

MI COVID RESPONSE DATA AND MODELING UPDATE

October 5, 2021

Executive Summary

Special Population Focus: Children

Cases and hospitalizations are steady compared to last week

Severe events, while rarer than among adults, do occur and have disparate impact on minority children

There were 364 outbreaks and clusters in K-12 schools

104 schools impacted by lost school time from illness or quarantine; average of 87 students and staff impacted by lost in-person schooling

Layered strategies work including vaccination, masking, screening testing, cohorting/podding, isolation and quarantine, physical distancing, and proper hygiene (examples from North Carolina ABC Study, CDC MMWR camp studies , and difference in Michigan school districts)

7% of school districts (35) have rescinded their school mask policies

Michigan remains at High Transmission

Percent positivity (10.3%) increased for one week (8.8% last week)

Case rate (258.9 cases/million) is increasing for three months (246.3 last week)

Michigan has 52nd lowest number of cases (49th last week), and T37th lowest case rate (27th last week) in the last 7 days

99% 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 (8.0%) is increasing for 11 weeks (up from 7.4% last week)

Michigan has 20th lowest inpatient bed utilization (17th last week) and 13th lowest adult ICU bed utilization (13th last week)

Death rate (2.8 deaths/million) is steady for one week (2.8 last week). There were 194 COVID deaths between Sep 21-Sep 27

Michigan has the 30th lowest number of deaths (T30th last week), and T10th lowest death rate (T7th last week) in the last 7 days

7-day average **state testing rate** decreased to 3,606.9 tests/million/day. **Daily diagnostic tests (PCR)** is 32.3K per day, and the weekly average for PCR and antigen tests conducted in Michigan is 46.7K.

10.77 million **COVID-19 vaccine** doses administered, 52.6% of population is fully vaccinated (5.256 million people)

COVID-19 and Pediatric Populations

Cases and hospitalizations

Special Populations

National
Comparison

Spread

Severity

Public Health
Response

Other
Indicators

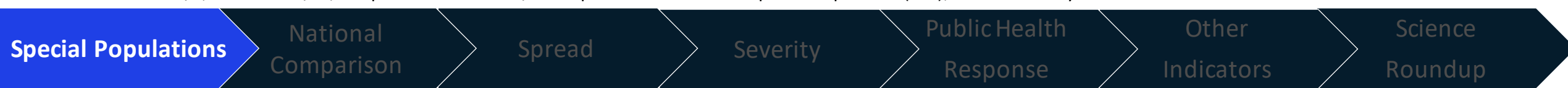
Science
Roundup

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)
Detroit	735529	1134247	36715	162.9	221.5	18.9	16.7	0
Grand Rapids	230120	350652	13169	78.0	339.0	7.6	21.7	0
Kalamazoo	140422	214801	7053	35.4	252.1	2.0	9.3	0
Saginaw	78759	122834	4344	25.6	325.0	0.6	4.9	0
Lansing	78140	119915	4206	24.0	307.1	0.7	5.8	0
Traverse City	53099	83462	2155	14.3	269.3	0.4	4.8	0
Jackson	41274	64091	2096	14.6	353.7	0.0	0.0	0
Upper Peninsula	34645	53875	2193	20.3	585.9	0.0	0.0	0
Michigan	1391988	2143877	72021	375.0	269.4	30.1	14.0	0

- Each day more than 375 children under age 12 become infected with COVID-19, 5 more children per day than last week
- Pediatric case rates are steady at 269.4 cases/million (last week: 265.4 cases/million)
- Pediatric (<18) hospital census* is averaging approximately 30 per day (last week: 25.9 per day)
- Previous documents incorrectly summed pediatric confirmed COVID+19 hospitalization census with pediatric confirmed and suspect COVID-19 hospitalization census

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



Overview of metrics for individuals < 18: Key changes from last week

MERC Region	Pediatric Case Rate – One Week % Change (Δ Rate) [¶]	Pediatric Hospitalization Rate – One Week % Change (Δ Rate) [†]
Detroit	1% (+1.7)	-4% (-0.7)
Grand Rapids	7% (+21.8)	62% (+8.3)
Kalamazoo	14% (+30.6)	182% (+6.0)
Saginaw	-13% (-47.0)	48% (+1.6)
Lansing	14% (+37.1)	132% (+3.3)
Traverse City	-15% (-49)	ND [§] (+4.8)
Jackson	1% (+4.8)	ND [§] (NC)
Upper Peninsula	-5% (-31.8)	ND [§] (NC)
Michigan[¶]	2% (+4.0)	16% (+1.9)

Note: Case information sourced from MDHHS and reflects date of onset of symptoms

§ ND – Not divisible with denominator of 0; NC – No change

Source: Case data - Michigan Disease Surveillance System (MDHHS), Hospitalization data - EM Resource

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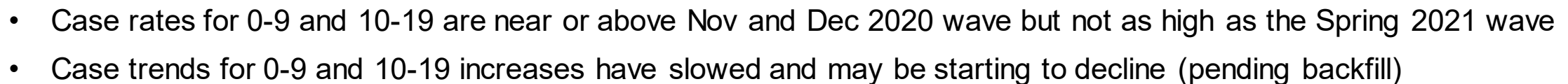
Note: Data as of 10/4; case data 9/27, hospitalization data 10/4.

Hospitalization data is for pediatric patients (<18)

* Includes only confirmed COVID-19; ¶ Case Rate change compares data from 9/27 to 9/20; †Hospitalization Rate change compares 10/4 to 9/27 and these data now only compare hospitalizations with confirmed COVID-19 diagnosis;



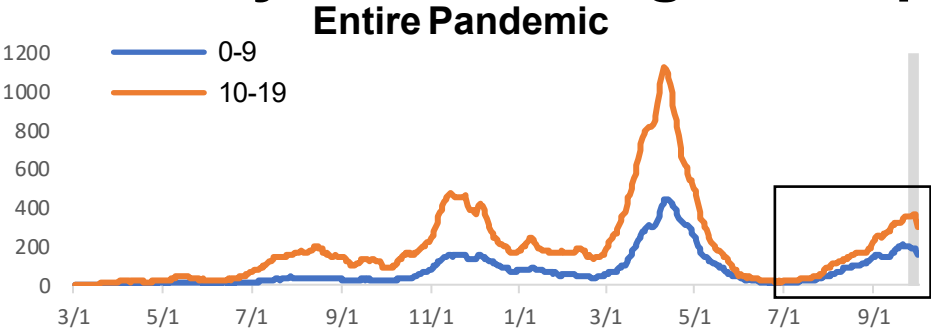
Daily new confirmed and probable cases per million by pediatric age group (7-day rolling average)



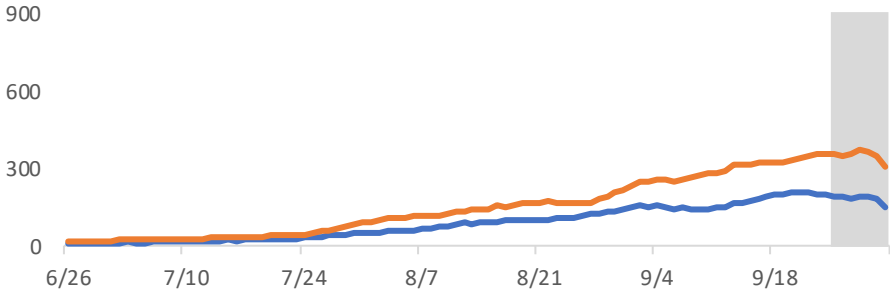
Special Populations > National Comparison > Spread > Severity > Public Health Response > Other Indicators > Science Roundup

Case Rate Trends by Pediatric Age Group and MERC Region

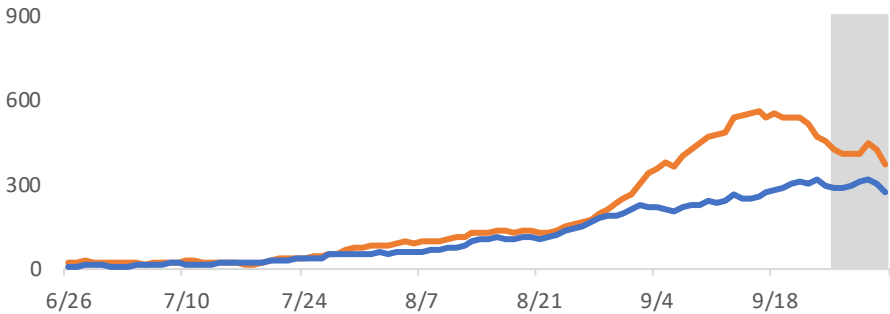
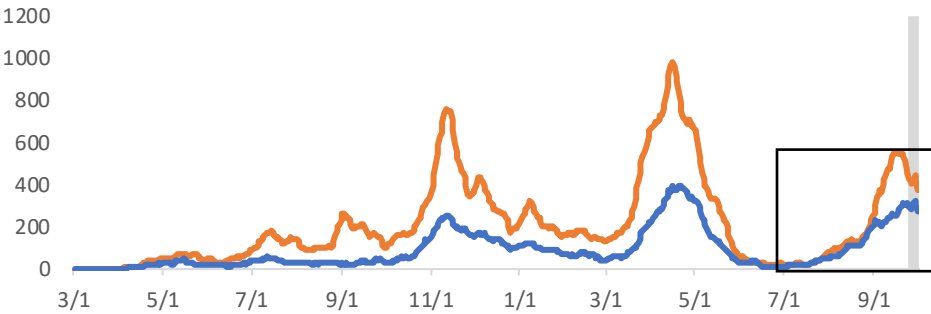
Detroit Region



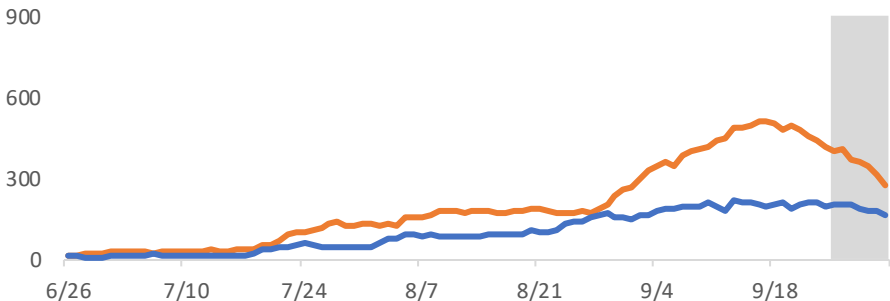
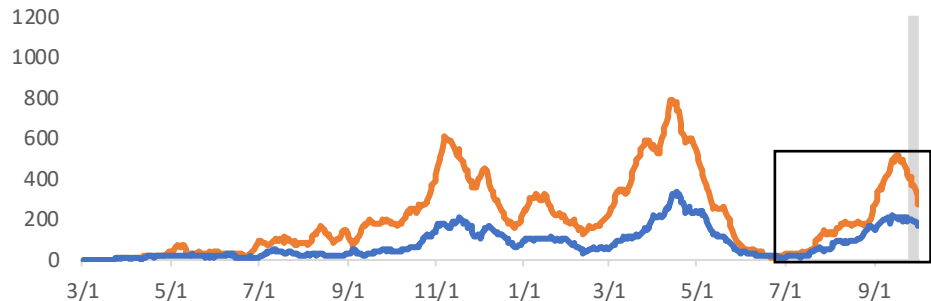
Previous 3 months



