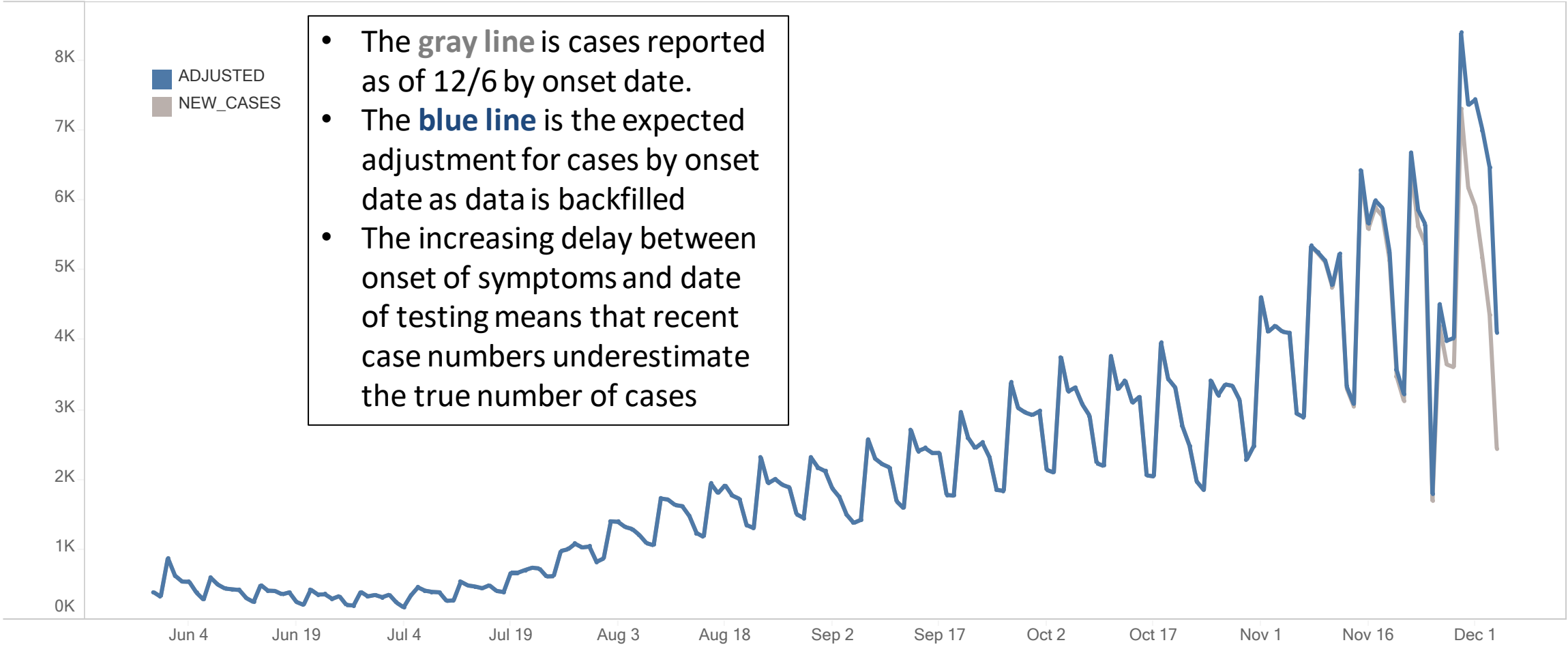




- Referrals declined over the holiday weekend

Michigan Lag-adjusted new COVID cases by onset date

New confirmed cases by onset actual and adjusted as of December 6, 2021 (-2 days)



- The **gray line** is cases reported as of 12/6 by onset date.
- The **blue line** is the expected adjustment for cases by onset date as data is backfilled
- The increasing delay between onset of symptoms and date of testing means that recent case numbers underestimate the true number of cases

Confirmed and probable case indicators

Table Date: 12/06/2021 (7 days from date table was produced: 11/29/2021)

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	507.7	elevated incidence growth	17.2	Increase - 6wk	5378.8	19.8	Increase - 20wk	7.1	Increase - 3wk
Grand Rapids	High	553.1	decline [12 days]	24.5	Increase - 1wk	4580.9	26.4	Increase - 6wk	10.3	Increase - 4wk
Kalamazoo	High	549.1	elevated incidence growth	23.5	Increase - 6wk	4074.7	24.4	Increase - 5wk	6.6	Increase - 3wk
Saginaw	High	535.6	elevated incidence growth	23.2	Increase - 6wk	3950.8	18.3	Increase - 5wk	11.0	Increase - 2wk
Lansing	High	546.6	decline [13 days]	19.5	Increase - 1wk	3823.1	27.5	Increase - 5wk	8.5	Decrease - 1wk
Traverse City	High	489.1	decline [14 days]	20.5	Increase - 1wk	2994.1	20.7	Increase - 4wk	17.1	Increase - 3wk
Jackson	High	549.8	decline [15 days]	24.1	Decrease - 2wk	4358.5	32.0	Decrease - 1wk	10.4	<20 wkly deaths
Upper Peninsula	High	502.7	decline [14 days]	18.3	Increase - 2wk	3070.6	16.0	Increase - 1wk	10.8	Increase - 1wk
Michigan	High	522.9	elevated incidence growth	19.5	Increase - 6wk	4849.7	21.3	Increase - 20wk	8.5	Increase - 3wk

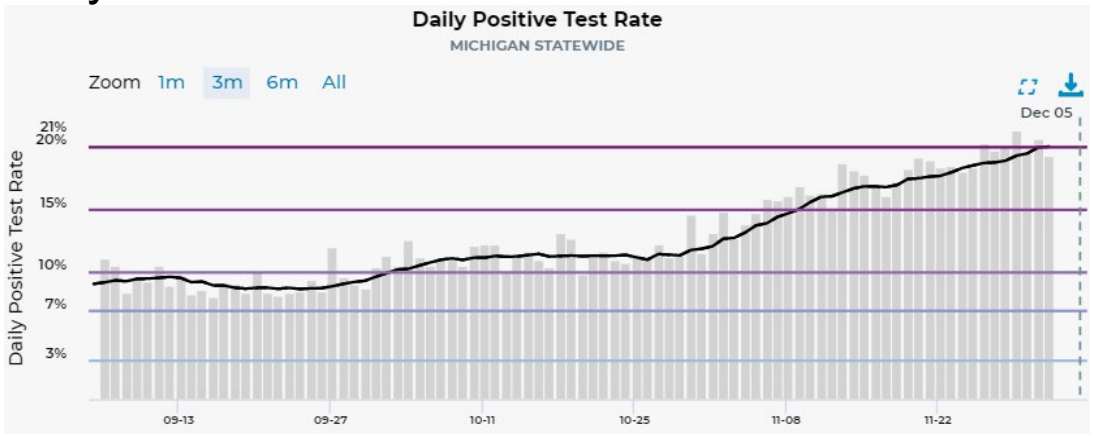
Cases: Low: <7 | A: 7-20 | B: 20-40 | C: 40-70 | D: 70-150 | E: >=150

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

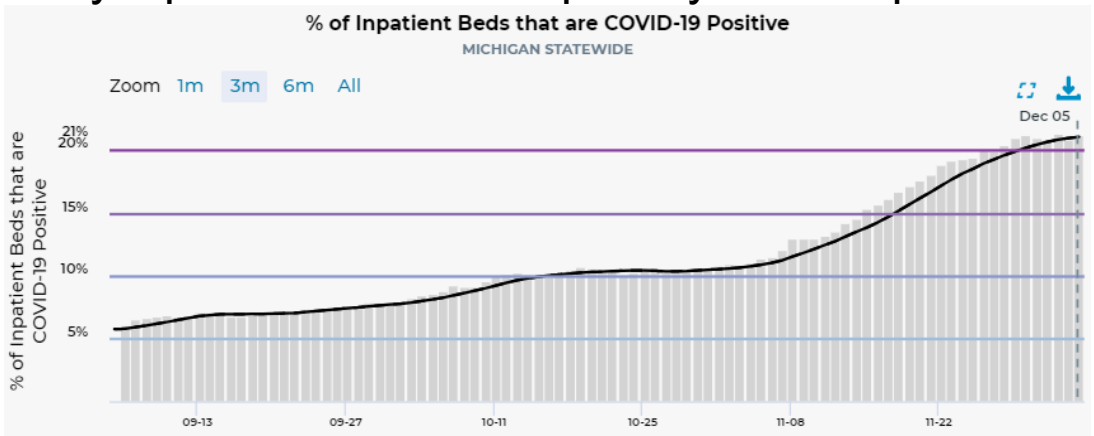
Time Trends – Positivity, Case Rates, Hospitalizations, Deaths

- Core COVID-19 indicators show burden remains high in Michigan

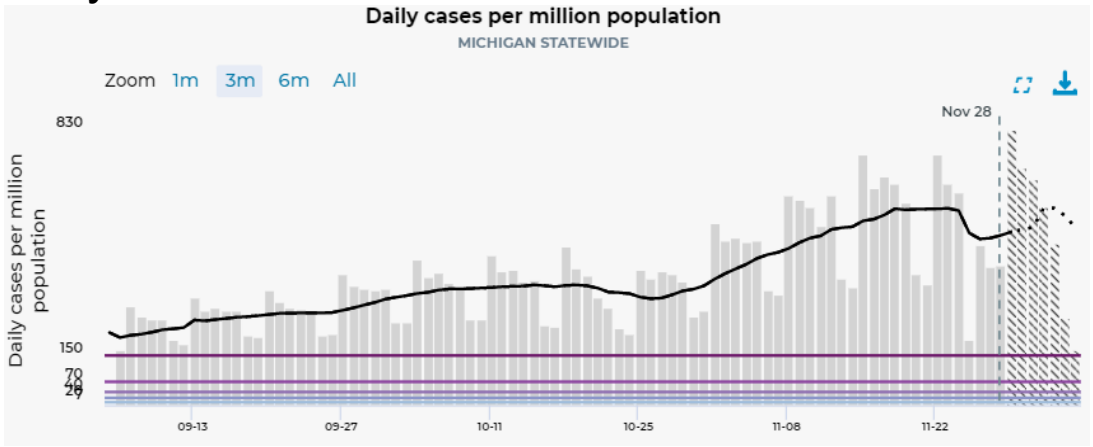
Daily Positive Test Rate



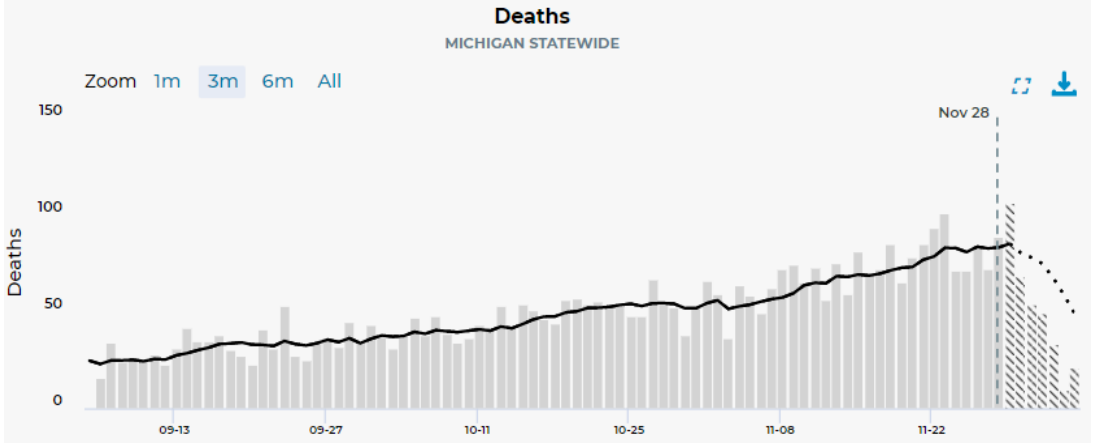
Daily Inpatient Beds Occupied by COVID patients



Daily Case Rate



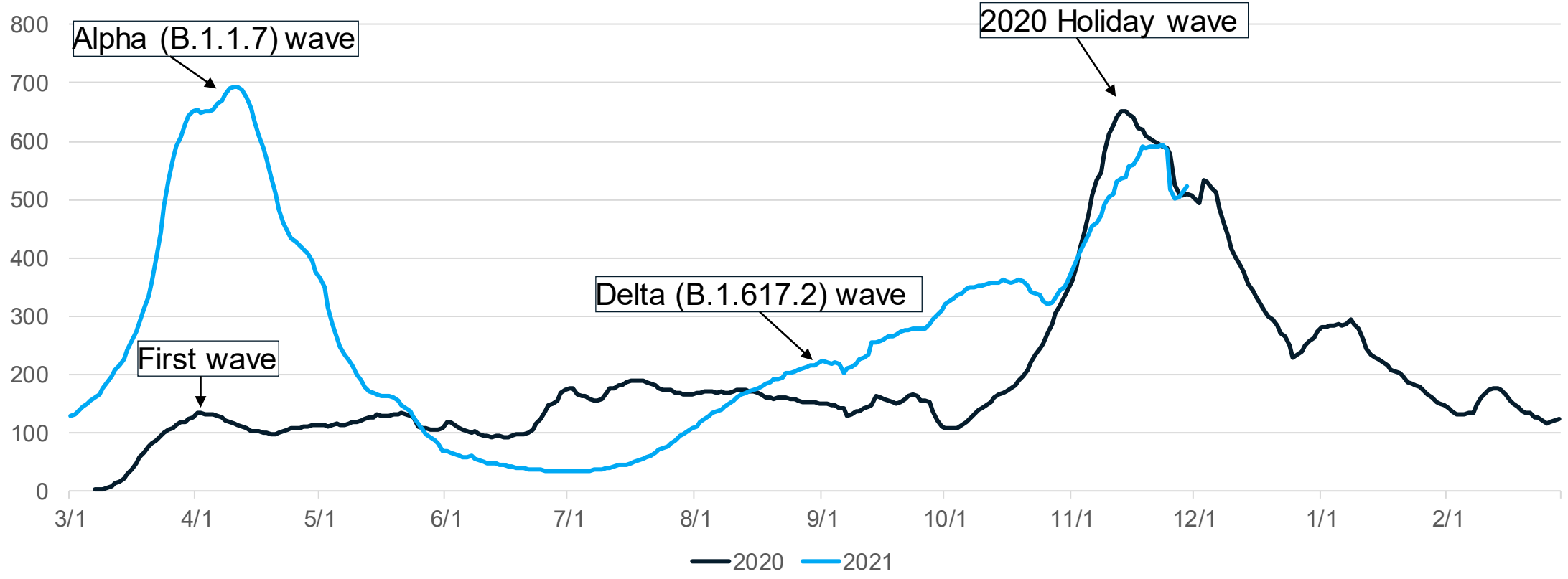
Daily Deaths



Time Trends – Annual Comparison

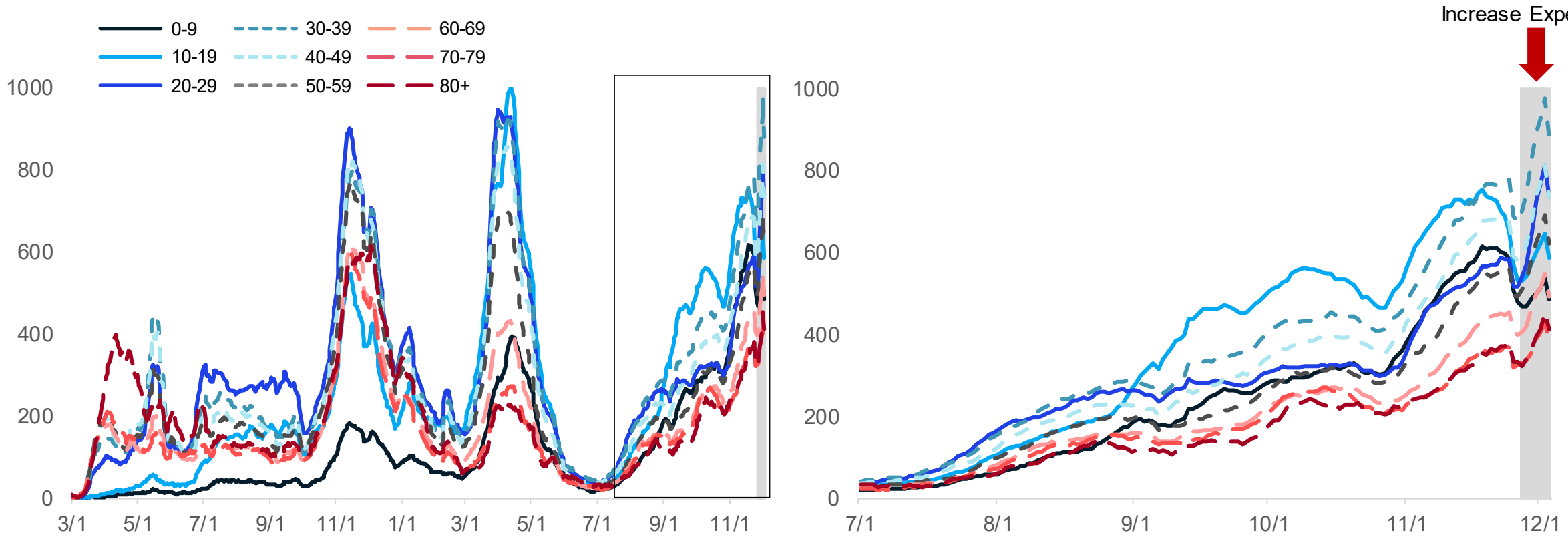
- Case rates are now at the same level as this time last year (by onset date).
- Trend is experiencing lull over Thanksgiving holiday as was experienced last year

7- day rolling average of Rates 2020 vs 2021



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 were impacted by reporting over Thanksgiving holiday but are increasing again
- Case rates by onset date for all age groups are between 315 and 722 cases per million (through 11/29)
- 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 CaseRates by Age Group, data as of Dec 6

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	550.7	477.7	-21% (-147)
10-19	705.9	**562.5**	-20% (-181)
20-29	772.0	**559.6**	-4% (-36)
30-39	**876.3**	**722.3**	-6% (-53)
40-49	702.7	**595.8**	-14% (-111)
50-59	702.4	520.2	-6% (-47)
60-69	524.7	411.3	-9% (-53)
70-79	242.3	316.0	-13% (-37)
80+	133.7	322.8	-13% (-20)
Total¶	**5228.1**	**522.9**	**-11% (-685.9)**

† 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 (876.3) and average daily case rate (722.3 case/mil) are highest for those aged 30-39
- Case rates over the last week have decreased due to decline in testing and reporting over the Thanksgiving holiday. It is anticipated that case rates will increase in next week.

