MI COVID RESPONSE DATA AND MODELING UPDATE

October 12, 2021

Executive Summary

Special Population Focus: Children

Cases and hospitalizations are increasing compared to last week

There were 393 outbreaks and clusters in K-12 schools

7% of school districts (36) have rescinded their school mask policies

Michigan remains at <u>High Transmission</u>

Percent positivity (11.2%) increased for two weeks (10.3% last week)

Case rate (304.4 cases/million) is increasing for three and half months (258.9 cases/million prior week)

In the last 7 days, only 3 states reported more cases than Michigan (this week rank 55th lowest; 52nd last week), and Michigan case rate is 46th lowest (T37th last week)

100% of positive tests available for sequencing in Michigan were **Delta variant** in the last 4 weeks

Percent of inpatient beds occupied by individuals with COVID (9.3%) is increasing for 12 weeks (up from 8.0% last week)

Michigan has 30th lowest inpatient bed utilization (20th last week) and 28th lowest adult ICU bed utilization (13th last week)

Death rate (3.0 deaths/million) is increasing for one week (2.8 last week). There were 210 COVID deaths between Sep 28-Oct 4

Michigan has the 36th lowest number of deaths (30th last week), and T16th lowest death rate (T10th last week) in the last 7 days

7-day average **state testing rate** increased to 4,095.1 tests/million/day. **Daily diagnostic tests (PCR)** is 41.5K per day, and the weekly average for PCR and antigen tests conducted in Michigan is 52.2K.

Nearly 11.0 million **COVID-19 vaccine** doses administered, 52.7% of population is fully vaccinated (5.26 million people)

COVID-19 and Pediatric Populations

Cases and hospitalizations

Overview of metrics for individuals < 18

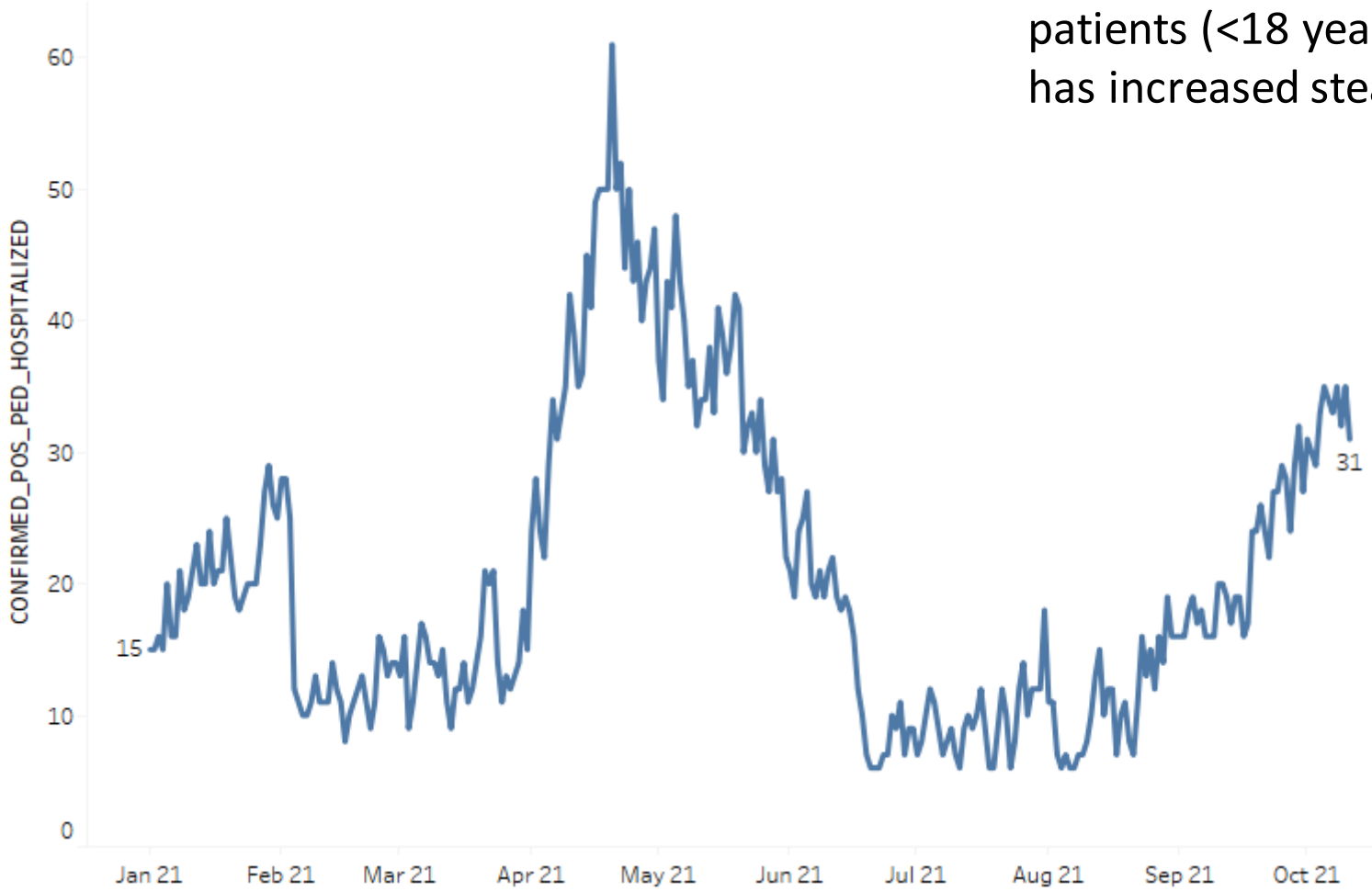
Region	Population (<12 yrs)	Population (<18 yrs)	Cumulative Case Count (<12 yrs)	7-day Average Daily Case Count (<12 yrs)	7-day Average Daily Case Rate per Million (<12 yrs)	7-day Average Daily Pediatric Hospitalization Count (<18 yrs) *	7-day Average Daily Pediatric Hospitalization Rate per Million (<18 yrs)*	7-day Average Daily Death Count (<12 yrs)	30-day Average Daily Death Count (<12 yrs)
Detroit	735529	1134247	38354	190.9	259.5	17.9	15.8	0	0.00
Grand Rapids	230120	350652	13911	89.1	387.2	7.9	22.5	0	0.00
Kalamazoo	140422	214801	7318	30.9	220.1	1.9	8.8	0	< 5
Saginaw	78759	122834	4629	35.1	445.7	1.1	9.0	0	0.00
Lansing	78140	119915	4453	29.1	372.4	3.9	32.5	0	0.00
Traverse City	53099	83462	2293	17.4	327.7	1.4	16.8	0	0.00
Jackson	41274	64091	2198	11.6	281.0	0.0	0.0	0	0.00
Upper Peninsula	34645	53875	2365	21.0	606.1	0.0	0.0	0	0.00
Michigan	1391988	2143877	75608	425.4	305.6	34.0	15.9	0	< 5

- Each day more than 425 children under age 12 become infected with COVID-19, 50 more children per day than last week
- Pediatric case rates are steady at 305.6 cases/million (last week: 269.4 cases/million)
- Pediatric (<18) hospital census* is averaging approximately 34 per day (last week: 30 per day)

Note: Data as of 10/4; case data 9/27, hospitalization data 10/4. Hospitalization data is for pediatric patients (<18); * includes only confirmed COVID-19

Statewide Hospitalization Trends: Pediatric COVID+ Census

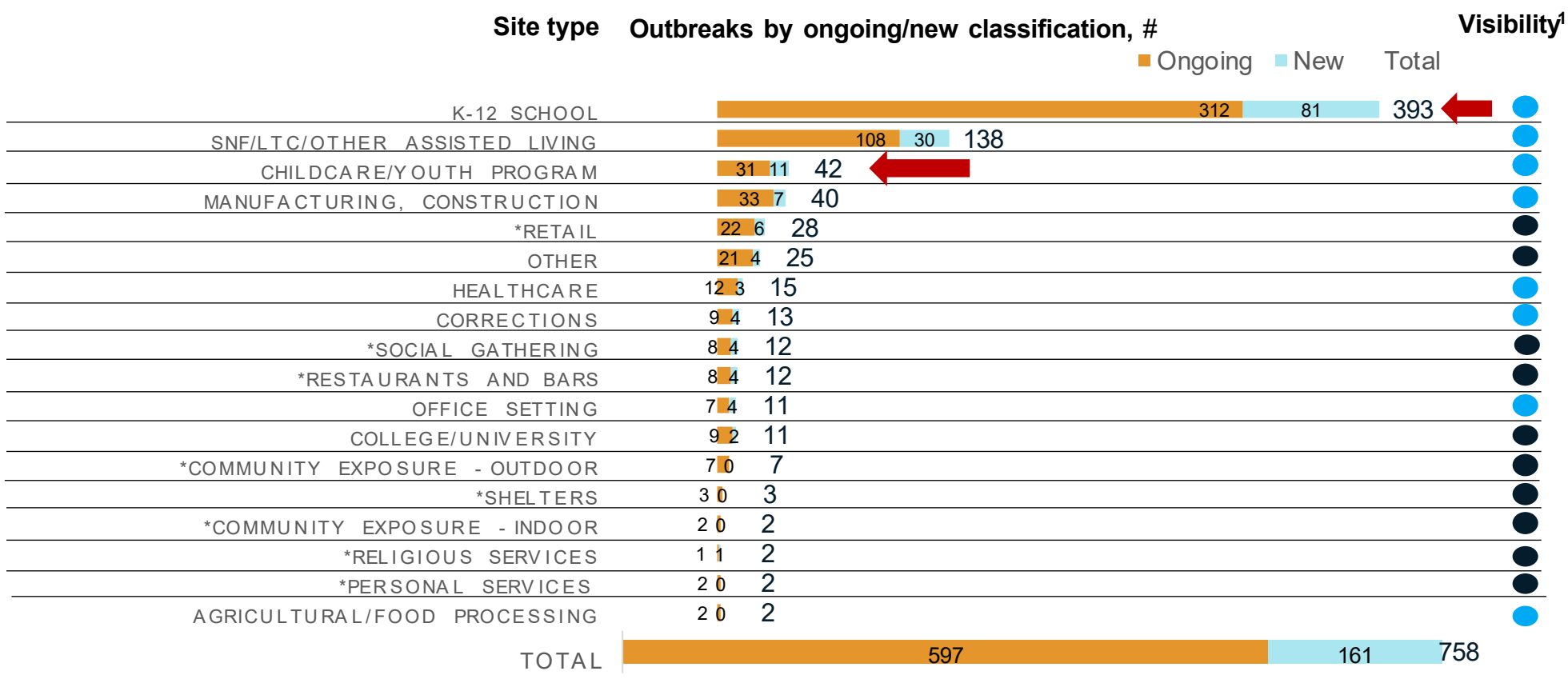
The census of COVID+ Pediatric patients (<18 years old) in hospitals has increased steadily since August



What do we know about COVID-19 impact on Michigan children and schools

Number of Weekly Reported Outbreaks

Number of outbreak investigations by site type, week ending Oct 7



1. Based on a setting's level of control and the extent of time patrons/residents spend in the particular setting, different settings have differing levels of ability to ascertain whether a case derived from that setting

NOTE: 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

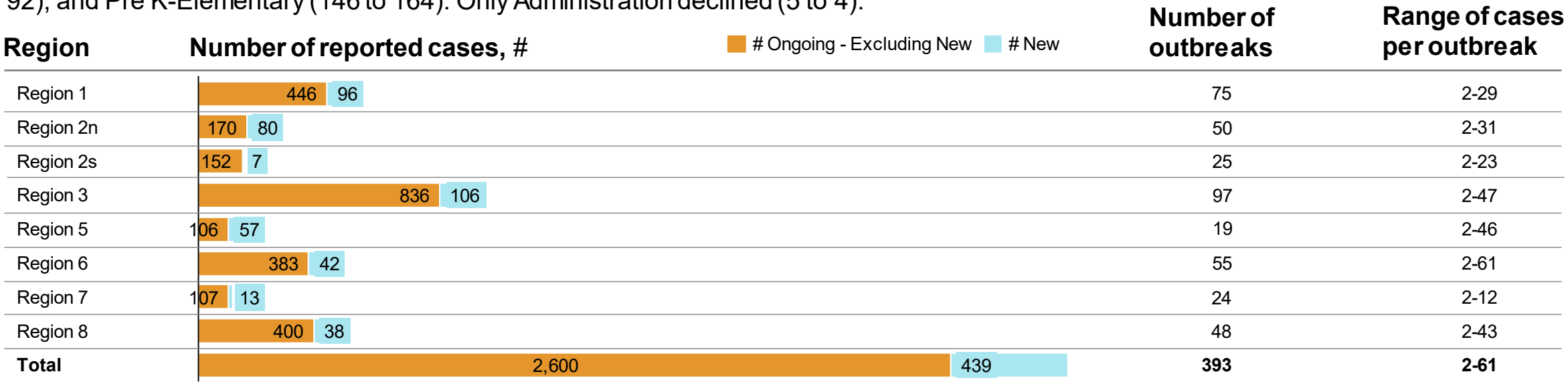
Total number of active outbreaks is **up 6%** from previous week, with 161 new outbreaks identified

K-12 schools reported the greatest number of new outbreaks and clusters (81) this week, and there were an additional 11 new outbreaks in childcare and youth programs for a total of 92 outbreaks in settings primarily with 0-19-year-olds. (57% of all known new outbreaks)

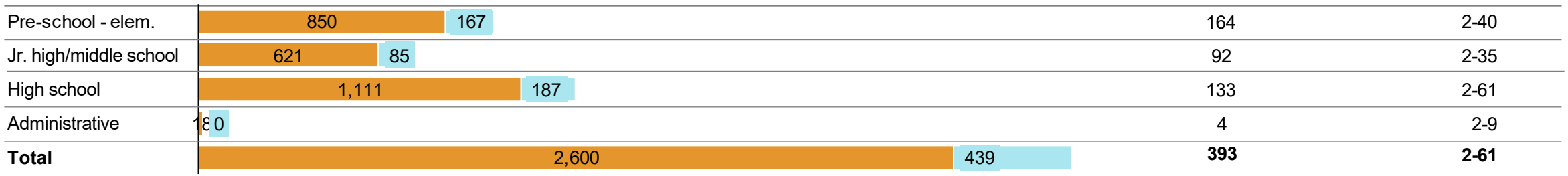
The next greatest number of new outbreaks was among SNF/LTC (30), followed by manufacturing/construction (7), retail (6), and eight other settings with at least 1 new outbreak in the last week.

K-12 school clusters and outbreaks, recent and ongoing, week ending Oct 7

Number of reported outbreaks increased since last week (364 to 393), including increases in High Schools (123 to 133), Middle/Jr High (89 to 92), and Pre K-Elementary (146 to 164). Only Administration declined (5 to 4).



Region	Number of reported cases, #	Number of outbreaks	Range of cases per outbreak
Region 1	446 / 96	75	2-29
Region 2n	170 / 80	50	2-31
Region 2s	152 / 7	25	2-23
Region 3	836 / 106	97	2-47
Region 5	106 / 57	19	2-46
Region 6	383 / 42	55	2-61
Region 7	107 / 13	24	2-12
Region 8	400 / 38	48	2-43
Total	2,600 / 439	**393**	**2-61**



Grade level	Number of reported cases, #	Number of outbreaks	Range of cases per outbreak
Pre-school - elem.	850 / 167	164	2-40
Jr. high/middle school	621 / 85	92	2-35
High school	1,111 / 187	133	2-61
Administrative	18 / 0	4	2-9
Total	2,600 / 439	**393**	**2-61**

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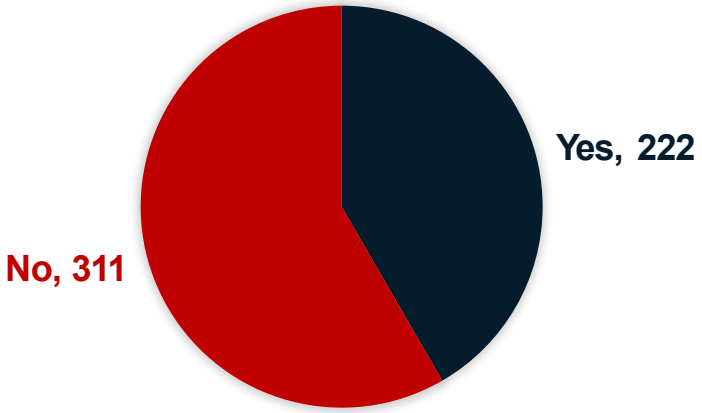
Source: LHD Weekly Sitreps

MI School Districts and Mask Policy as of Oct 11, 2021

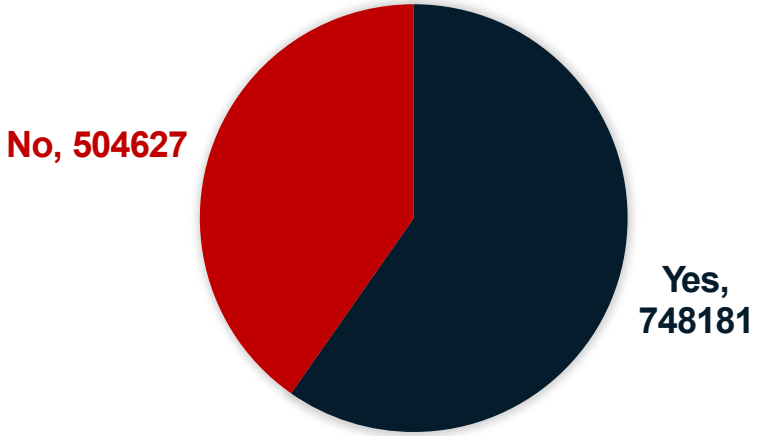
Yes – Any masking policy in some subset of school grades

No – No mask policies (includes unknown)