Grand Rapids Region



Kalamazoo Region



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

Special Populations

National
Comparison

Spread

Severity

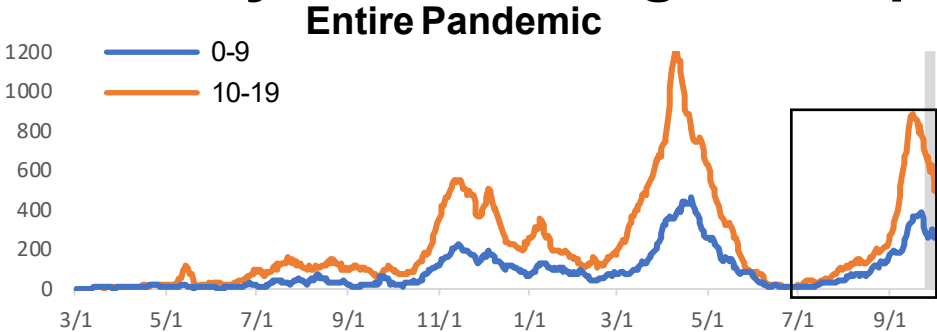
Public Health
Response

Other
Indicators

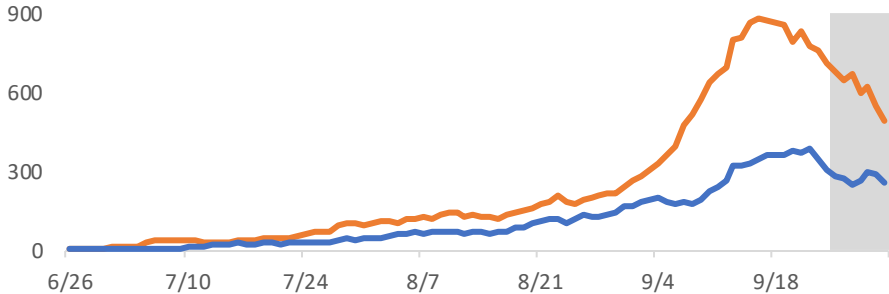
Science
Roundup

Case Rate Trends by Pediatric Age Group and MERC Region

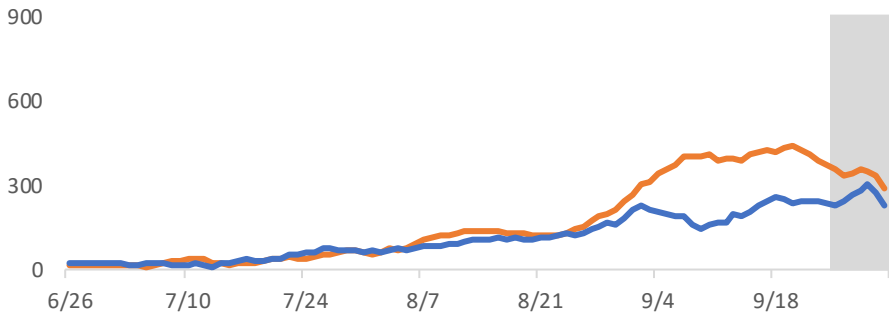
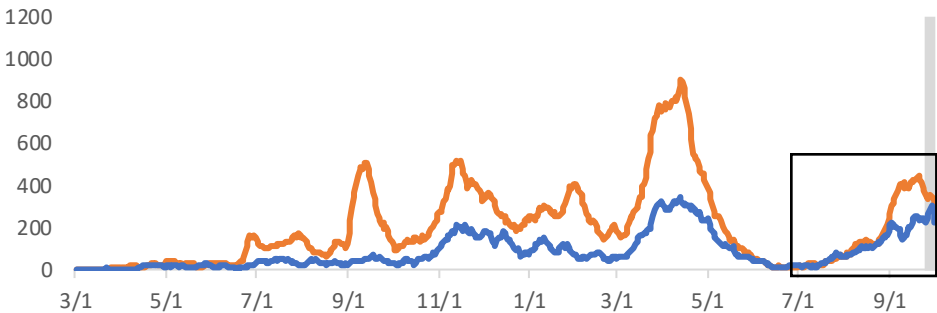
Saginaw
Region



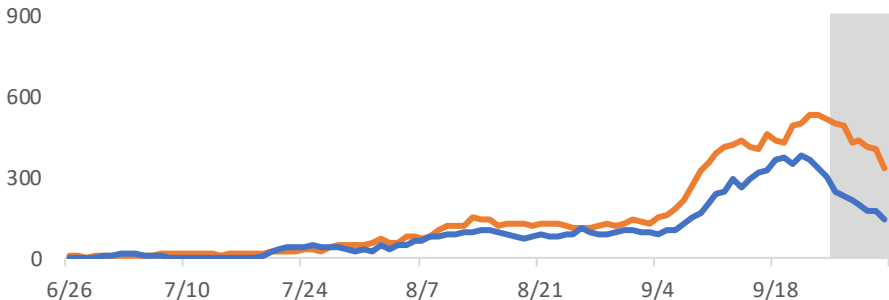
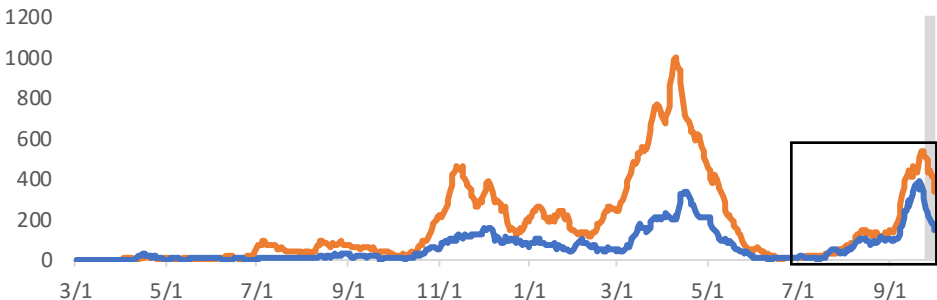
Previous 3 months



Lansing
Region

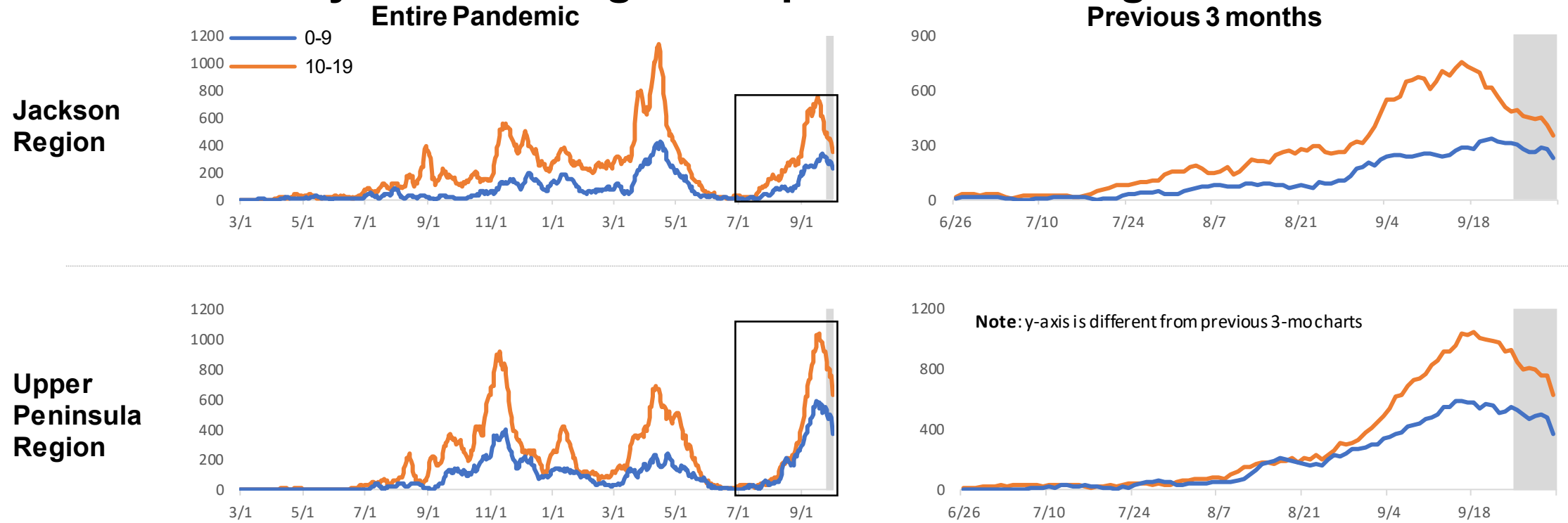


Traverse City
Region



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

Case Rate Trends by Pediatric Age Group and MERC Region

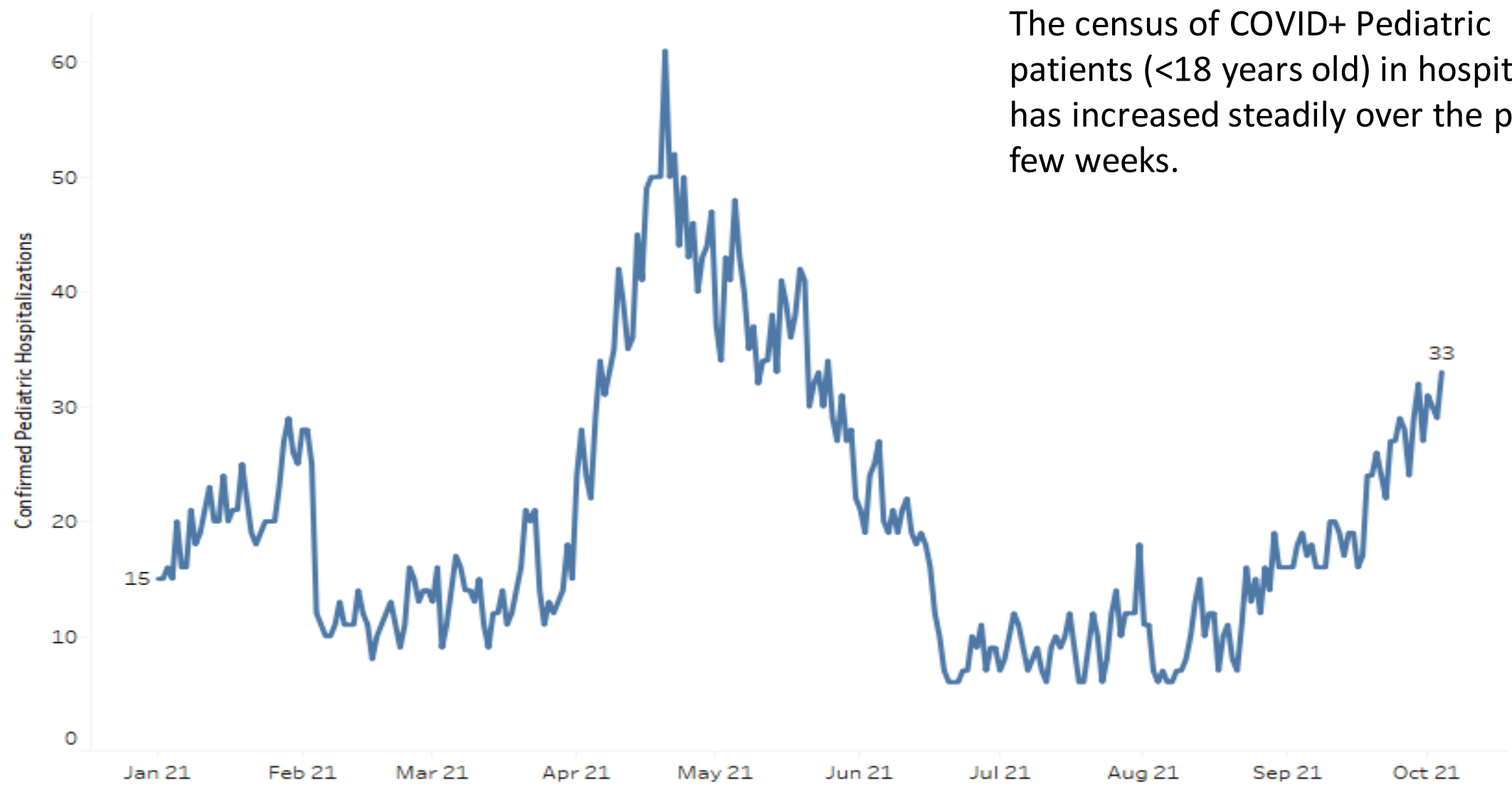


- All MERC Regions experienced an increase in cases among 0-9 and 10-19 during the recent Delta (B.1.617.2) surge
- All regions saw higher case rates for 10-19 than for 0-9
- The regions of Upper Peninsula, Traverse City, and Saginaw currently have the highest case rates for 0-19 years age groups

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

Statewide Hospitalization Trends: Pediatric COVID+ Census

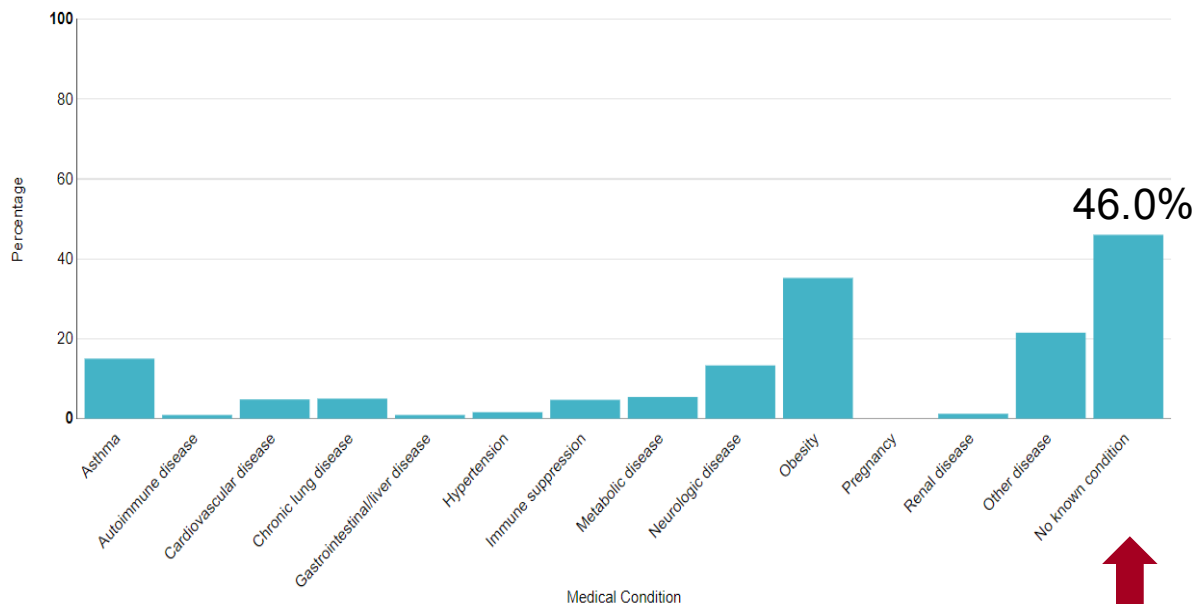
The census of COVID+ Pediatric patients (<18 years old) in hospitals has increased steadily over the past few weeks.