Overview of metrics for individuals < 12 and <18

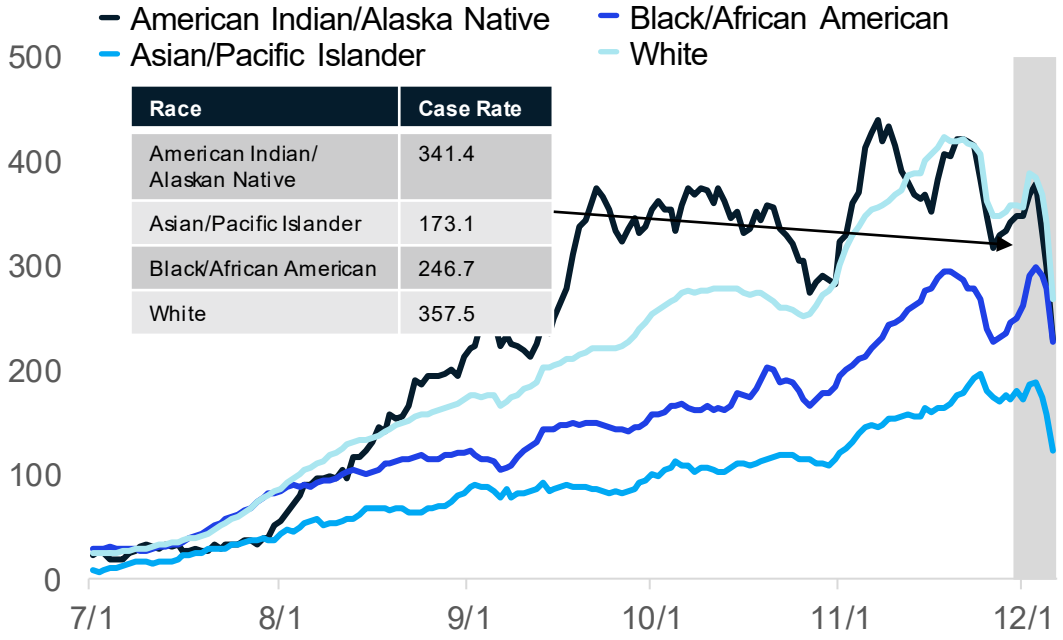
Region	Population (<12 yrs)	Population (<18 yrs)	Cumulative Case Count (<12 yrs)	7-day Average Daily Case Count (<12 yrs)	7-day Average Daily Case Rate per Million (<12 yrs)	7-day Average Daily Pediatric Hospitalization Count (<18 yrs) *	7-day Average Daily Pediatric Hospitalization Rate per Million (<18 yrs) *	7-day Average Daily Death Count (<12 yrs)	30-day Average Daily Death Count (<12 yrs)
Detroit	735529	1134247	59943	380.7	517.6	29.6	26.1	0.0	0.03
Grand Rapids	230120	350652	22207	126.0	547.5	11.3	32.2	0.1	0.07
Kalamazoo	140422	214801	11367	68.0	484.3	3.3	15.4	0.0	0.00
Saginaw	78759	122834	7232	38.7	491.4	3.0	24.4	0.0	0.00
Lansing	78140	119915	7409	42.6	545.2	3.1	25.9	0.0	0.00
Traverse City	53099	83462	3976	30.1	566.9	0.1	1.2	0.0	0.03
Jackson	41274	64091	3807	17.0	411.9	0.0	0.0	0.0	0.03
Upper Peninsula	34645	53875	3761	19.9	574.4	0.0	0.0	0.0	0.00
Michigan	1391988	2143877	119825	724.7	520.6	50.4	23.5	0.1	0.17

- Each day, 725 children under age 12 become infected with COVID-19, 141 fewer than last week
- Pediatric case rates increased to 520.6 cases/million (last week: 622.2 cases/million)
- Pediatric (<18) hospital census* is averaging approximately 50 per day (last week: 47 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

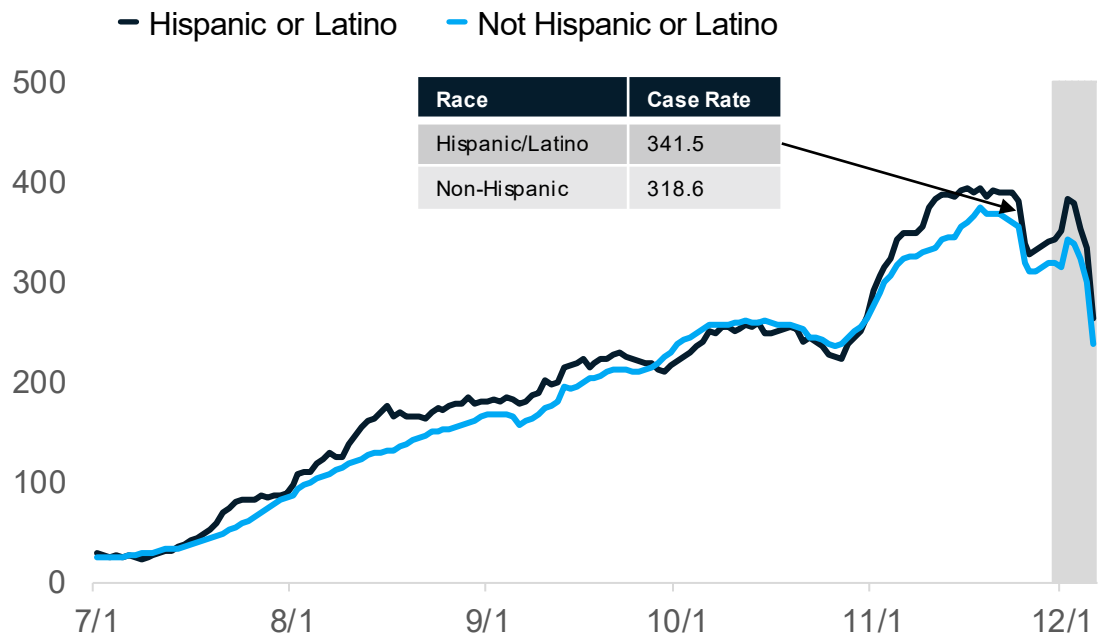
Case Rates by Reported Racial and Ethnic Group

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



Race	Case Rate
American Indian/ Alaskan Native	341.4
Asian/Pacific Islander	173.1
Black/African American	246.7
White	357.5

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



Race	Case Rate
Hispanic/Latino	341.5
Non-Hispanic	318.6

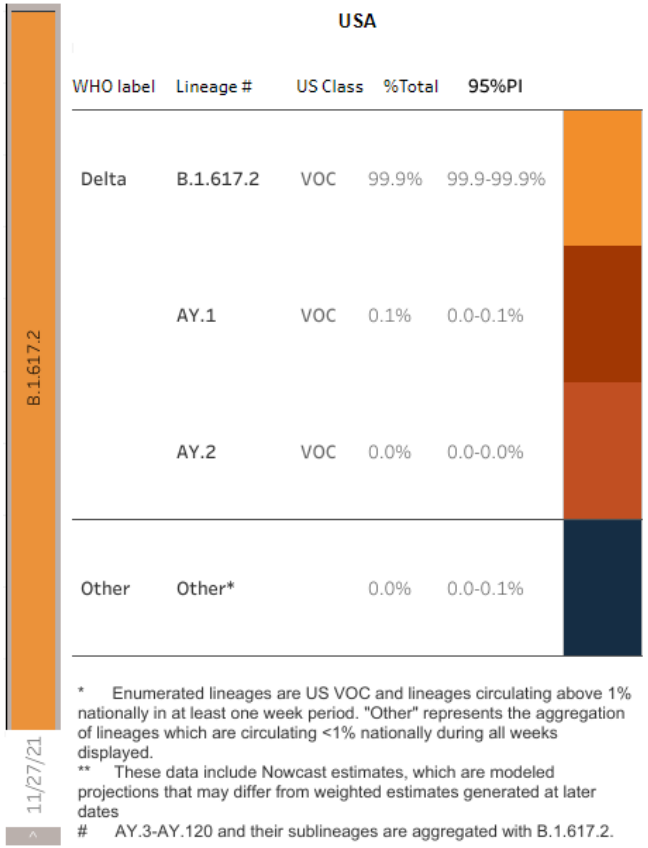
Updates since last week:

- 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, 28% (↑1%) of race data and 38% (↑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

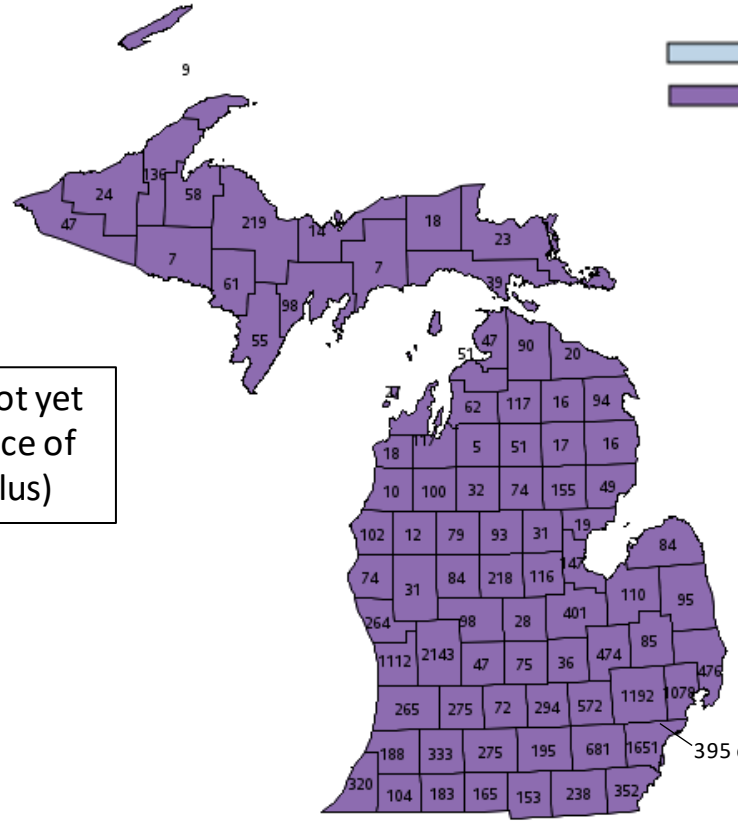
SARS-CoV-2 Variants Circulating in the United States, Nov 21 – Nov 27 (NOWCAST)



* 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.120 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 6



395 cases in Wayne attributed to Detroit

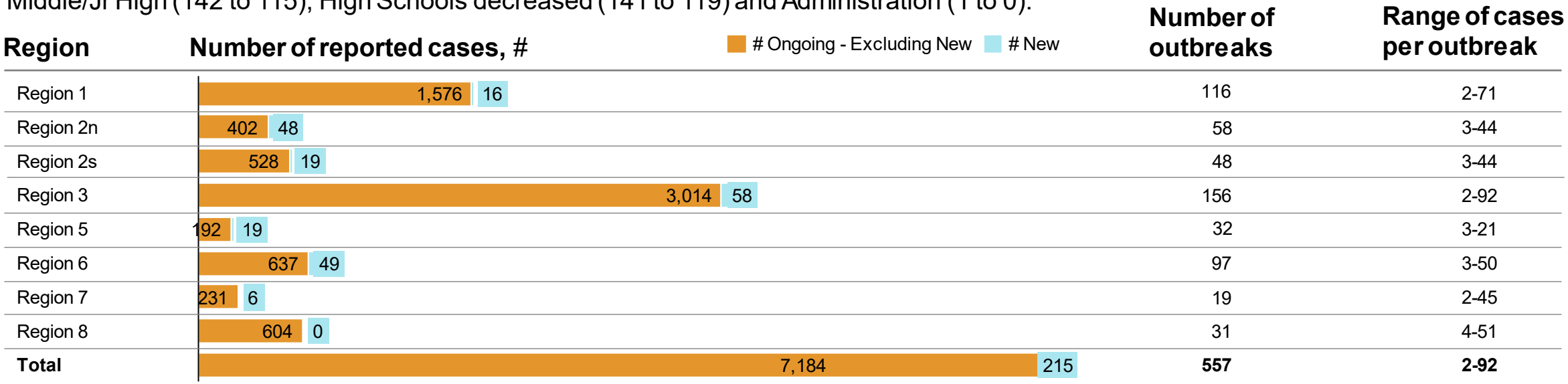
- CDC has reclassified other VOCs as variants being monitored
- Variants are downgraded when there has been a significant and sustained reduction in prevalence, or variant no longer poses significant risk to public health
- Currently, only Delta (B.1.617.2) remains a VOC
- Information on Omicron in Science Round Up

Variant	MI Reported Cases¶	# of Counties	MDHHS VOC Sequenced Prev.
B.1.617.2 (delta)	17,240	83	100%

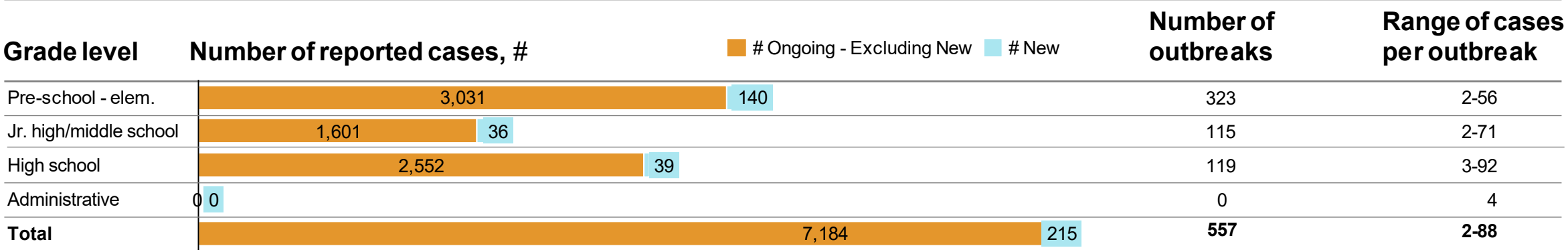
Data last updated Dec 6, 2021
Source: MDSS

K-12 school clusters and outbreaks, recent and ongoing, week ending Dec 2

Number of reported outbreaks/clusters decreased since last week (627 to 557), with decreases in Pre K-Elementary (343 to 323). Declines in Middle/Jr High (142 to 115), High Schools decreased (141 to 119) and Administration (1 to 0).



Region	Number of reported cases, #	Number of outbreaks	Range of cases per outbreak
Region 1	1,576 + 16	116	2-71
Region 2n	402 + 48	58	3-44
Region 2s	528 + 19	48	3-44
Region 3	3,014 + 58	156	2-92
Region 5	192 + 19	32	3-21
Region 6	637 + 49	97	3-50
Region 7	231 + 6	19	2-45
Region 8	604 + 0	31	4-51
Total	7,184 + 215	**557**	**2-92**



Grade level	Number of reported cases, #	Number of outbreaks	Range of cases per outbreak
Pre-school - elem.	3,031 + 140	323	2-56
Jr. high/middle school	1,601 + 36	115	2-71
High school	2,552 + 39	119	3-92
Administrative	0 + 0	0	4
Total	7,184 + 215	**557**	**2-88**

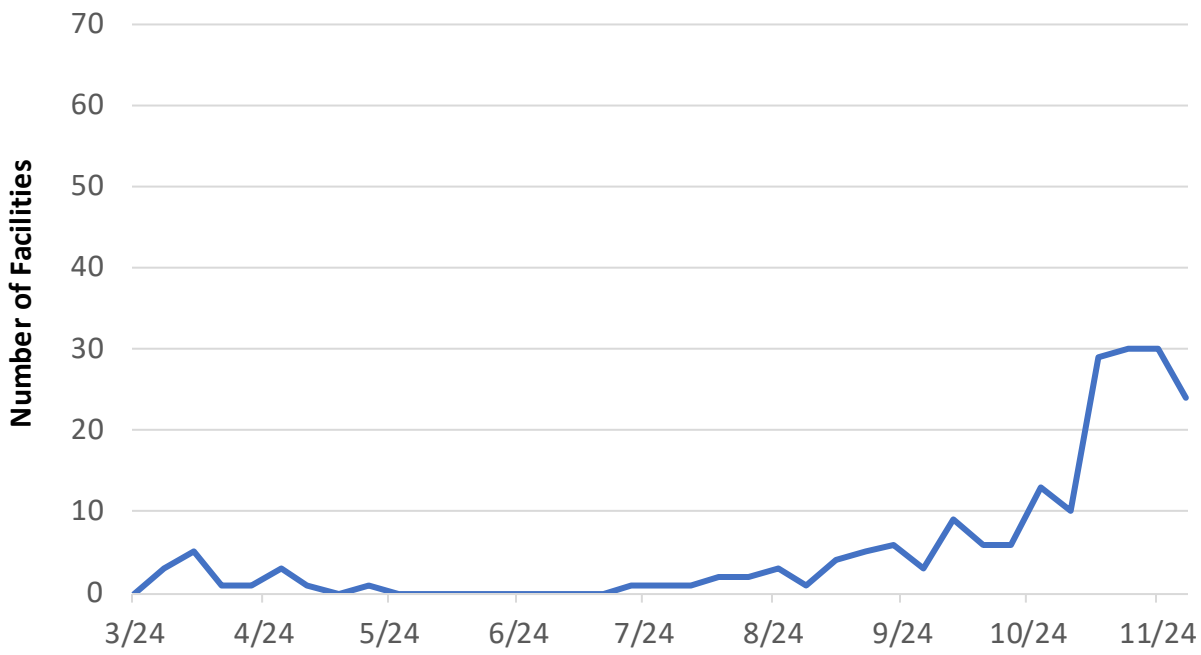
Many factors, including the lack of ability to conduct effective contact tracing in certain settings, may result in significant underreporting of outbreaks. This chart does not provide a complete picture of outbreaks in Michigan and the absence of identified outbreaks in a particular setting in no way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