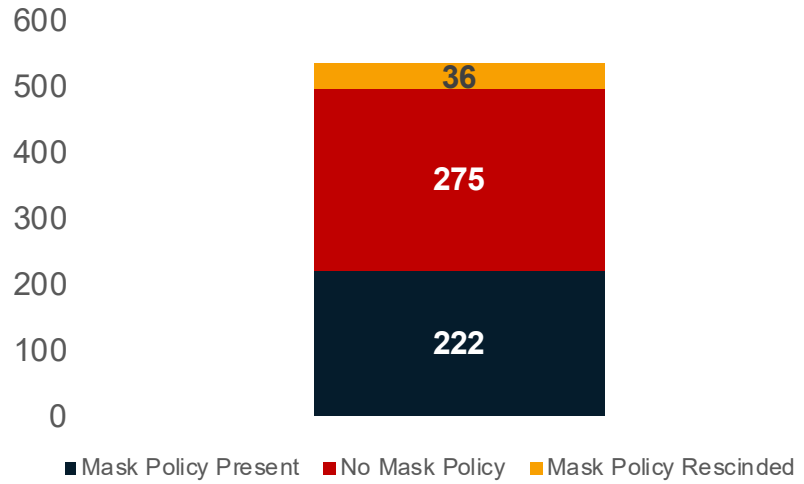
NUMBER OF SCHOOL DISTRICTS WITH MASK POLICIES IN K-12 SETTINGS



NUMBER OF STUDENTS* IN SCHOOL DISTRICTS WITH MASK POLICIES



NUMBER OF SCHOOL DISTRICTS WITH MASK POLICY REVERSAL



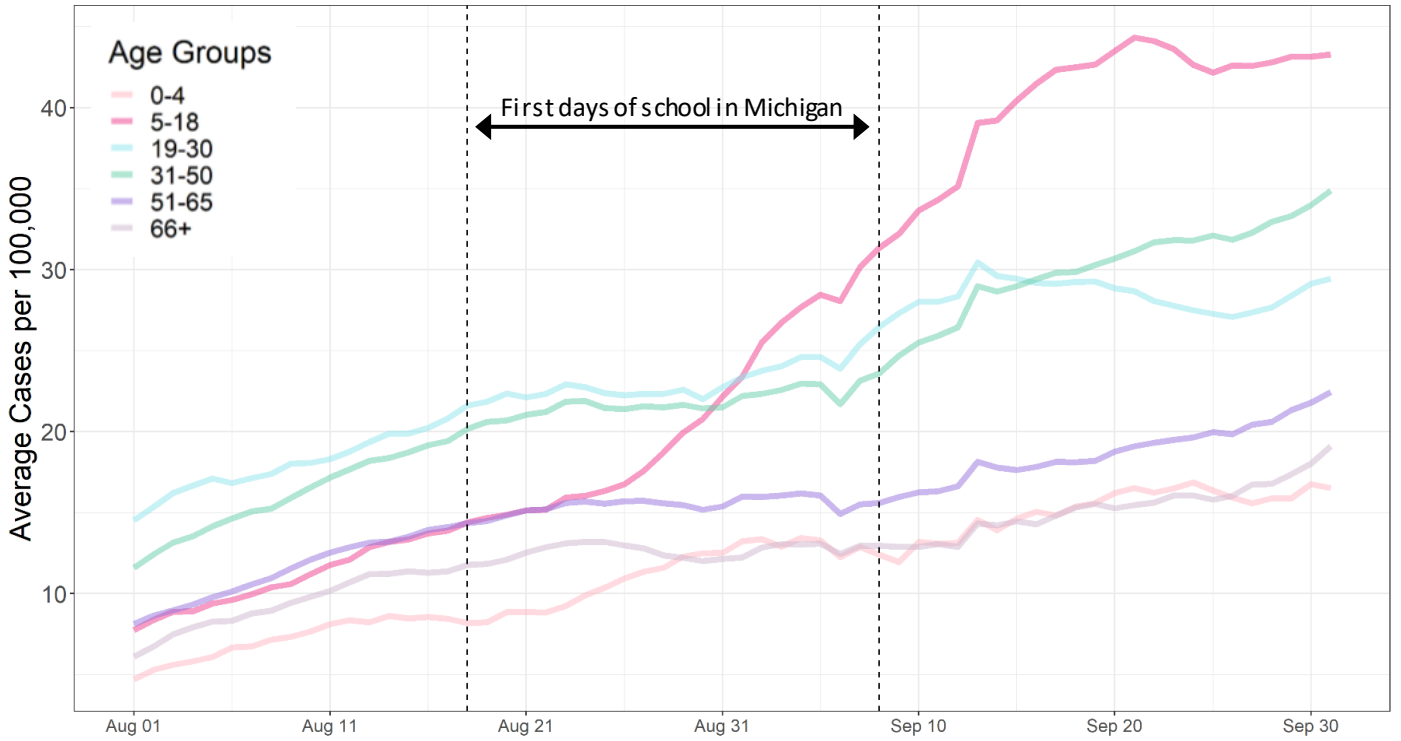
- 42% (222/533) of K-12 school districts have mandatory mask policies
- School districts with mandatory mask policies cover 60% (748,181/1,252,808) of K-12 students*
- Not all K-12 grades or students may be covered by masks polices; examples include policies for those through K-6, or only during higher levels of community transmission
- 7% (36/533) of K-12 school districts have rescinded their mask policies

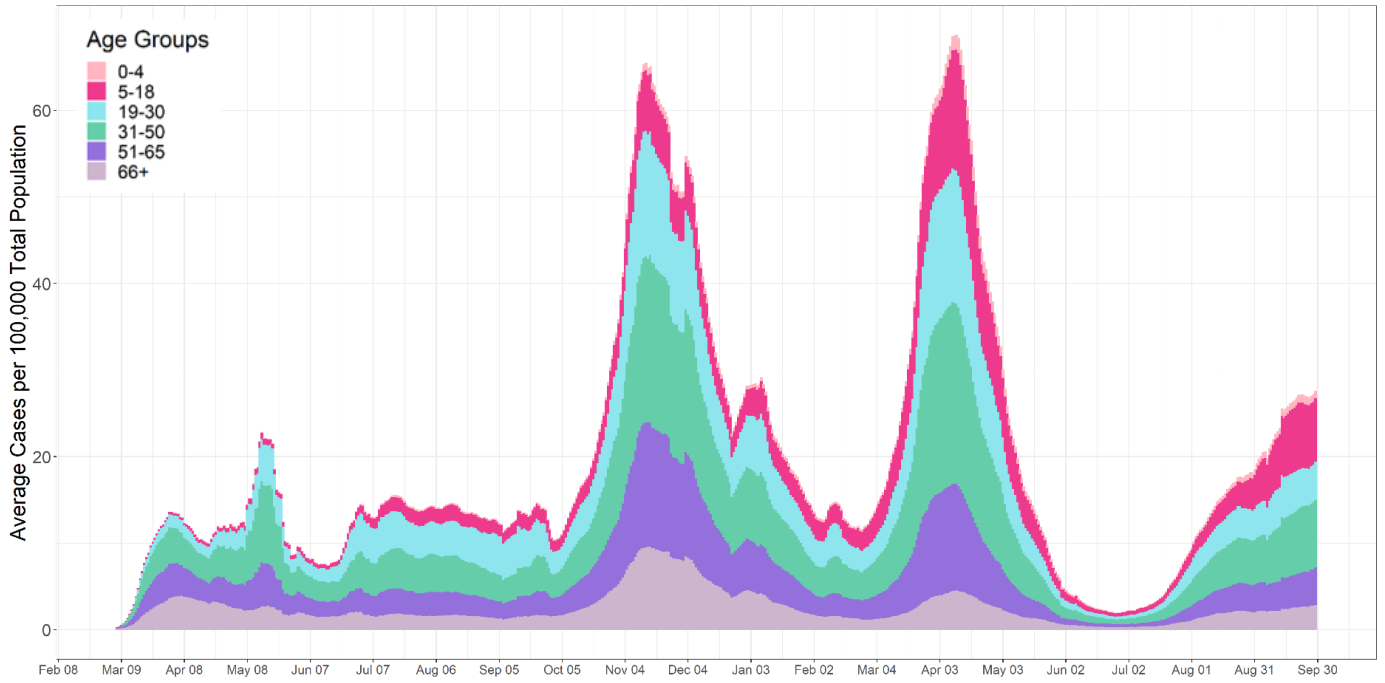
*** Student size based on school enrollment numbers; Buses and public transportation are federally required to enforce mask mandates**

Source: Executive Office of Governor School District Mask Policy Database

Case increases are largest in school aged children (5-18 year olds)

- School aged children (5-18 y) saw a rapid rise beginning over the school reopening period that has remained high following back-to-school
- 31-50 year olds are now beginning to increase to next highest, above other age groups
- Previous surges had larger proportions of cases in adults

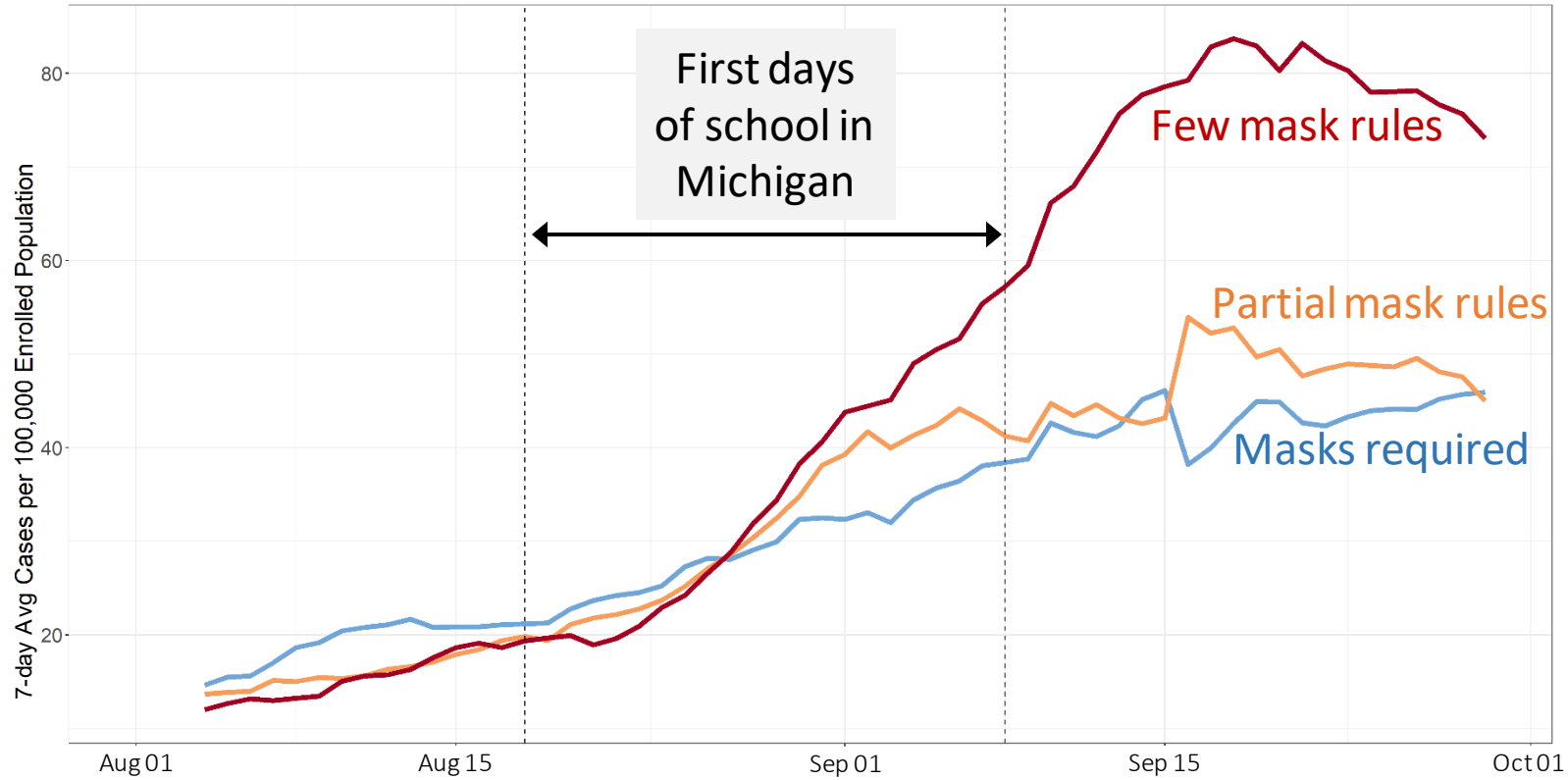


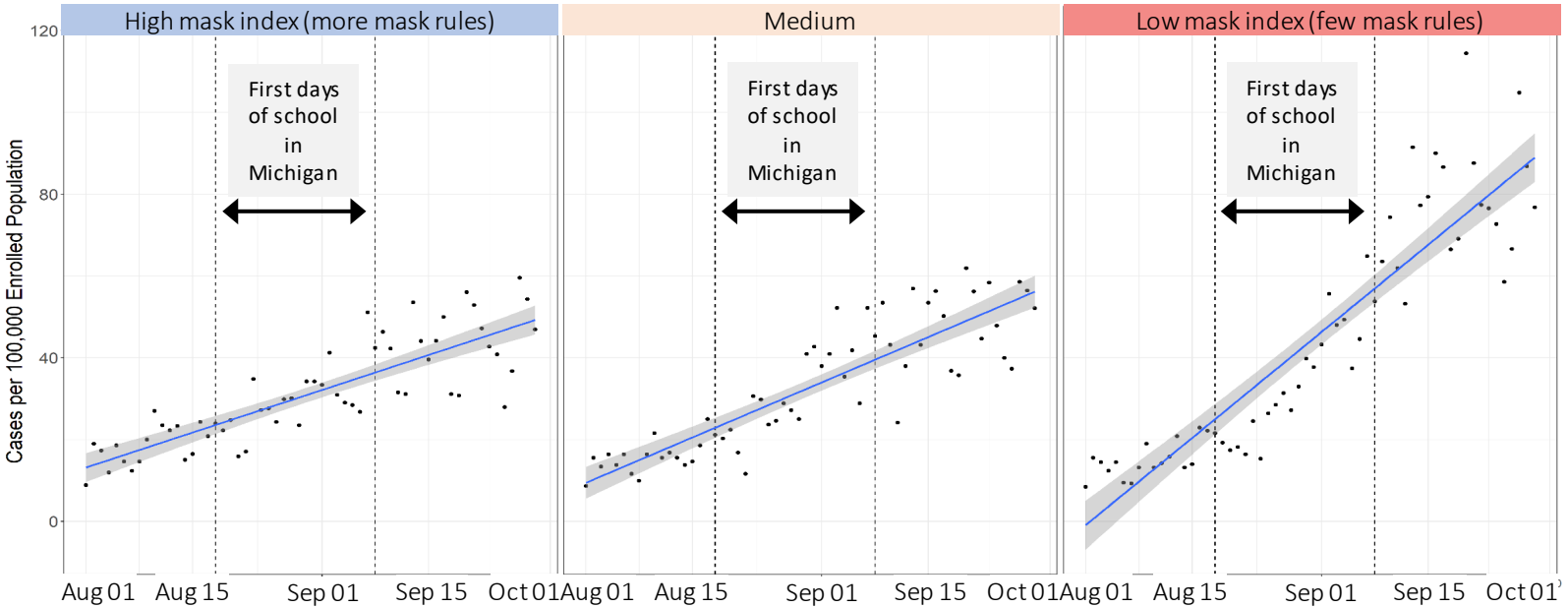


Data source: MDSS case data as of 10/6/2021

Districts without mask requirements are experiencing higher case rates

- 5-18 year old school population case rates are higher and rose faster in districts without mask requirements
- Districts with complete or partial mask requirements have lower case rates with slower increases
- Note districts may change categories as mask rules change
- Districts with mask rules may also have other prevention measures that can contribute to lower transmission levels





High mask index = mask required for all grades; Medium = partial mask req. (tiered, some grades, based on vax status, staff only); Low = None or unknown. Blue line & shaded region is a linear trend fit. Data Sources: MDSS/MDHHS case data as of 10/6/2021 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.

Global, National and Michigan Trends

Global and National Comparisons

Globally, 237,973,161 cases and 4,854,144 deaths (Data* through 10/10/21)

- Countries with the highest case count are U.S. (44,340,408), India (33,971,607), and Brazil (21,575,820)

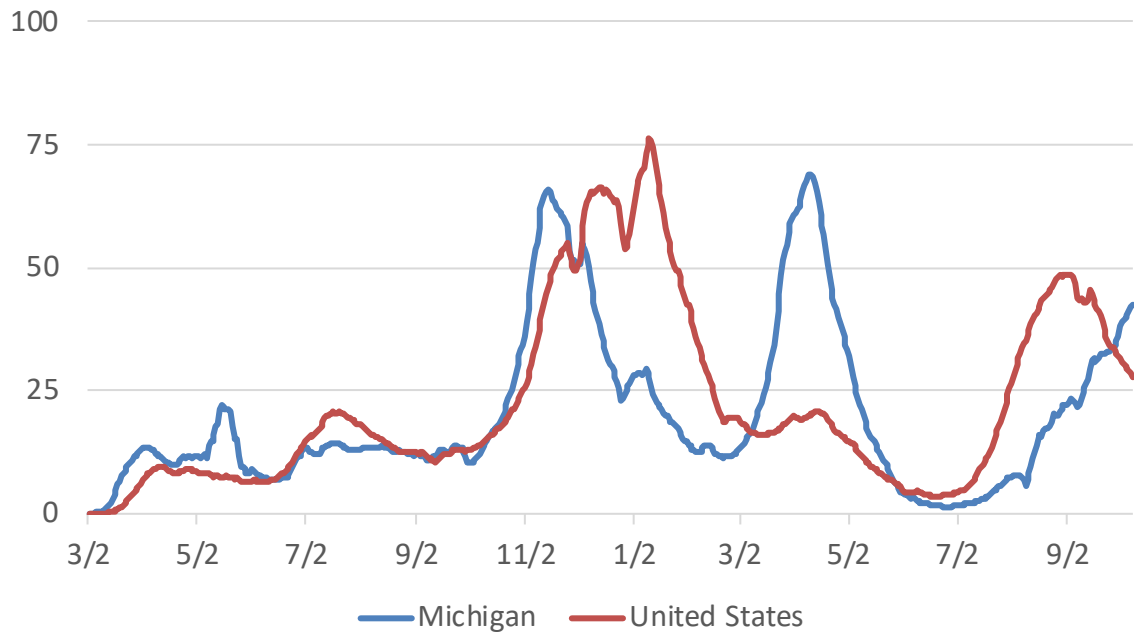
United States: Nearly all US jurisdictions have High community transmission¶

- California and Connecticut are Substantial
- Palau and Puerto Rico are Moderate
- While National case rates are decreasing, Michigan case rates continue to increase and are higher than U.S. total rate
- 7-day moving average of daily new cases decreased 11.6% compared with previous 7-day moving average
- Percent positivity has decreased from the previous week, now at 6.1%. The number of PCR tests performed has increased.

Midwest states maintain High transmission levels†

- Overall plateau in Region 5 but some states (MI, MN, WI) are seeing increases

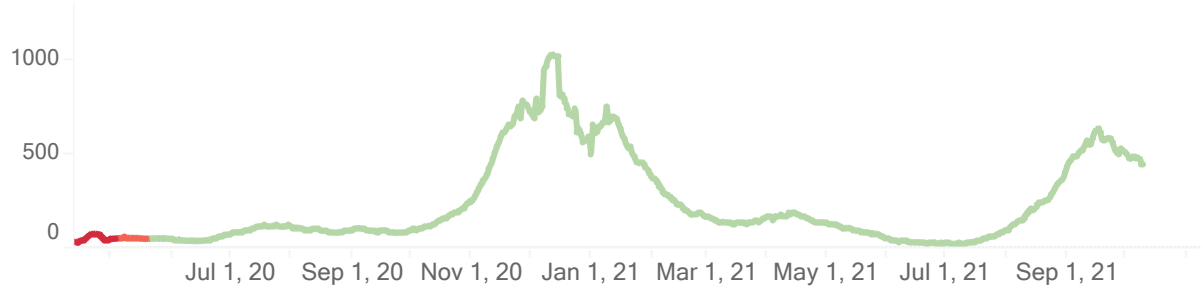
National and Michigan 7-day average New Cases per 100K†



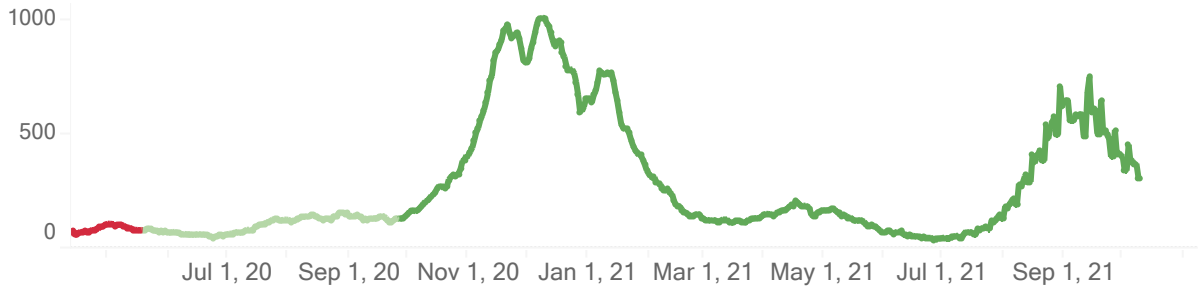
Source: *Johns Hopkins Coronavirus Resource Center; ¶ CDC COVID Data Tracker Weekly Review; † CDC COVID Data Tracker