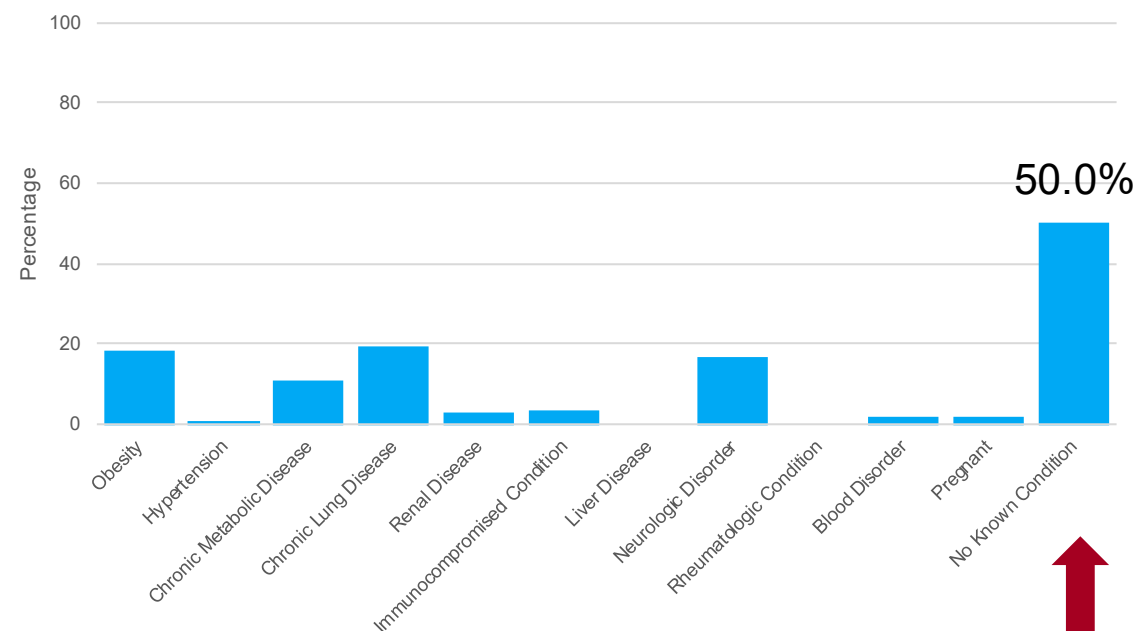
Majority of hospitalized children have no underlying conditions

- Children can experience severe health outcomes from COVID-19 including MIS-C and Hospitalization
 - Nationally, nearly half of children hospitalized have no reported underlying conditions[†]
 - In Michigan, 50% of children hospitalized have no reported underlying conditions

U.S. Pediatric Hospitalizations | Underlying Medical Conditions



MI Pediatric Hospitalizations | Underlying Medical Conditions



1. COVID-NET hospitalization data are preliminary and subject to change as more data become available. In particular, case counts and rates for recent hospital admissions are subject to delay. As data are received each week, prior case counts and rates are updated accordingly.

2. Data are restricted to cases reported during March 1, 2020 – August 31, 2021, due to delays in reporting. During this time frame, sampling was conducted among hospitalized adults aged ≥18 years; therefore, counts are not shown, and weighted percentages are reported. The denominator for percentages among adults includes sampled cases with data on these conditions. No sampling was conducted among hospitalized children; therefore, the denominator for percentages of underlying medical conditions among children includes all pediatric cases with data on these conditions. Underlying medical conditions among pregnant women are included when "Adults" and/or "Pediatrics" is selected.

Sources: *[CDC COVID Data Tracker > New Hospital Admissions](#); † [COVIDNET](#)

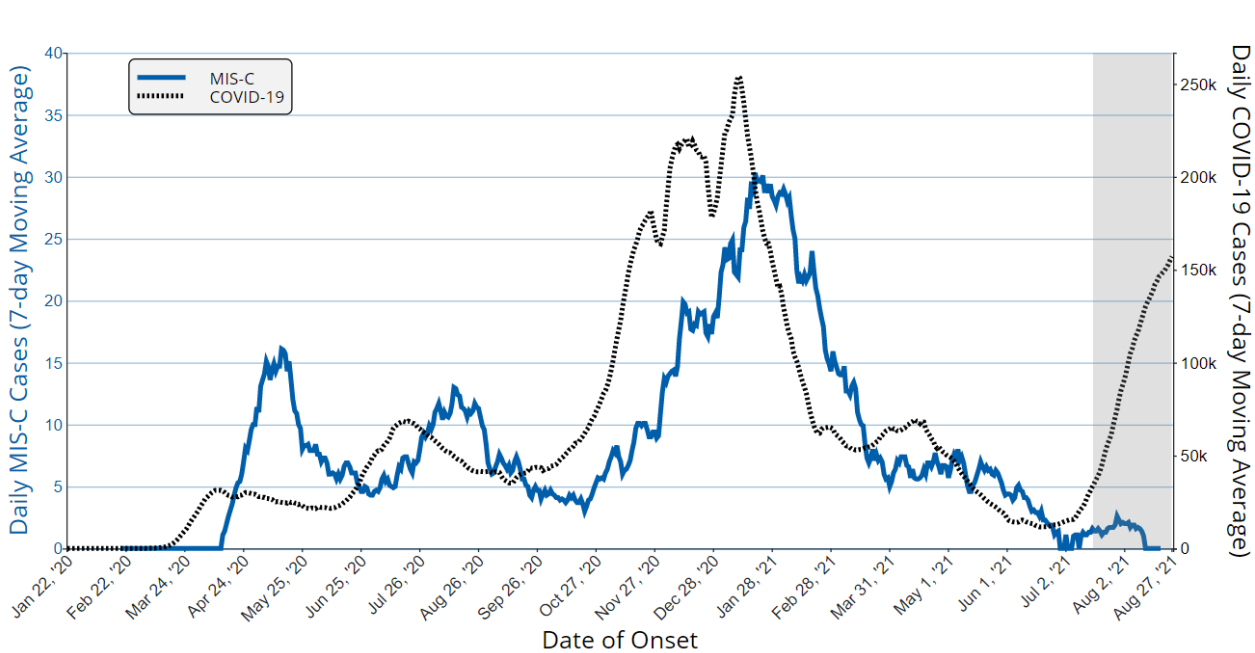
Multisystem Inflammatory Syndrome in Children (MIS -C)

Expect cases to rise in future

- Higher community transmissions is followed by higher incidence of MIS-C cases nationally

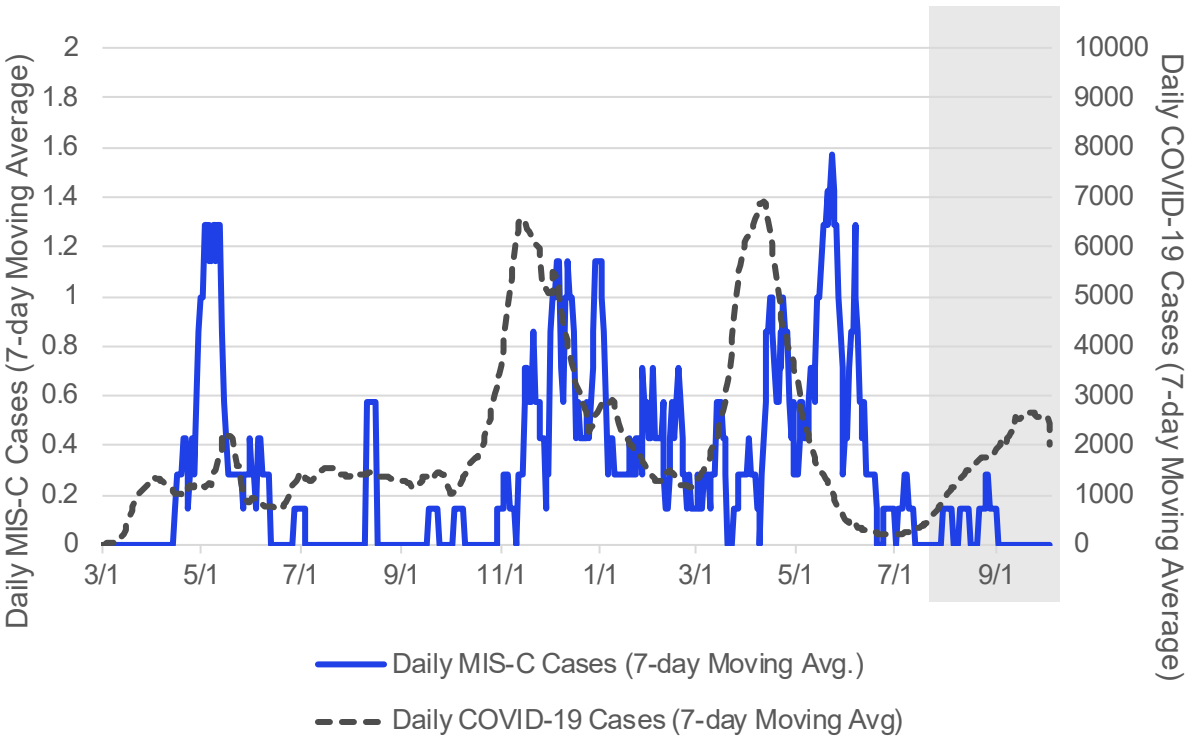
U.S. National Data

Daily MIS-C Cases and COVID-19 Cases Reported to CDC (7-Day Moving Average)



MI State Data

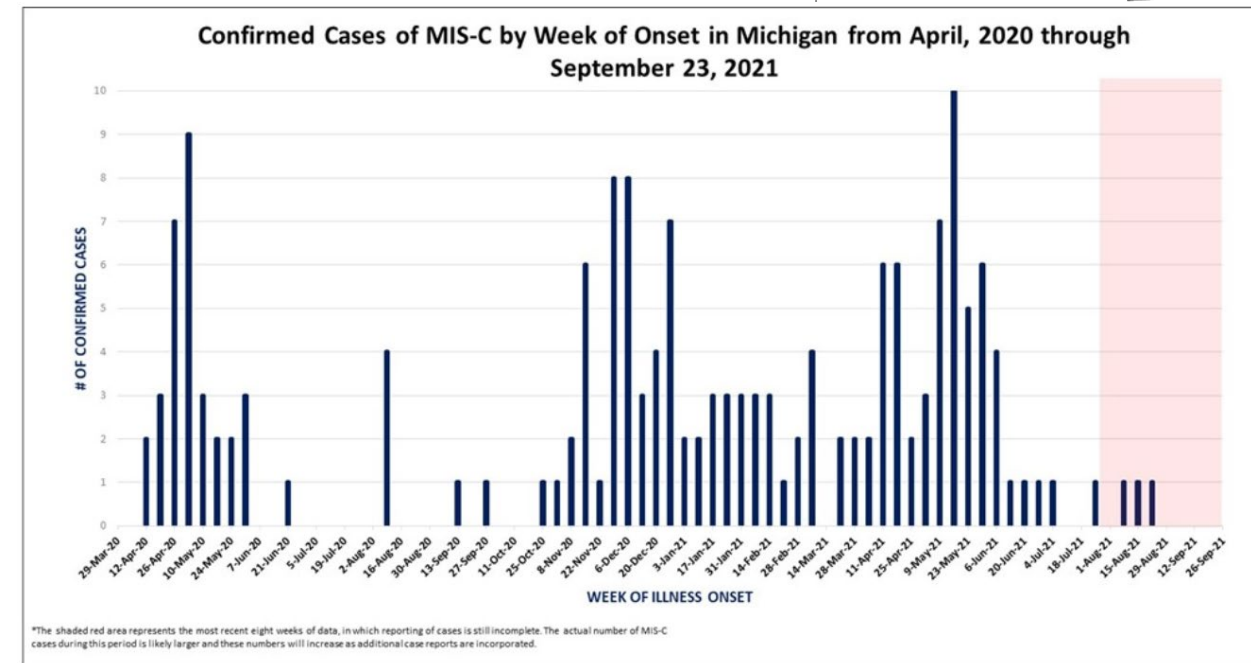
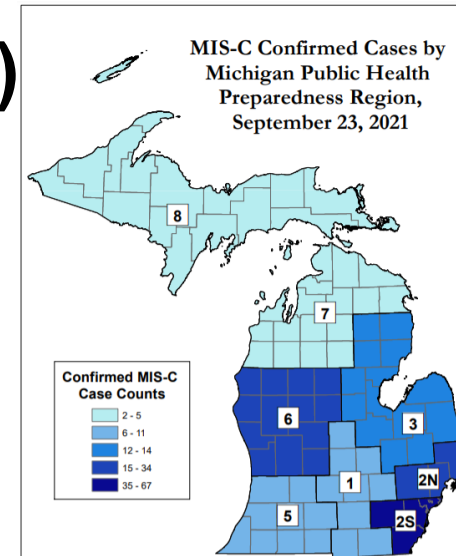
Daily MIS-C Cases and COVID-19 Cases Reported to MDHHS (7-Day Moving Average)