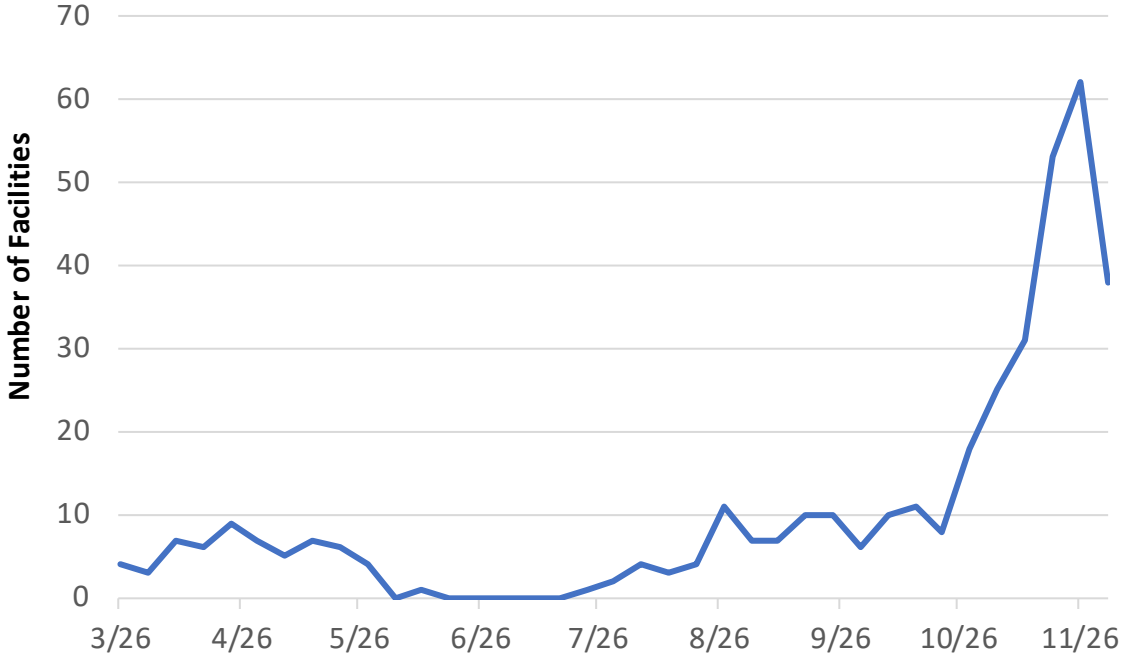
Long term care facility focus

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

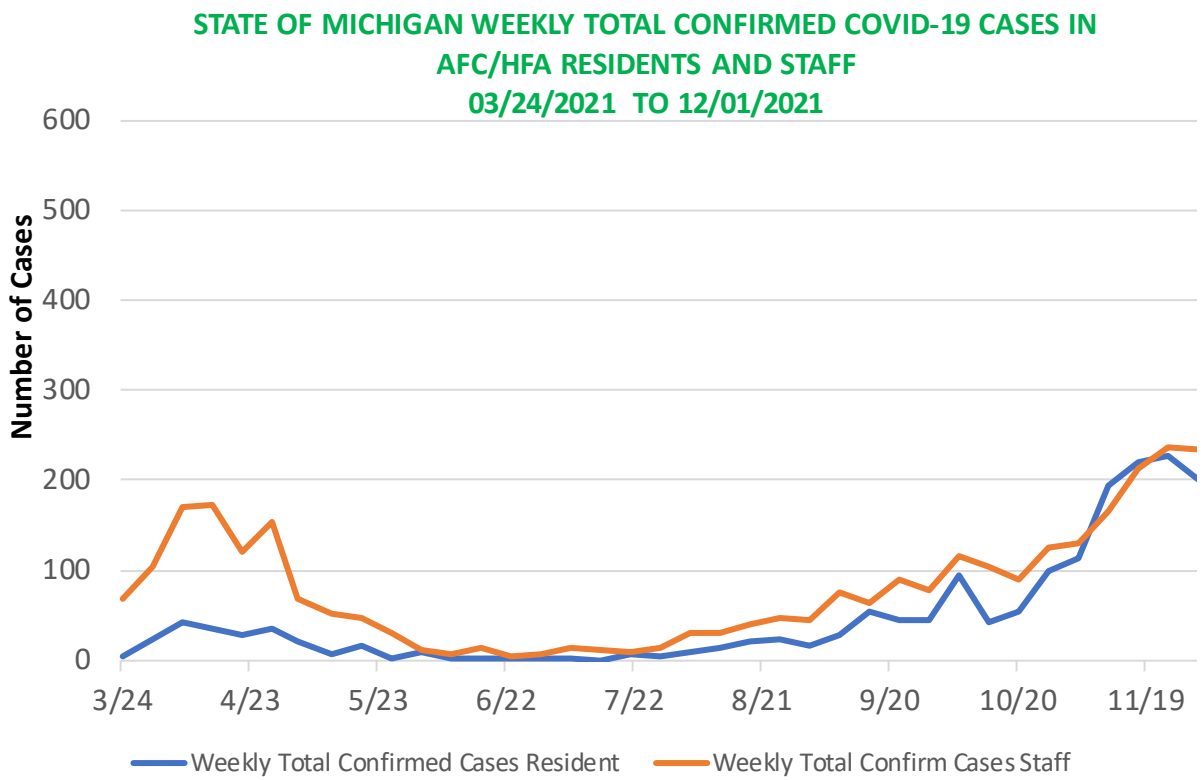


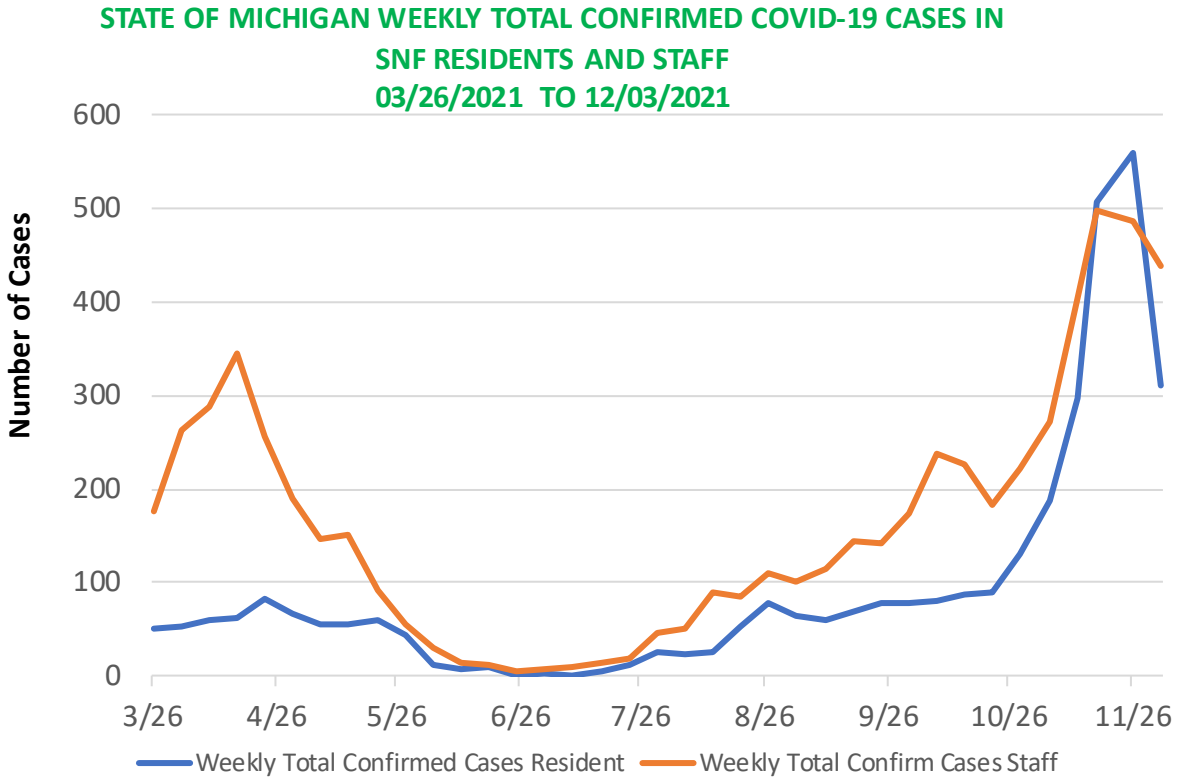
- The number of Long-Term Care Facilities reporting 3 or more cases within a single reporting period has decreased 38 from a peak of 62 for Skilled Nursing Facilities, and 24 from 30 for AFC/HFA facilities in past week
- These decreases coincide with statewide decreases that have occurred in case reporting over the Thanksgiving holiday

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





- In the past week, the number of reported cases have plateaued or deceased in AFC/HFA/SNF, however, these decreases may be attributed to decreased reporting over the Thanksgiving holiday
- Case counts in LTCF have reverted to more staff case count than residents case count

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

- 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 (next slide), the risk of COVID-19 transmission as a result of visitation is low.

- Visitation should be permitted 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

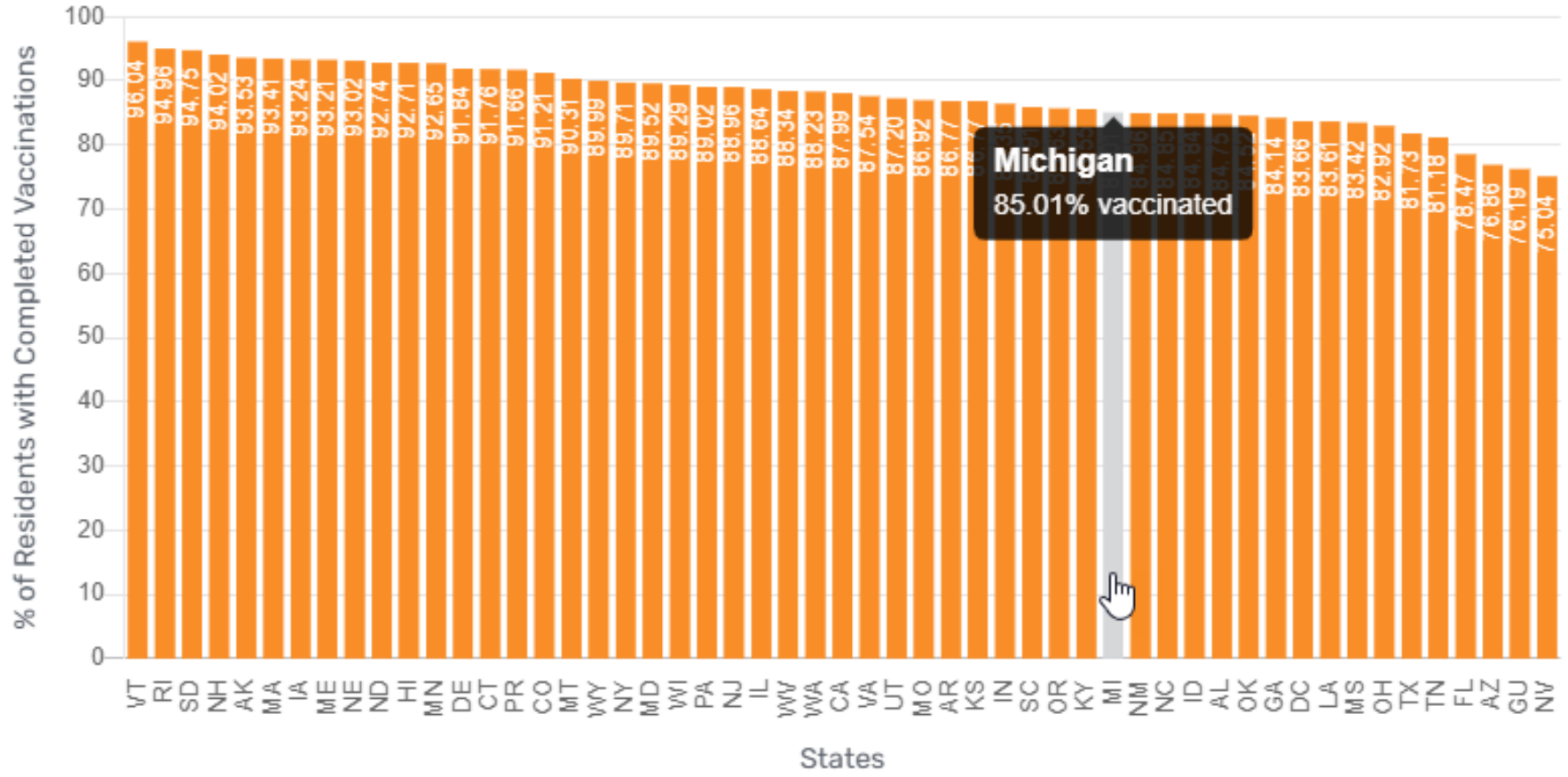
Appropriate staff use of Personal Protective Equipment (PPE)

Effective cohorting of residents

Resident and staff testing conducted as required

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

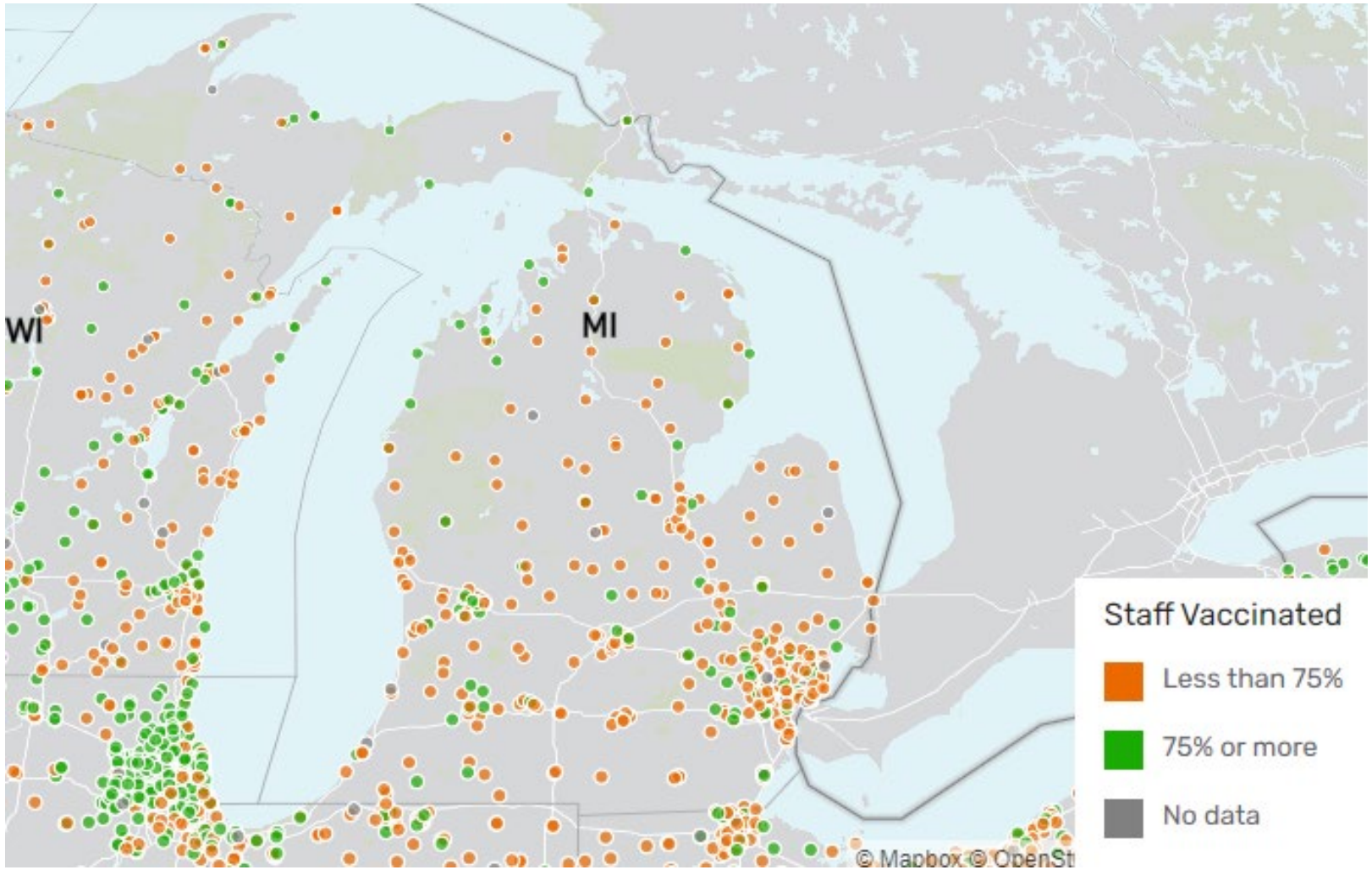
Note: This shows the average percentage among facilities who have reported vaccination data in the current or prior week.