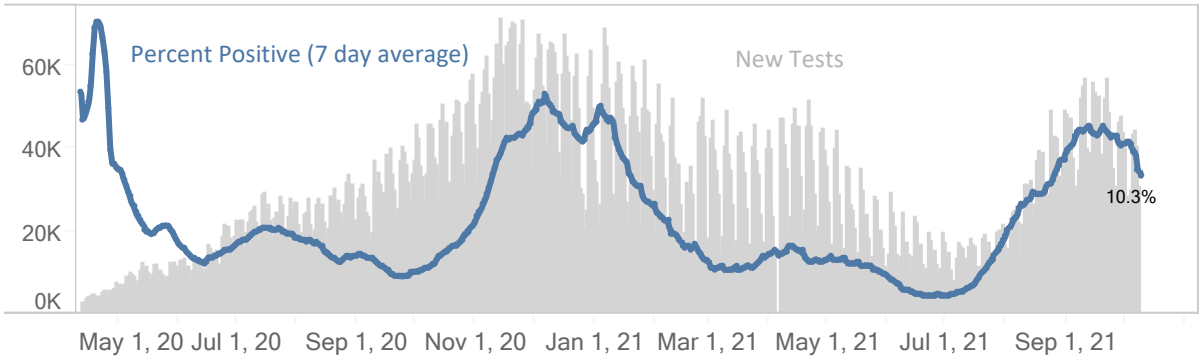
State Comparison: Ohio and Indiana

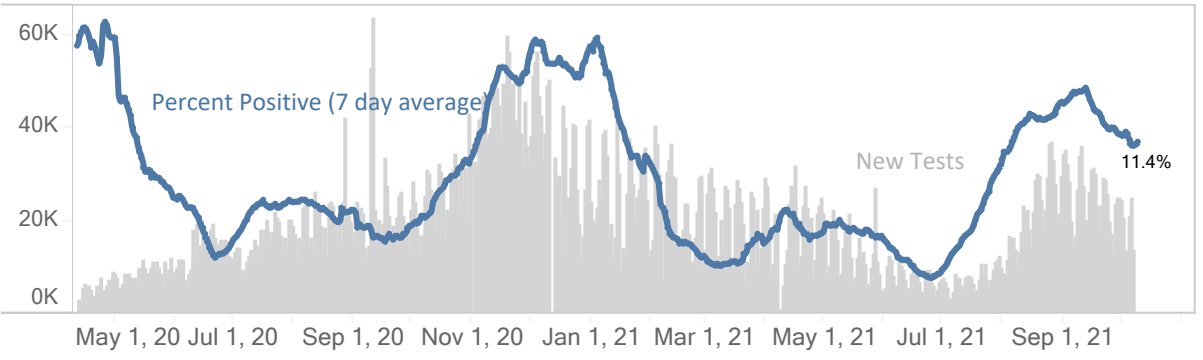
Ohio Confirmed New Cases / 1M (7 days average)

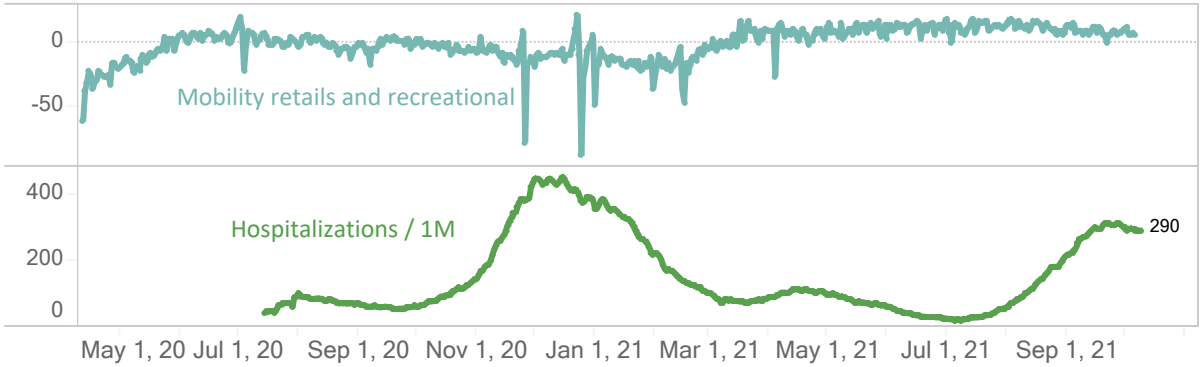


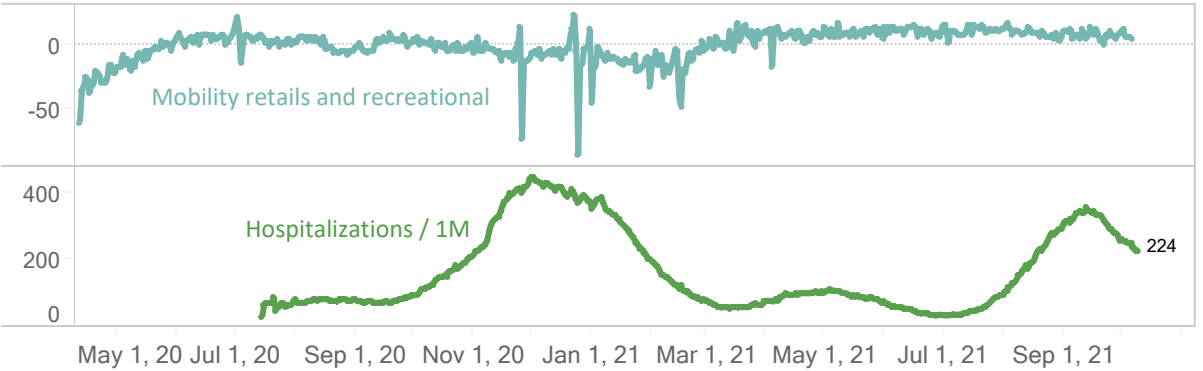
Indiana Confirmed New Cases / 1M (7 days average)



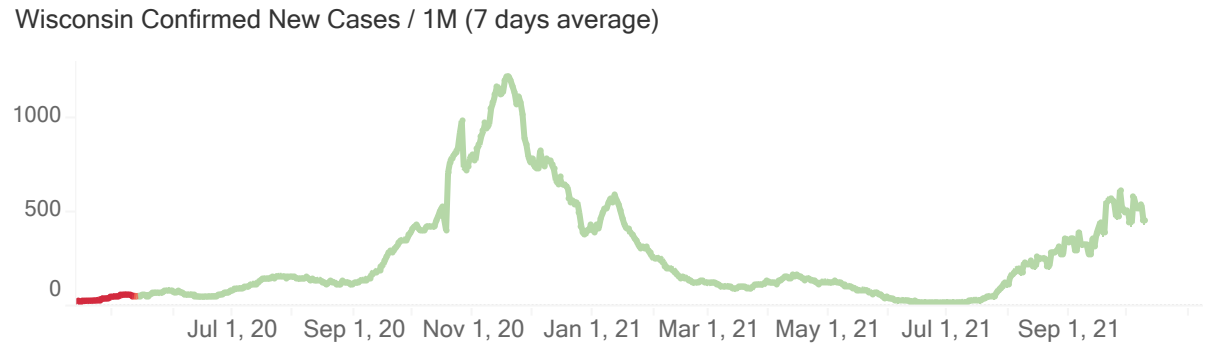


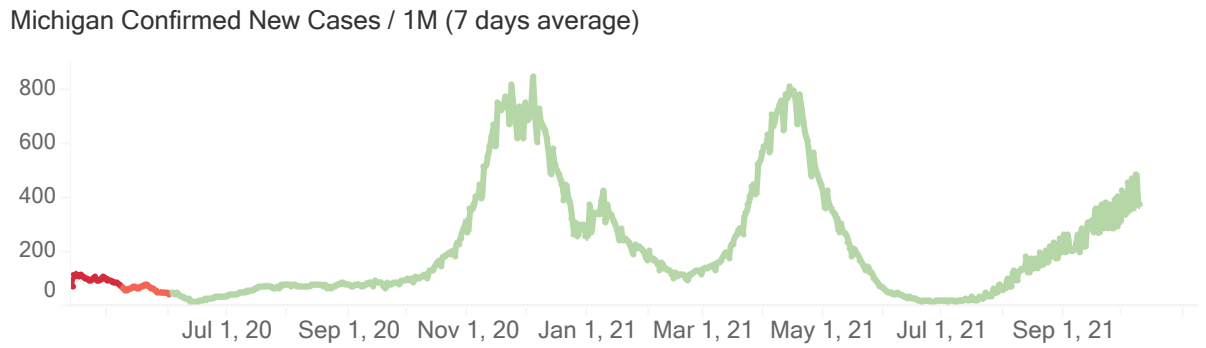


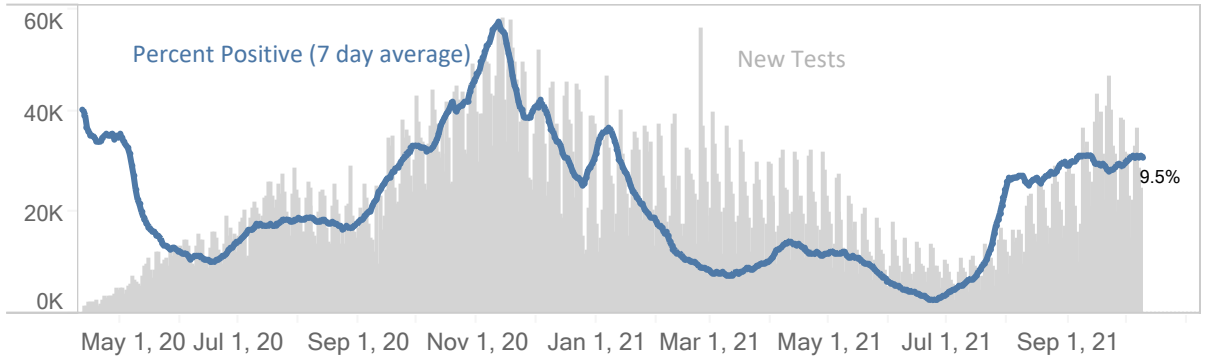


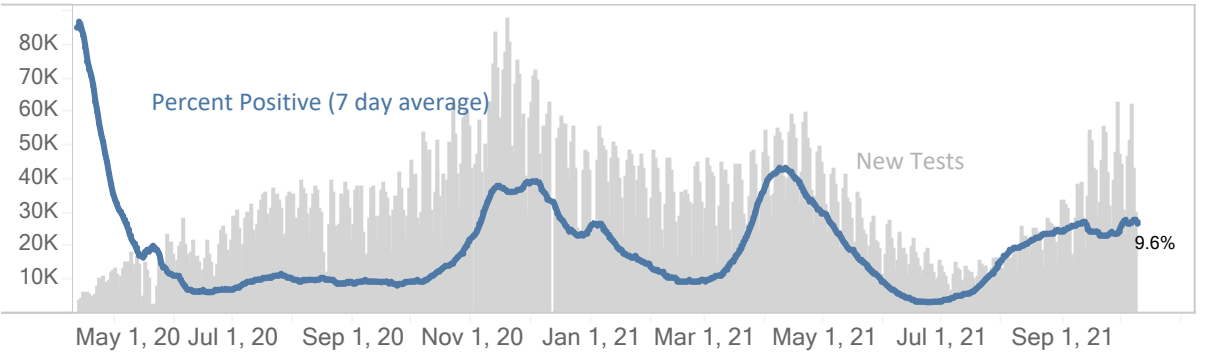


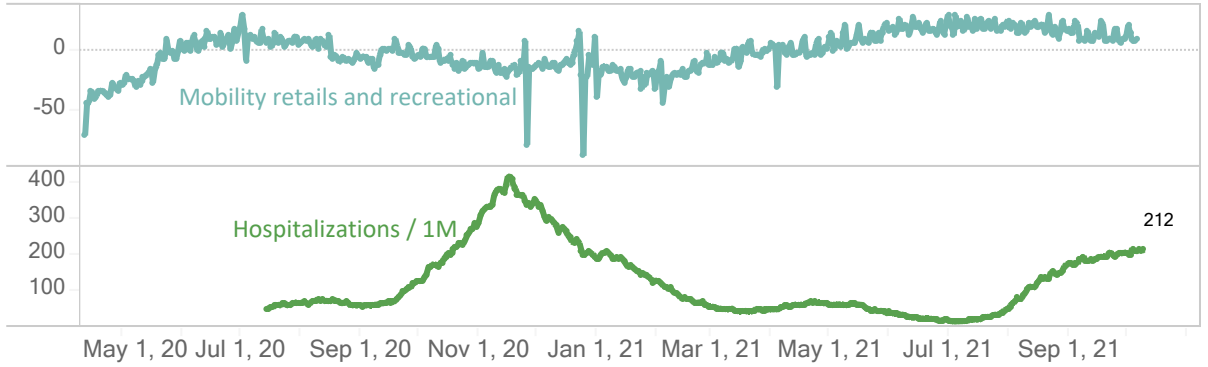
State Comparison: Wisconsin and Michigan

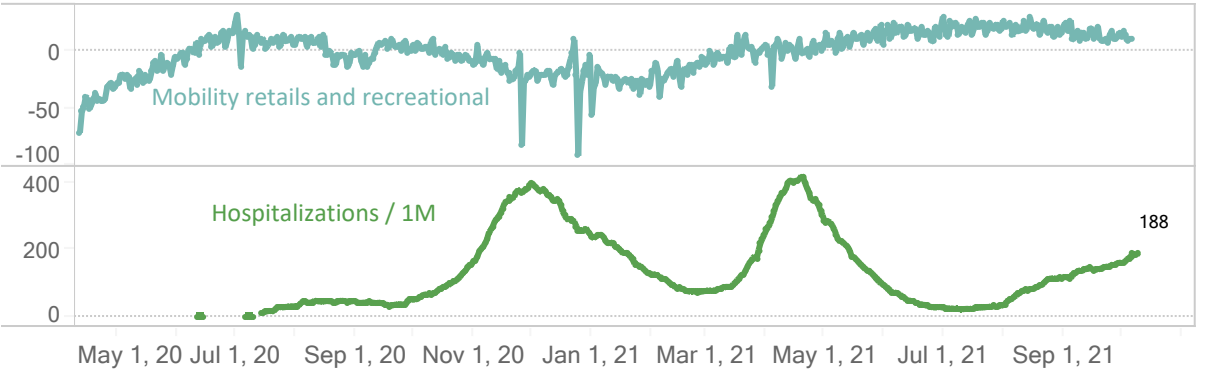






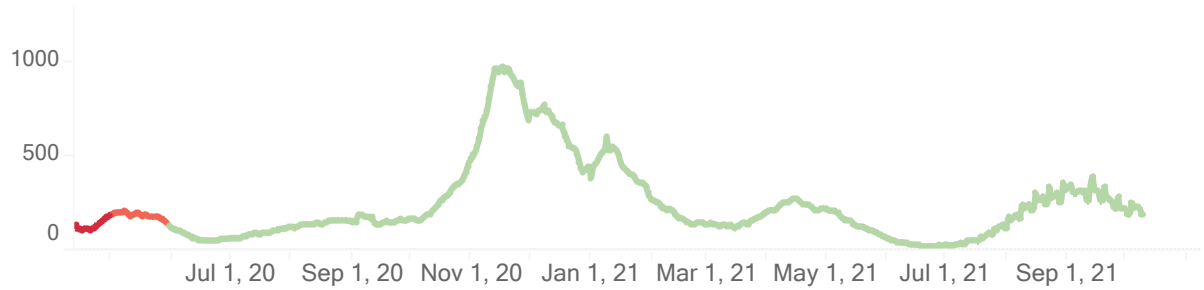


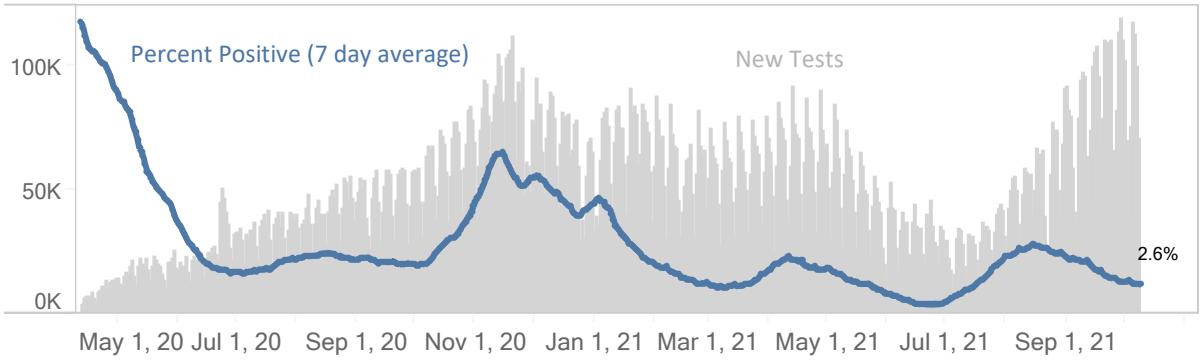


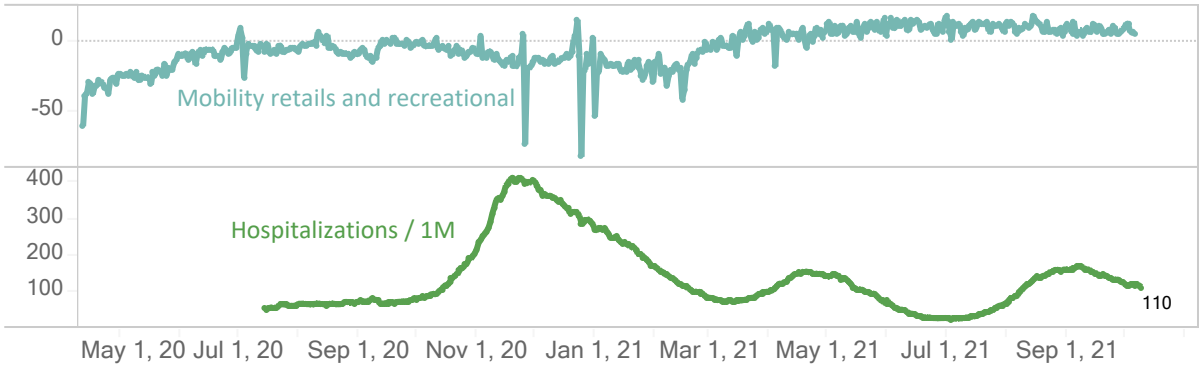


State Comparison: Illinois and Minnesota

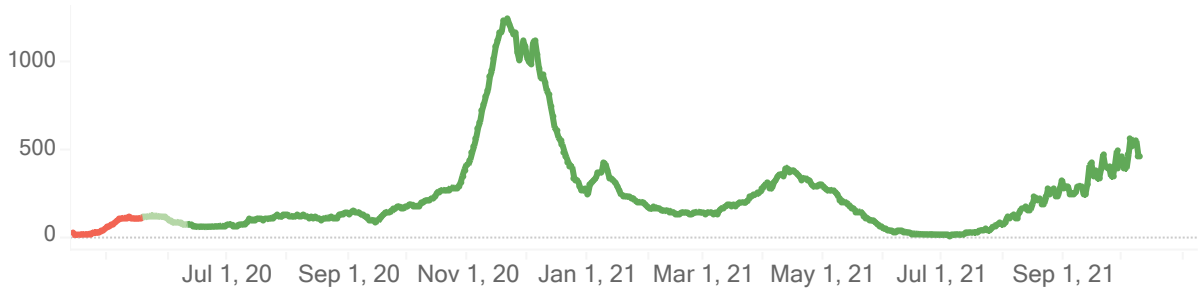
Illinois Confirmed New Cases / 1M (7 days average)

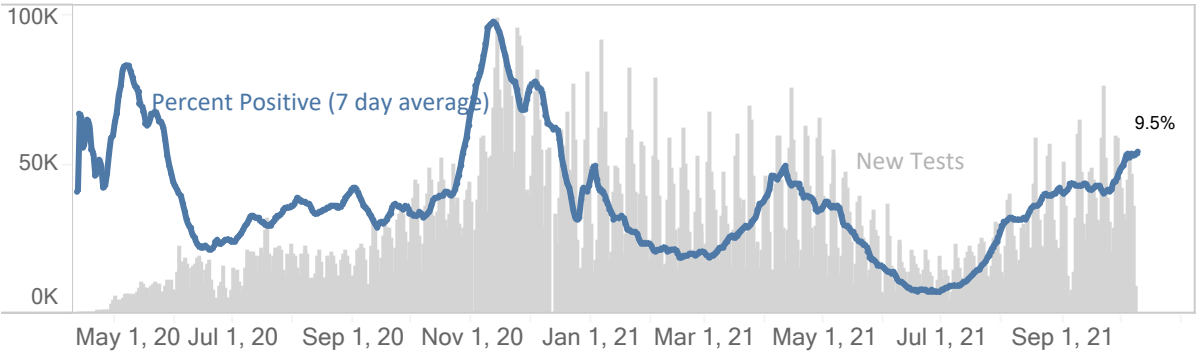


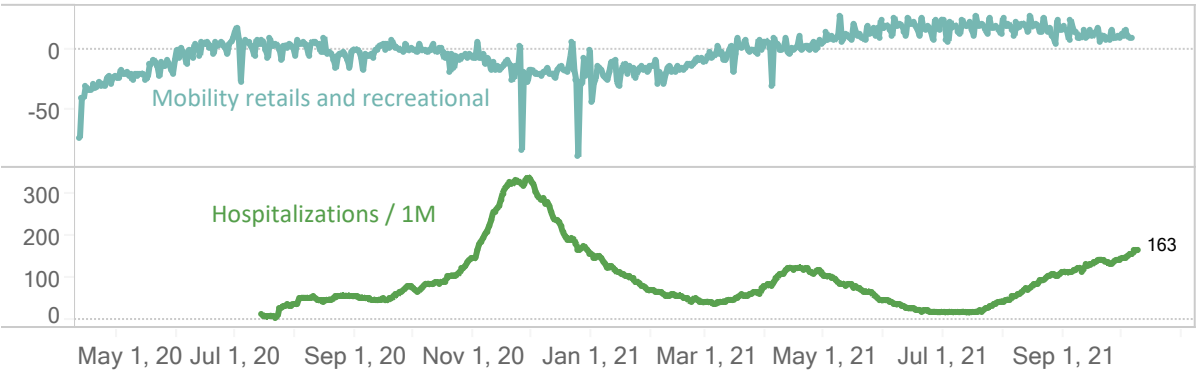




Minnesota Confirmed New Cases / 1M (7 days average)