Source: [CDC COVID Data Tracker](#) and [MDHHS and MIS-C Data and Reporting](#)

Multisystem Inflammatory Syndrome in Children (MIS -C)

- Multisystem Inflammatory Syndrome in Children (MIS-C) is a condition in children and adolescents under 21 years of age where multiple organ systems become inflamed or dysfunctional which occurs in association with illness.
- 168 children and adolescents under 21 years have had MIS-C in Michigan
- 70.2% were in the ICU
- Majority of cases are younger than 11 years
- Black/African American children are over-represented among cases (42%)
- Cases are most frequent in preparedness regions 2 North, 2 South and 6



Red shading indicates the expected reporting lag for new cases. Cases with onset dates in this time period may not have been detected or reported yet.

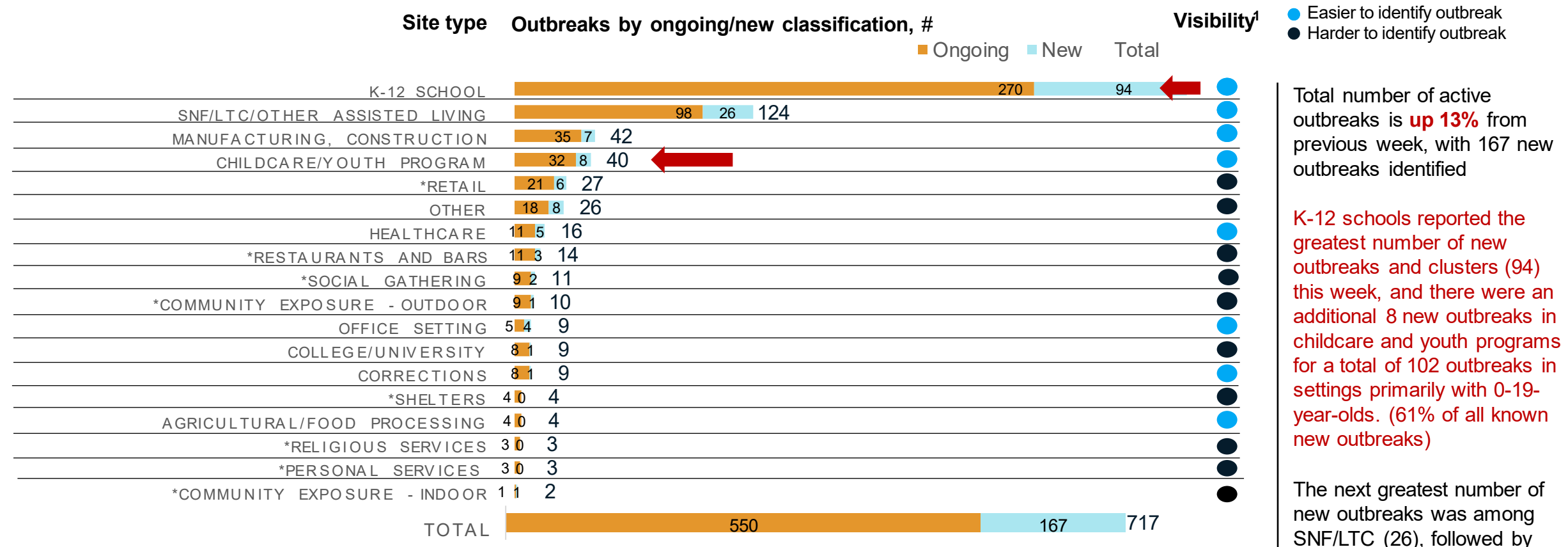
Source: [MDHHS and MIS-C Data and Reporting](#)



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 Sep 30



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

K-12 school clusters and outbreaks, recent and ongoing, week ending Sep 30

Number of reported outbreaks increased since last week (289 to 364), including increases in High Schools (107 to 123), Middle/Jr High (68 to 89), Pre K-Elementary (110 to 146) and Administration (4 to 5).

Region	Number of reported cases, #	# Ongoing - Excluding New	# New	Number of outbreaks	Range of cases per outbreak
Region 1	340	33		62	2-21
Region 2n	121	31		31	2-23
Region 2s	139	27		30	2-23
Region 3	682	113		91	2-48
Region 5	120	9		20	2-36
Region 6	331	94		65	2-44
Region 7	62	40		21	3-12
Region 8	241	104		44	2-37
Total	2,036	451		364	2-48

Grade level	Number of reported cases, #	# Ongoing - Excluding New	# New	Number of outbreaks	Range of cases per outbreak
Pre-school - elem.	652	183		146	2-37
Jr. high/middle school	471	114		89	2-21
High school	898	149		124	2-48
Administrative	15	5		5	2-9
Total	2,036	451		364	2-48

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.

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Source: LHD Weekly Sitreps

SARS-CoV-2 can Negatively Impact Children Directly and Indirectly: Missed school time

Local health report they are investigating 364 outbreaks in K-12 schools. But COVID-19 can impact school without transmission within the school building by disrupting the learning environment

As of 10/01, an informal survey of local health departments identified 104 schools where learning time is directly impacted:

- 3 districts closed entirely as well as
 - 12 schools closed and one in-school pre-school
 - 5 grades closed
 - 34 classrooms closed
 - 29 other instances reported of multiple students quarantining
- 20 schools instituted no operational change but had large numbers of close contacts
- 87 students and/or staff impacted per event on average



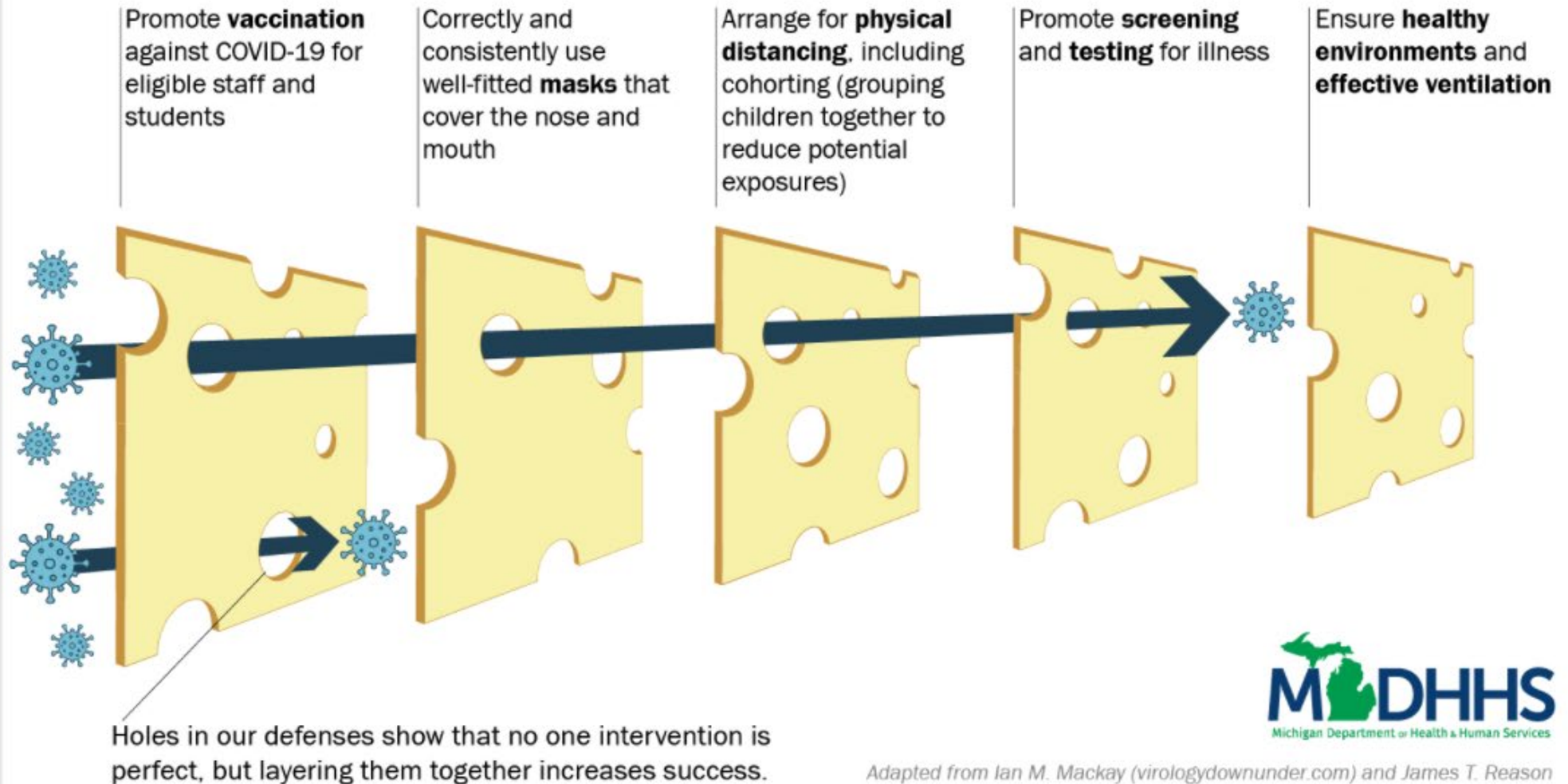
Layers of Defense Against COVID-19 in Schools

CDC recommended prevention strategies can be layered in different ways – the number and intensity of the layers can increase if community transmission increases

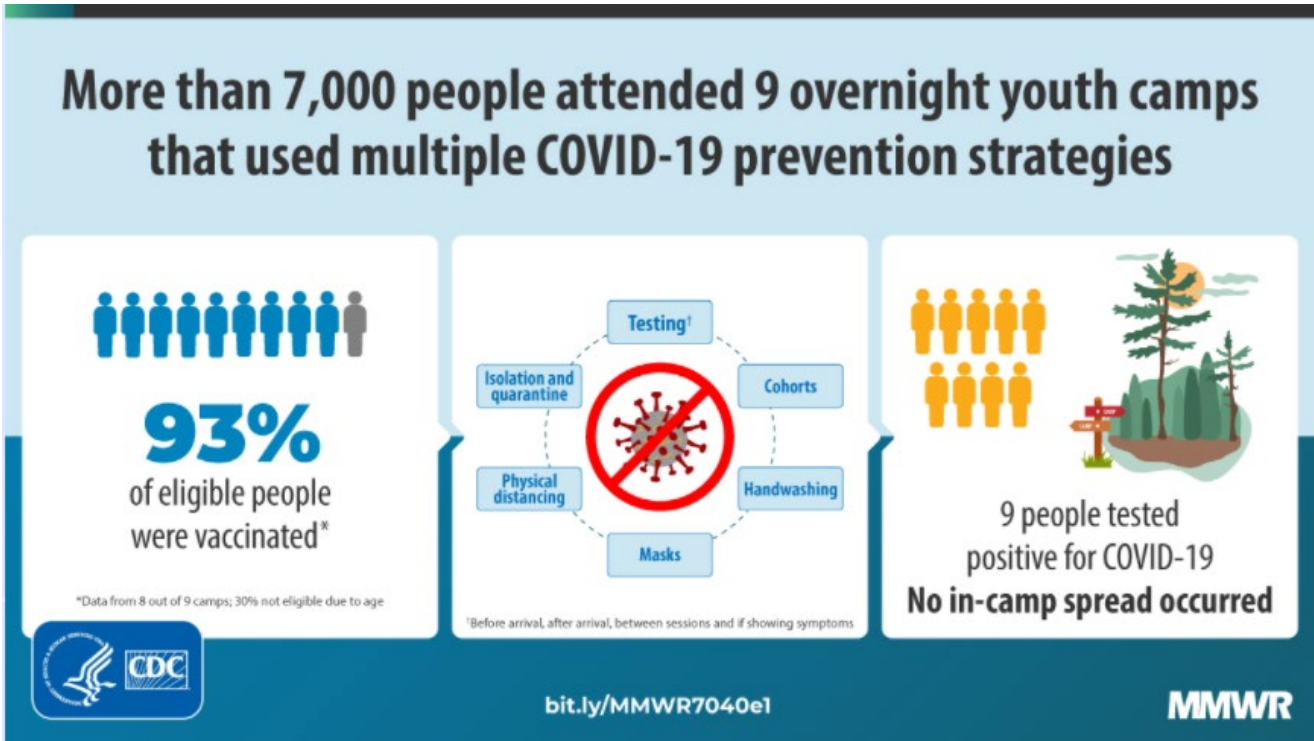
As community transmission increases, more holes appear in the defenses, meaning more layers of protection may be needed.