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

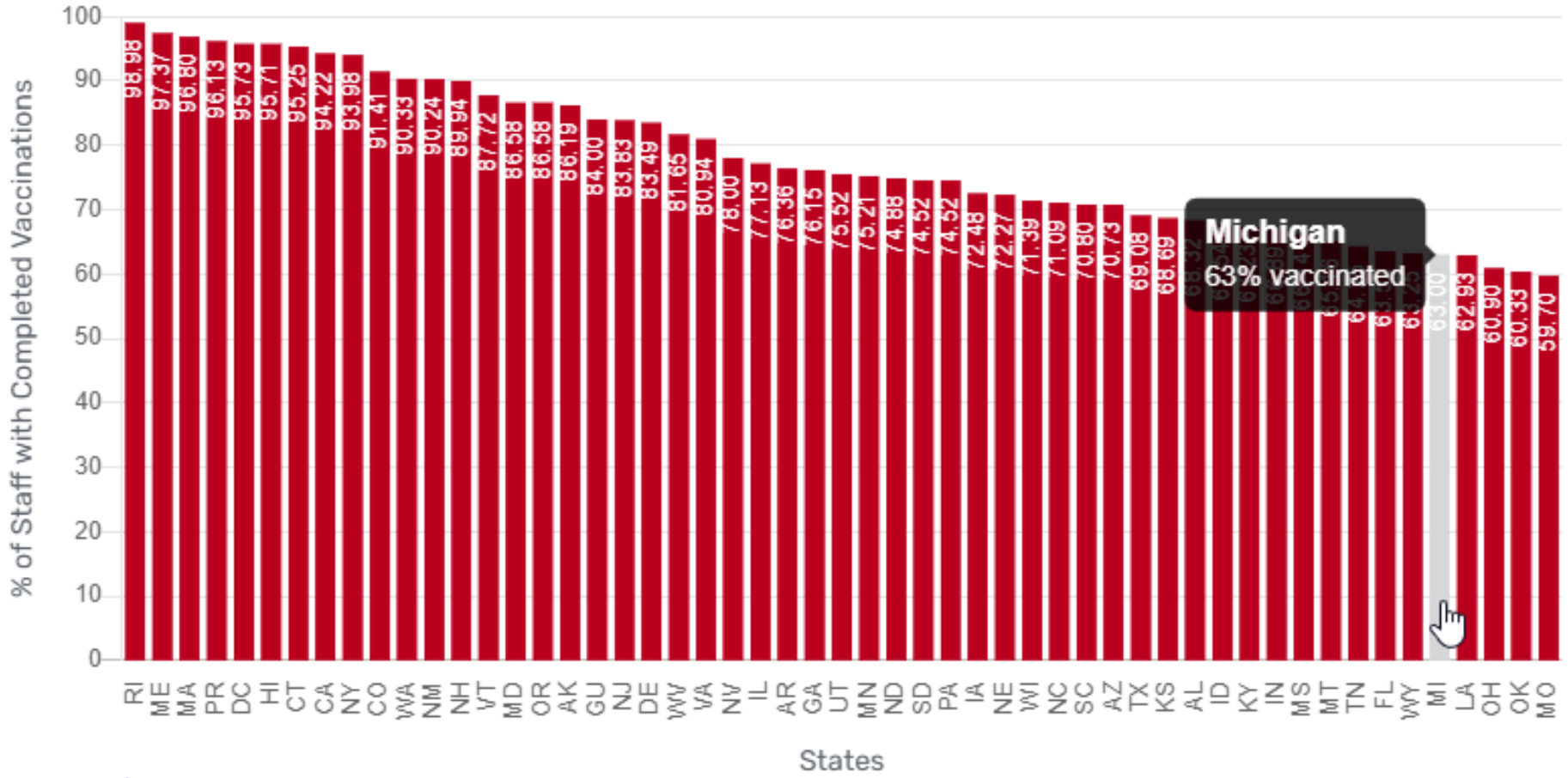
Data for individual facilities available through interact map at Centers for Medicaid and Medicare Services



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

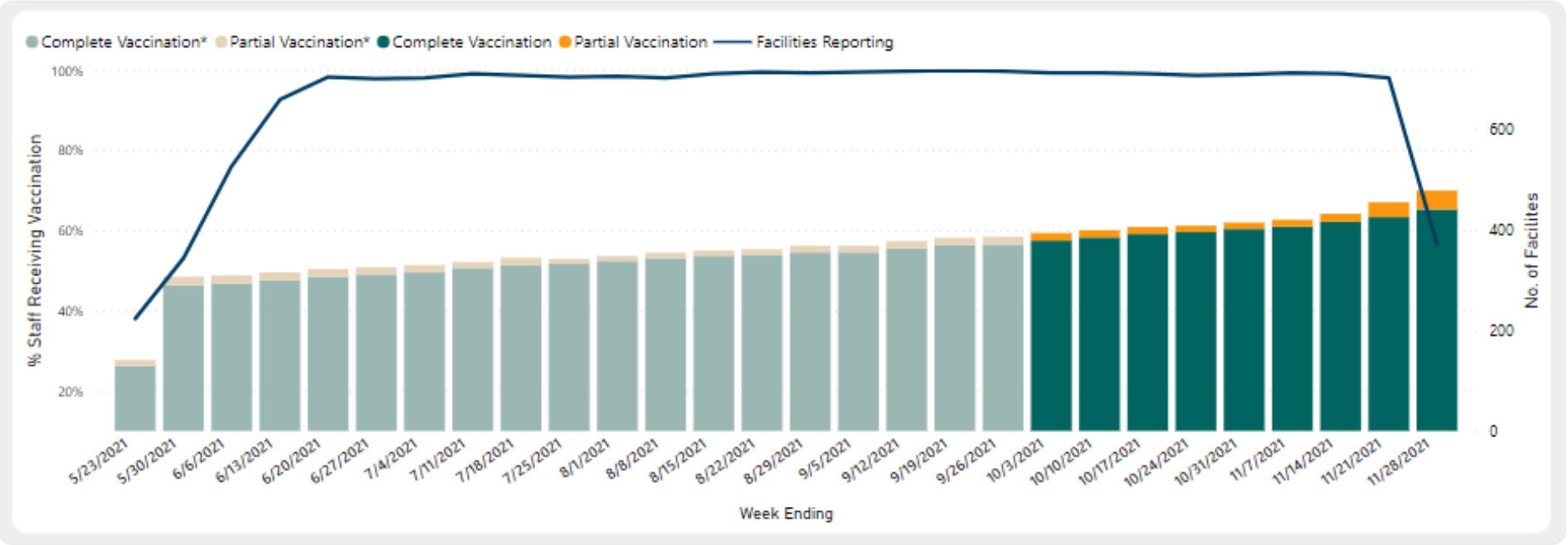
COVID-19 Vaccination Coverage and Reporting among Staff in Nursing Homes, by week—United States

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

Nursing Home/Skilled Nursing Facility COVID-19 Trend Summary

New guidance from CMS discusses how visitation can be safe when infection prevention standards are followed correctly and consistently

- **MDHHS strongly recommends those entering nursing home test negative before visiting**

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

Michigan nursing home staff have low vaccination coverage (63%) compared nationally, which lends to increased transmission and introduction of SARS-CoV-2 within vulnerable populations

- Trends in staff vaccination coverage are not rapidly changing
- Michigan staff nursing home vaccination coverage ranks 49th of 53 U.S. states and territories

Update on breakthrough cases

Potential COVID-19 Vaccination Breakthrough Cases

Michigan part of CDC's nationwide investigation (COVID-19 Vaccine Effectiveness | CDC)

Cumulative Michigan Data (1/1/21 through 11/19/21):

- **104,081 cases met criteria based on a positive test 14 or more days after being fully vaccinated**
- **Approximately 2% of people who were fully vaccinated met this case definition**
  - **Includes 1,170 deaths (1,004 in persons ages 65 years or older)**
  - **2,370 cases were hospitalized**

COVID-19 Vaccines Work

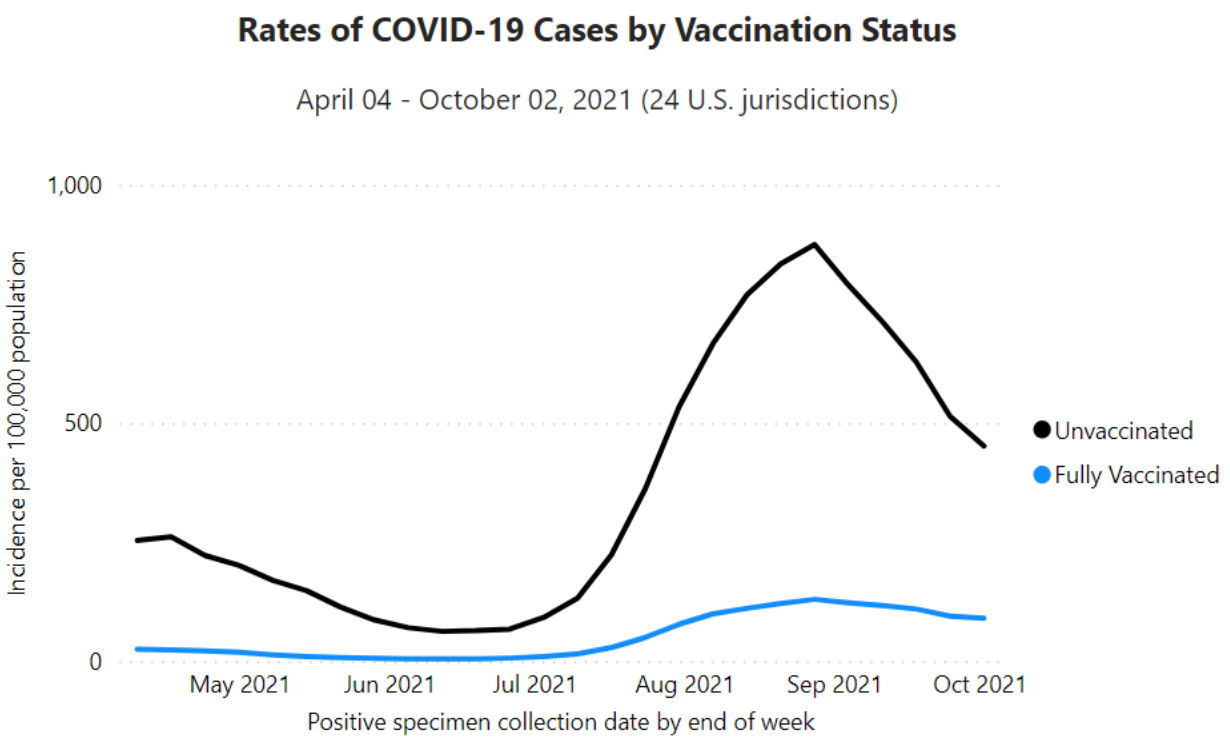
- Research provides evidence that COVID-19 vaccines are effective at preventing COVID-19.
- COVID-19 vaccination helps protect adults and children ages 5 years and older from getting sick or severely ill with COVID-19 and helps protect those around them.
- To receive the most protection, adults and children ages 5 years and older should receive all recommended doses of a COVID-19 vaccine.
- Some people who are fully vaccinated against COVID-19 will still get sick because no vaccine is 100% effective. Experts continue to monitor and evaluate how often this occurs, how severe their illness is, and how likely a vaccinated person is to spread COVID-19 to others.

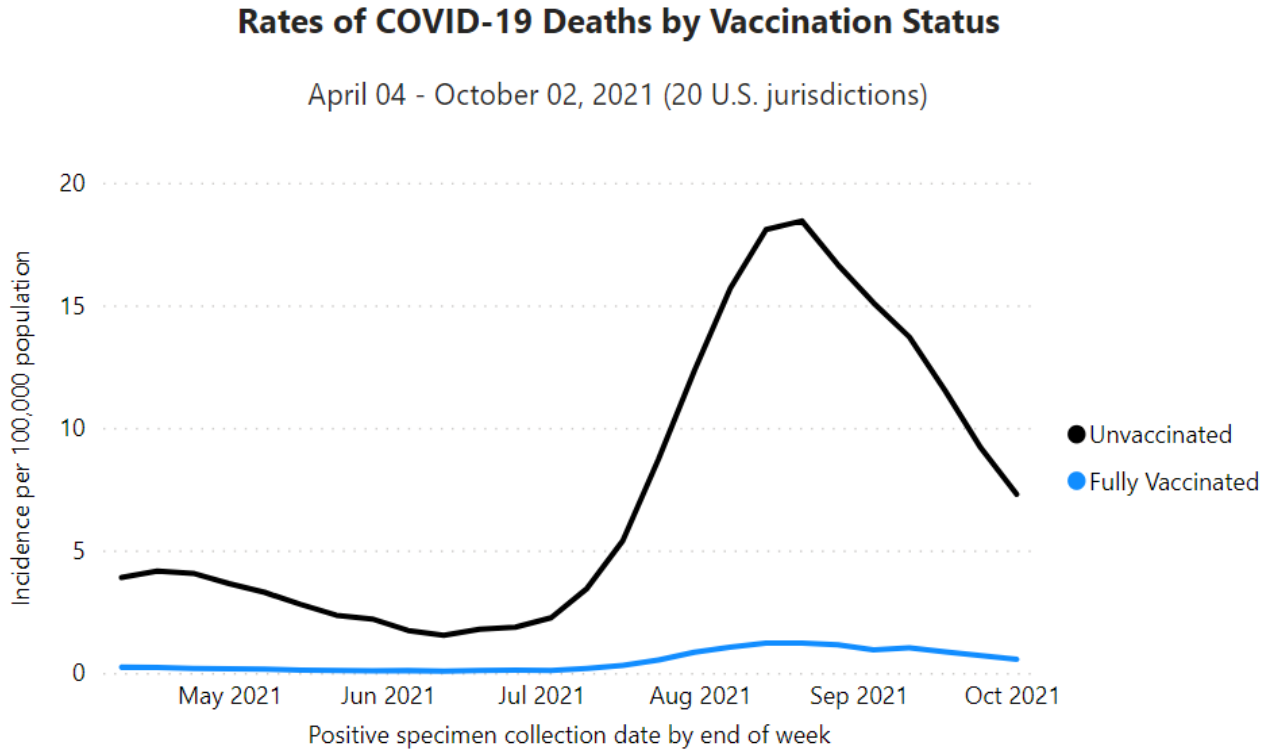
Cumulative COVID-19 Cases by Vaccination Status, Michigan, Jan 15 – Nov 19

Fully Vaccinated People (5,107,217)		
Cases	**Hospitalization**	**Deaths**
Percent of Cases In People Not Fully Vaccinated (630,878 / 734,959) **85.8%**	Percent of Hospitalizations In People Not Fully Vaccinated (15,907 / 18,277) **87.0%**	Percent of Deaths In People Not Fully Vaccinated (7,404 / 8,574) **86.4%**
630,878 Total Cases Not Fully Vaccinated	**15,907** Total Hospitalized Not Fully Vaccinated	**7,404** Total Deaths Not Fully Vaccinated
Total Breakthrough Cases **104,081**	Total Breakthrough Hospitalizations **2,370**	Total Breakthrough Deaths **1,170**
2.038% Percent of Fully Vaccinated People who Developed COVID-19 (104,081 / 5,107,217)	**0.046%** Percent of Fully Vaccinated People Who Were Hospitalized for COVID-19 (2,370 / 5,107,217)	**0.023%** Percent of Fully Vaccinated People Who Died of COVID-19 (1,170 / 5,107,217)
14.2% Percent of Cases Who Were Fully Vaccinated (104,081 / 734,959)	**13.0%** Percent of Hospitalizations Who Were Fully Vaccinated (2,370 / 18,277)	**13.6%** Percent of Deaths Who Were Fully Vaccinated (1,170 / 8,574)
Total Cases: **734,959**	Total Hospitalizations: **18,277**	Total Deaths: **8,574**

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

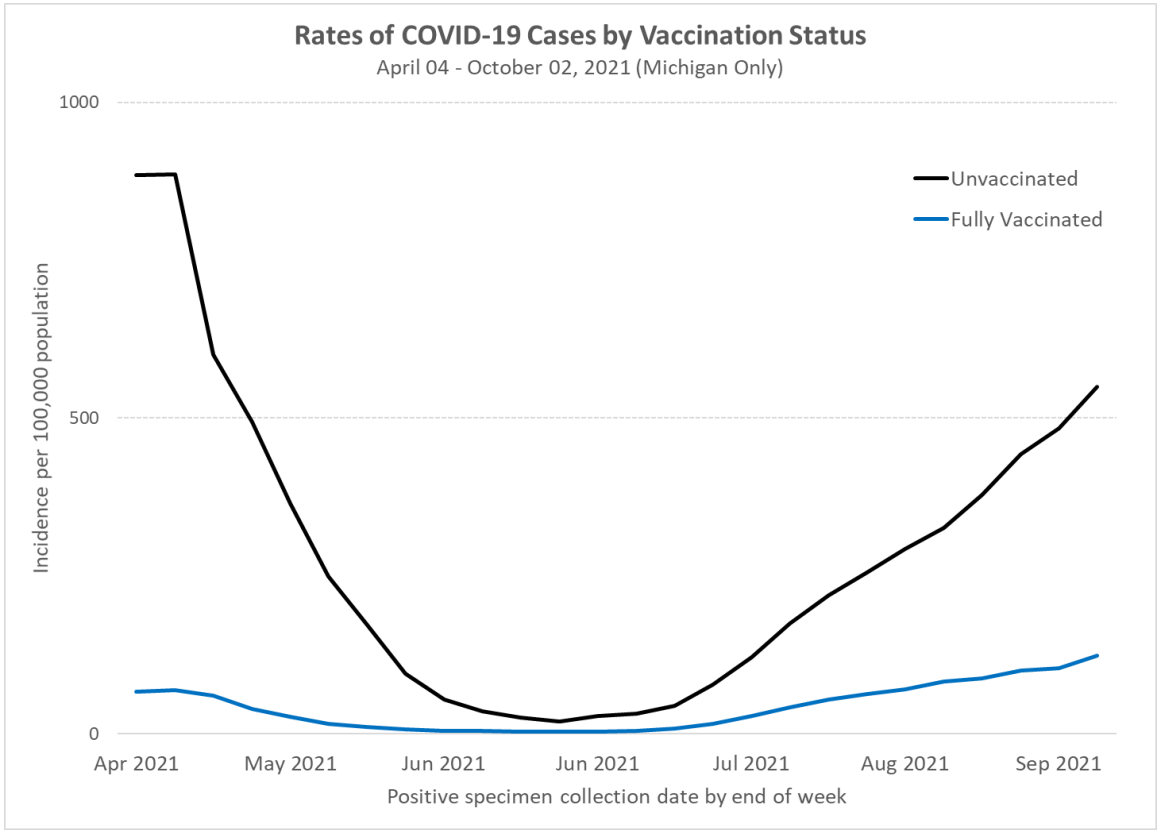
AND

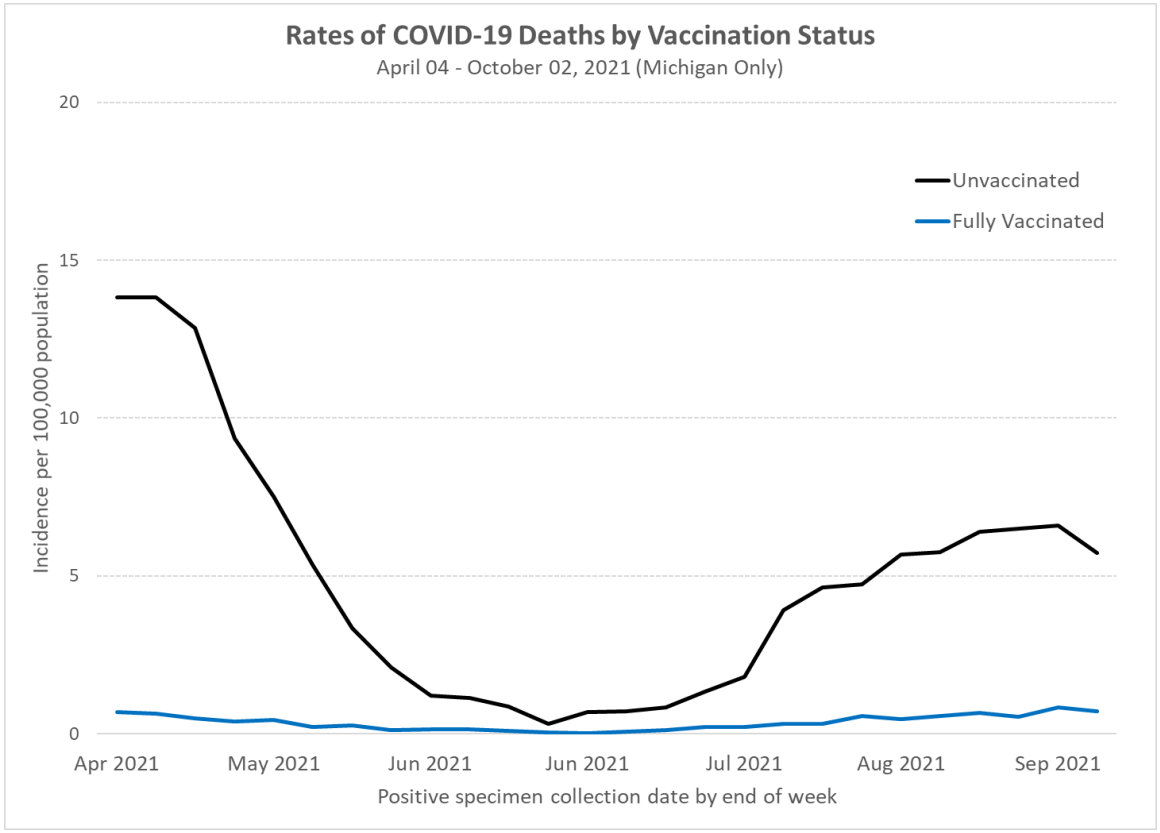
14X
Risk of Dying from COVID-19

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 September, unvaccinated persons had:

4.4 X
Risk of Testing Positive for COVID-19

AND

9.3 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.