Key Messages: COVID-19 Burden Among Younger Ages Remains High

Statewide positivity increased 11.2% (last week: 10.3%)

- This is a 9% increase in the past week (prior week: 17% increase)
- Positivity is increasing in all MERC regions
- Positivity in seven regions is above 10%

Case rate has increased to 304.4 cases/million (last week: 258.9 cases/million)

- Increasing for three and a half months (June 26 low)
- Cases per million are plateaued or increasing in most MERC regions;
- 10-19-years-olds are experiencing the greatest case burden (596 daily cases; 474.8 cases/mil)

Michigan is at High Transmission level

- All counties in Michigan are at high transmission level
- CDC recommends all individuals, regardless of vaccination status, should mask indoors
- The U.S. is at high transmission level (195.3 cases/100,000 in last 7 days) with 52 states/territories in substantial or high transmission

Number of active outbreaks is up 6% from last week

- 161 new outbreaks were identified in the past week
- K-12 reported the most total outbreaks (312) and new outbreaks (81) this week

Confirmed and probable case indicators

Table Date: 10/11/2021 (7 days from date table was produced: 10/4/2021)

Risk levels: Low | A | B | C | D | E

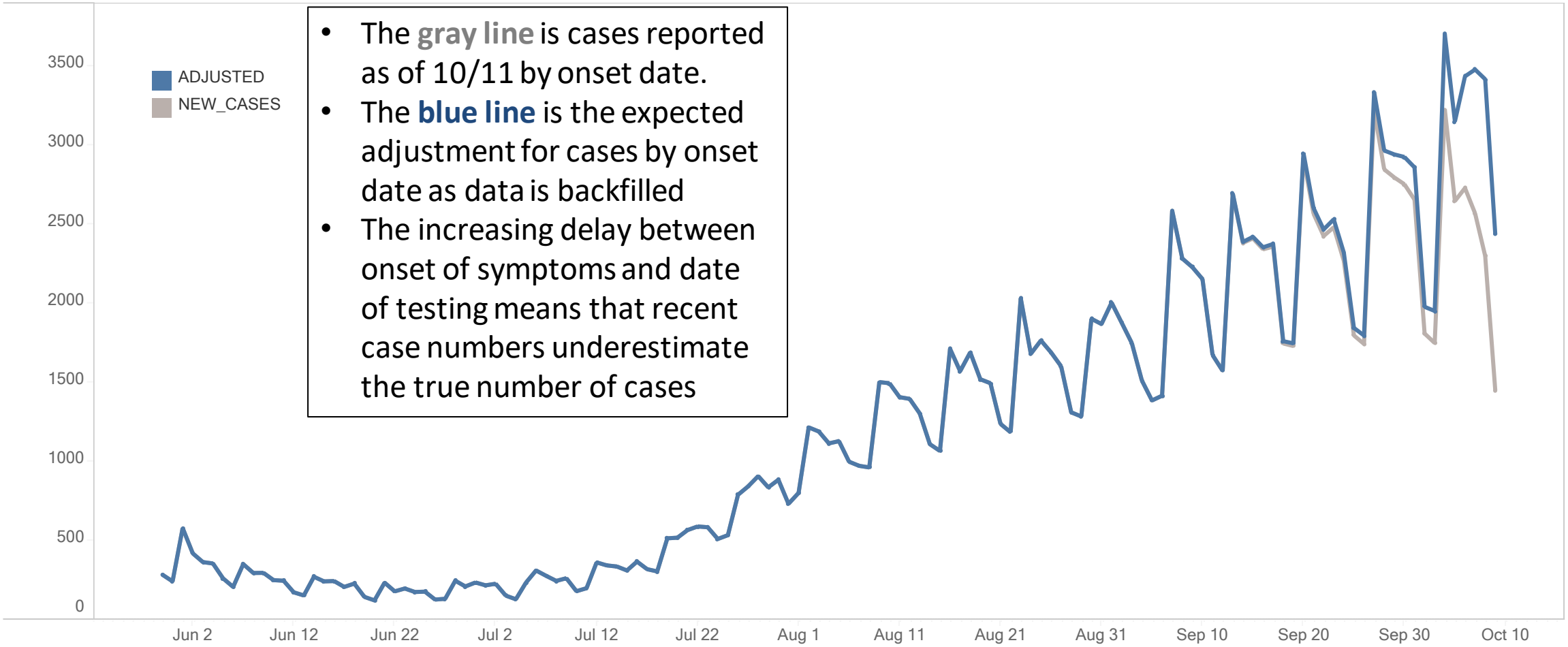
	CDC Transmission Risk Level	Absolute Cases (per million)	CDC Case Trend	Average Percent Positivity	Positivity Trend	Tests (per million)	% IP Beds Occupied by COVID-19 Cases	% Occupied IP Beds Trend	Absolute Deaths (per million)	Death Trend
Detroit	High	240.8	elevated incidence growth	8.2	Increase - 2wk	4471.4	7.5	Increase - 12wk	2.4	Increase - 1wk
Grand Rapids	High	380.2	elevated incidence growth	16.0	Increase - 3wk	3968.0	12.8	Increase - 2wk	2.8	Increase - 1wk
Kalamazoo	High	301.4	decline [11 days]	13.2	Increase - 2wk	3226.4	10.8	Increase - 1wk	3.3	Decrease - 1wk
Saginaw	High	439.3	elevated incidence growth	18.2	Increase - 5wk	3327.5	9.5	Increase - 3wk	5.4	Increase - 1wk
Lansing	High	340.7	elevated incidence growth	12.8	Increase - 2wk	3345.4	13.8	Increase - 13wk	2.4	<20 wkly deaths
Traverse City	High	369.7	elevated incidence growth	14.4	Increase - 8wk	3033.9	9.5	Increase - 3wk	5.5	<20 wkly deaths
Jackson	High	359.0	decline [9 days]	16.8	Increase - 15wk	3481.7	20.1	Increase - 13wk	3.8	<20 wkly deaths
Upper Peninsula	High	541.2	decline [6 days]	15.2	Increase - 12wk	3274.2	12.3	Increase - 5wk	5.2	<20 wkly deaths
Michigan	High	304.4	elevated incidence plateau	11.2	Increase - 2wk	4095.1	9.3	Increase - 12wk	3.0	Increase - 1wk

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%

Michigan Lag adjusted COVID cases by onset date

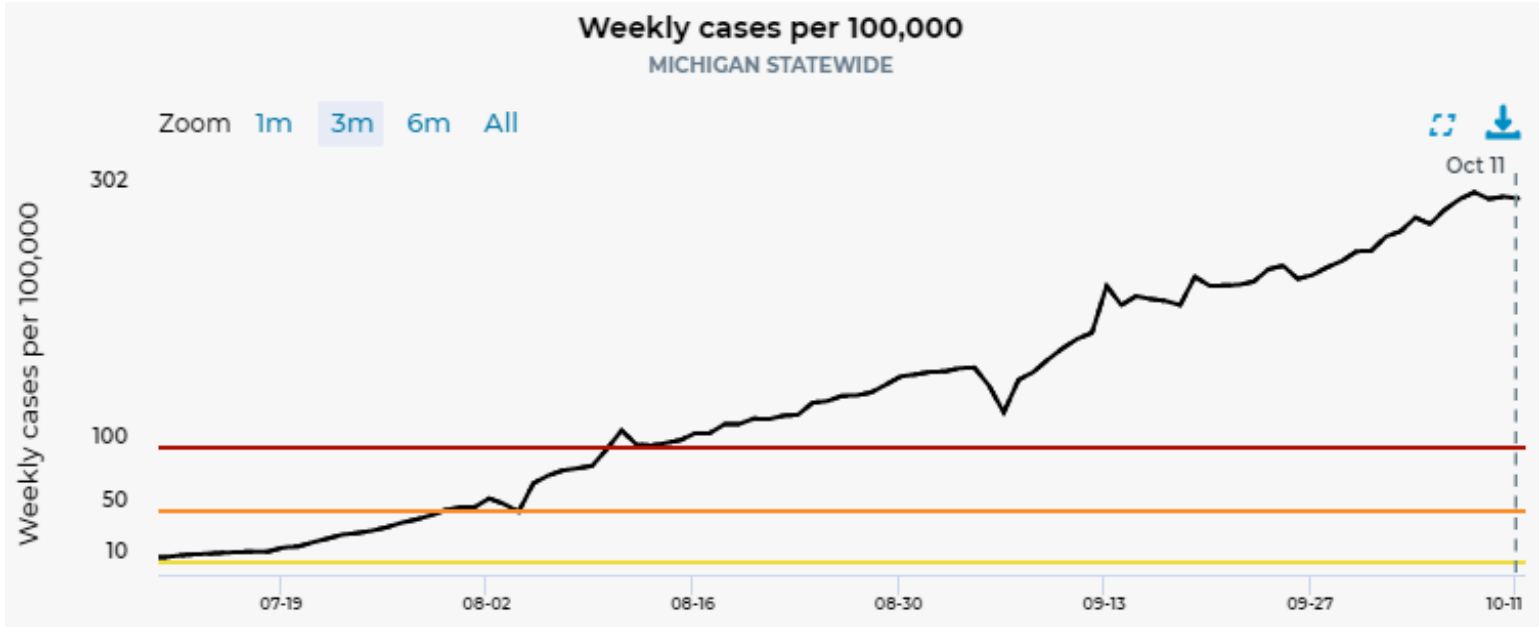
New confirmed cases by onset actual and adjusted as of October 11, 2021 (-2 days)

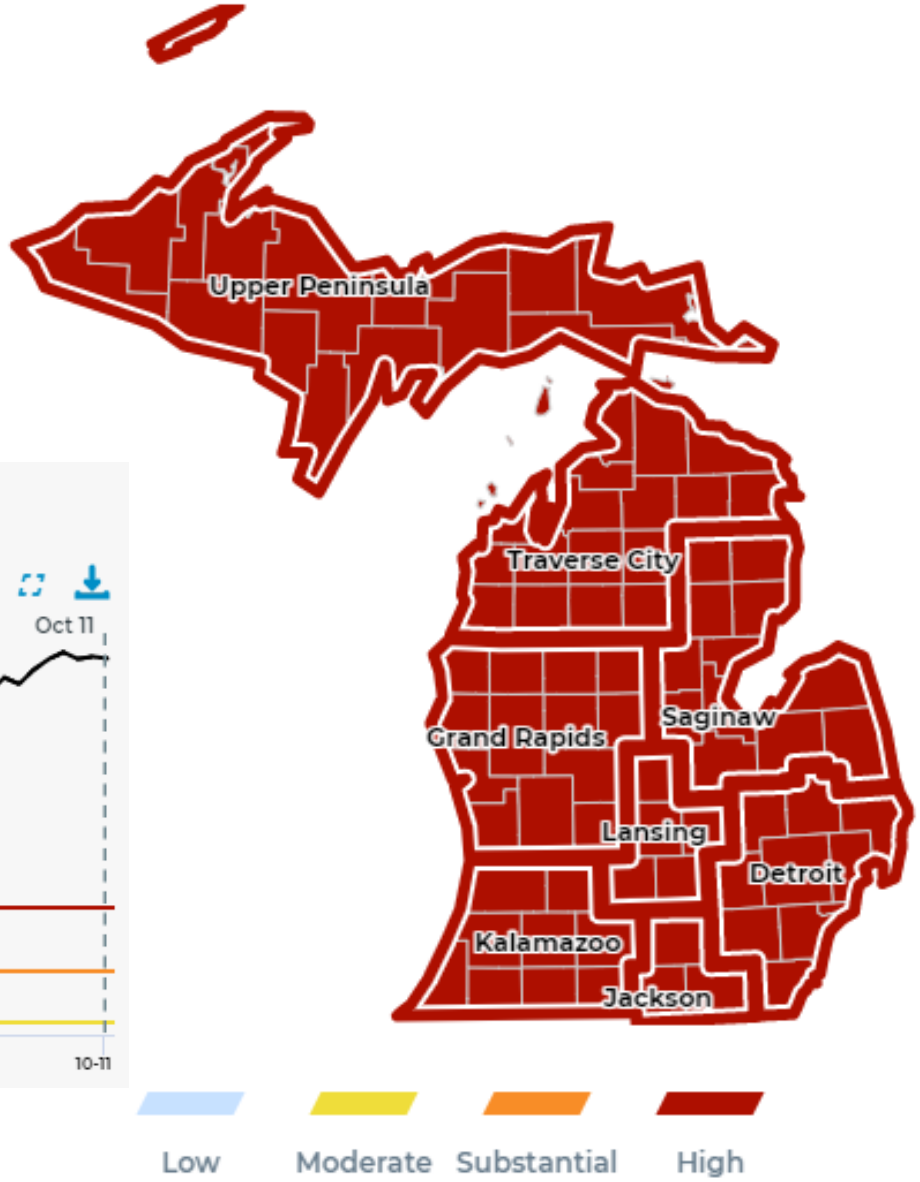


- The **gray line** is cases reported as of 10/11 by onset date.
- The **blue line** is the expected adjustment for cases by onset date as data is backfilled
- The increasing delay between onset of symptoms and date of testing means that recent case numbers underestimate the true number of cases

Michigan at High Transmission Level

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

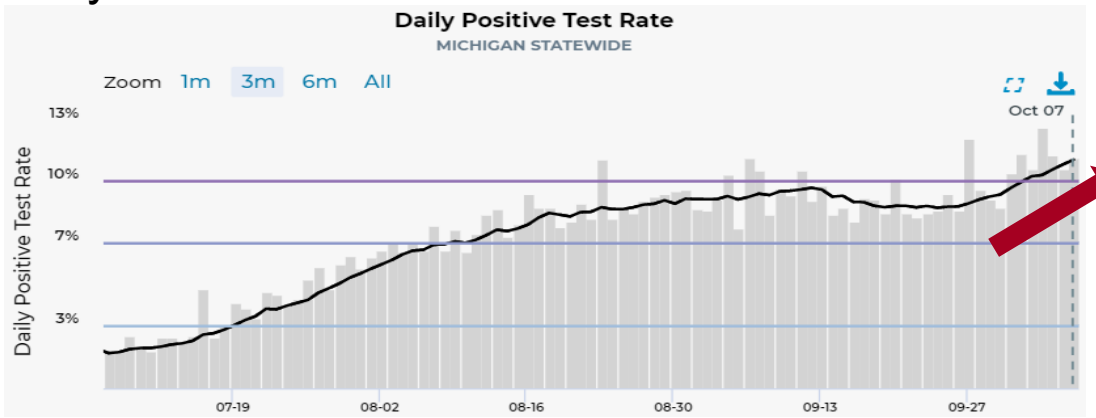




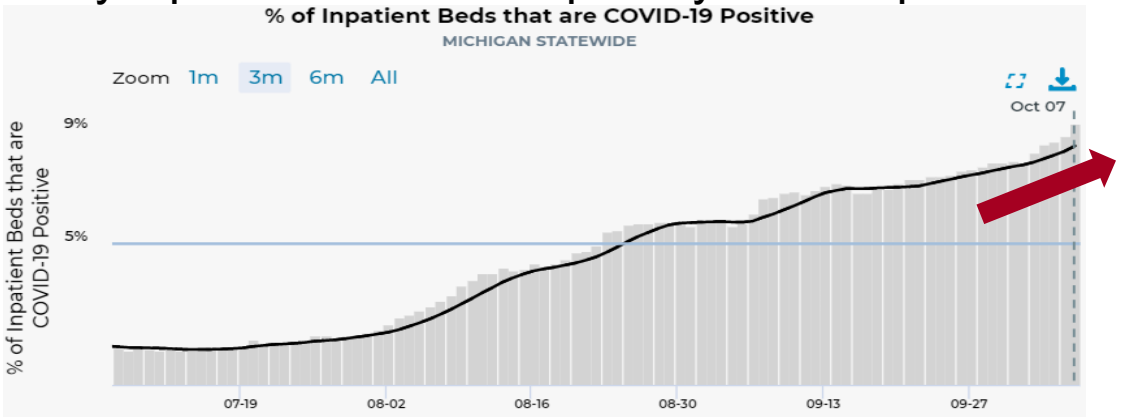
Time Trends – Positivity, Case Rates, Hospitalizations, Deaths

- COVID-19 transmission remains high and early indicators show Delta surge may be speeding up again

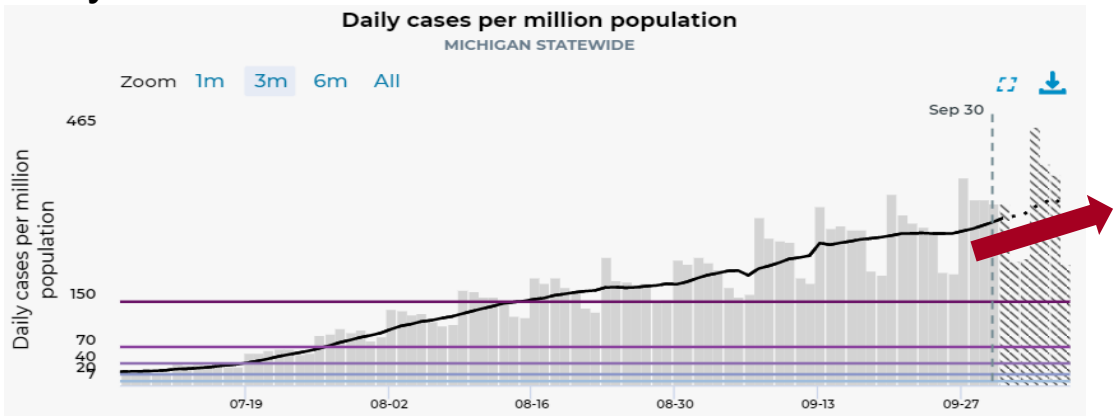
Daily Positive Test Rate



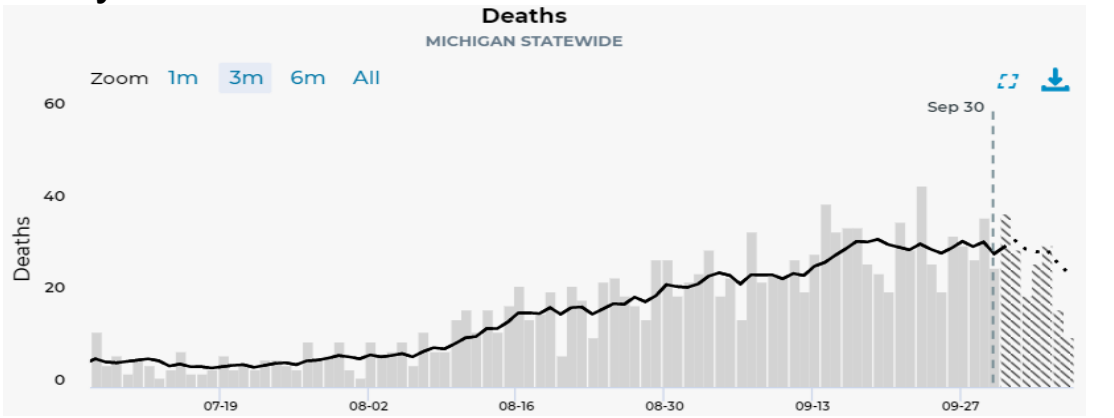
Daily Inpatient Beds Occupied by COVID patients