As the vaccination rate within a building or facility increases, fewer holes will appear in the defenses.



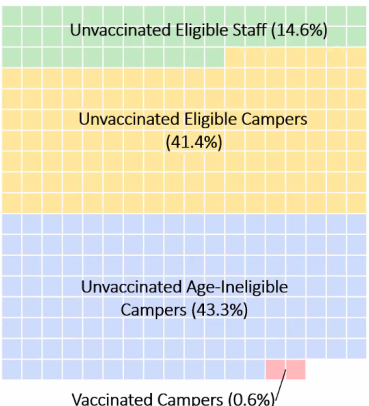
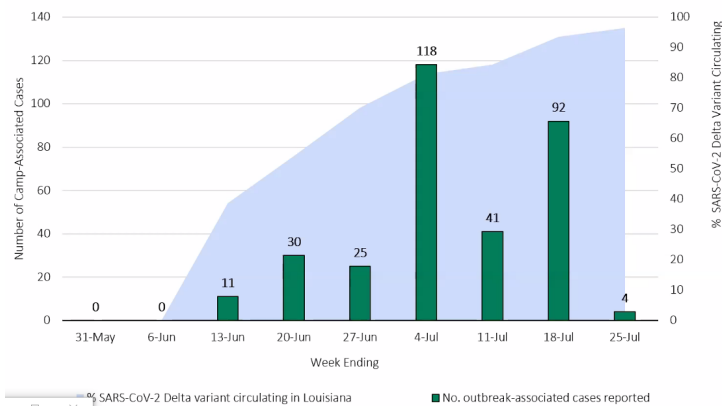
Multicomponent Strategies to Prevent SARS-CoV-2 Transmission – Youth Summer Camps



COVID-19 Outbreaks at Youth Summer Camps Louisiana, June-July 2021

Camp Outbreak-Associated COVID-19 cases and SARS-CoV-2 Delta Variant Levels

COVID-19 Cases by Vaccination Eligibility Status (N=321)



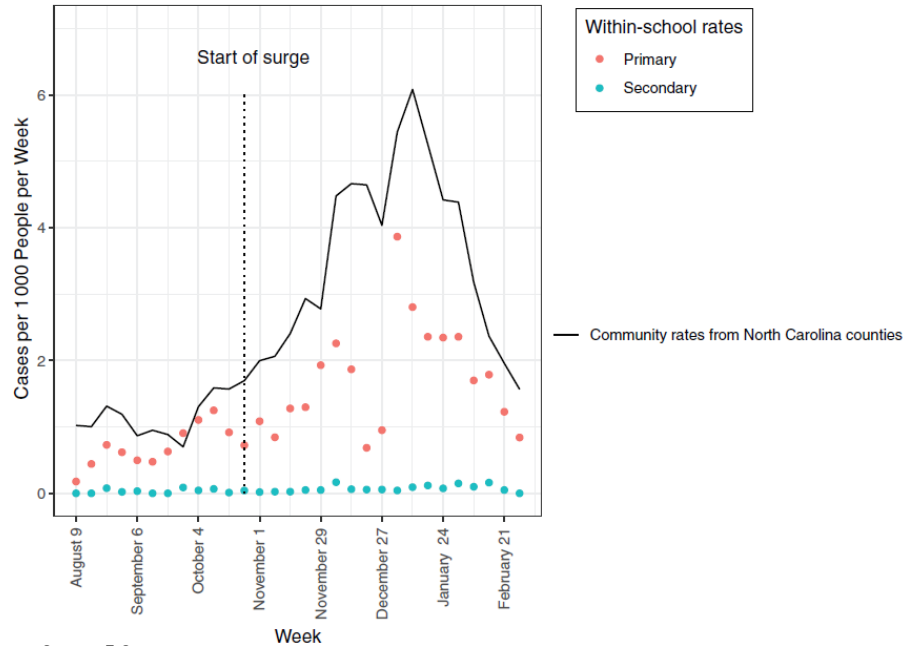
Source 1. [Van Naarden Braun K, Rozenfeld RA, et al. Multicomponent Strategies to Prevent SARS-CoV-2 Transmission — Nine Overnight Youth Summer Camps, United States, June–August 2021. MMWR Morb Mortal Wkly Rep. ePub: 1 Oct 2021.](#)

Source 2. [Tonzel JL, Sokol T. COVID-19 Outbreaks at Youth Summer Camps— Louisiana, June–July 2021. MMWR Morb Mortal Wkly Rep. ePub: 1 Oct 2021](#)

Source 3. [Zimmerman, KO et al. Community SARS-CoV-2 Surge and Within-School Transmission. Pediatrics October 2021, 148 \(4\).](#)

Community SARS-CoV-2 Surge and Within-School Transmission

Kanecia O. Zimmerman, MD, MPH,^{a,b,d} M. Alan Brookhart, PhD,^c Ibukunoluwa C. Kalu, MD,^d Angelique E. Boutzoukas, MD,^d



- Study of over 100,000 students from 13 North Carolina school districts to demonstrate the impact of social distancing tools on disease transmission to support safe school opening.

FIGURE 1

Community rates of infection versus community-acquired (primary) and school-acquired (secondary) infections in school buildings.

Findings:

- School-acquired infections remained stable and uncommon, with a <1% secondary attack rate.
- With strict adherence to masking and some distancing, school-acquired SARS-CoV-2 infection is uncommon, even in the setting of high community infection rates. Consistent with previous data, schools can and should reopen safely.

Source 1. [Van Naarden Braun K, Rozenfeld RA, et al. Multicomponent Strategies to Prevent SARS-CoV-2 Transmission — Nine Overnight Youth Summer Camps, United States, June–August 2021. MMWR Morb Mortal Wkly Rep. ePub: 1 Oct 2021.](#)

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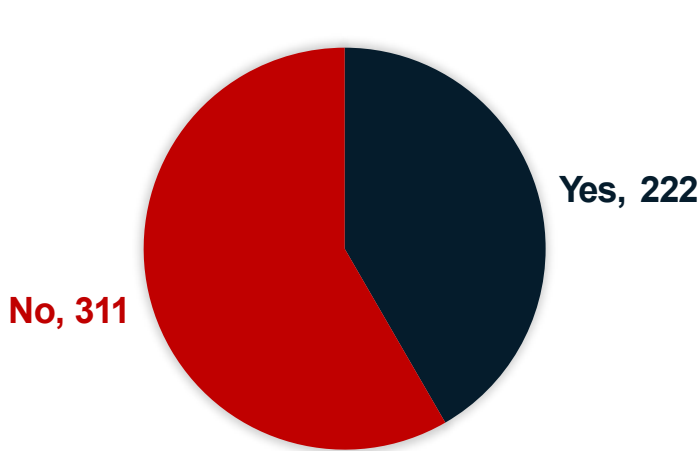
Source 3. [Zimmerman, KO et al. Community SARS-CoV-2 Surge and Within-School Transmission. Pediatrics October 2021, 148 \(4\).](#)

MI School Districts and Mask Policy as of Oct 4, 2021

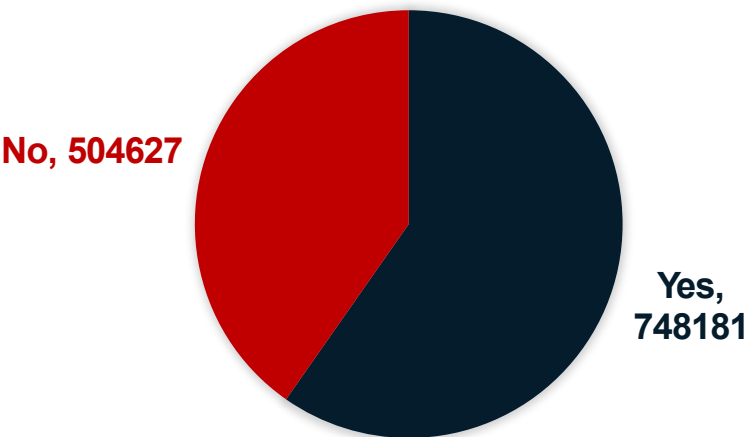
Yes – Any masking policy in some subset of school grades

No – No mask policies (includes unknown)

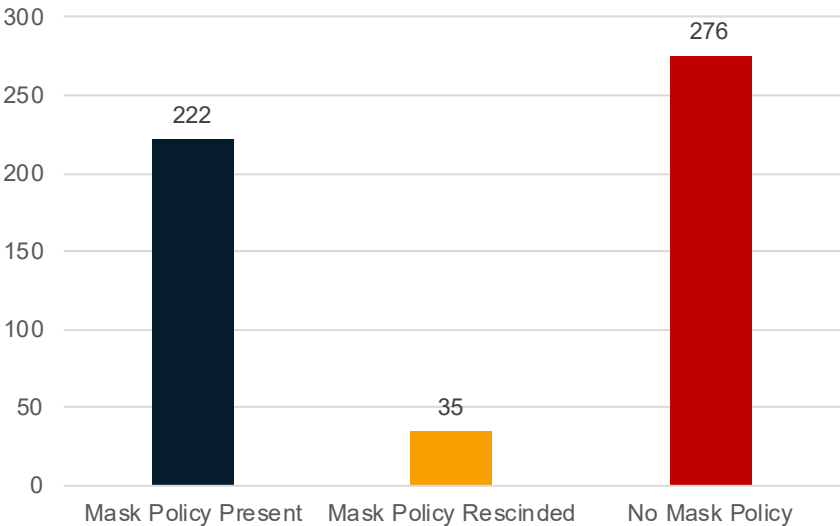
NUMBER OF SCHOOL DISTRICTS
WITH MASK POLICIES IN K-12
SETTINGS



NUMBER OF STUDENTS* IN SCHOOL
DISTRICTS WITH MASK POLICIES



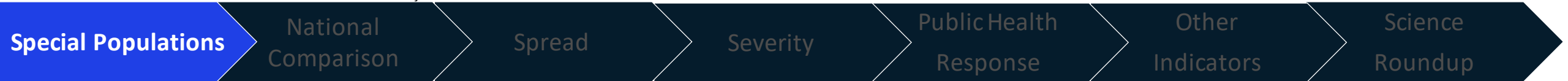
NUMBER OF SCHOOL DISTRICTS
WITH MASK POLICY REVERSAL



- 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% (35/533) of K-12 school districts have rescinded their mask policies