Risk of becoming ill or dying much higher in unvaccinated individuals

In September 2021:

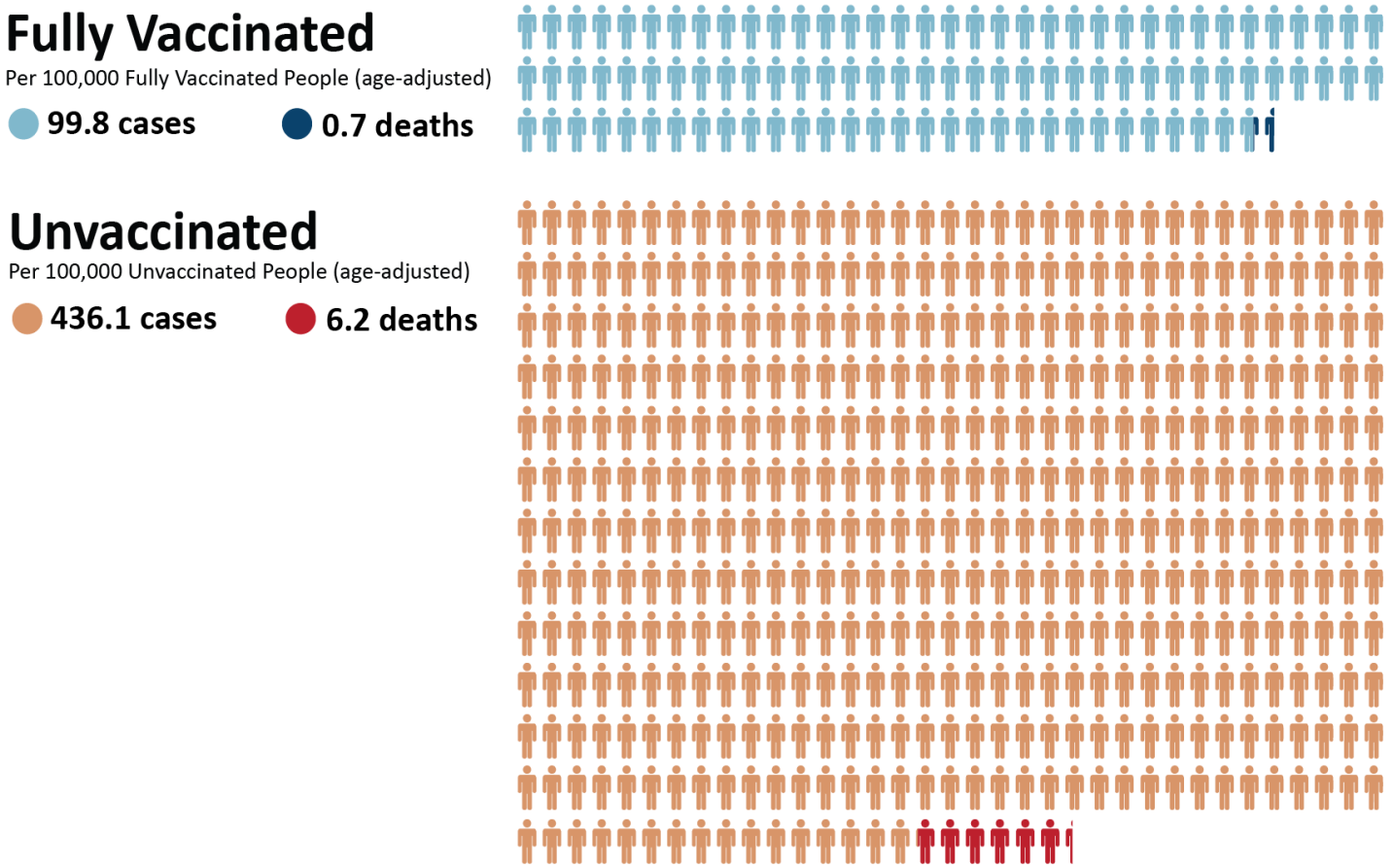
Unvaccinated persons had **4.4 times** the risk of testing positive for COVID-19 compared to fully vaccinated persons

- 436.1 cases per 100,000 unvaccinated persons compared to 99.8 cases per 100,000 fully vaccinated persons

Unvaccinated persons had **9.3 times** the risk of dying from COVID-19 compared to fully vaccinated persons

- 6.2 deaths per 100,000 unvaccinated persons compared to 0.7 deaths per 100,000 fully vaccinated persons

Age-Adjusted Case and Death Rates per 100,000 People by Vaccination Status, September 2021



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

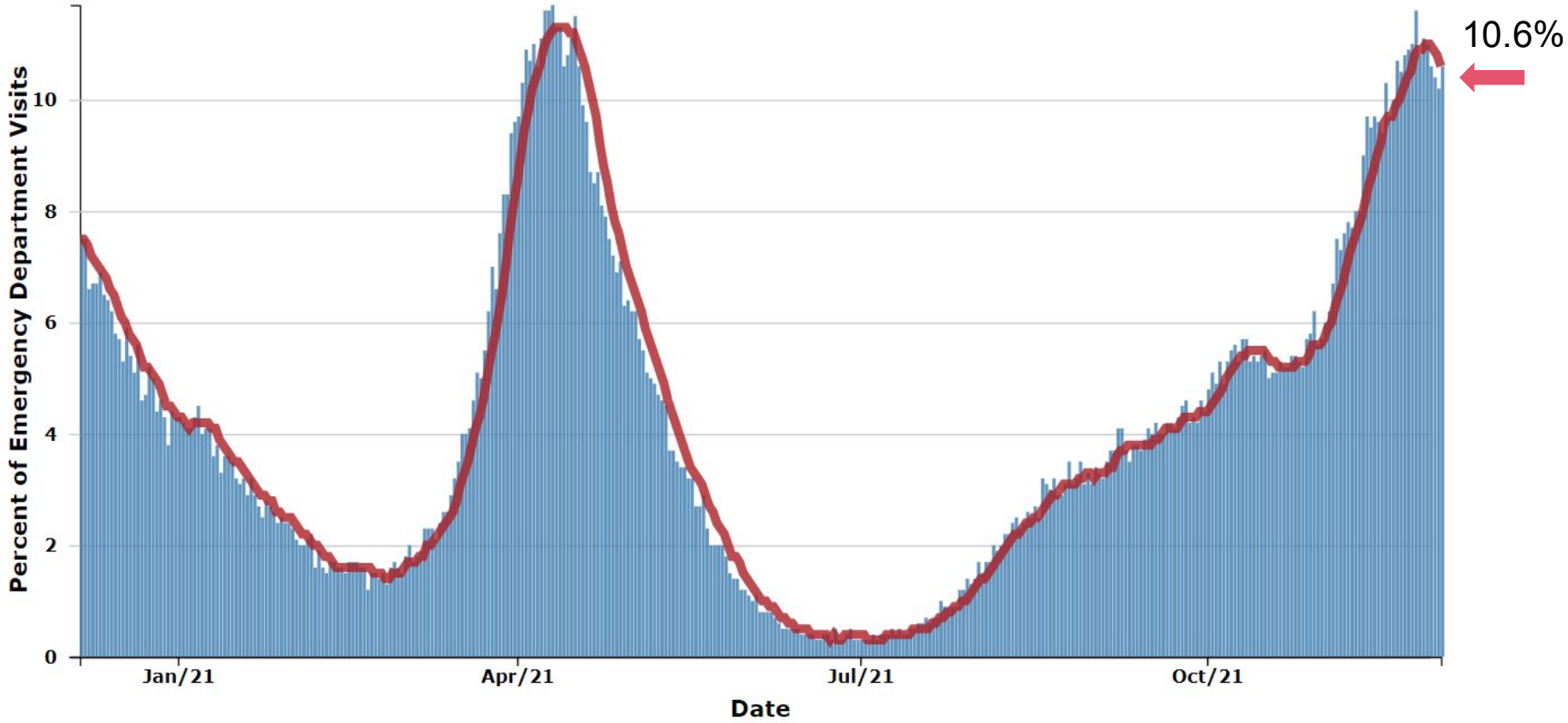
Emergency Department visits, Hospital Admissions, and Hospital Census for COVID are mostly increasing

- 10.6% of ED visits are for COVID diagnosis (up from 10.4 % last week)
- Hospital admissions for most age groups are decreasing over the past 3 days
- Hospital census has increased 7% since last week (vs. 13% increase week prior)
- **The current wave's hospitalizations is highest to date since the beginning of the pandemic**
- Most regions have increasing trends in hospital census this week
  - Four regions (1, 2N, 2S, 3, 6) now have greater than 400/Million population hospitalized; Region 2N more than 500/Million
- Overall, volume of COVID-19 patients in intensive care has increased 10% (vs. 8% increase last week)
  - ICU census now exceeds the spring 2021 peak

Death rate is 8.5 daily deaths/million residents over last 7 days (Last week: 6.8 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 (6.9 deaths/million)
- In the past 30 days, the proportion of deaths among those over 60 is steady

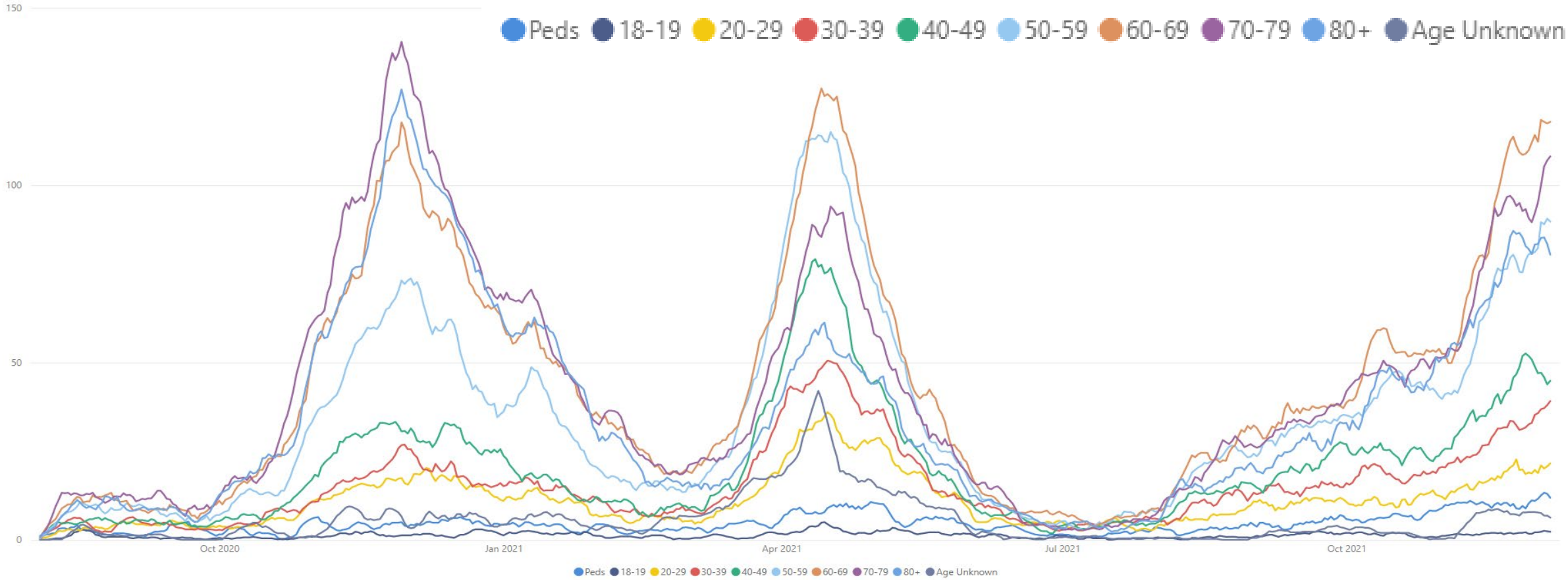
Michigan Trends in Emergency Department (ED) Visits for Diagnosed COVID-19



- Trends for ED visits have increased to 10.6% since last week (up from 10.4% last week, but down from 11% on 11/29), and are near Alpha surge high of 11.3%
- Over past week, those 50-64 years saw highest number of avg. daily ED CLI visits (14.6%), but those between 40+ all above state average

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

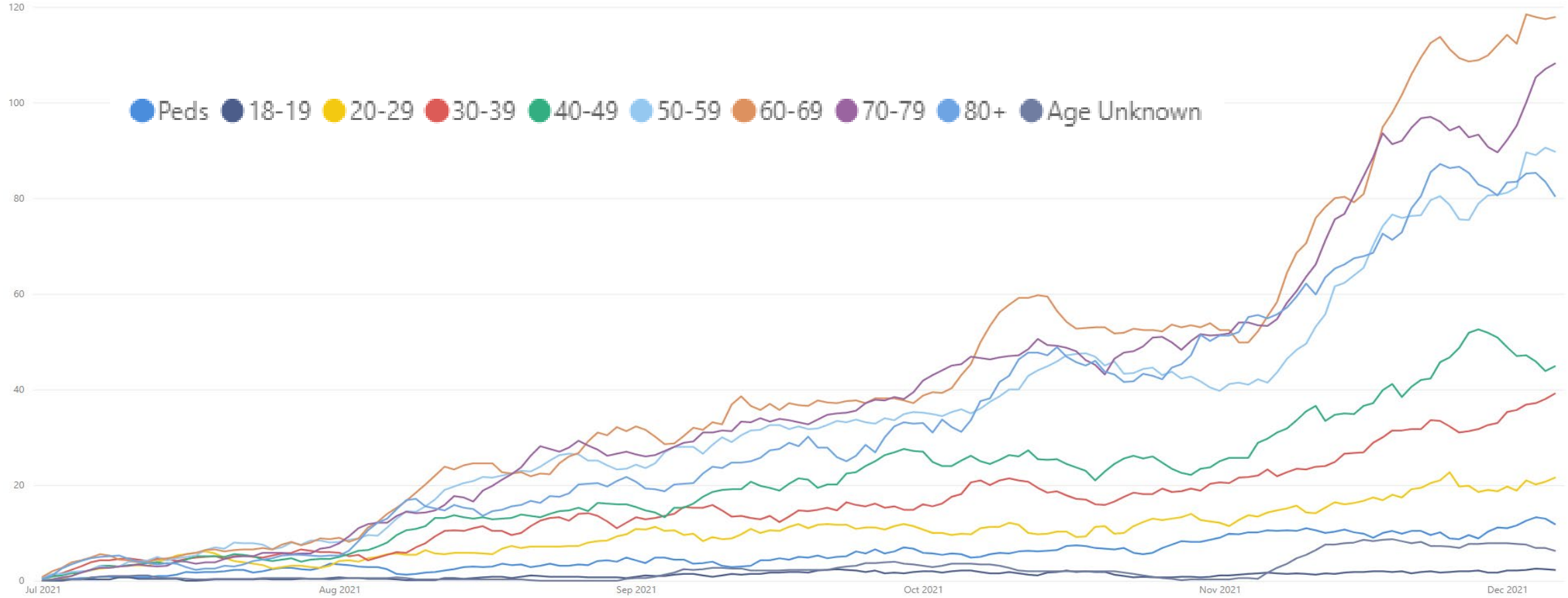
Average Hospital Admissions Are Increasing for all Age Groups



- Trends for daily average hospital admissions have increased 7% since last week (vs. 2% increase prior week)
- Nearly all age groups saw increases this week with largest increases in those between 70 and 79 years (23%, +10)
- More than 80 daily hospital admissions was seen for each of the age groups of 50-59, 60-69, 70-79, and 80+

Source: CHECC & EM Resource

Average Hospital Admissions by Age Groups



- Trends for daily average hospital admissions have increased 7% since last week (vs. 2% increase prior week)
- Nearly all age groups saw increases this week with largest increases in those between 70 and 79 years (23%, +10)
- More than 80 daily hospital admissions was seen for each of the age groups of 50-59, 60-69, 70-79, and 80+

Source: CHECC & EM Resource

Hospital Admissions and Admission Rates by Age Group

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

Age Group	Average† daily number of hospital admissions	Average† Daily Hospital Admission Rate*	One Week % Change (Δ #)
0-11	8.1	5.9	+0% (+0)
12-17	3.1	4.2	-19% (-1)
18-19	2.6	9.7	+50% (+1)
20-29	21.0	15.2	+11% (+2)
30-39	39.0	32.1	+21% (+7)
40-49	44.9	38.0	-13% (-7)
50-59	**88.6**	**65.6**	**+10% (+8)**
60-69	**115.3**	**90.4**	**+5% (+6)**
70-79	**107.1**	**139.7**	**+19% (+17)**
80+	**82.0**	**198.0**	**+0% (+0)**
Total¶	**520.4**	**52.1**	**+7% (+34)**