Daily Case Rate



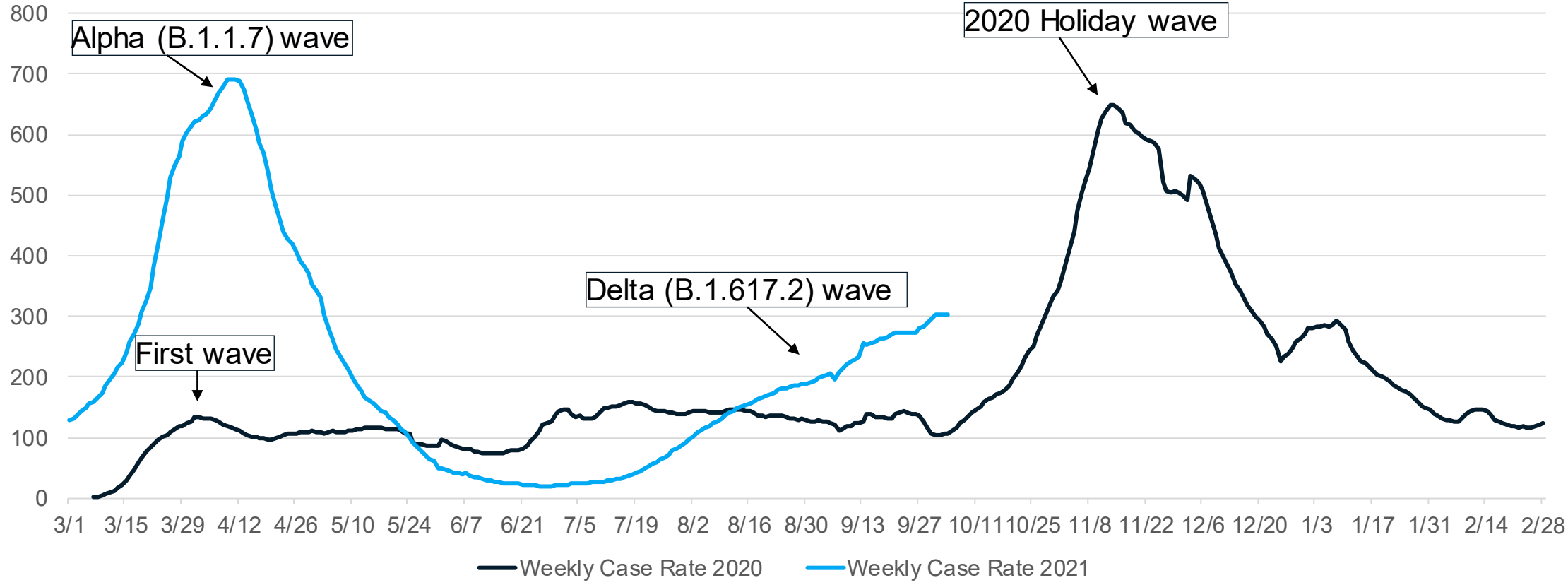
Daily Deaths



Time Trends – Annual Comparison

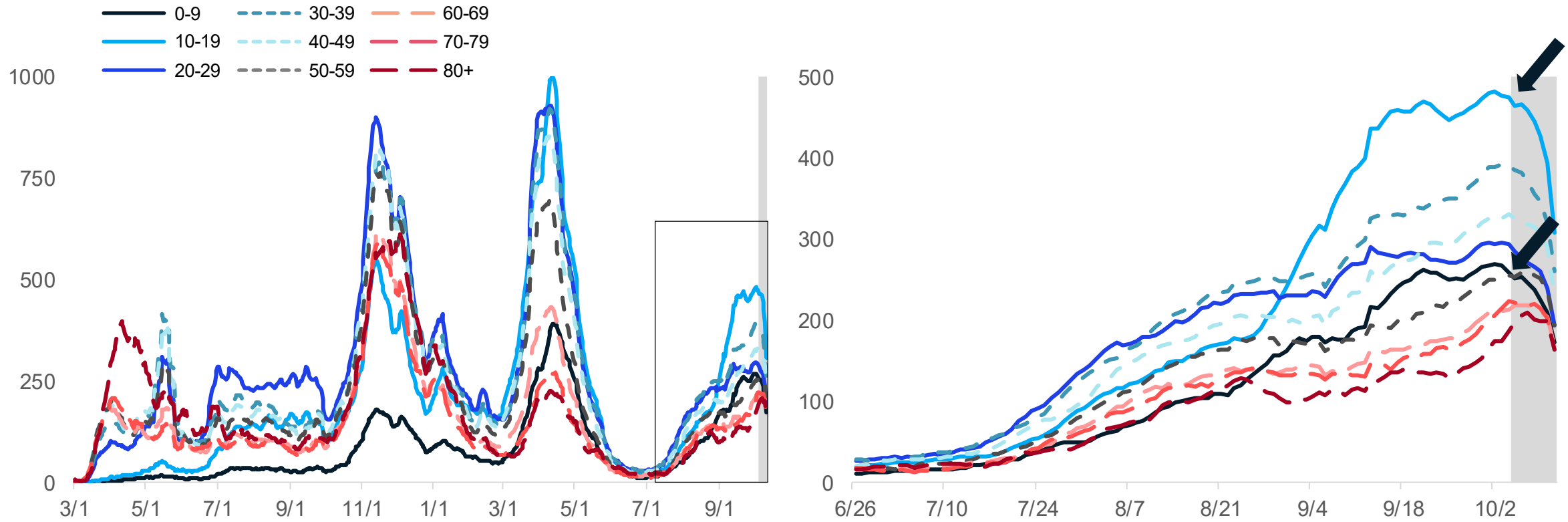
- We are heading into the winter months (and holiday season) starting at higher cases rates than last year

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 all age groups are plateaued or increasing
- Case rates for all age groups are between 187 and 475 cases per million (through 10/4)
- Case rates are highest for 10-19-year-olds followed by 30-39, 40-49, 20-29, and 0-9

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 Oct 11

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

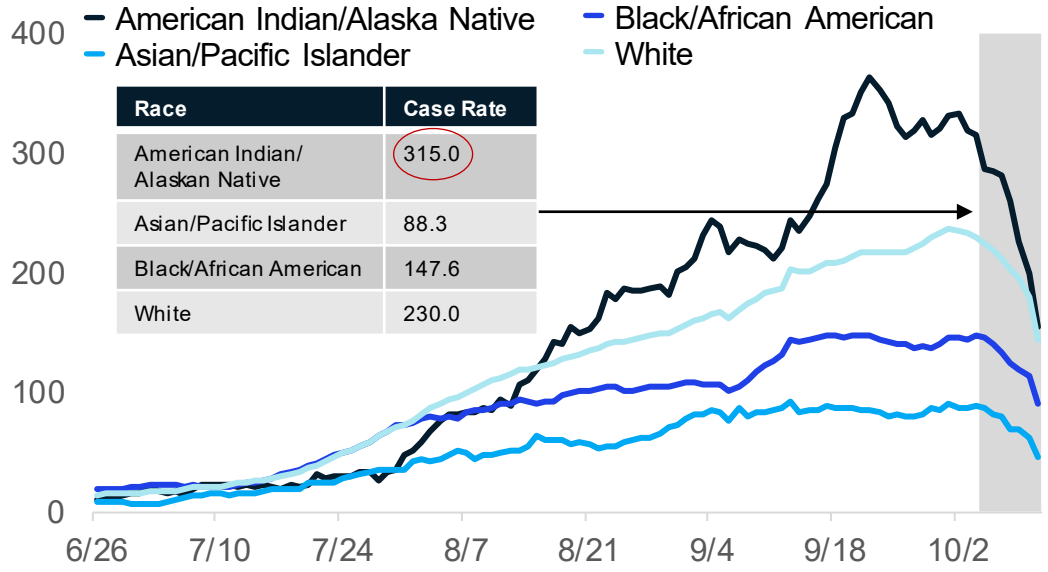
Age Group	Average† daily cases	Average† Daily Case Rate	One Week % Change (Δ#)*
0-9	299.7	260.0	4% (+12)
10-19	**595.9**	**474.8**	**4% (+23)**
20-29	405.4	293.9	7% (+26)
30-39	475.0	**391.5**	10% (+43)
40-49	390.7	**331.3**	8% (+29)
50-59	344.6	255.2	12% (+36)
60-69	271.4	212.8	15% (+35)
70-79	171.9	224.1	29% (+39)
80+	77.6	187.3	32% (+19)
Total¶	**3,047.9**	**304.4**	**9% (256.4)**

† 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 (595.9) and avg. daily case rate (474.8 case/mil) are highest for those aged 10-19
- This week the highest growth was among those 70+
- Case rates for age groups 10-19, 30-39, and 40-49 are all higher than the state
- Case rates bottomed out on June 26, 2021

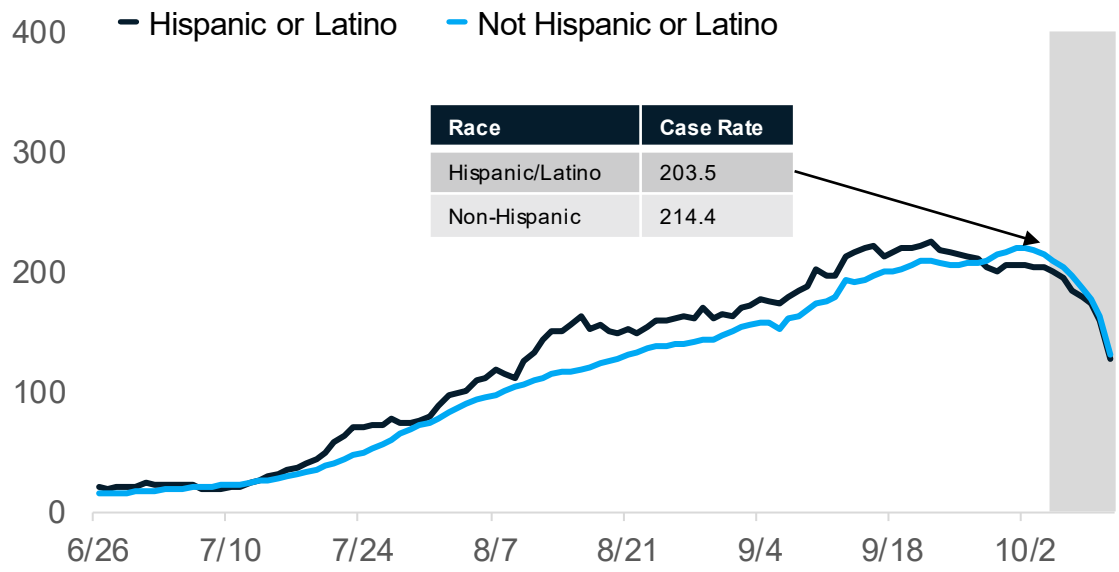
Case Rates by Reported Racial and Ethnic Group

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



Race	Case Rate
American Indian/ Alaskan Native	315.0
Asian/Pacific Islander	88.3
Black/African American	147.6
White	230.0

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



Race	Case Rate
Hispanic/Latino	203.5
Non-Hispanic	214.4

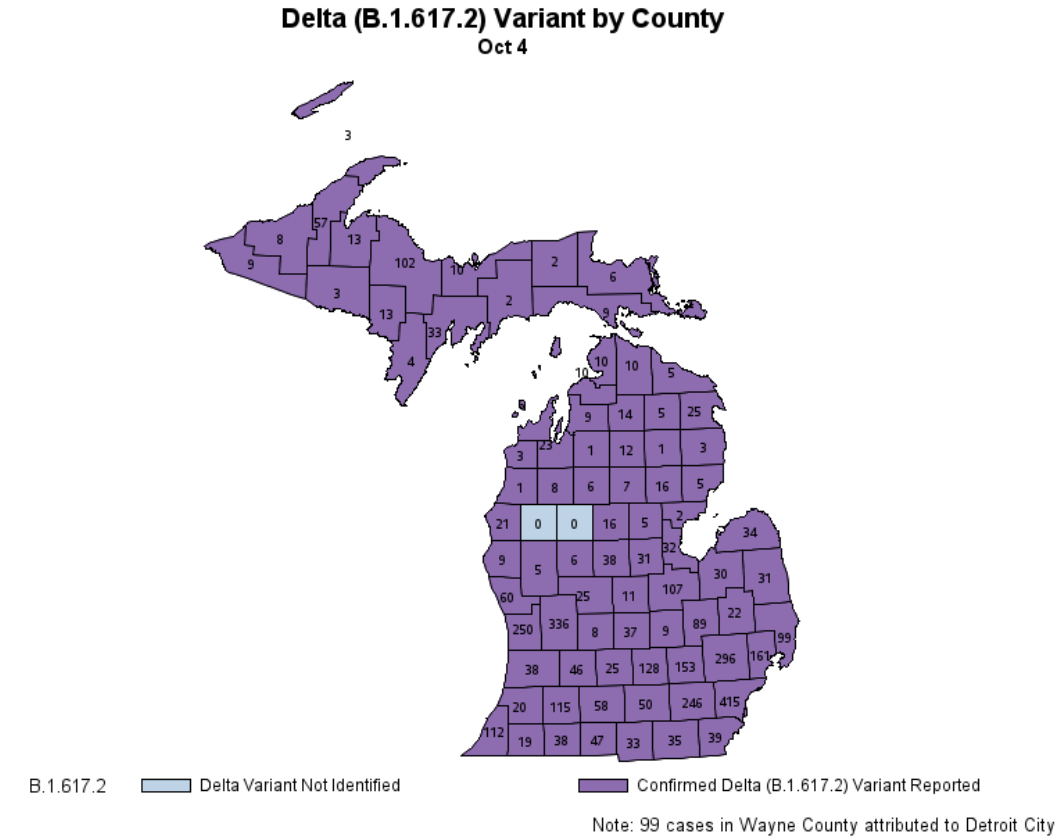
Updates since last week:

- Cases per million are increasing for Whites, Blacks, and Non-Hispanics; case rates are plateaued for Asian/Pacific Islanders
- The high number of cases with missing race/ethnicity data, and those multiracial or other are impacting the case rates shown here
- **American Indian/Alaskan Native have the highest case rates but are declining; Case rates for Non-Hispanic recently surpassed that for Hispanics**
- In the past 30 days, 24% (↑1%) of race data and 28% (↔) ethnicity data was either missing or reported as unknown

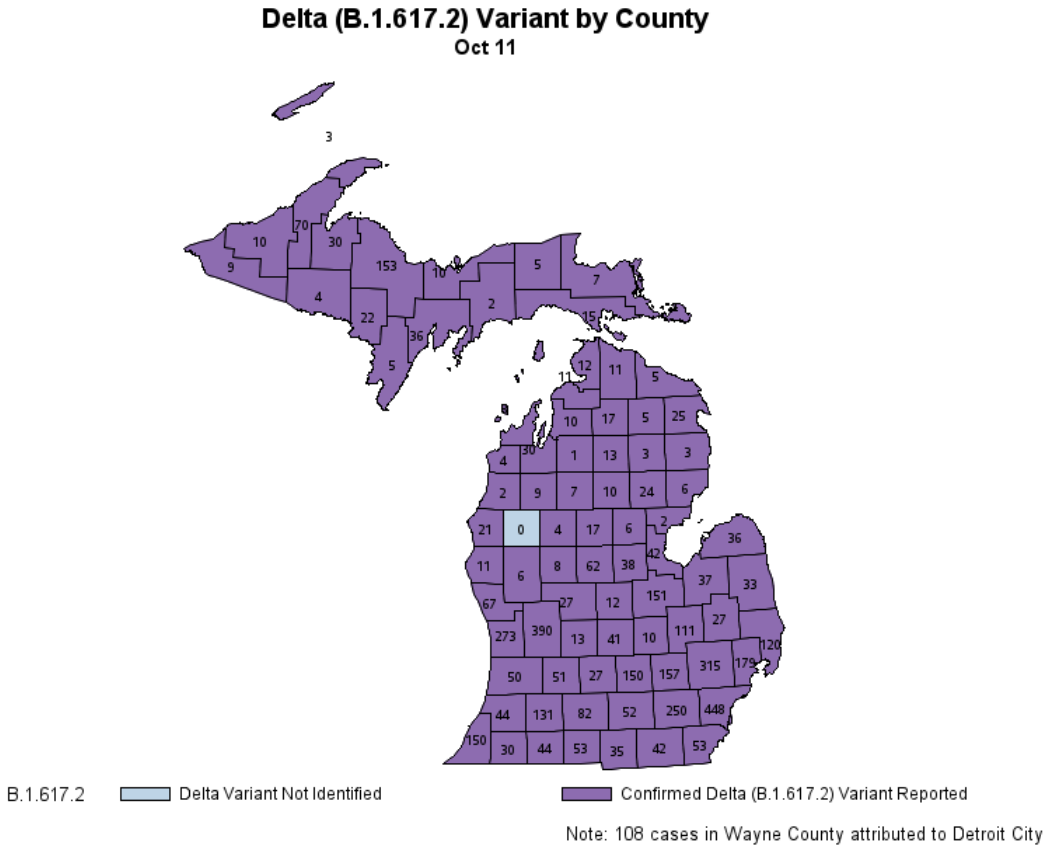
Note: Case information sourced from MDHHS and reflects date of death of confirmed and probable cases.
Source: MDHHS – Michigan Disease Surveillance System

Identified COVID-19 Delta Variants by County

Last week (Oct 4, 2021)



This week (Oct 11, 2021)



Data last updated Oct 11, 2021
Source: MDSS

Key Messages: Healthcare Capacity and COVID Severity

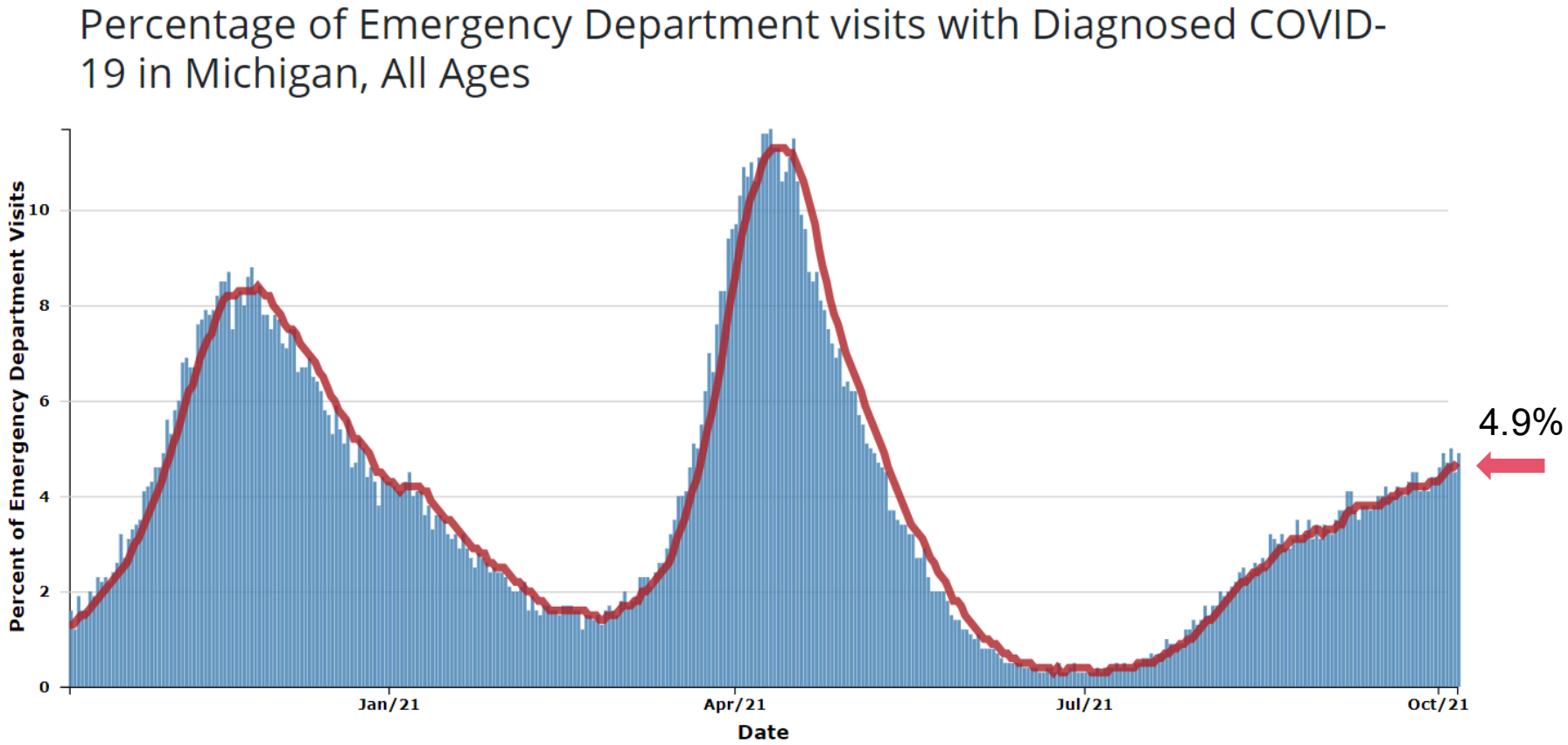
Hospitalizations and ICU utilization are increasing