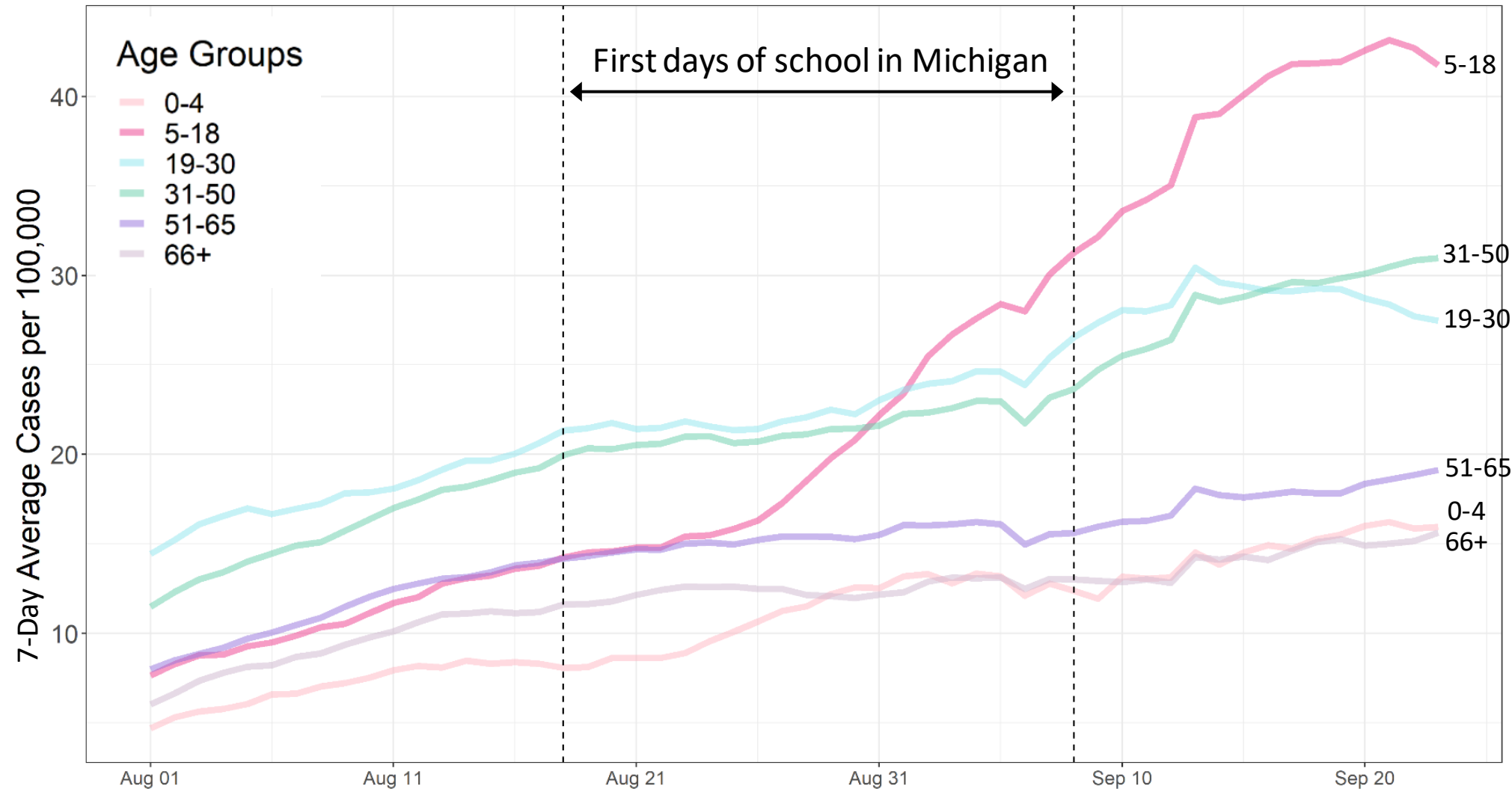
* Student size based on school enrollment numbers; Buses and public transportation are federally required to enforce mask mandates

Source: Executive Office of Governor School District Mask Policy Database



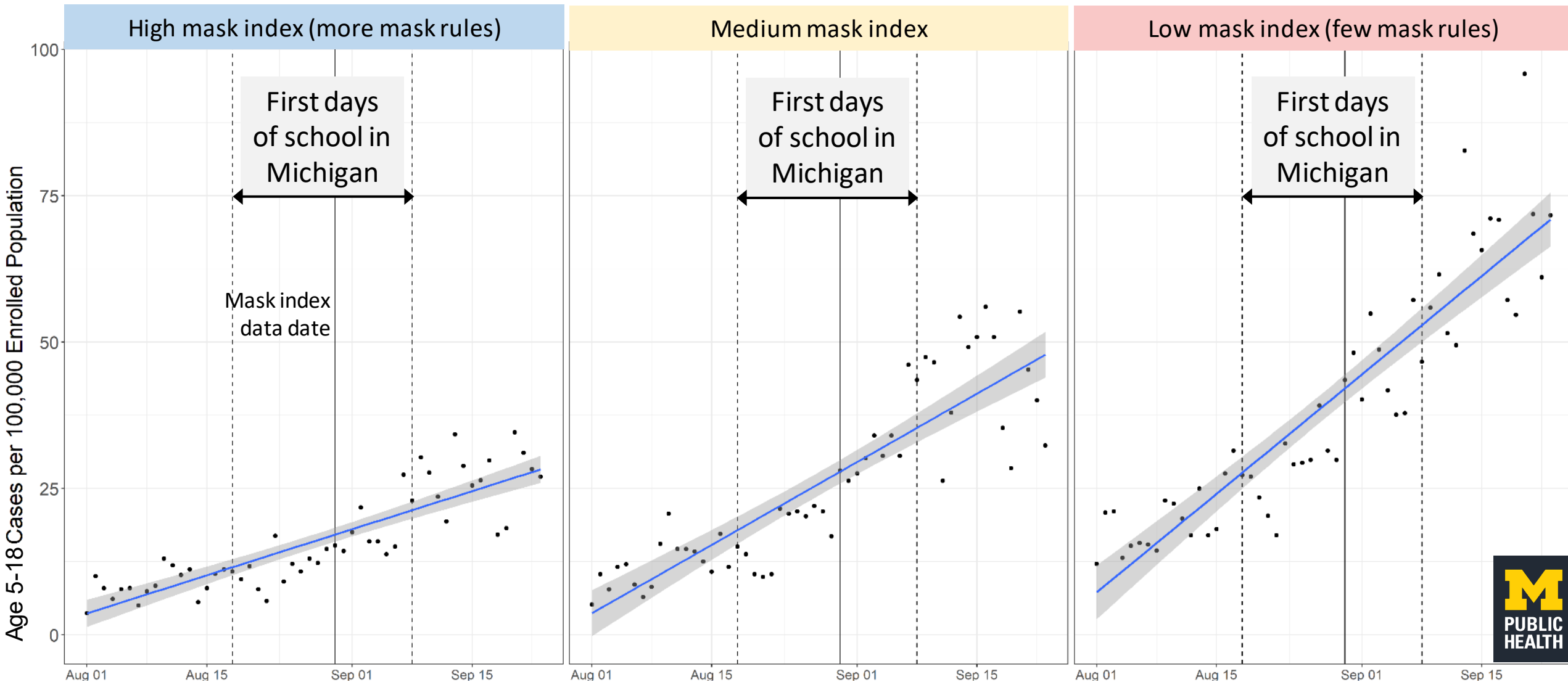
A closer look: increases have been largest in the K-12 school aged population (5-18 year olds)

- School aged children (5-18 y) saw a rapid rise beginning over the school reopening period that has continued following back-to-school
- The largest increases during and following back-to-school have been among 5-18 year olds
- Young and middle-aged adults (19-50 y) make up the next highest case rates



Districts with fewer mask rules during back-to-school saw higher case rates and faster case rises

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. See Appendix for details. Blue line & shaded region is a linear trend fit. Data Sources: MDSS/MDHHS case data as of 10/1/2021 geocoded to school district, EOG School District Mask Policy Tracker as of 8/30/2021. 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, 234,989,731 cases and 4,803,332 deaths (Data* through 10/4/21)

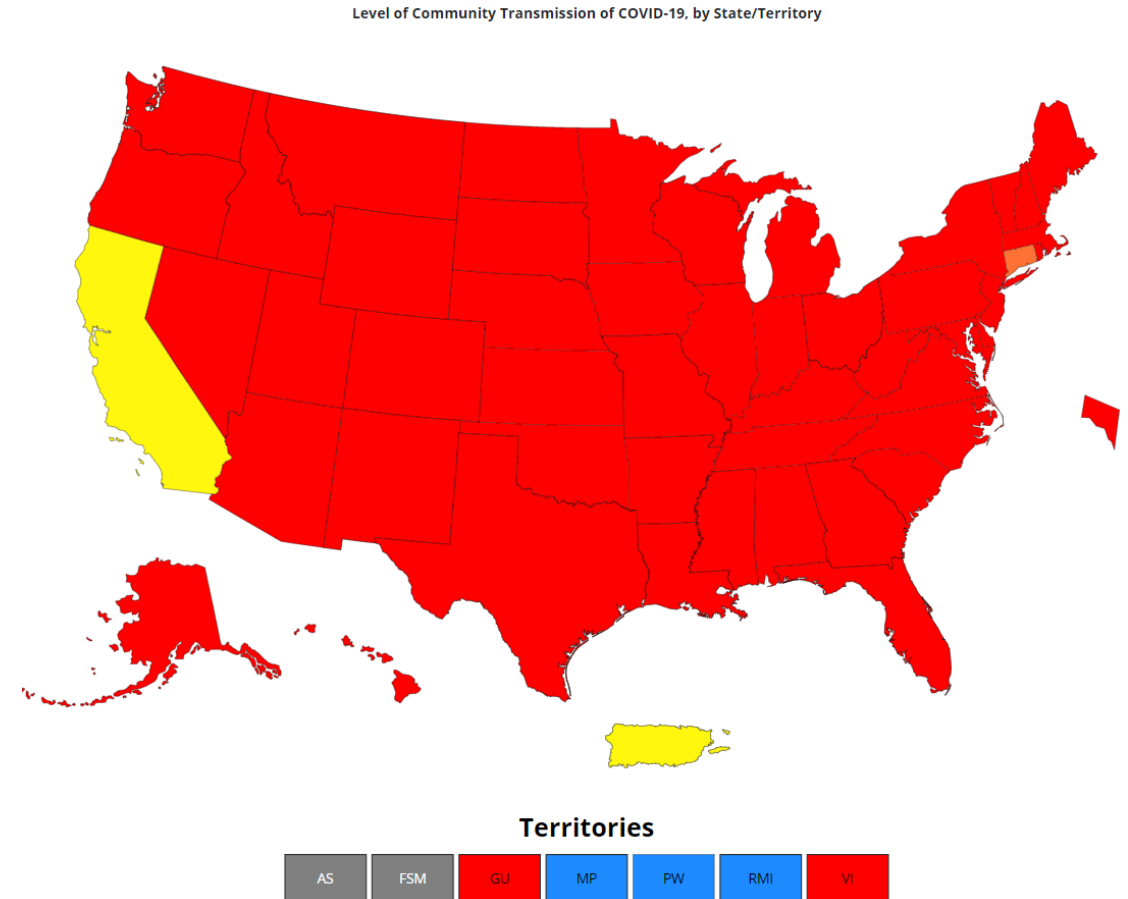
- Countries with the highest case count are U.S. (43,683,764), India (33,834,702), and Brazil (21,468,121)

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

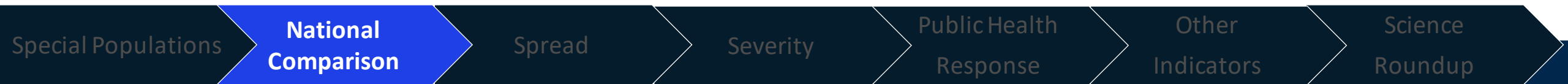
- Connecticut are Substantial
- California and Puerto Rico is Moderate
- 7-day moving average of daily new cases decreased 13.3% compared with previous 7-day moving average
- Percent positivity has decreased from the previous week, now at 11.1%. The number of PCR tests performed has increased.