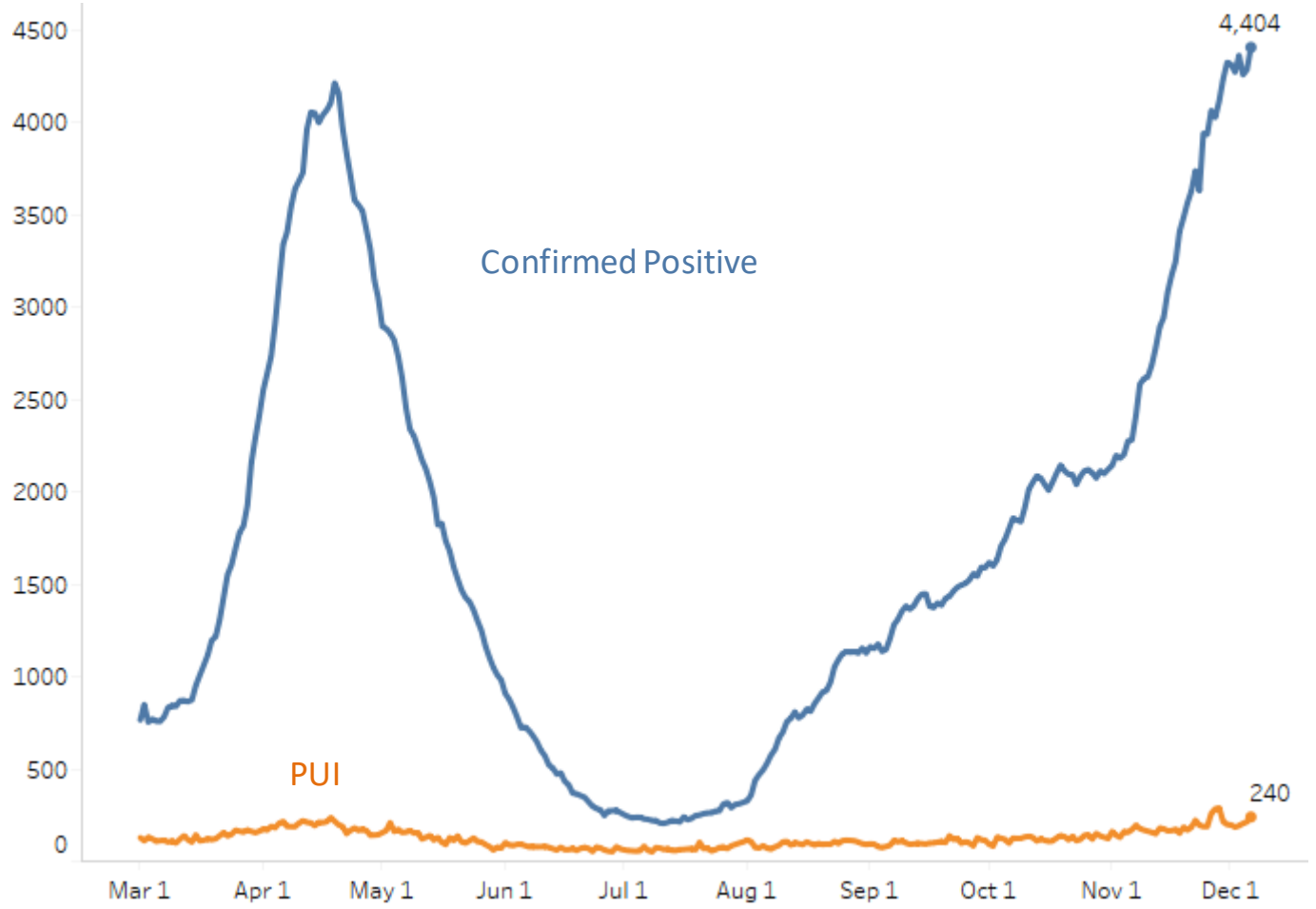
* Rate per 1 million residents; † Rolling 7-day average; ¶ Total may not reflect state due to missing age data
Note: Hospital Admission data reflects date data was submitted
Source: CHECC and EM Resource

- Through Dec 6, there were an average of 520.4 hospital admissions per day due to COVID-19; an increase from last week (+7%, +34 admission)
- Most age groups saw modest increases this week
- The largest one-week increases were among those 70-79 (+17, +19%)
- Average daily hospital admission count (115 hospital admissions per day) are highest among those 60-69
- Average daily hospital admission rate (198.0 hospital admissions/million) are highest for those aged 80+
- More than 80 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: Total COVID+ Census

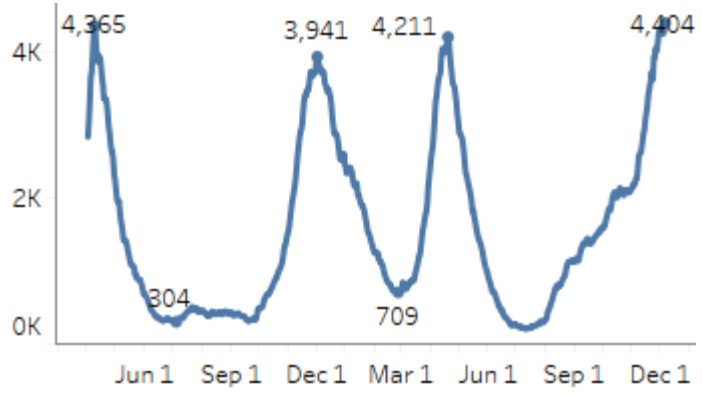
Hospitalization Trends 3/1/2021 – 12/6/2021
Confirmed Positive & Persons Under Investigation (PUI)



The COVID+ census in hospitals has increased by 4% in the past week (previous week was 13% growth).

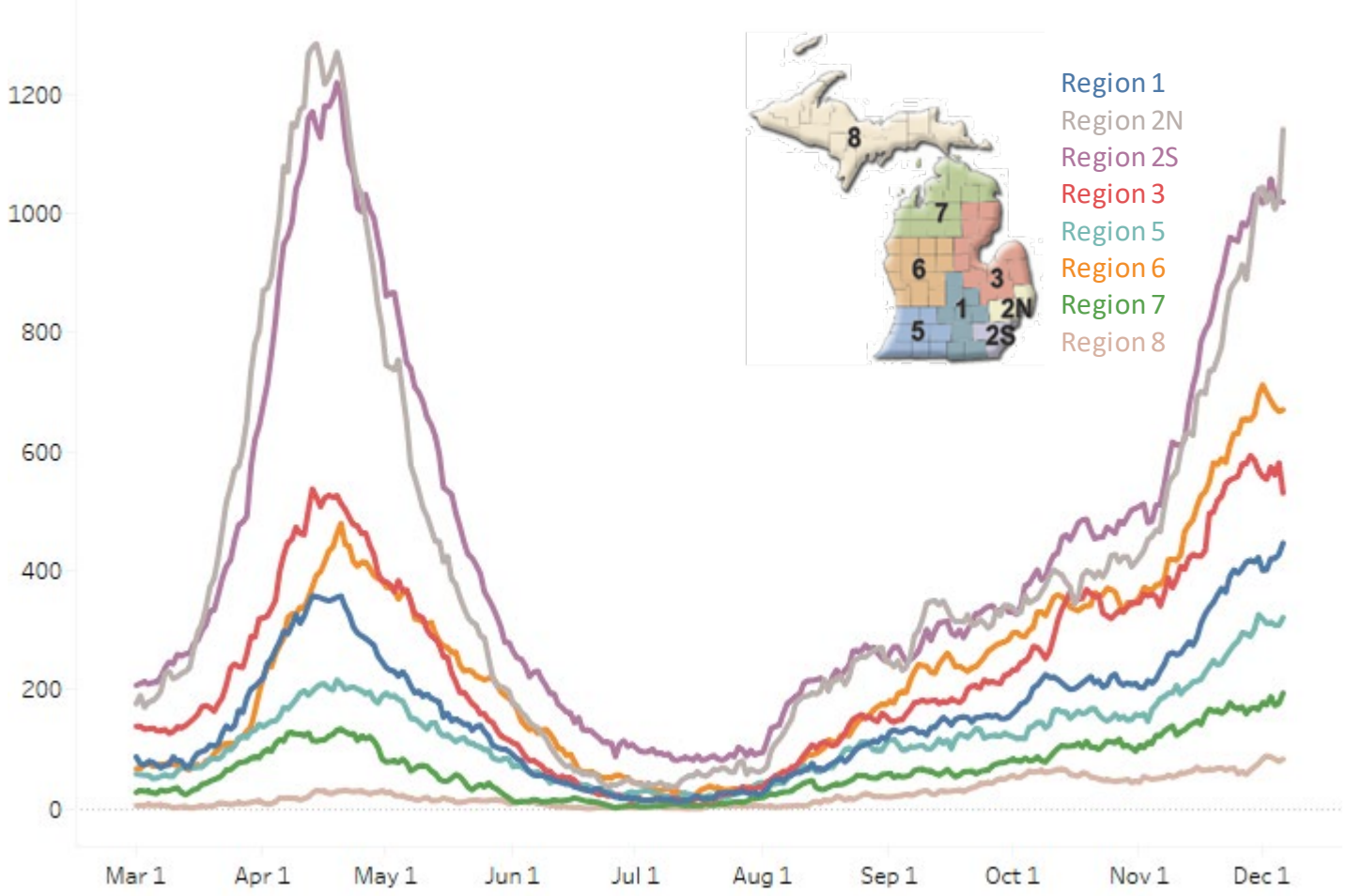
The current wave's hospitalizations are now at the highest point since the beginning of the pandemic.

Hospitalized COVID Positive Long Term Trend (beginning March 2020)



Statewide Hospitalization Trends: Regional COVID+ Census

Hospitalization Trends 3/1/2021 – 12/6/2021
Confirmed Positive by Region



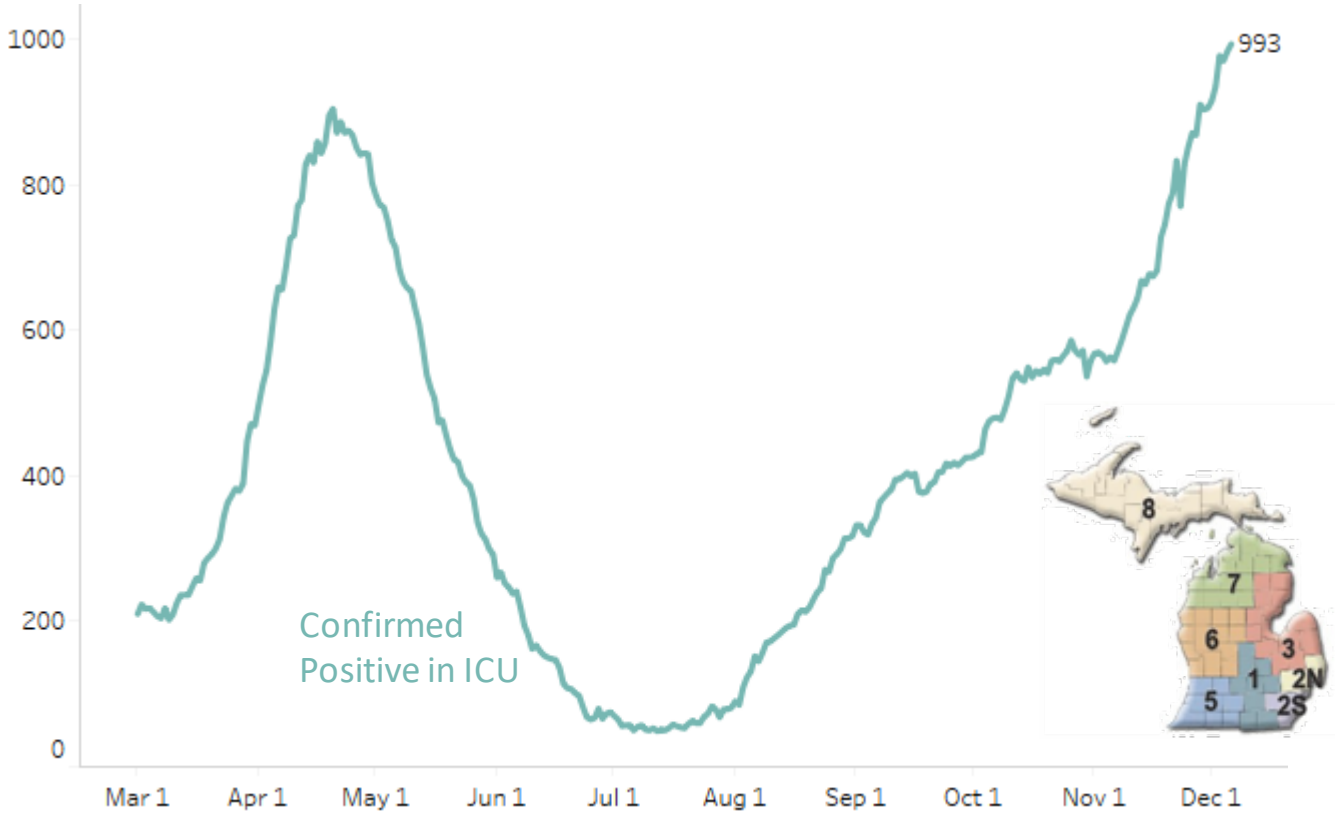
The COVID+ hospital census increased across all regions except Region 2S and 3. The fastest growth was in Regions 2N, 7 and 8.

Regions 1, 2N, 2S, 3 and 6 now have greater than 400/Million population hospitalized and Region 2N is now >500/Million population hospitalized.

Region	COVID+ Hospitalizations (% Δ from last week)	COVID+ Hospitalizations / MM
Region 1	446 (8%)	412/M
Region 2N	1141 (14%)	515/M
Region 2S	1019 (-1%)	457/M
Region 3	530 (-10%)	467/M
Region 5	321 (7%)	337/M
Region 6	670 (1%)	457/M
Region 7	194 (15%)	388/M
Region 8	83 (19%)	267/M

Statewide Hospitalization Trends: ICU COVID+ Census

Hospitalization Trends 3/1/2021 – 12/6/2021
Confirmed Positive in ICUs

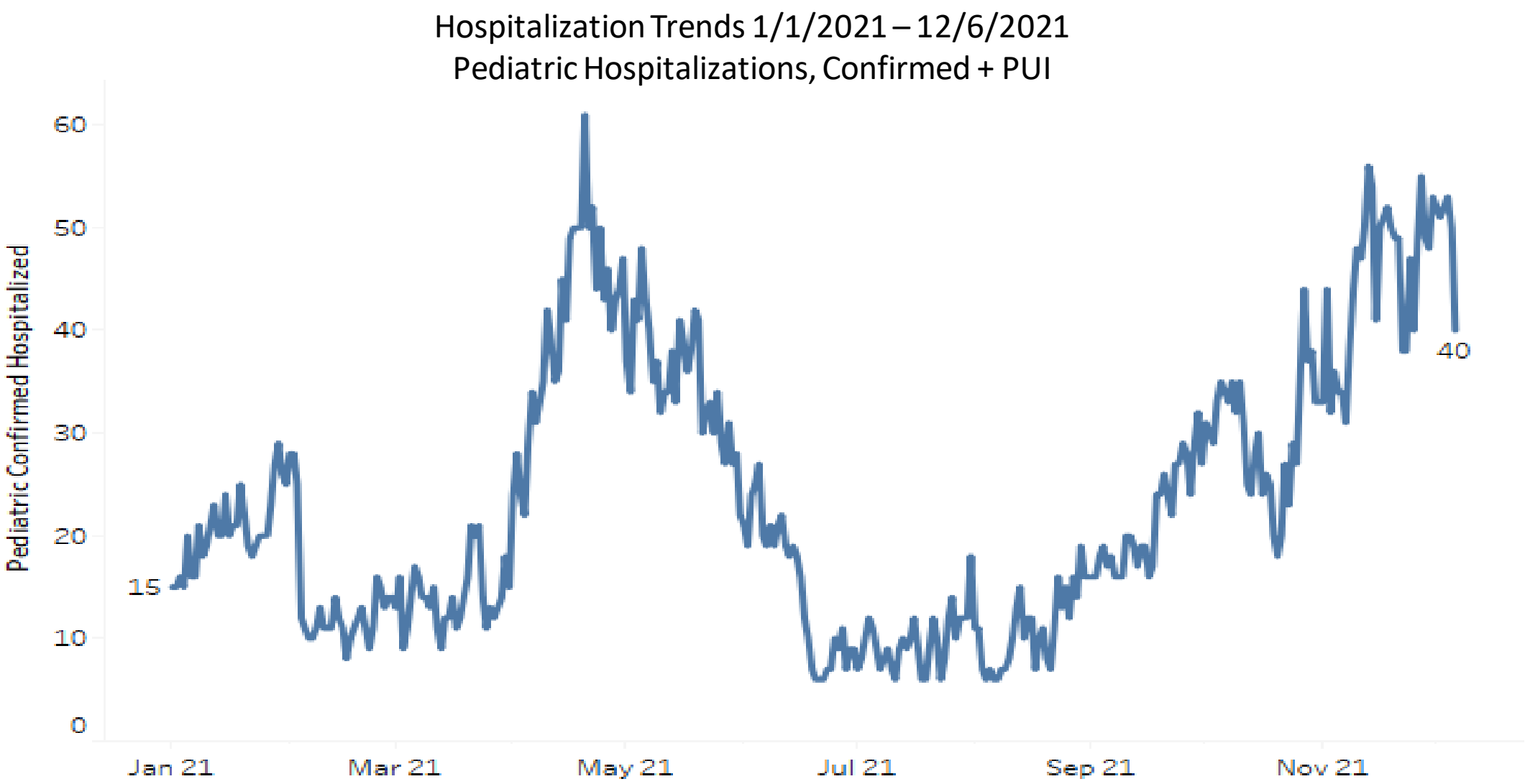


The census of COVID+ patients in ICUs has increased 10% from last week. **ICU census now exceeds the spring 2021 peak.**

All Regions except 2N and 8 have adult ICU occupancy greater than 85% with Regions 1, 3 and 7 above 90% occupancy. Regions 1, 5, 6, 7 and 8 have >40% of adult ICU beds occupied with COVID+ patients while Regions 6 and 7 have >55% of adult ICU beds used for COVID+ patients.