- 4.9% of ED visits are for COVID diagnosis (up from 4.1% last week)
- Hospital admissions are increasing for most age groups this week
- Hospital census has increased 18% (vs. up 10% week prior)
- All regions experienced increasing trends in hospital census this week
  - Regions 1, 3, 6, and 8 now have above 200/million population hospitalized
  - Most growth is in Regions 1, 5, and 6
- Volume of COVID-19 patients in intensive care has increased 15% since last week (vs. 12% increase last week)

Death rate is increased to 3.0 daily deaths/million residents (up from 2.8 deaths/million last week)

- Overall trends for daily average deaths are increasing for Whites, Non-Hispanics, and Hispanics
- Currently, American Indian/Alaskan Natives and Whites have the highest death rates
- In the past 30 days, there have been 6 deaths among confirmed and probable COVID-19 cases under the age of 20

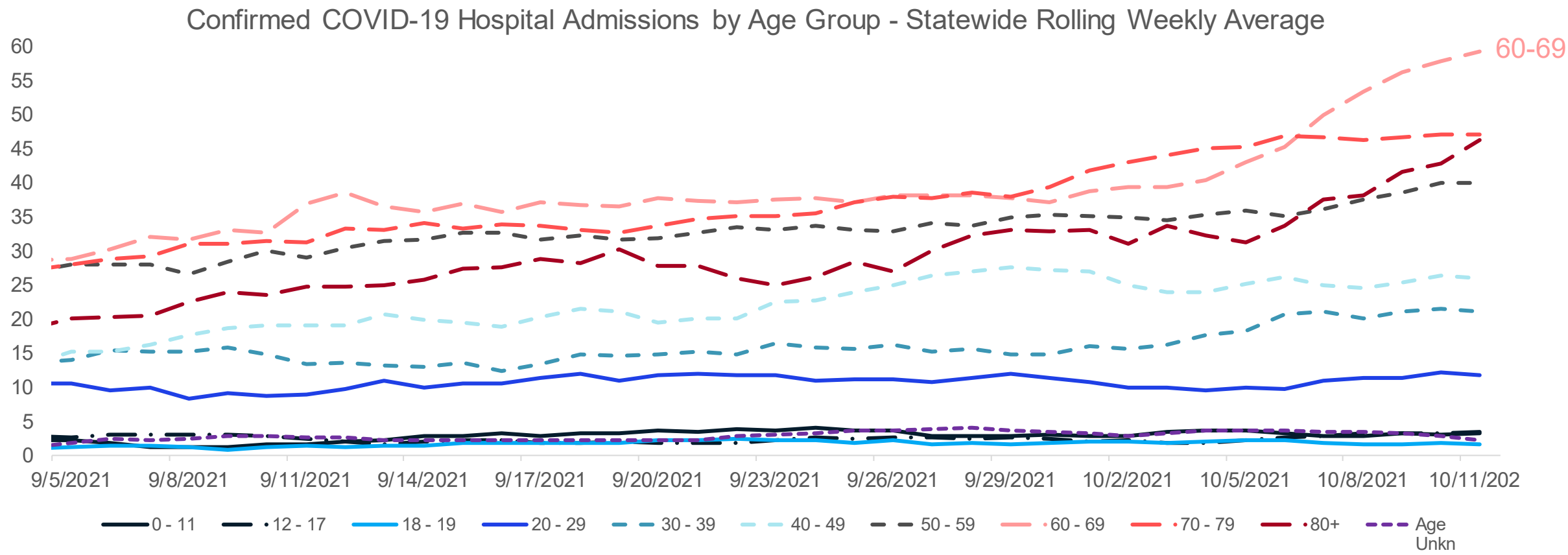
Michigan Trends in Emergency Department (ED) Visits for Diagnosed COVID-19



- Trends for ED visits have increased to 4.9% since last week (4.1% week prior)
- Trends vary by age groups with most age groups seeing an increase
- Over past week, those 40-49 years saw highest number of avg. daily ED CLI visits (6.8%), but those between 40 and 74 all above state average

Source: https://covid.cdc.gov/covid-data-tracker/#ed-visits

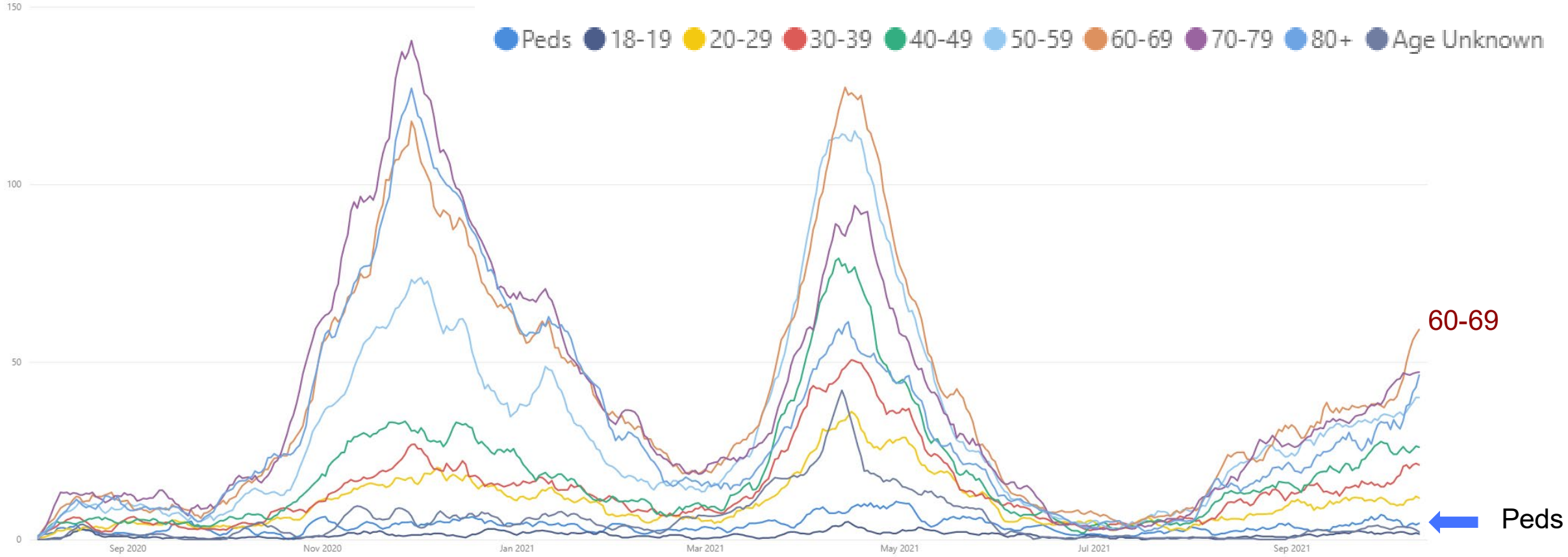
Average Hospital Admissions by Age Groups



- Trends for daily average hospital admissions have increased 22% since last week (vs. 6% increase prior week)
- Most age groups experienced a one week increase in daily hospital admissions
- Over the past week, those 60-69 years have seen the highest number of avg. daily hospital admissions (59 admissions)

Source: CHECC & EM Resource

Average Hospital Admissions Are Increase for all Age Groups



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Source: CHECC & EM Resource

Number of Hospital Admissions and Admission Rates are Increasing for Most Age Groups

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	3.3	2.4	-8% (-<1)
12-17	3.4	4.6	**85% (+2)**
18-19	1.6	6.0	-21% (-<1)
20-29	11.7	8.5	22% (+2)
30-39	21.0	17.3	20% (+3)
40-49	26.0	22.0	8% (+2)
50-59	40.0	**29.6**	13% (+5)
60-69	**59.1**	**46.4**	**47% (+19)**
70-79	47.1	**61.5**	5% (+2)
80+	46.3	**111.7**	**44% (+14)**
Total¶	**261.7**	**26.2**	**22% (+47)**

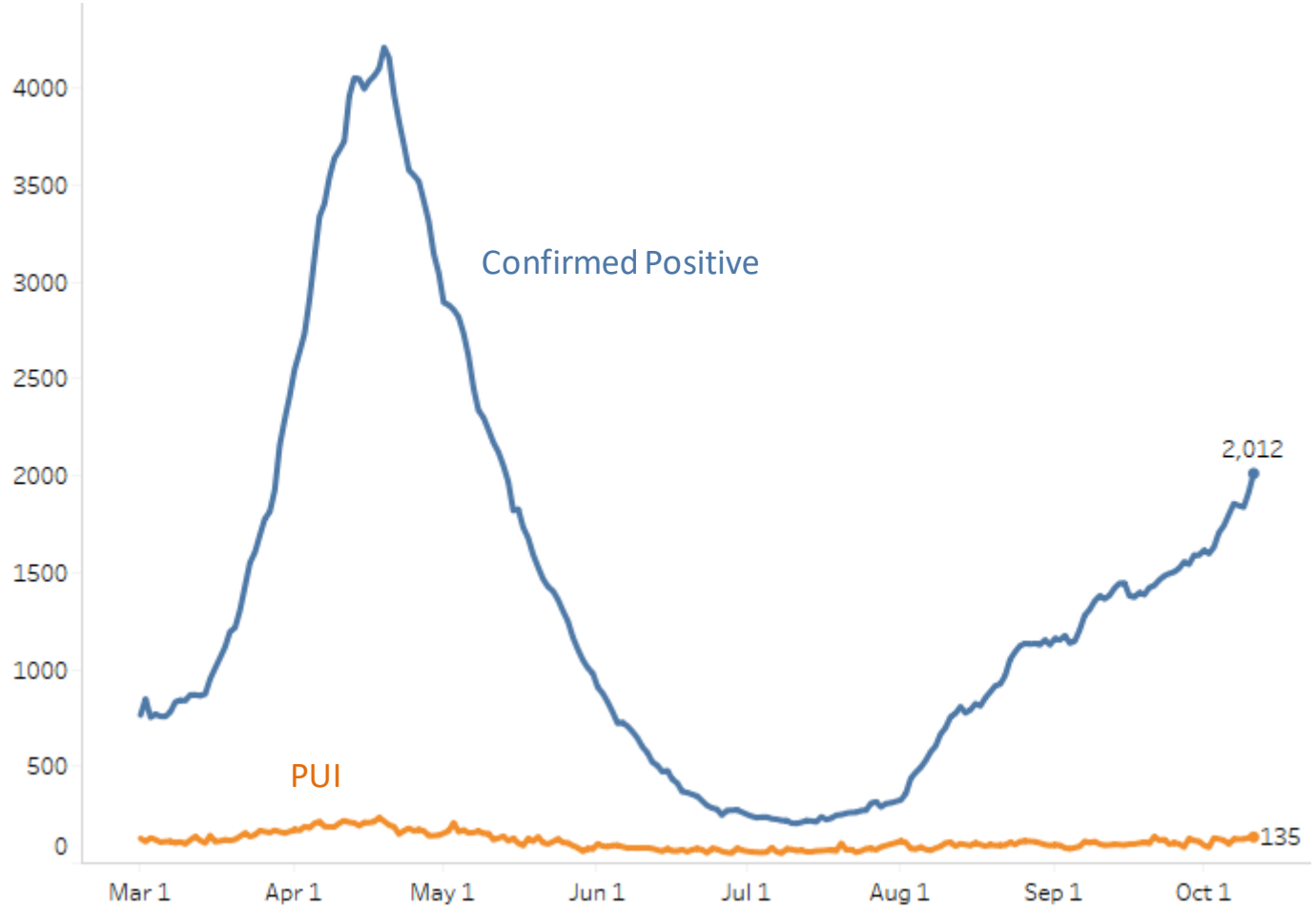
* Rate per 1 million residents; † Rolling 7-day average; ¶ Total may not reflect state due to missing age data
Note: Hospital Admission data reflects date data was submitted
Source: CHECC and EM Resource

- Through October 11, there were an average of 261 hospital admissions per day due to COVID-19, which is 47 (22%) more than last week
- The largest one week change in number of admissions was among those 60-69 years of age (+19, +47%)
- Average number of daily hospital admissions (59) are highest for those aged 60-69
- Average daily hospital admission rate (111.7 hospital admissions/million) are highest for those aged 80+

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

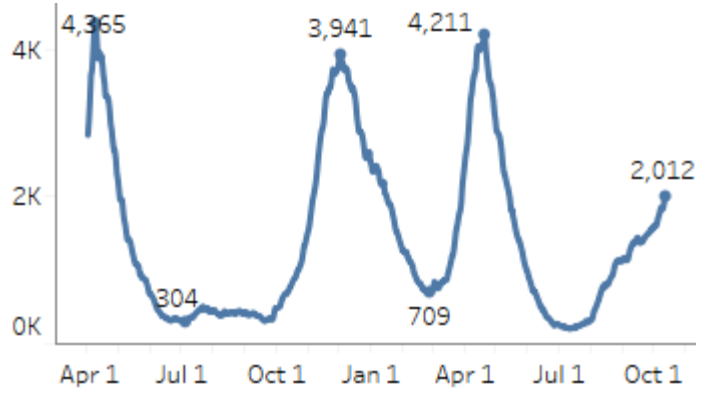
Statewide Hospitalization Trends: Total COVID+ Census

Hospitalization Trends 3/1/2021 – 10/11/2021
Confirmed Positive & Persons Under Investigation (PUI)



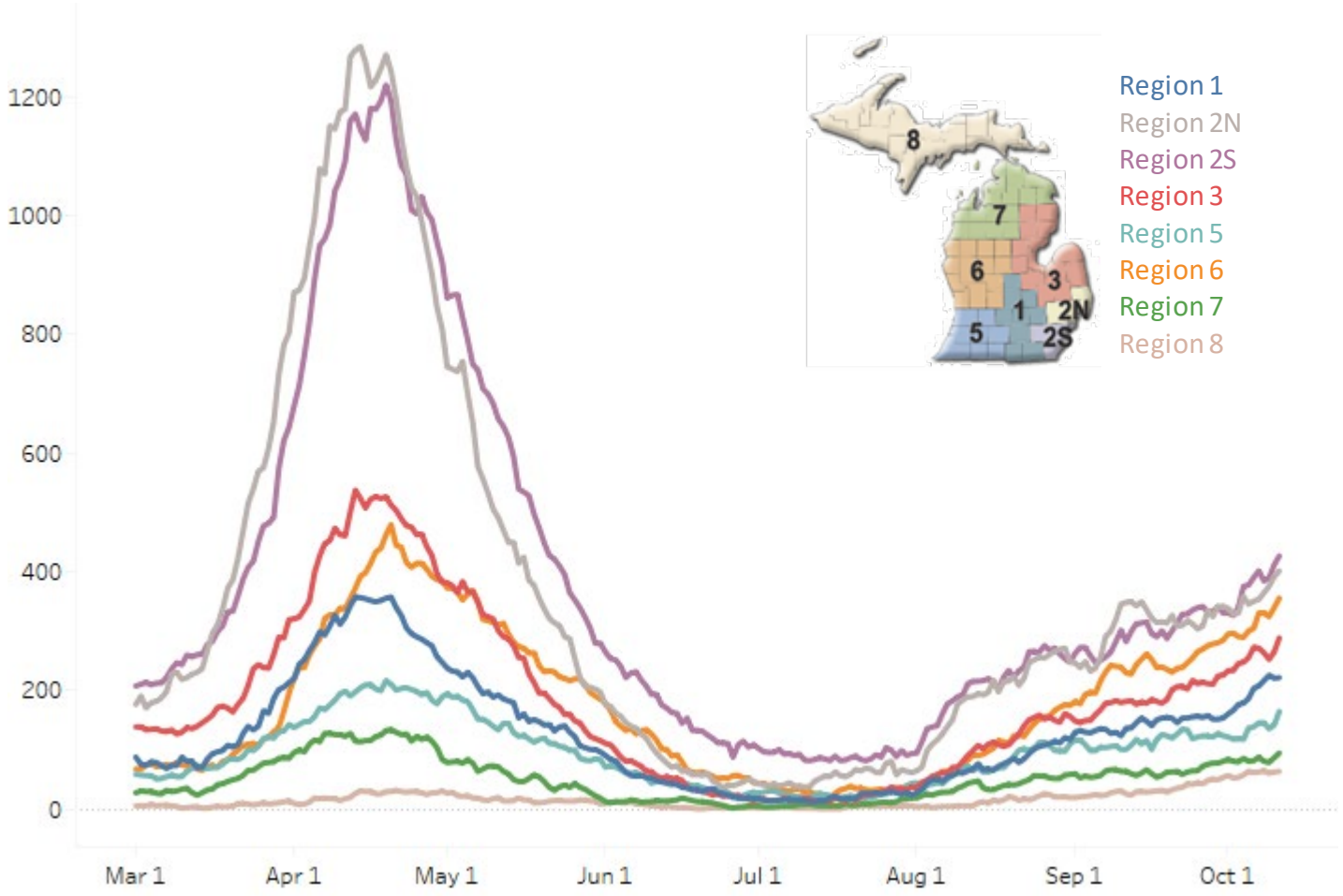
The COVID+ census in hospitals has increased 18% from the previous week (previous week's increase was 10%)

Hospitalized COVID Positive Long Term Trend (beginning March 2020)



Statewide Hospitalization Trends: Regional COVID+ Census

Hospitalization Trends 3/1/2021 – 10/11/2021
Confirmed Positive by Region



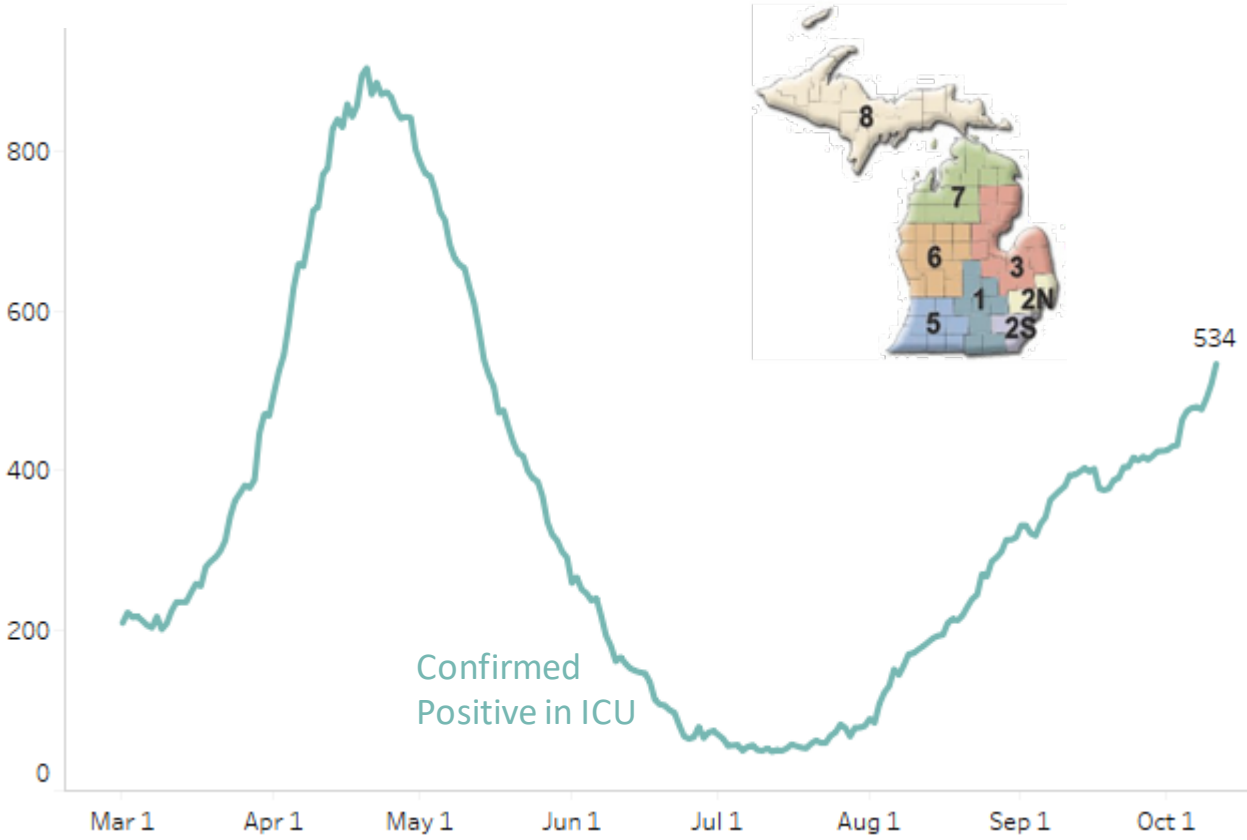
The hospital census of COVID+ patients has increased in all regions. The fastest growth was seen in Regions 1, 5 and 6.