Midwest states maintain High transmission levels[†]

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

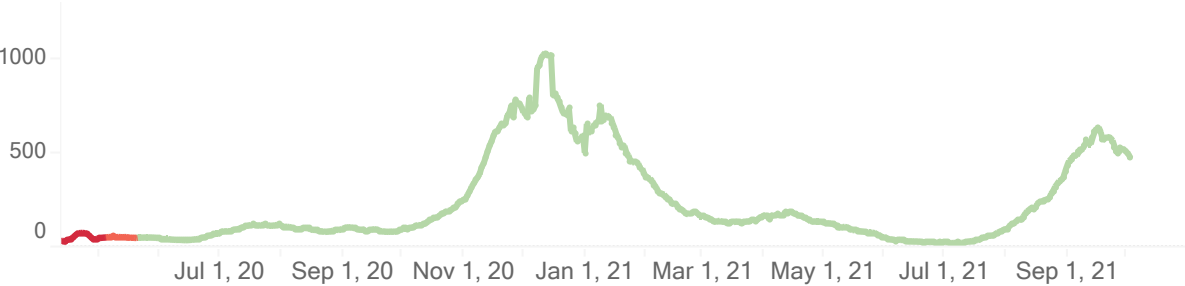


Source: *[Johns Hopkins Coronavirus Resource Center](#); [¶] CDC [COVID Data Tracker Weekly Review](#); [†] CDC [COVID Data Tracker](#)

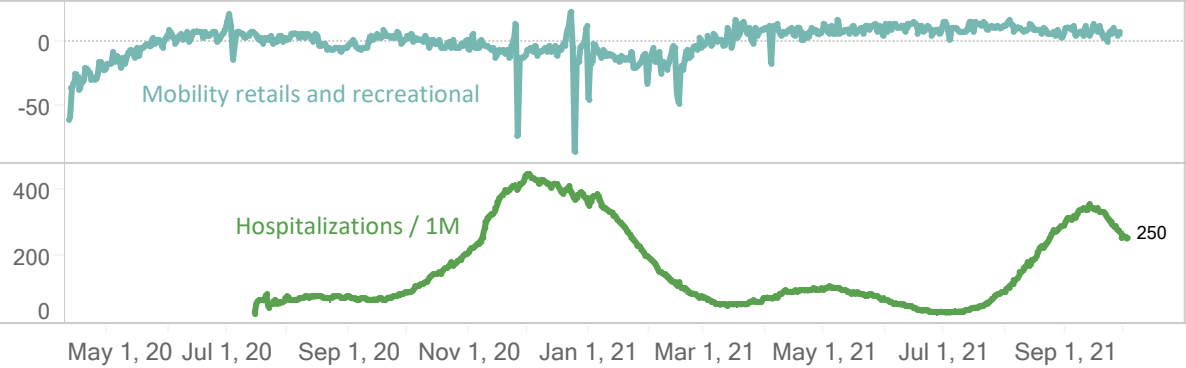
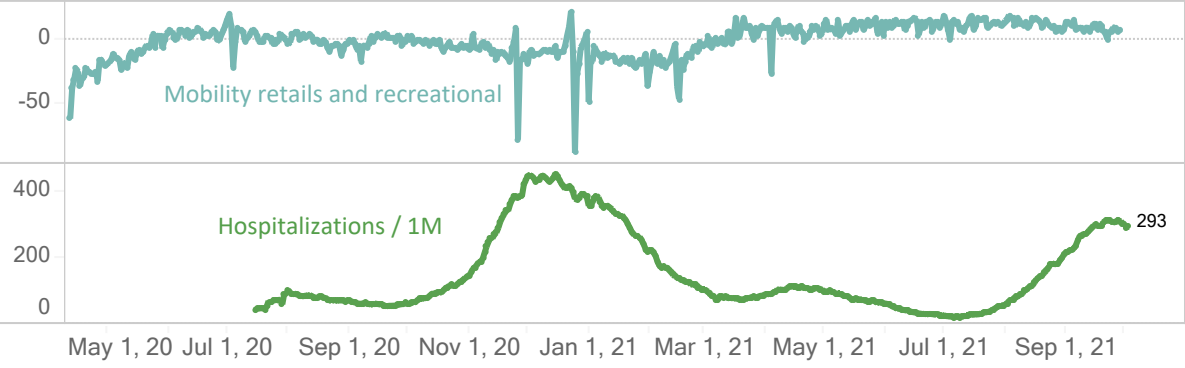
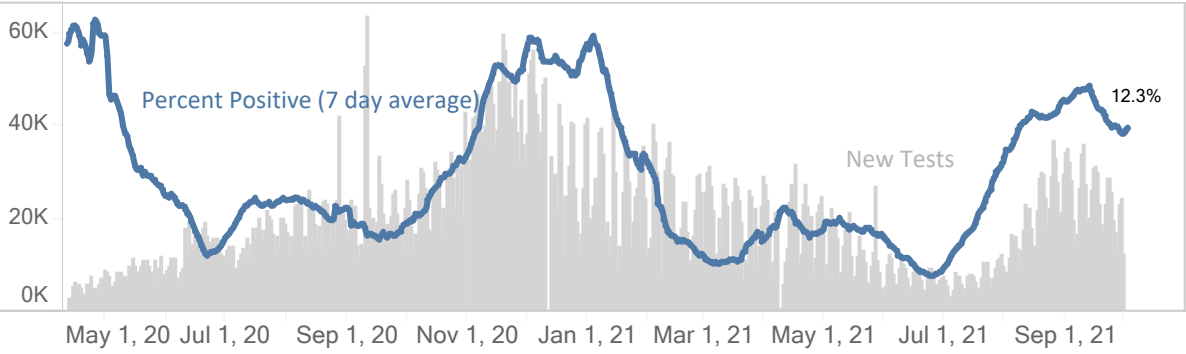
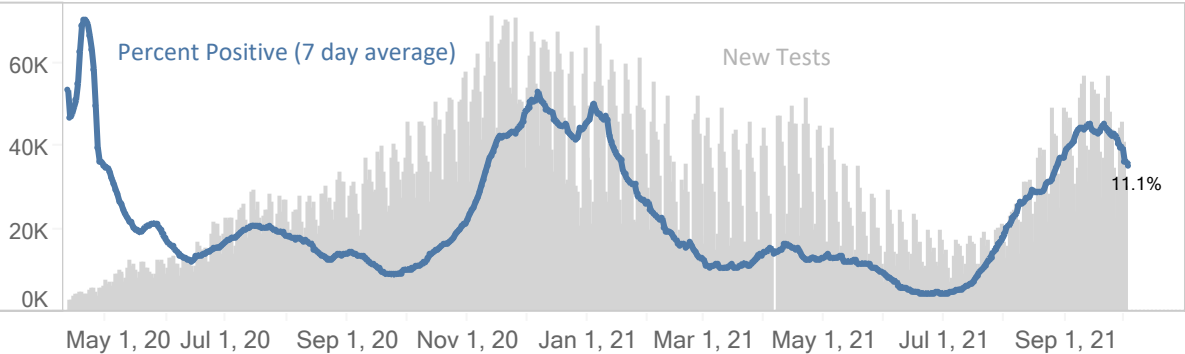
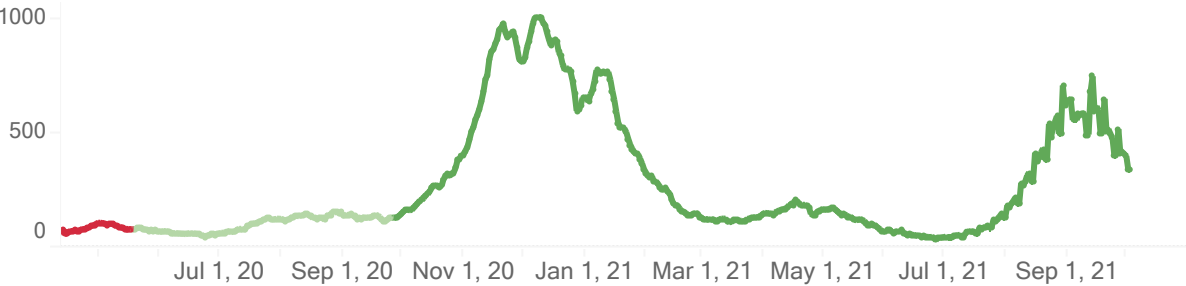


State Comparisons: Ohio and Indiana

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

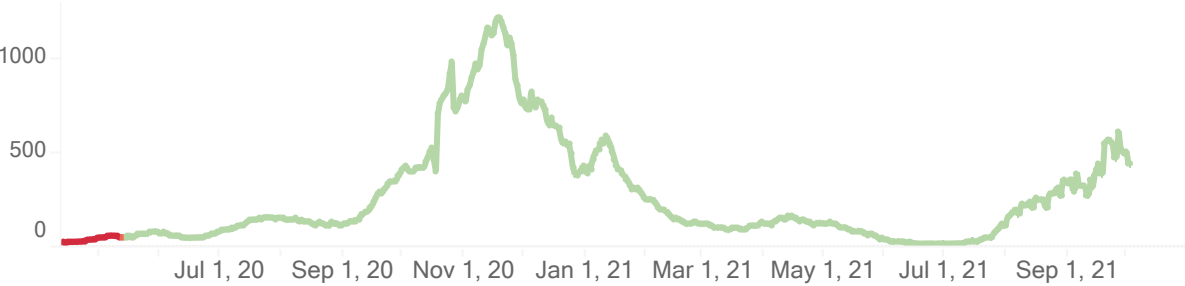


Indiana Confirmed New Cases / 1M (7 days average)

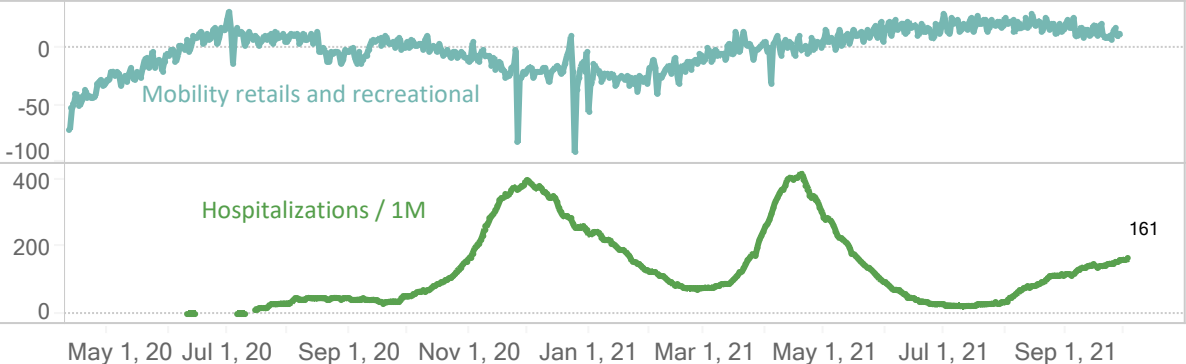
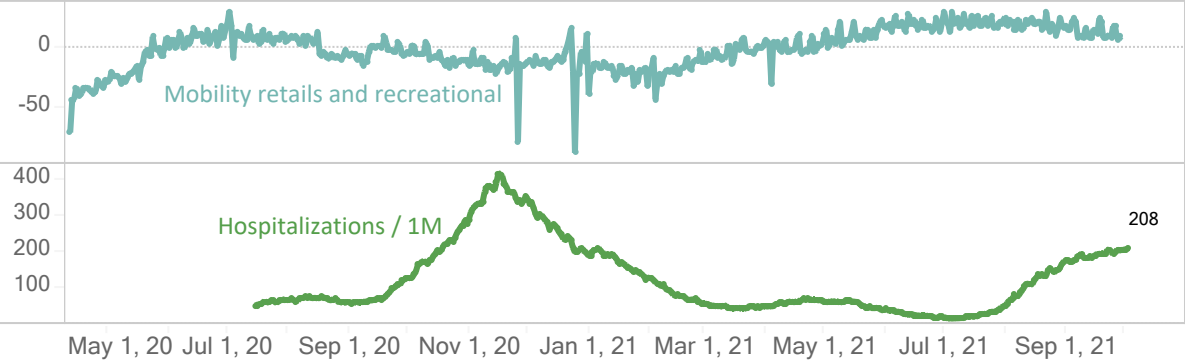
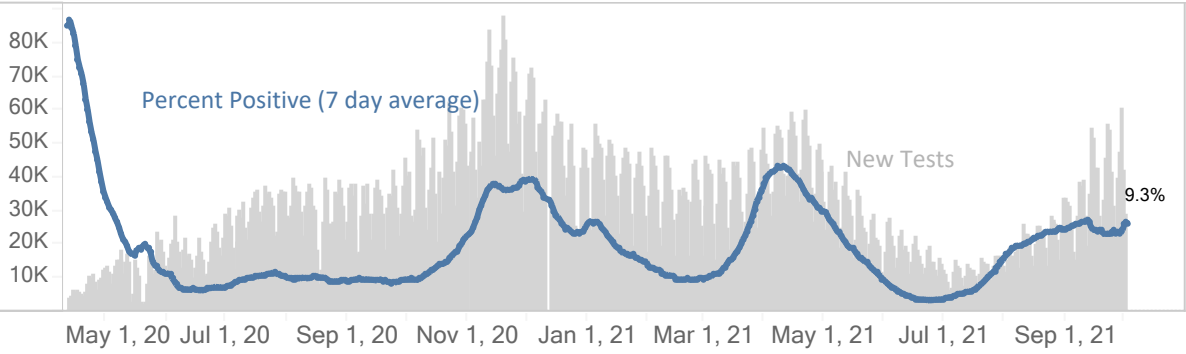
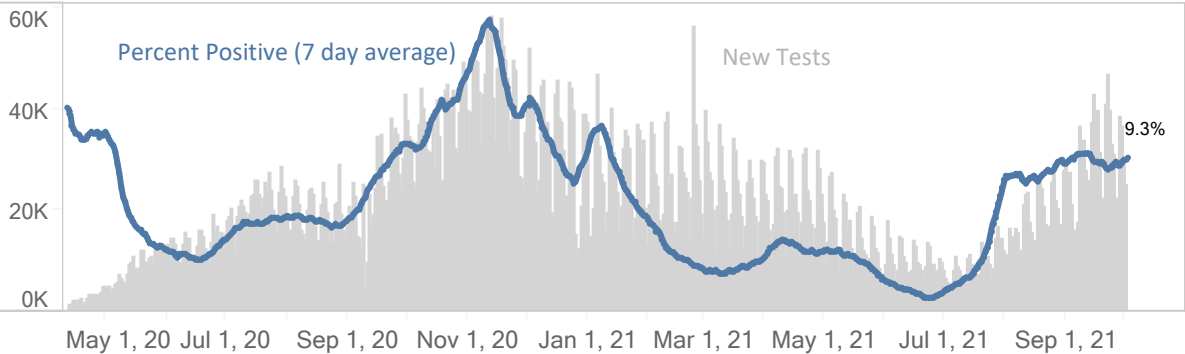
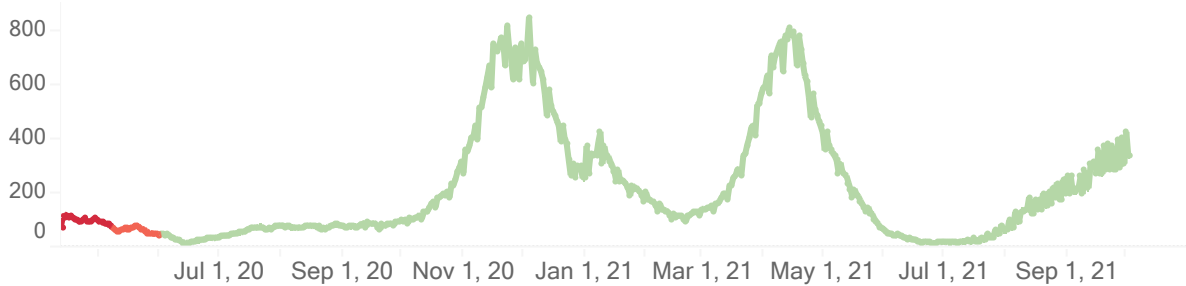