Region	Adult COVID+ in ICU (% Δ from last week)	Adult ICU Occupancy	% of Adult ICU beds COVID+
Region 1	100 (0%)	94%	48%
Region 2N	199 (20%)	82%	34%
Region 2S	220 (10%)	86%	31%
Region 3	126 (-2%)	93%	36%
Region 5	66 (8%)	89%	43%
Region 6	176 (12%)	87%	57%
Region 7	81 (29%)	90%	56%
Region 8	25 (-11%)	79%	40%

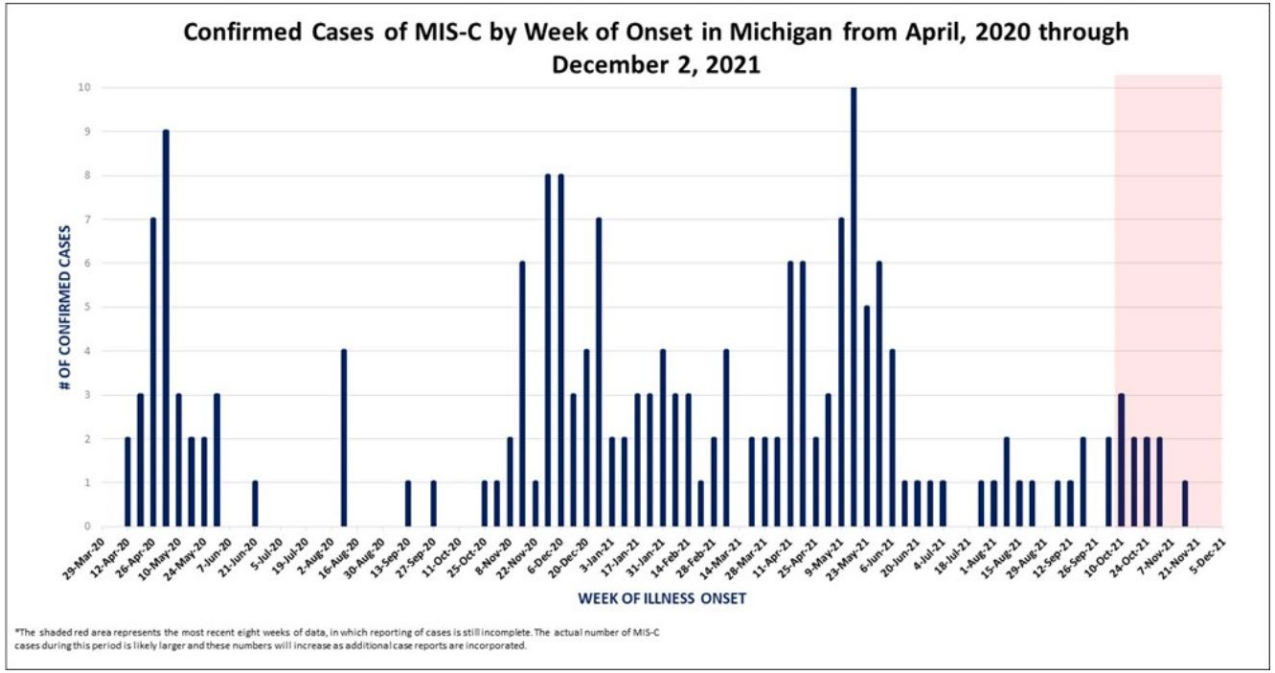
Statewide Hospitalization Trends: Pediatric COVID+ Census



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



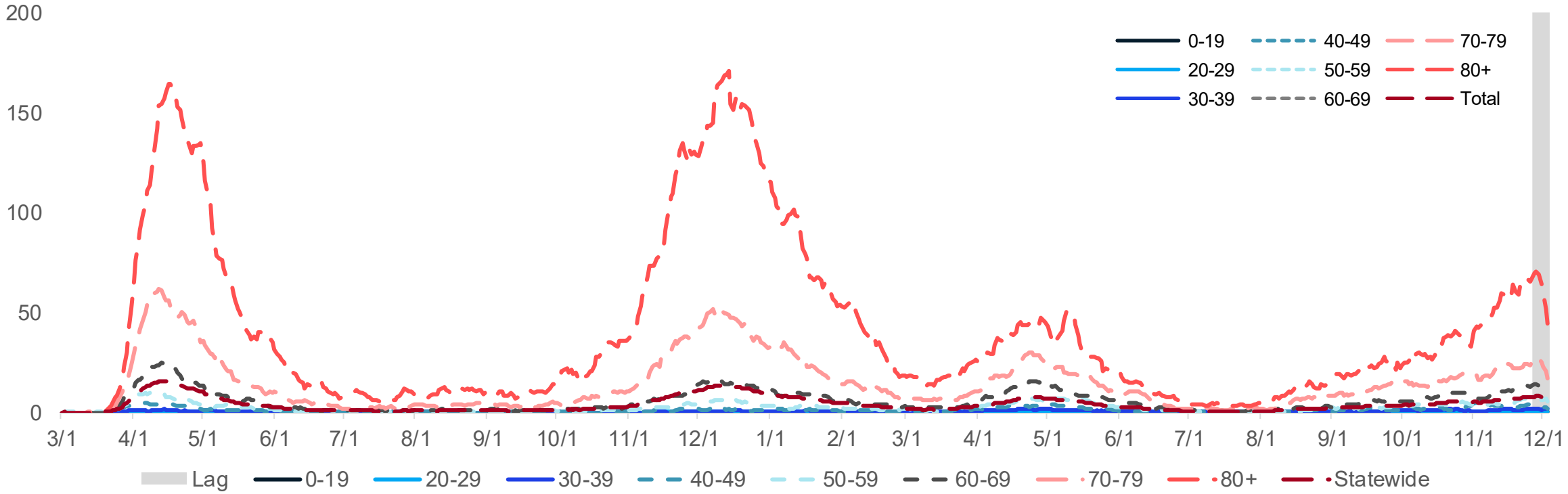
DEMOGRAPHIC INFORMATION (N=187)

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

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)

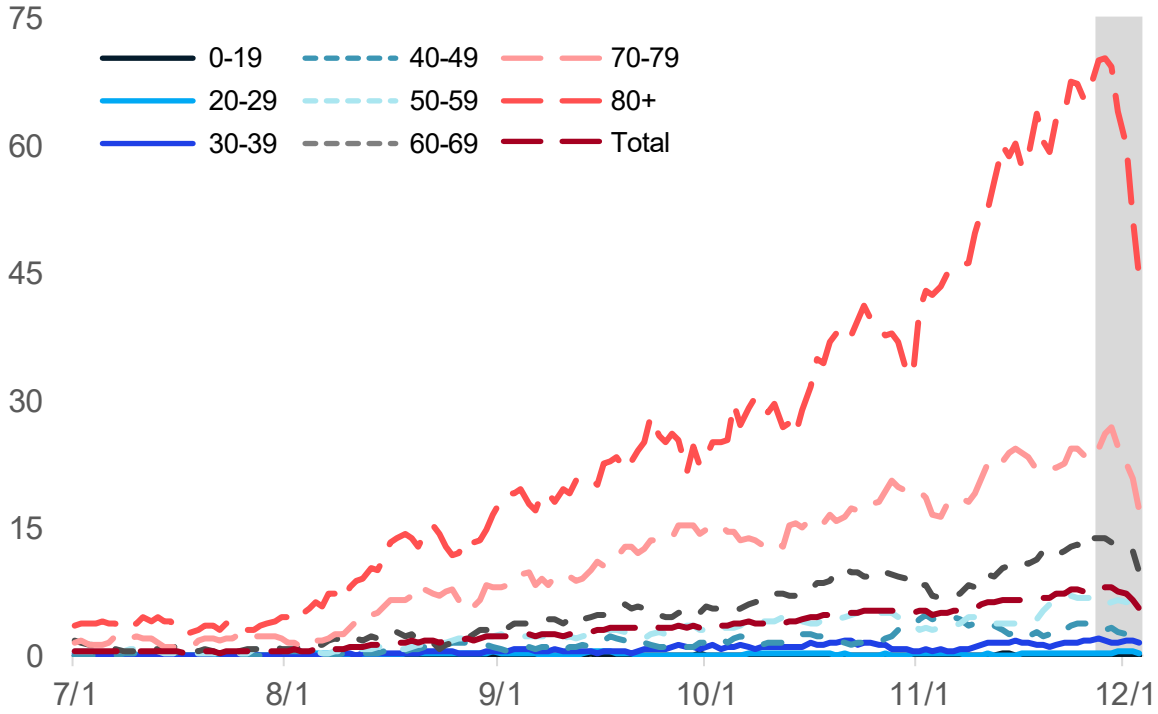


- Through 12/6, the 7-day avg. death rate is more than 70 daily deaths per million people for those over the age of 80
- COVID-19 death rates for those 80+ now are higher than the death rates during the Alpha (B.1.1.7) surge but not as high as the first two surges

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

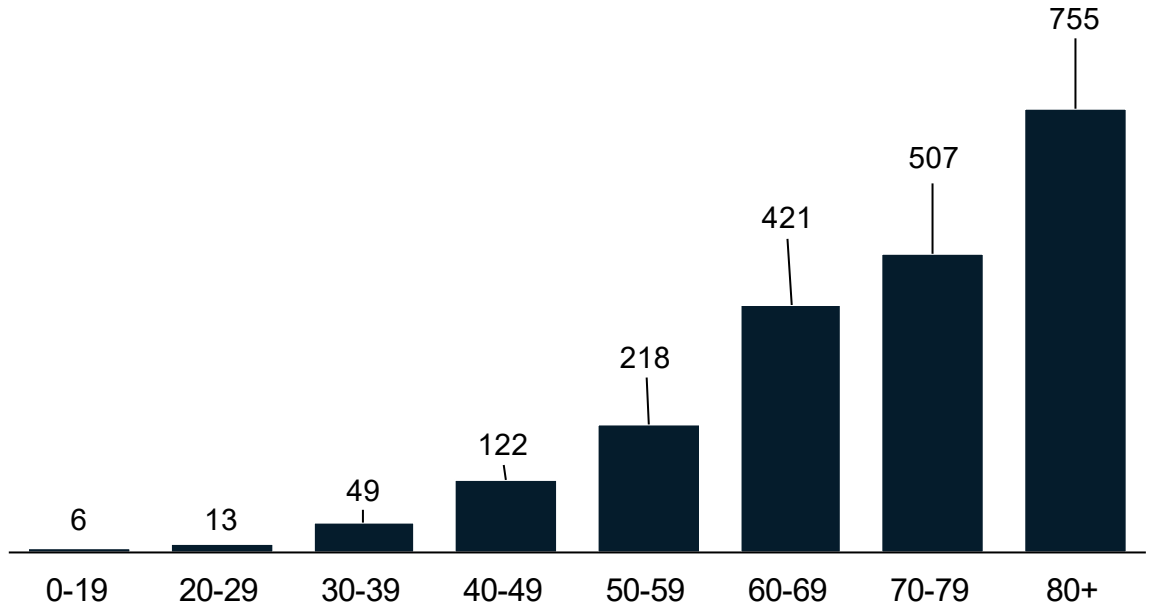
Average and total new deaths, by age group

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 11/29/2021)

- 20% of deaths below age sixty

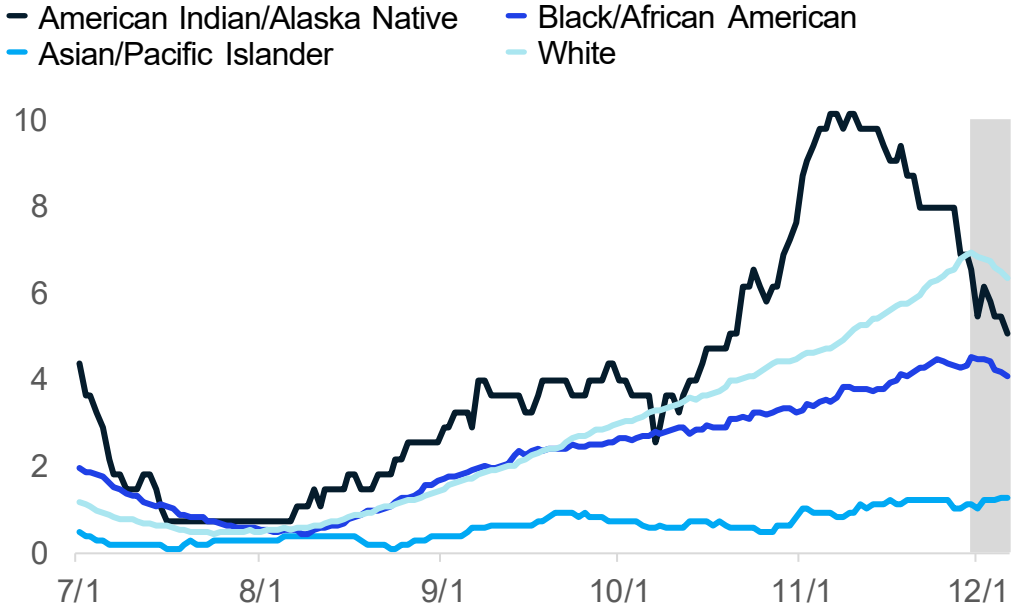


- Through 12/6, the 7-day avg. death rate is more than 70 daily deaths per million people for those over the age of 80
- In the past 30 days, the proportion of deaths among those over 60 is steady

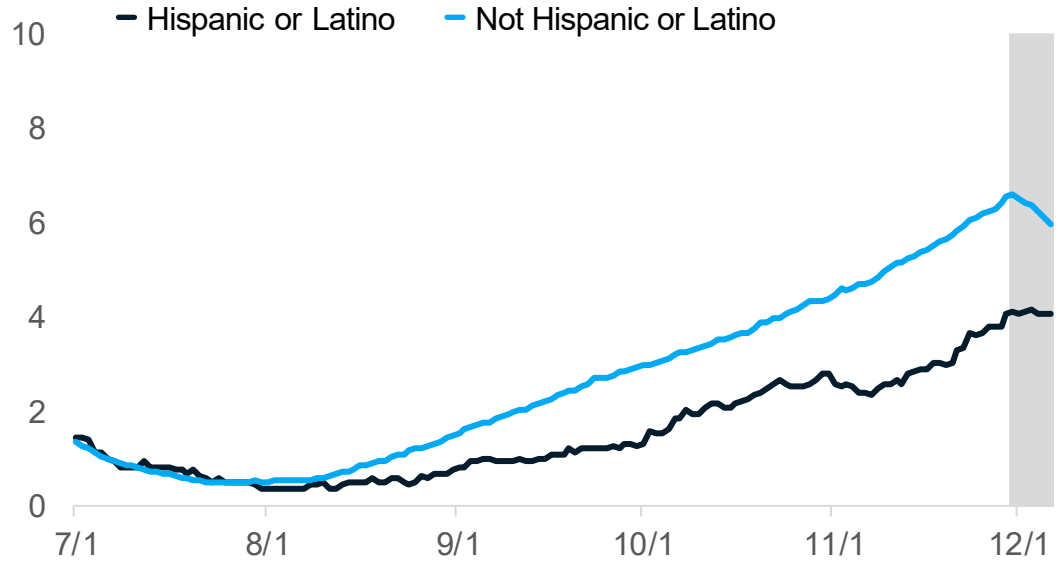
Note: Death information sourced from MDHHS and reflects date of death of confirmed and probable cases.
Source: MDHHS – Michigan Disease Surveillance System (MDSS)

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

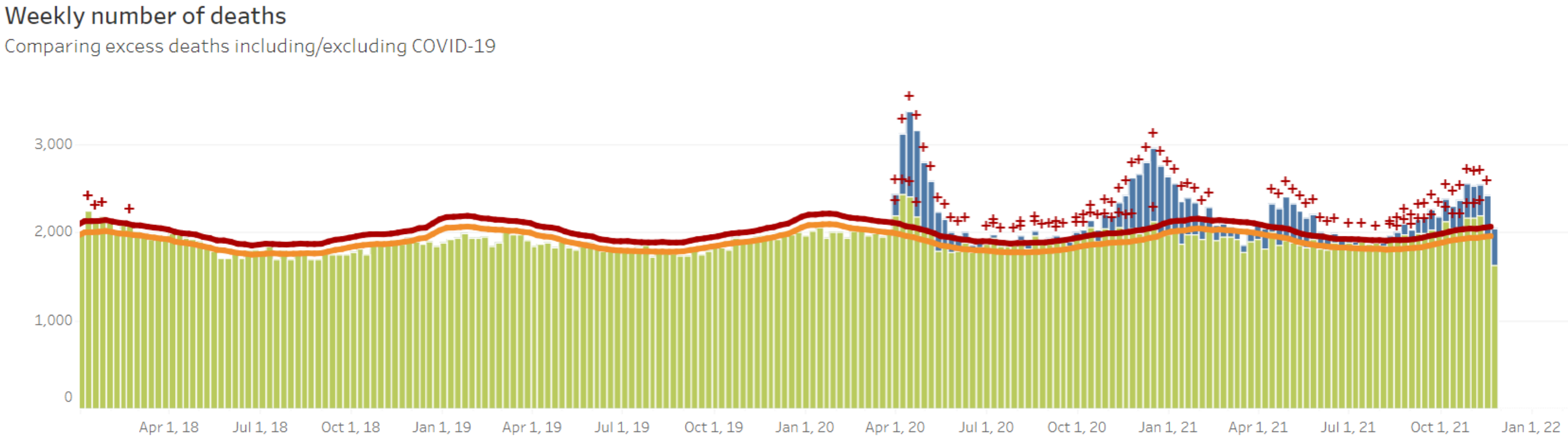


- Deaths are lagging indicator of other metrics
- Overall trends for daily average deaths are increasing for most reported races and ethnicities
- Currently, Whites have the highest death rate (6.9 deaths/million)

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

+ indicates observed count above threshold
Predicted number of deaths from all causes, including COVID-19
Predicted number of deaths from all causes, excluding COVID-19
average expected number of deaths
upper bound threshold for excess deaths



- 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

- 6,735 first doses administered each day (7-day rolling average); administrations declined slightly over Thanksgiving holiday
- Over 5.5 million people (55.3% of the population) in the state are fully vaccinated

COVID-19 Boosters

- Over 1.6 million people have received an additional/booster dose in Michigan
- More than 50% of 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)
- 133,320 administrations in 5- to 11-year-olds as of 12/2

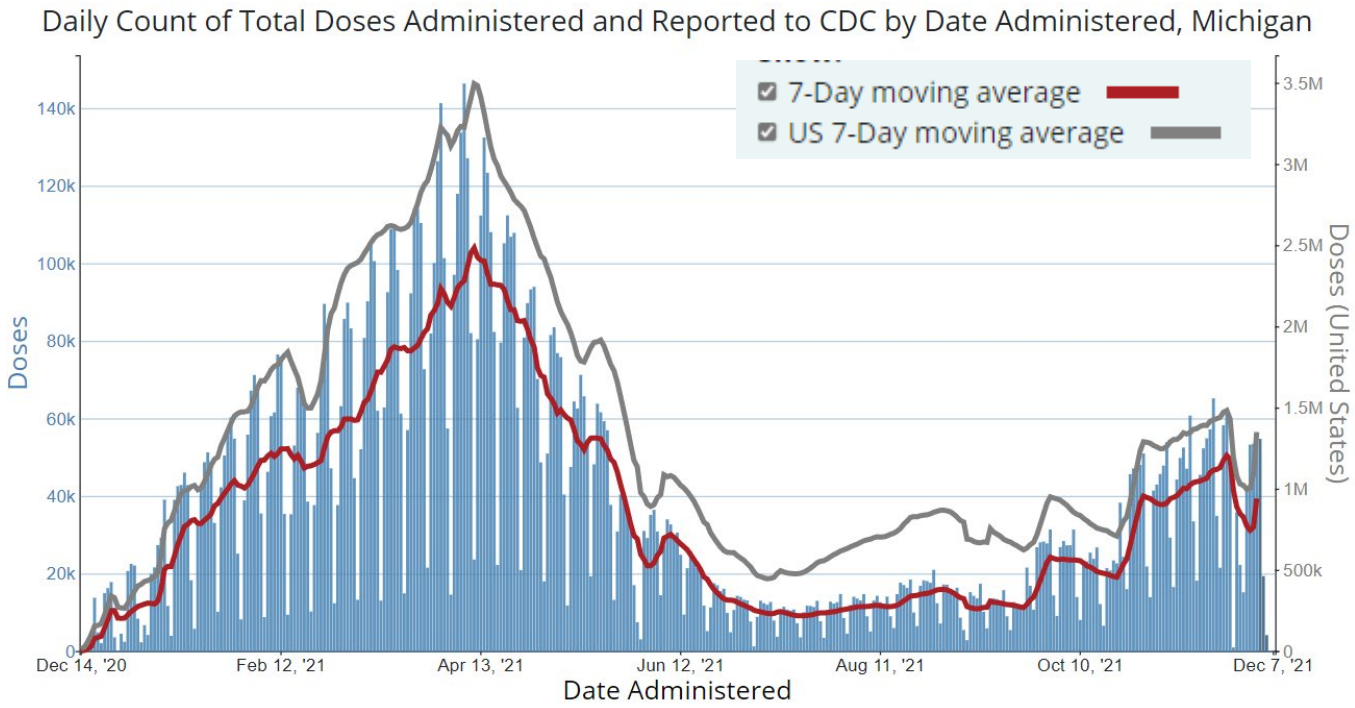
Average daily doses administered increase (data through 12/7/2021)