Regions 1, 3, 6 and 8 have greater than 200/M population hospitalized.

Region	COVID+ Hospitalizations (% Δ from last week)	COVID+ Hospitalizations / MM
Region 1	221 (24%)	204/M
Region 2N	401 (12%)	181/M
Region 2S	426 (15%)	191/M
Region 3	288 (17%)	254/M
Region 5	164 (40%)	172/M
Region 6	355 (23%)	242/M
Region 7	94 (11%)	188/M
Region 8	63 (11%)	202/M

Statewide Hospitalization Trends: ICU COVID+ Census

Hospitalization Trends 3/1/2021 – 10/11/2021
Confirmed Positive in ICUs



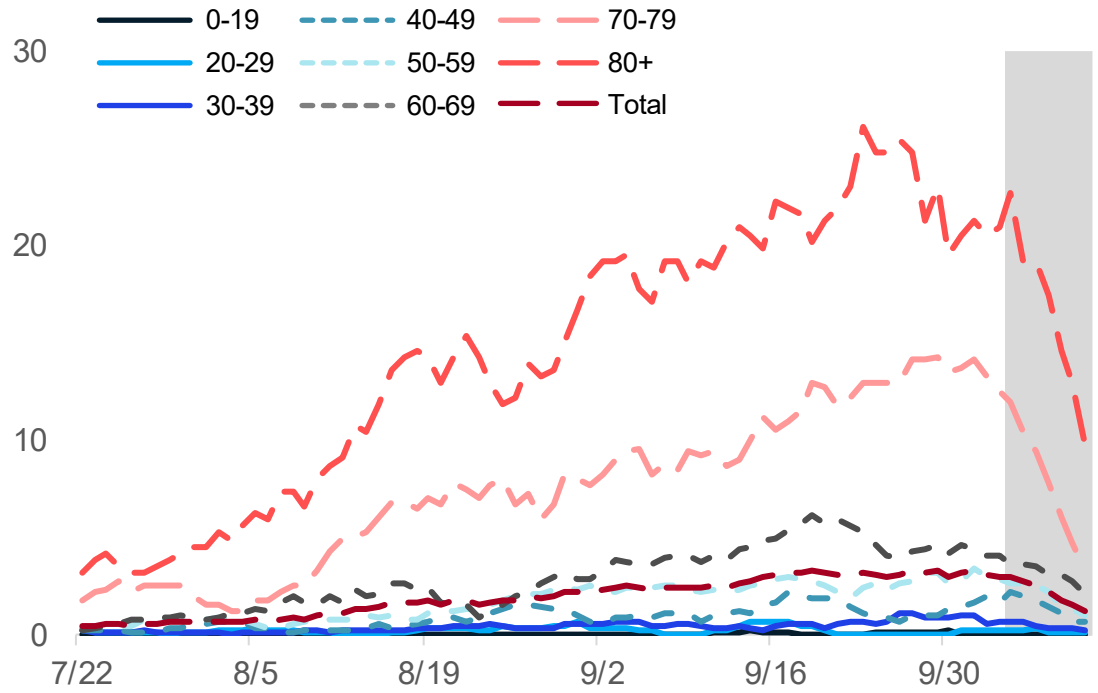
The census of COVID+ patients in ICUs has increased by 15% from last week

Regions 1, 6, 7 and 8 have greater than 30% of adult ICU beds filled with COVID+ patients and Region 6 is approaching ~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	56 (8%)	90%	32%
Region 2N	95 (0%)	74%	17%
Region 2S	116 (30%)	85%	17%
Region 3	79 (25%)	91%	23%
Region 5	33 (-3%)	75%	18%
Region 6	90 (11%)	83%	39%
Region 7	45 (29%)	81%	31%
Region 8	20 (33%)	69%	32%

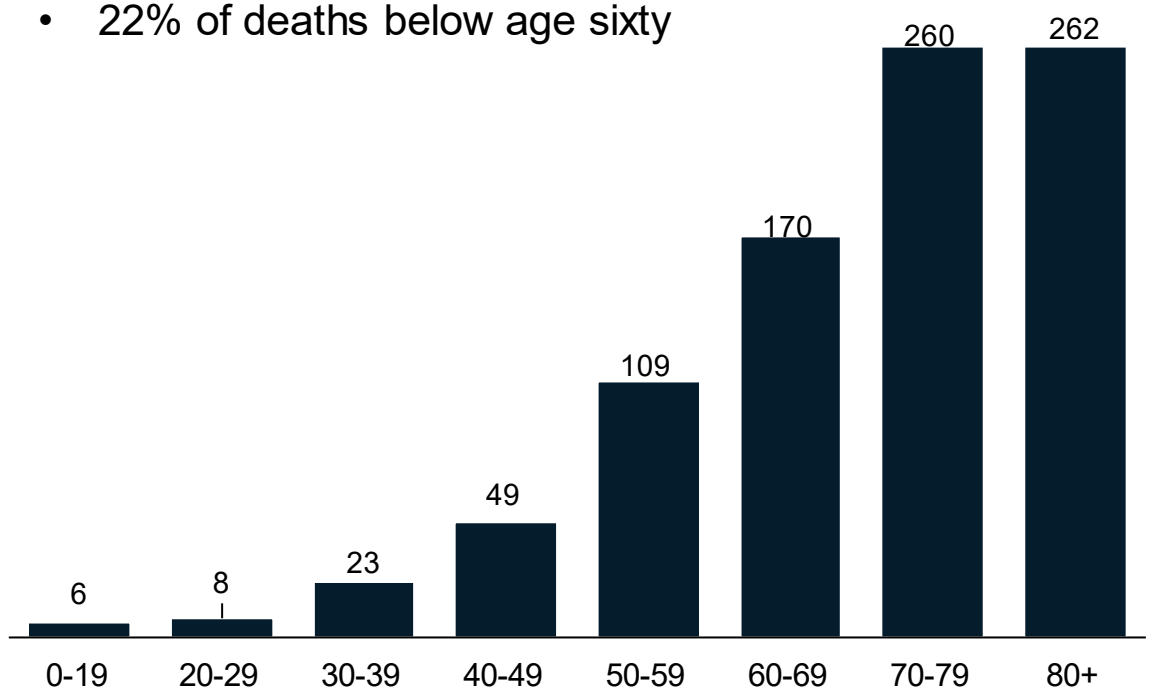
Average and total new deaths, by age group

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 10/4/2021)

- 22% of deaths below age sixty

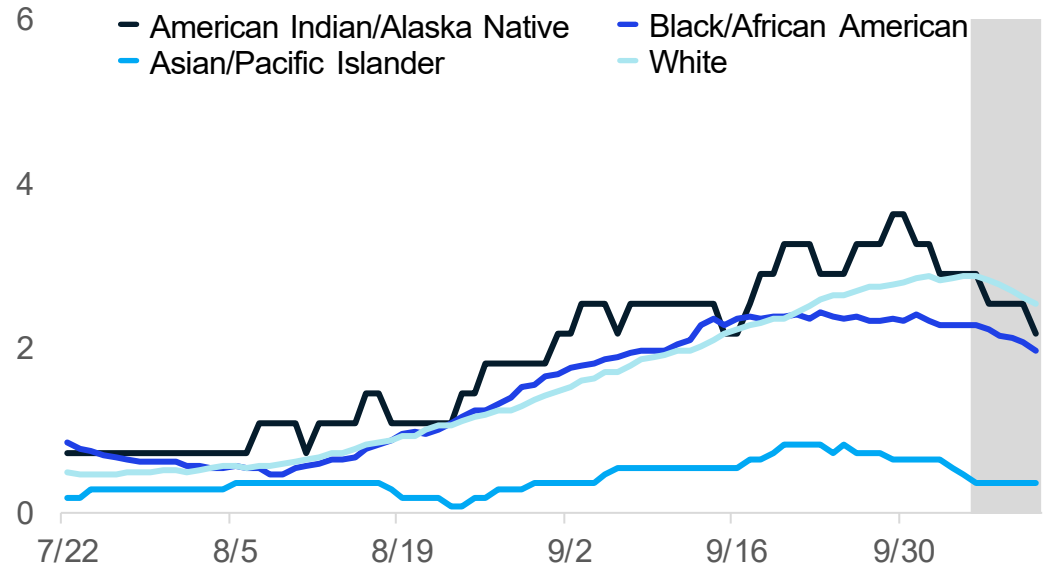


- Through 10/4, the 7-day avg. death rate is more than 12 daily deaths per million people for those over the age of 70
- In the past 30 days, there have been 6 deaths among confirmed and probable COVID-19 cases under the age of 20
- 30-day proportion of deaths among those under 60 years of age is steady from the prior week

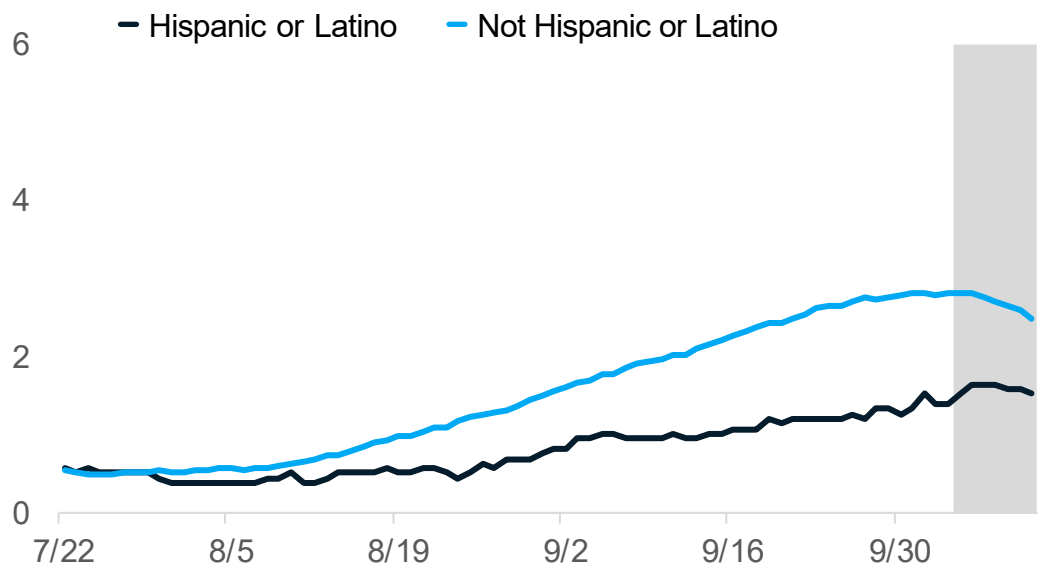
Note: Death information sourced from MDHHS and reflects date of death of confirmed and probable cases.
Source: MDHHS – Michigan Disease Surveillance System (MDSS)

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



- Overall trends for daily average deaths are increasing for Whites, Non-Hispanics, and Hispanics
- Currently, American Indian/Alaskan Natives and Whites have the highest death rate (2.9 deaths/million)
- In the past week, Hispanics have seen the largest increase in death rates (+16%)

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

Key Messages: Public Health Response

COVID-19 Vaccination

- 4,386 first doses administered each day (7-day rolling average*); total administrations increasing
- Most administered frequently by pharmacies, local health departments, and hospitals
- More than 893K third doses administered since August 13th, may include additional dose or booster dose
- 5.26 million people (52.7%) in the state are fully vaccinated

Breakthrough

- Less than 1% of people who were fully vaccinated experienced vaccine breakthrough
- Trends over time show that both case and death rates among the Fully Vaccinated are lower than the Not Fully vaccinated rates in Michigan

*Source: https://covid.cdc.gov/covid-data-tracker/#vaccination-trends_vacctrends-onedose-daily

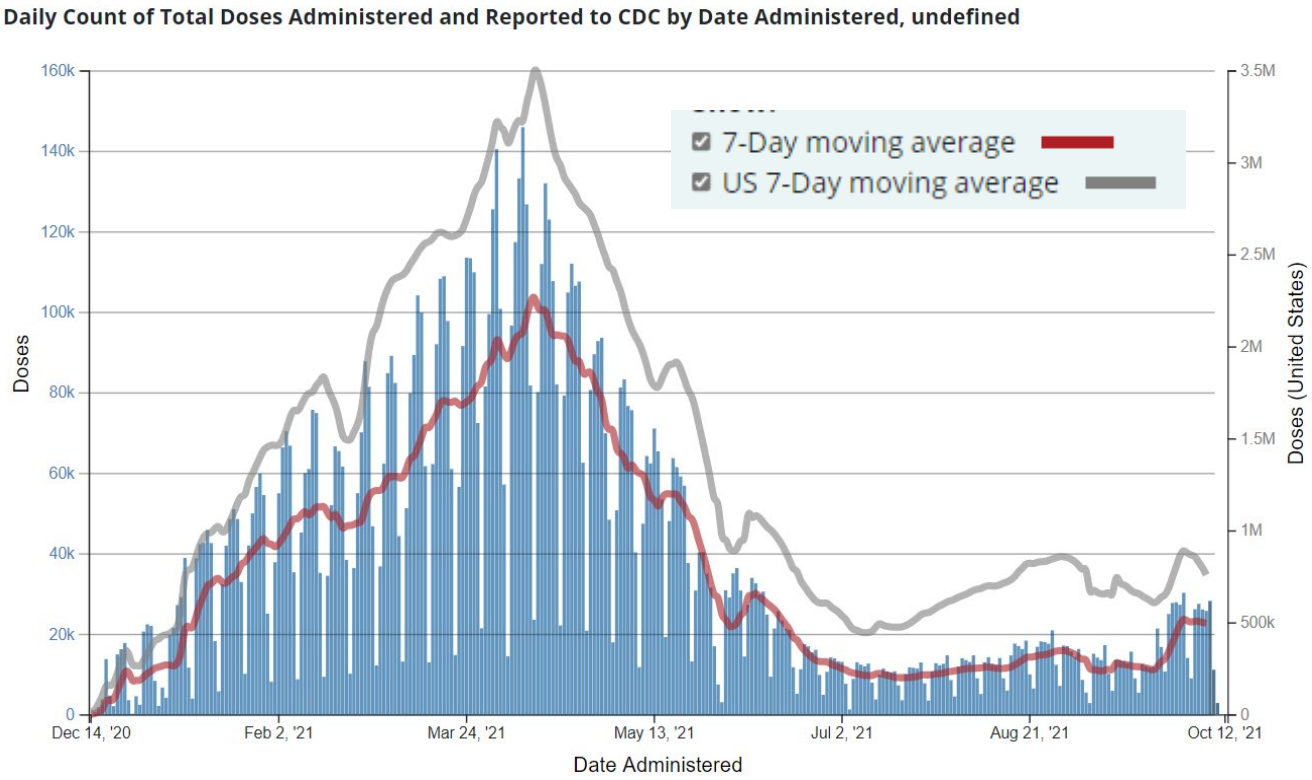
Average daily doses administered declining (data through 10/12/2021)

13,869,960 doses delivered to providers and
10,972,618 doses administered*

MI 7-day rolling average ending October 6th
- 22,833 total doses/day on average† (19,826 on 9/29)
- 4,012 first doses/day on average † (4,386 on 9/29)

Total primary series doses in month of September were most frequently administered¶ by:
Pharmacies (208,480)
LHD (17,213) and hospitals (15,366)
Family practice (10,727) and FQHCs (8,865)

Third Doses
- 309,943 third doses administered as of 10/11



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

5.26 Million Michiganders fully vaccinated and 52.7% of total population fully vaccinated

5.26 million people in the state are fully vaccinated*

84.0% of people aged 65 and older have completed the series (↔%)*

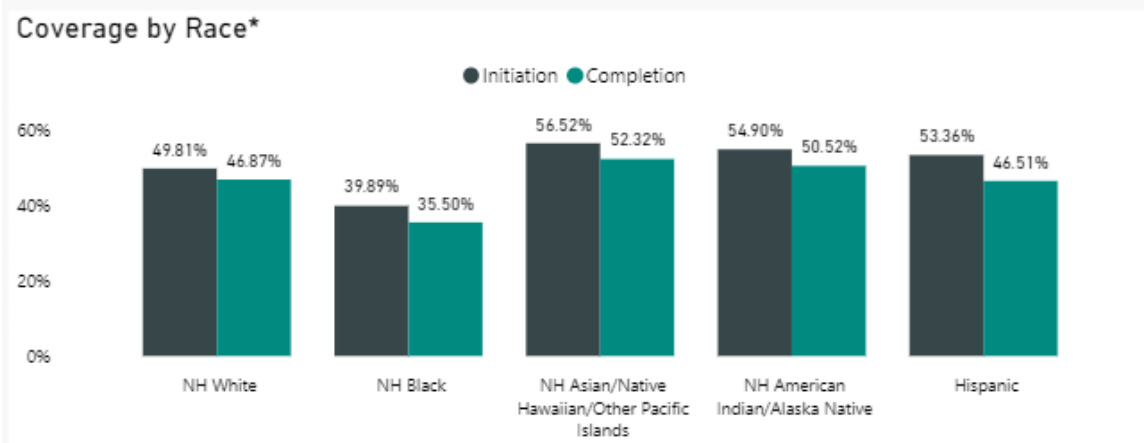
57.3% of total population initiated (↓0.1%)*

Race/Ethnicity¶ for those 12 years and older:

- Initiation coverage highest among those of Non-Hispanic (NH) Asian, Native Hawaiian or Pacific Islander Race (56.5%), then NH American Indian (54.9%), NH White (49.8%), NH Black or African American Races (39.9%).
- Initiation is at 53.4% for those of Hispanic ethnicity
- Completion follows the same pattern
- 16.6% data missing or unknown

Vaccination Coverage in Michigan as of 10/12/21

Age Group	% At Least One Dose	% Fully Vaccinated	Number Fully Vaccinated
Total Population	57.3%	**52.7%**	5,264,411
≥ 12 years	66.5%	61.2%	5,264,291
≥ 18 years	68.7%	63.3%	4,967,788
≥ 65 years	89.1%	84.0%	1,483,463



*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

Update on breakthrough cases

Potential COVID-19 Vaccination Breakthrough Cases

Michigan part of CDC's nationwide investigation (COVID-19 Breakthrough Case Investigations and Reporting | CDC)

Michigan Data (1/1/21 through 10/5/21):

- **38,571 cases met criteria based on a positive test 14 or more days after being fully vaccinated**
- **Less than 1% of people who were fully vaccinated met this case definition**
  - **Includes 574 deaths (504 in persons ages 65 years or older)**
  - **1,412 cases were hospitalized**

- Vaccine breakthrough cases are expected. COVID-19 vaccines are effective and are a critical tool to bring the pandemic under control; however, no vaccine is 100% effective at preventing illness. Some fully vaccinated people will get sick, and some will even be hospitalized or die from COVID-19. However, there is evidence that vaccination may make illness less severe for those who are vaccinated and still get sick. The risk of infection, hospitalization, and death are all much lower in vaccinated people compared to unvaccinated.
- More than 185 million people in the United States have been fully vaccinated as of October 4, 2021. CDC is monitoring these cases among vaccinated persons and evaluating trends in order to better understand who is at risk for severe COVID-19 following vaccine breakthrough infection. Vaccinated people have also experienced asymptomatic infections.
- Current data suggest that COVID-19 vaccines authorized for use in the United States offer protection against most SARS-CoV-2 variants circulating in the United States.

Cumulative COVID-19 Cases by Vaccination Status, Michigan, Jan 15 – Oct 5

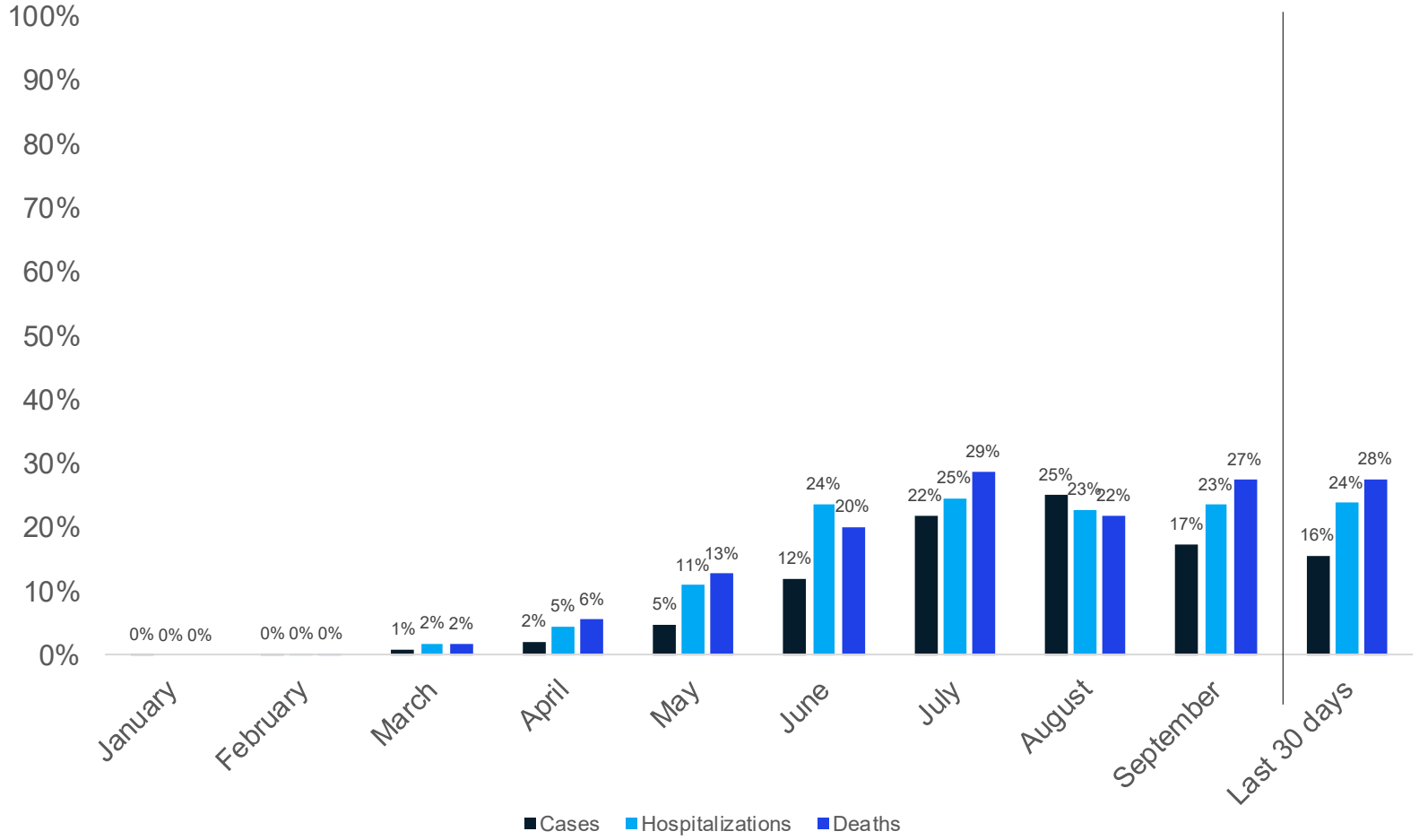
Fully Vaccinated People (4,948,851)		
Cases	**Hospitalization**	**Deaths**
Percent of Cases In People Not Fully Vaccinated (505,838 / 544,409) **92.9%**	Percent of Hospitalizations In People Not Fully Vaccinated (13,512 / 14,924) **90.5%**	Percent of Deaths In People Not Fully Vaccinated (5,662 / 6,236) **90.8%**
505,838 Total Cases Not Fully Vaccinated	**13,512** Total Hospitalized Not Fully Vaccinated	**5,662** Total Deaths Not Fully Vaccinated
Total Breakthrough Cases **38,571**	Total Breakthrough Hospitalizations **1,412**	Total Breakthrough Deaths **574**
0.779% Percent of Fully Vaccinated People who Developed COVID-19 (38,571 / 4,948,851)	**0.029%** Percent of Fully Vaccinated People Who Were Hospitalized for COVID-19 (1,412 / 4,948,851)	**0.012%** Percent of Fully Vaccinated People Who Died of COVID-19 (574 / 4,948,851)
7.1% Percent of Cases Who Were Fully Vaccinated (38,571 / 544,409)	**9.5%** Percent of Hospitalizations Who Were Fully Vaccinated (1,412 / 14,924)	**9.2%** Percent of Deaths Who Were Fully Vaccinated (574 / 6,236)
Total Cases: **544,409**	Total Hospitalizations: **14,924**	Total Deaths: **6,236**

Michigan Disease Surveillance System may underestimate the frequency of COVID-19 hospitalizations:
- Case investigation and follow-up is more difficult for individuals who get vaccinated (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.

Trends in Breakthrough Cases, Hospitalizations, and Deaths

- 52.7% of the population is fully vaccinated yet only account for ~20-25% of cases, hospitalizations, and deaths
- As the fully vaccinated population has increased, so have the percent of breakthrough incidents; but breakthrough burden remains lower

In the last 30 days (Sep 6 – Oct 5), 13,124 (16%) of 83,966 cases, 282 (24%) of 1,186 hospitalizations, and 104 (28%) of 378 deaths were among fully vaccinated individuals



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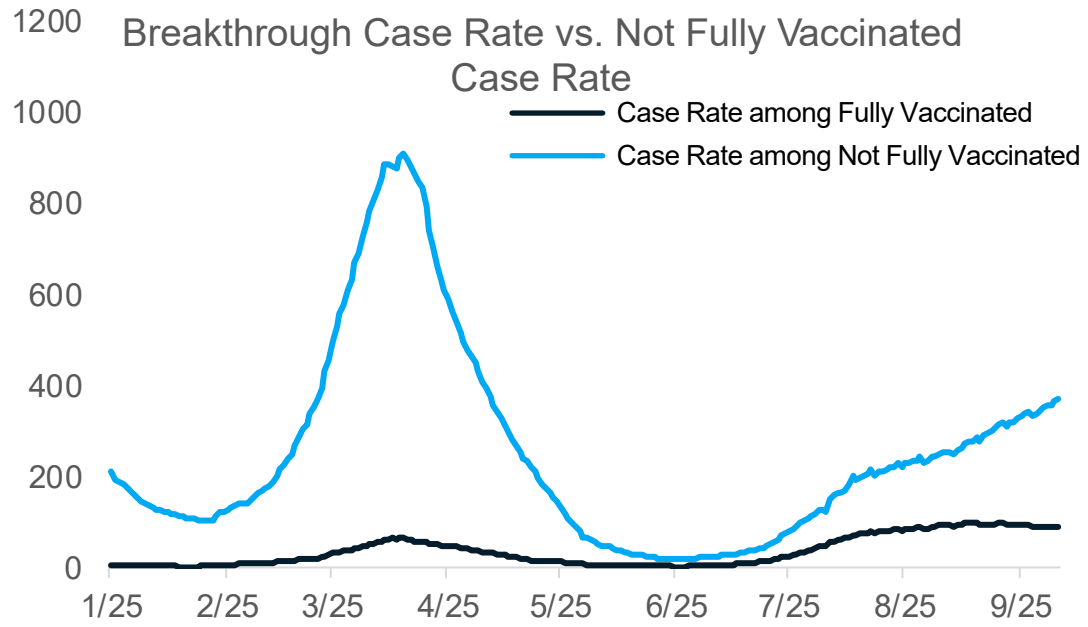
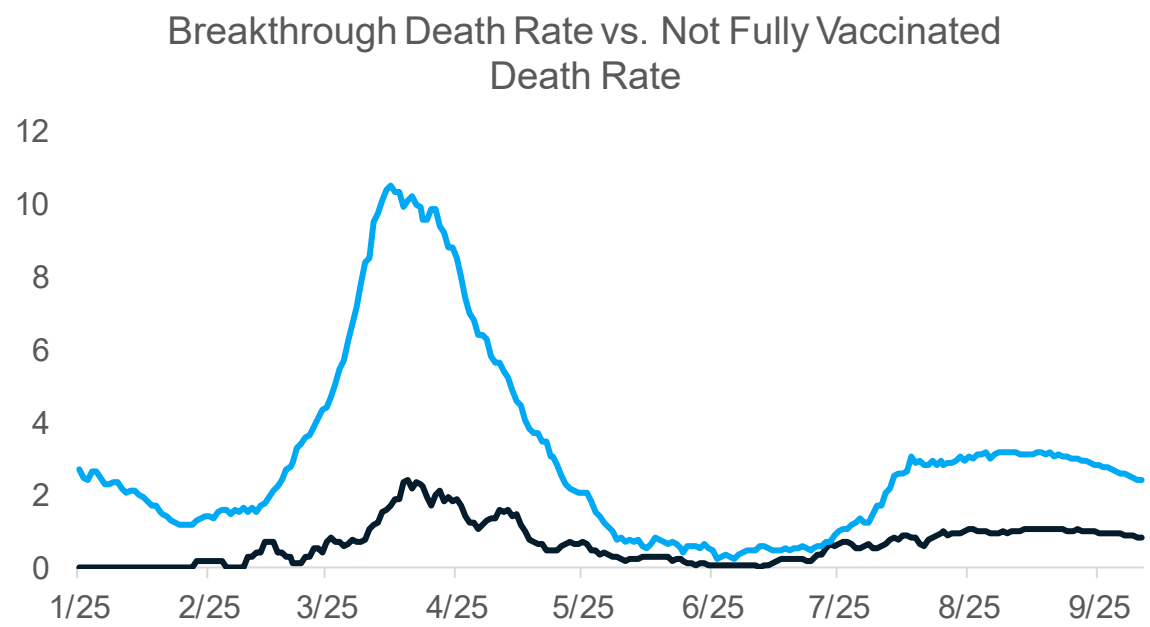
COVID-19 Vaccination Breakthrough Cases and Deaths

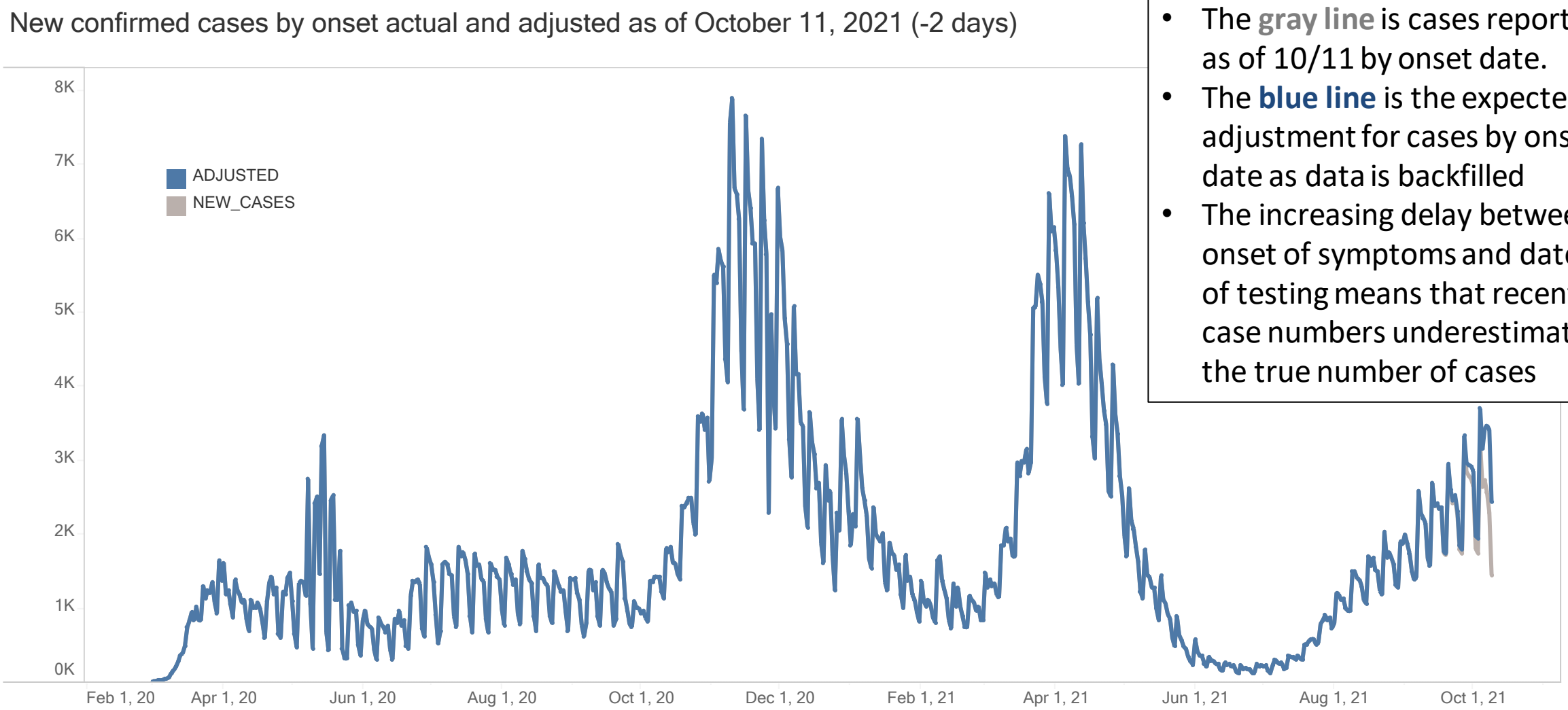




- Trends over time show that both case and death rates among the Fully Vaccinated are lower than the Not Fully vaccinated rates in Michigan
- The *proportion* of breakthrough cases and deaths among all cases and deaths has shown some increases as more people become fully vaccinated
  - However, the risk of infection and death remains significantly lower among the fully vaccinated

Appendix

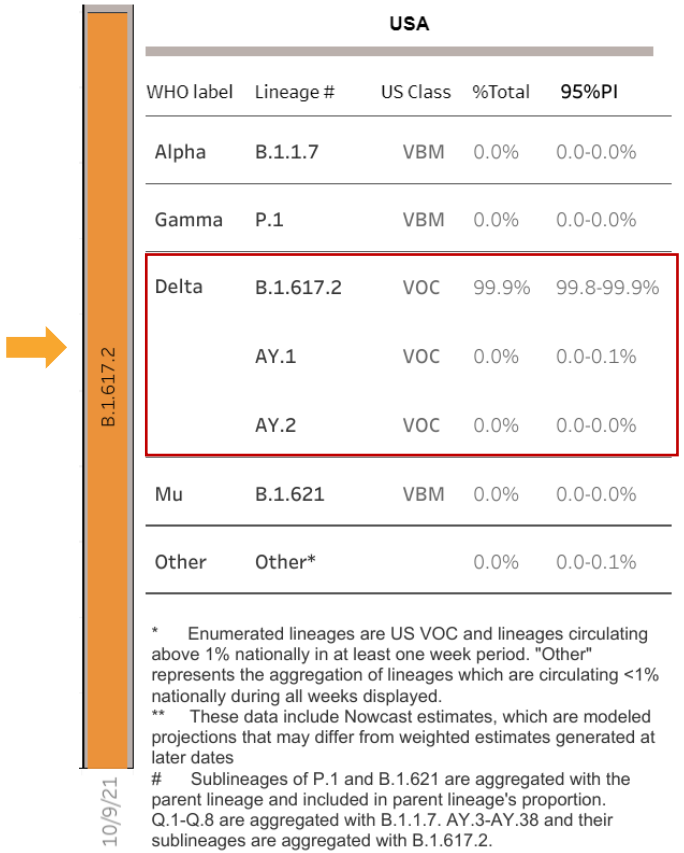
Michigan Lag adjusted new COVID cases by onset date



- The **gray line** is cases reported as of 10/11 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

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

Variants Circulating in United States, Oct 3 – Oct 9 (NOWCAST)



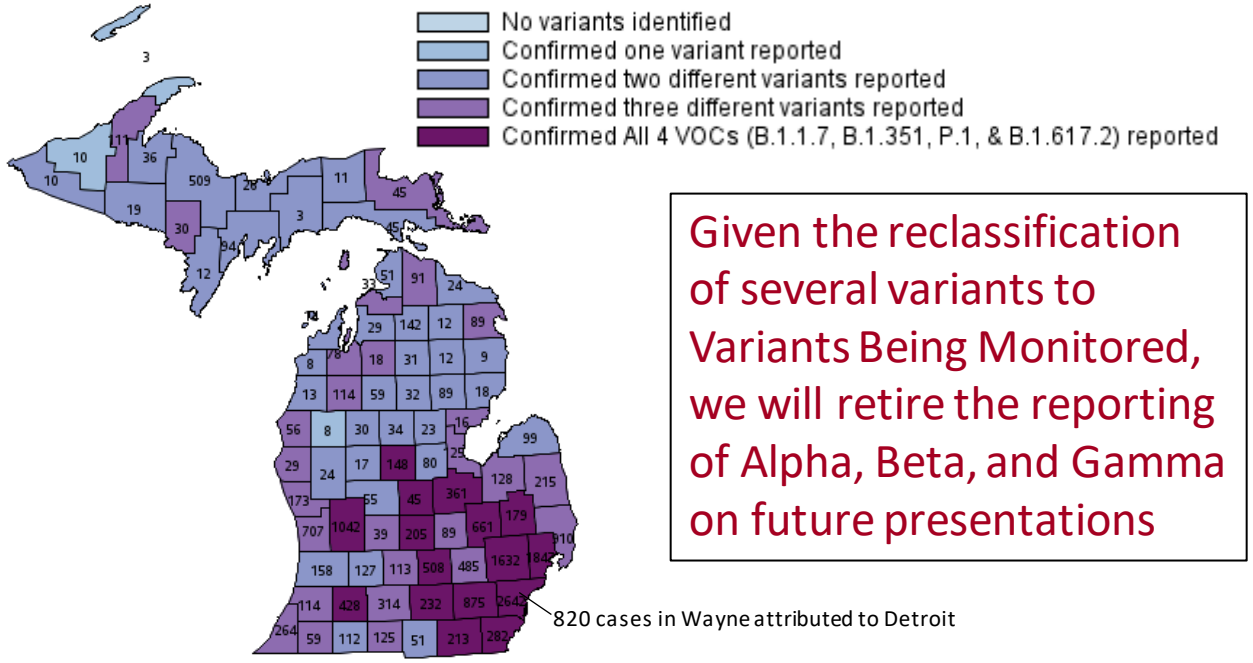
USA

WHO label	Lineage #	US Class	%Total	95%PI
Alpha	B.1.1.7	VBM	0.0%	0.0-0.0%
Gamma	P.1	VBM	0.0%	0.0-0.0%
Delta	B.1.617.2	VOC	99.9%	99.8-99.9%
	AY.1	VOC	0.0%	0.0-0.1%
	AY.2	VOC	0.0%	0.0-0.0%
Mu	B.1.621	VBM	0.0%	0.0-0.0%
Other	Other*		0.0%	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
# Sublineages of P.1 and B.1.621 are aggregated with the parent lineage and included in parent lineage's proportion. Q.1-Q.8 are aggregated with B.1.1.7. AY.3-AY.38 and their sublineages are aggregated with B.1.617.2.

Data last updated Oct 12, 2021
Source: https://covid.cdc.gov/covid-data-tracker/#variant-proportions and MDSS

Variants of Concern in Michigan, Oct 11



Given the reclassification of several variants to Variants Being Monitored, we will retire the reporting of Alpha, Beta, and Gamma on future presentations

Variant	MI Reported Cases¶	# of Counties	% Specimens in last 4 wks
B.1.1.7 (alpha) now VBM	13,667*	81	0%
B.1.351 (beta) now VBM	88	24	0%
P.1 (gamma) now VBM	336	35	0%
B.1.617.2 (delta)	**4,617 (↑668)**	**82 (↔)**	**100%**

* 534 cases within MDOC; ¶ 41 cases with county not yet determined; now only Delta remains a VOC