16,853,470 doses delivered to providers and
13,083,499 doses administered*

MI 7-day rolling average ending December 3
- 42,033 total doses/day on average† (37,231 on 11/26)
- 6,735 first doses/day on average † (8,422 on 11/24)

Total primary series doses in month of November were most frequently administered¶ by:
Pharmacies (251,478)
LHD (39,665), pediatrics (26,491), and hospitals (14,846)
Family practice (12,243) and FQHCs (9,306)

Third Doses
- 1,603,370 third doses administered as of 12/2



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

Over 5.5 Million Michiganders fully vaccinated and 55.3% of total population fully vaccinated

5.5 million people in the state are fully vaccinated*

85.8% of people aged 65 and older have completed the series*

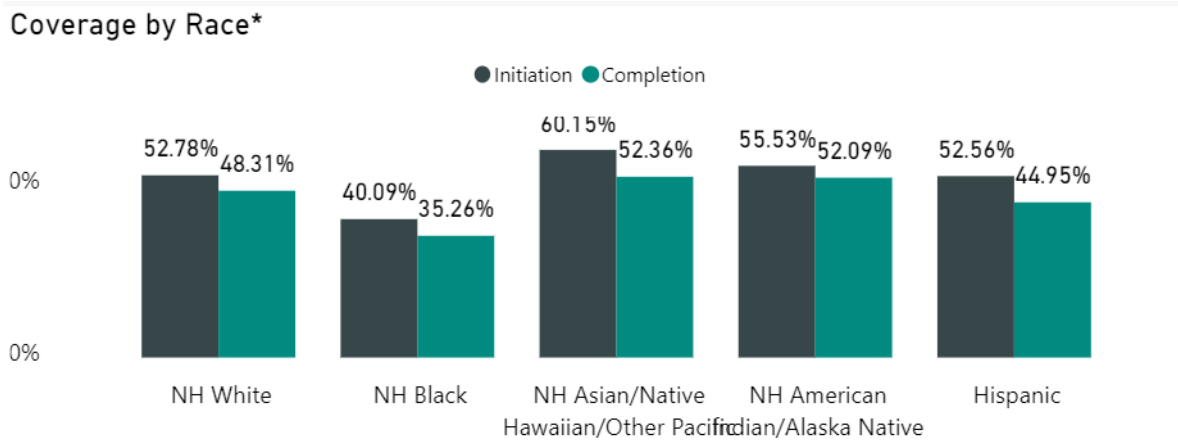
61.8% of total population initiated*

Race/Ethnicity¶ for those 5 years and older:

- Initiation coverage highest among those of Non-Hispanic (NH) Asian, Native Hawaiian or Pacific Islander Race (60.15%), then NH American Indian (55.53%), NH White (52.78%), NH Black or African American Races (40.09%).
- Initiation is at 52.56% for those of Hispanic ethnicity
- Completion follows the same pattern
- 12.11% data missing or unknown

Vaccination Coverage in Michigan as of 12/6/21

Age Group	% At Least One Dose	% Fully Vaccinated	Number Fully Vaccinated
Total Population	61.8%	**55.3%**	5,517,866
≥ 5 years	65.5%	58.6%	5,517,822
≥ 12 years	70.2%	63.7%	5,472,620
≥ 18 years	72.4%	65.7%	5,156,537
≥ 65 years	93.4%	85.8%	1,515,455



*Data suppressed for Race/Ethnicity-by-Age populations smaller than 50 and/or where the number of vaccinated persons is 10 or less.

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

COVID Vaccine Coverage

Dashboard Updated: December 3, 2021. "Completion" is the percentage of Michigan residents receiving 2 doses of Pfizer or Moderna or 1 dose of J&J. "Initiation" is the percentage who have received either 1 or more doses of ANY vaccine. See the "Learn More" page to learn how percentages

Data as of : 12/2/21

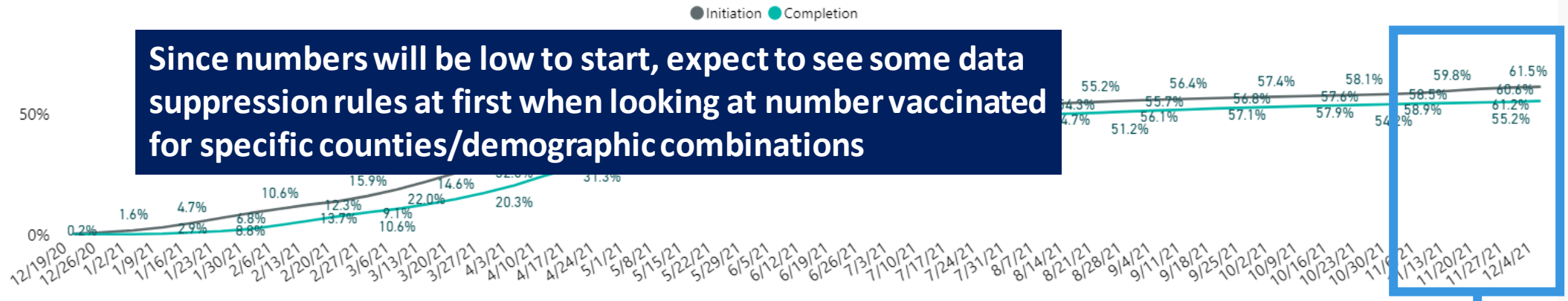
Preparedness Region: All

County: All

Local Health Dept. Jurisdiction: All

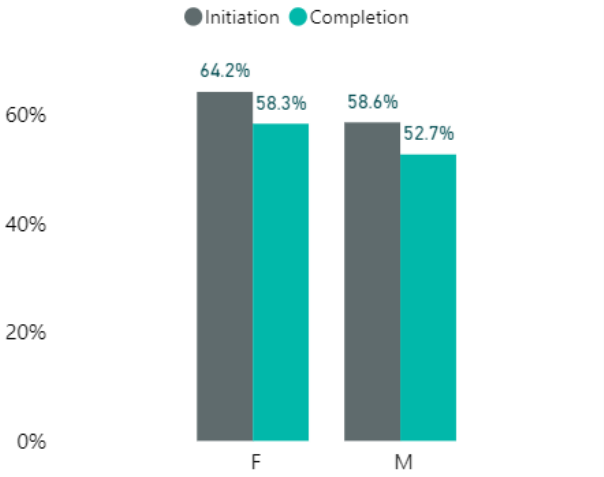
Week Ending Date: 12/19/2020 – 12/4/2021

Cumulative Coverage by Week Ending Date

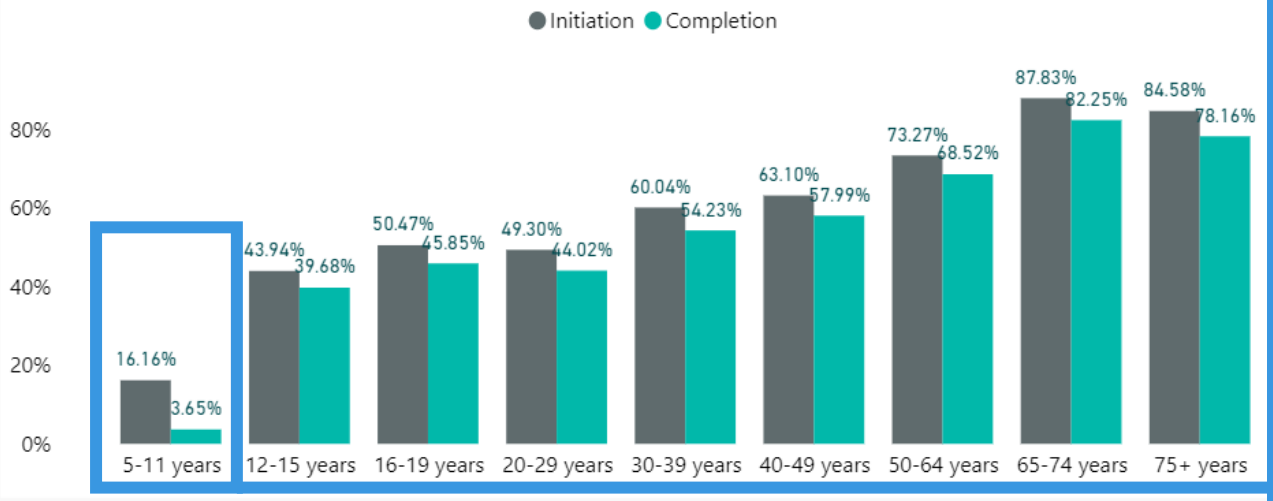


Since numbers will be low to start, expect to see some data suppression rules at first when looking at number vaccinated for specific counties/demographic combinations

COVID Vaccine Coverage by Sex



COVID Vaccine Coverage by Age Group



Data are refreshed Tuesdays and Friday afternoons

133,320 initial dose administrations in 5- to 11-year-olds as of 12/02

30,112 second dose administrations in 5- to 11-year-olds as of 12/02

Booster Administration Update

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

Over 57% of fully vaccinated persons in Michigan aged 65+ have received a booster dose

CDC | Data as of: December 7, 2021 6:00am ET. Posted: Tuesday, December 7, 2021 4:11 PM ET

Download Data

State/Territory/Federal Entity	People with a Booster Dose by State of Residence	Percent of Fully Vaccinated People with a Booster Dose by State of Residence	People 65+ with a Booster Dose by State of Residence	Percent of Fully Vaccinated Population 65+ with a Booster Dose
California	5,982,909	23.6	2,477,994	49.5
Texas	3,301,359	20.6	1,414,873	45.4
Florida	3,127,858	23.5	1,808,197	45.6
New York State	2,466,393	18.3	1,105,641	38.5
Illinois	2,185,966	27.6	1,000,911	56.7
Ohio	1,881,548	29.9	966,824	55.2
Michigan	1,750,240	31.7	865,028	57.1
Virginia	1,510,331	26.8	678,885	56
New Jersey	1,444,651	23.7	637,686	48.4
Washington	1,367,519	27.2	641,855	58.3
Massachusetts	1,315,285	20.4	566,788	52.6
Pennsylvania	1,290,156	17	645,061	31.5
Minnesota	1,280,270	35.8	585,383	67.4
Wisconsin	1,159,456	33	578,299	61.2
Colorado	1,149,164	31.1	463,812	62.3
Maryland	1,140,132	27.5	502,946	57
Georgia	1,038,700	19.7	486,932	40.4
Tennessee	918,121	26.9	477,597	51
Arizona	905,899	22.5	471,942	43.6
North Carolina	878,336	15.2	425,815	29.1

Now over 1.7 million Michiganders with a booster dose

Michigan is the 10th biggest state in population, but ranks 7th in terms of total COVID booster administrations

Over 1 in 3 fully vaccinated Michiganders age 18 and up have received a booster dose

Key Messages: Science Round Up

Omicron: A new variant identified

- 19 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

Omicron – Update December 6, 2021

How easily does Omicron spread?

- The Omicron variant likely will spread more easily than the original SARS-CoV-2 virus but how easily Omicron spreads compared to Delta remains unknown

Will Omicron cause more severe illness?

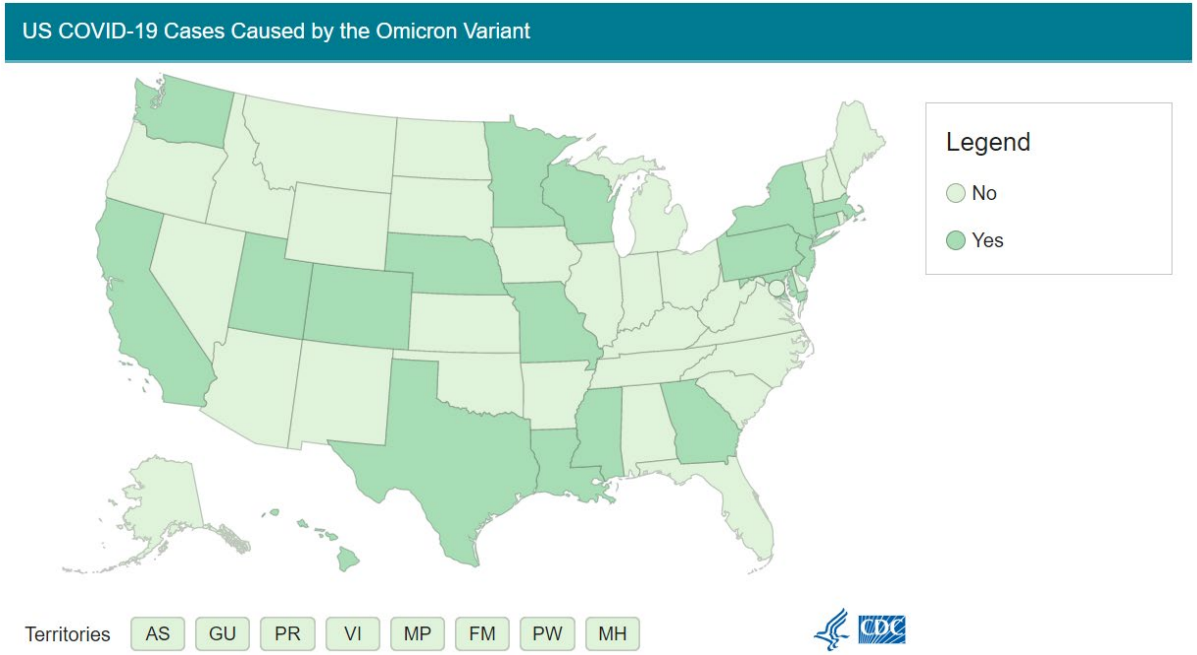
- More data are needed to know if Omicron infections, and especially reinfections and breakthrough infections in people who are fully vaccinated, cause more severe illness or death than infection with other variants

Will vaccines work against Omicron?

- Current vaccines are expected to protect against severe illness, hospitalizations, and deaths due to infection with the Omicron variant.
- Breakthrough infections in people who are fully vaccinated are likely to occur
- With other variants, like Delta, vaccines have remained effective at preventing severe illness, hospitalizations, and death
- The recent emergence of Omicron further emphasizes the importance of vaccination and boosters

Will treatments work against Omicron?

- Scientists are working to determine how well existing treatments for COVID-19 work
- Based on the changed genetic make-up of Omicron, some treatments are likely to remain effective while others may be less effective



– As of Dec 7, 2021, 19 states have reported identification of the Omicron variant

We have the Tools to Fight Omicron

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.

- COVID-19 vaccines are highly effective at preventing severe illness, hospitalizations, and death
- CDC recommends that everyone 5 years and older protect themselves from COVID-19 by getting fully vaccinated
- CDC recommends that everyone ages 18 years and older should get a booster shot

Masks offer protection against all variants

- CDC continues to recommend wearing a mask in public indoor settings in areas of substantial or high community transmission, regardless of vaccination status

Tests can tell you if you are currently infected with COVID-19.

- Two types of tests are used to test for current infection: nucleic acid amplification tests (NAATs) and antigen tests
- NAAT and antigen tests can only tell you if you have a current infection.
- Additional tests would be needed to determine if your infection was caused by Omicron
- Self-tests can be used at home or anywhere, are easy to use, and produce rapid results. If your self-test has a positive result, stay home or isolate for 10 days, wear a mask if you have contact with others, and call your healthcare provider. If you have any questions about your self-test result, call your healthcare provider or public health department.

Until we know more about the risk of Omicron, it is important to use all tools available to protect yourself and others.

What can I need to do to protect my community from Omicron?

- Get vaccinated
  - Get boosted
  - The CDC updated its booster guidance on Monday, now advising that all adults ages 18 and up should get a booster 6 months after their initial mRNA series or 2 months after their Johnson & Johnson shot.

- Wear a mask

- Get Tested

- Stay Home When Sick

- Get prepared mentally to act more cautiously in Omicron proves to be more infectious, immune-evasive, or both.

- Follow the news & science – will be much cleared in 2-4 weeks.

Safer Ways to Celebrate Holidays

Holiday traditions are important for families and children. There are several ways to enjoy holiday traditions and protect your health. Many generations tend to gather to celebrate holidays. Here are some ways to celebrate the holidays more safely:

- The best way to minimize COVID-19 risk and keep your family and friends safer is to **get vaccinated** if you're eligible.
  - Get a booster shot
- If you are sick or have symptoms, don't host or attend a gathering.
- Regardless of vaccination status, all those aged 2 or older, you should **wear a mask in indoor public places** in areas of substantial or high SARS-CoV-2 transmission and in crowded, poorly ventilated outdoor areas.
- **Before a multihousehold gathering, consider taking a rapid antigen test**, regardless of whether you've been in contact with someone with COVID-19; if you test positive, stay home until you consult your provider and rule out any possibility of infecting others.
- Consider a setting where people can spread out and where there can be good ventilation.
- If you are traveling for a holiday event, follow domestic and international travel guidelines and public health recommendations.
- Practice healthy hygiene – e.g., proper respiratory etiquette, wash your hands frequently, and avoid touching your face.
- People who have a condition or are taking medications that weaken their immune system may not be fully protected even if they are fully vaccinated. They should continue to take all precautions recommended for unvaccinated people, including wearing a well-fitted mask, until advised otherwise by their healthcare provider.
- Visit the CDC COVID-19 Safer Ways to Celebrate Holidays and Travel Guidelines for more information on how to keep yourself and your loved ones safe this holiday season.

Source: CDC Holiday Celebrations