State Comparisons: Wisconsin and Michigan

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

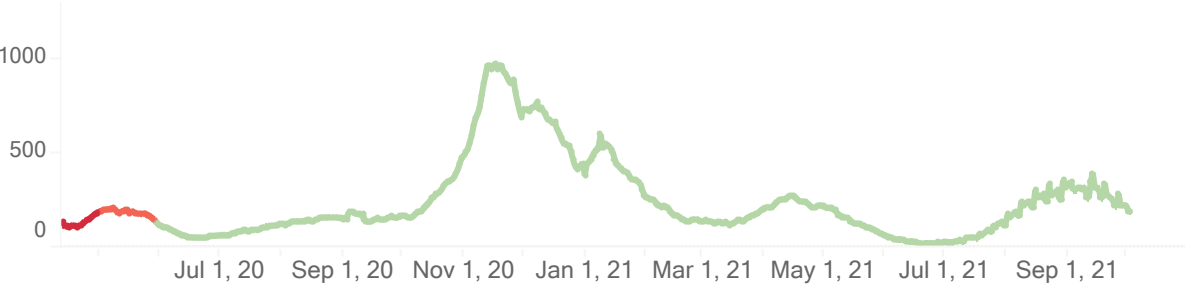


Michigan Confirmed New Cases / 1M (7 days average)

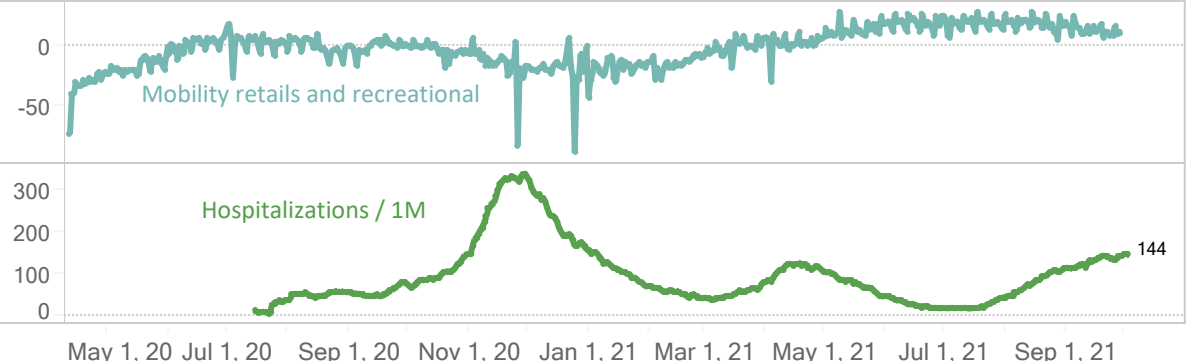
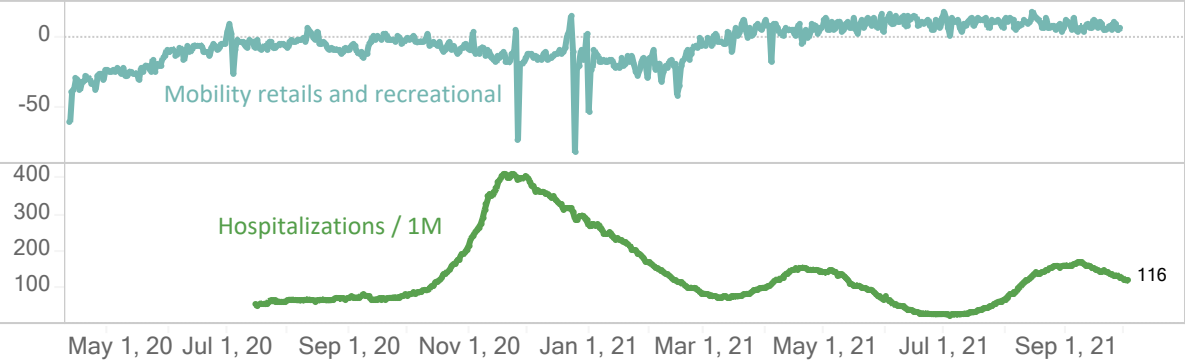
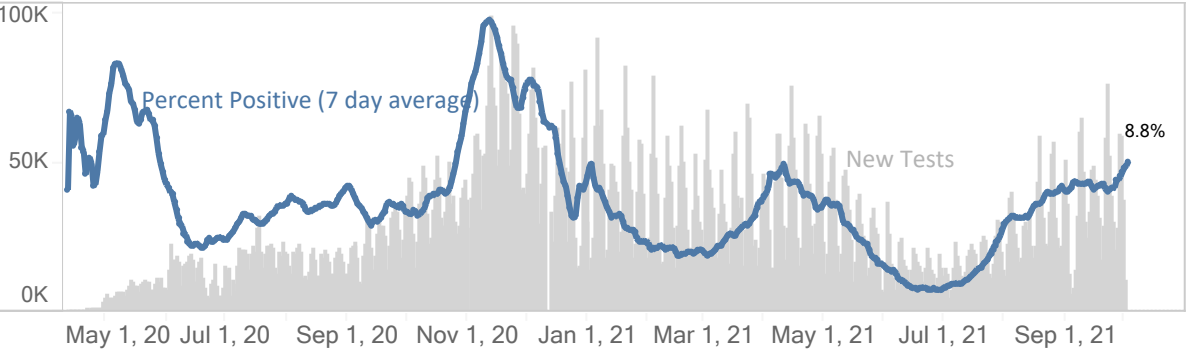
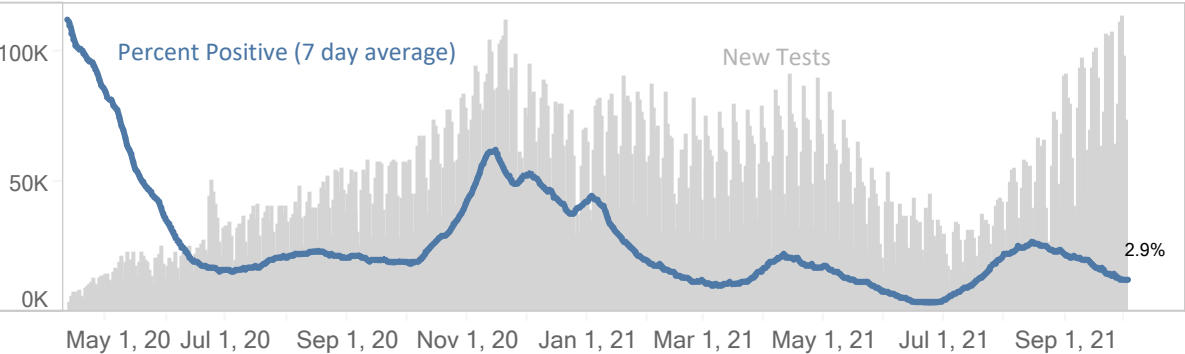
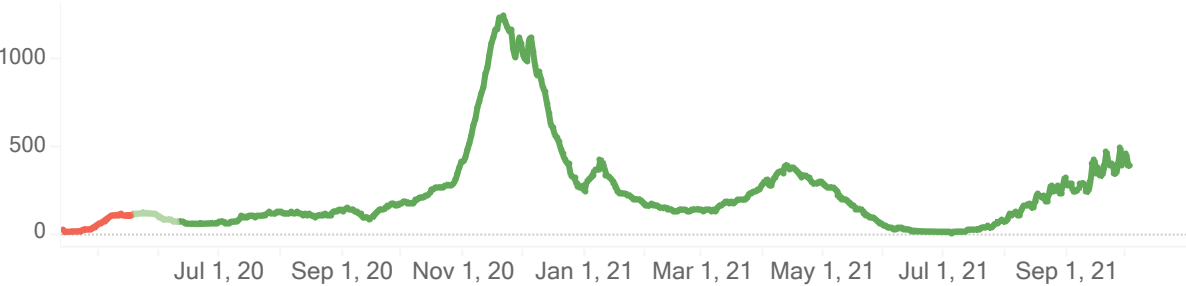


State Comparisons: Illinois and Minnesota

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 10.3% (last week: 8.8%)

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

Case rate has increased to 258.9 cases/million (last week: 246.3 cases/million)

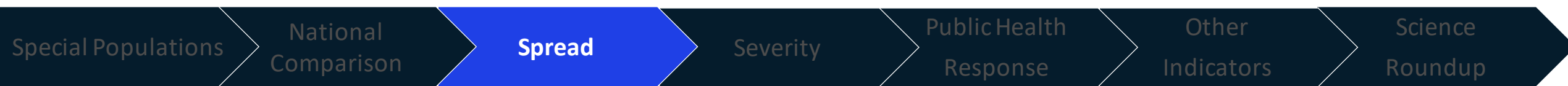
- Increasing for three months (June 26 low)
- Cases per million are plateaued or increasing in most MERC regions;
- 10-19-years-olds are experiencing the greatest case burden (519.7 daily cases; 414.1 cases/mil)
- Daily average pediatric (<18) hospital census is approximately 30

Michigan is at High Transmission level

- Nearly 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 (183.0 cases/100,000 in last 7 days) with 52 states/territories in substantial or high transmission

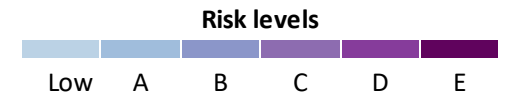
Number of active outbreaks is up 13% from last week

- 167 new outbreaks were identified in the past week
- K-12 reported the most total outbreaks (364) and new outbreaks (94) this week



Confirmed and probable case indicators

Table Date: 10/4/2021 (7 days from date table was produced: 9/27/2021)



	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	203.1	elevated incidence plateau	7.6	Increase - 1wk	3877.0	6.6	Increase - 11wk	2.5	Decrease - 1wk
Grand Rapids	High	333.9	elevated incidence growth	14.5	Increase - 2wk	3471.2	11.3	Increase - 1wk	3.2	Decrease - 1wk
Kalamazoo	High	270.4	decline [10 days]	11.7	Increase - 1wk	2798.1	9.2	Decrease - 1wk	3.0	Increase - 1wk
Saginaw	High	363.7	elevated incidence growth	16.8	Increase - 4wk	3349.2	7.9	Increase - 2wk	2.8	<20 wkly deaths
Lansing	High	250.0	elevated incidence plateau	11.4	Increase - 1wk	2871.6	11.2	Increase - 12wk	2.7	<20 wkly deaths
Traverse City	High	302.8	elevated incidence plateau	12.9	Increase - 7wk	2755.0	9.3	Increase - 2wk	2.6	<20 wkly deaths
Jackson	High	331.7	decline [10 days]	14.6	Increase - 14wk	3107.2	15.5	Increase - 12wk	2.8	<20 wkly deaths
Upper Peninsula	High	480.1	elevated incidence growth	14.5	Increase - 11wk	2929.1	10.4	Increase - 4wk	4.7	<20 wkly deaths
Michigan	High	258.9	elevated incidence plateau	10.3	Increase - 1wk	3606.9	8.0	Increase - 11wk	2.8	Plateau 1wk

Cases

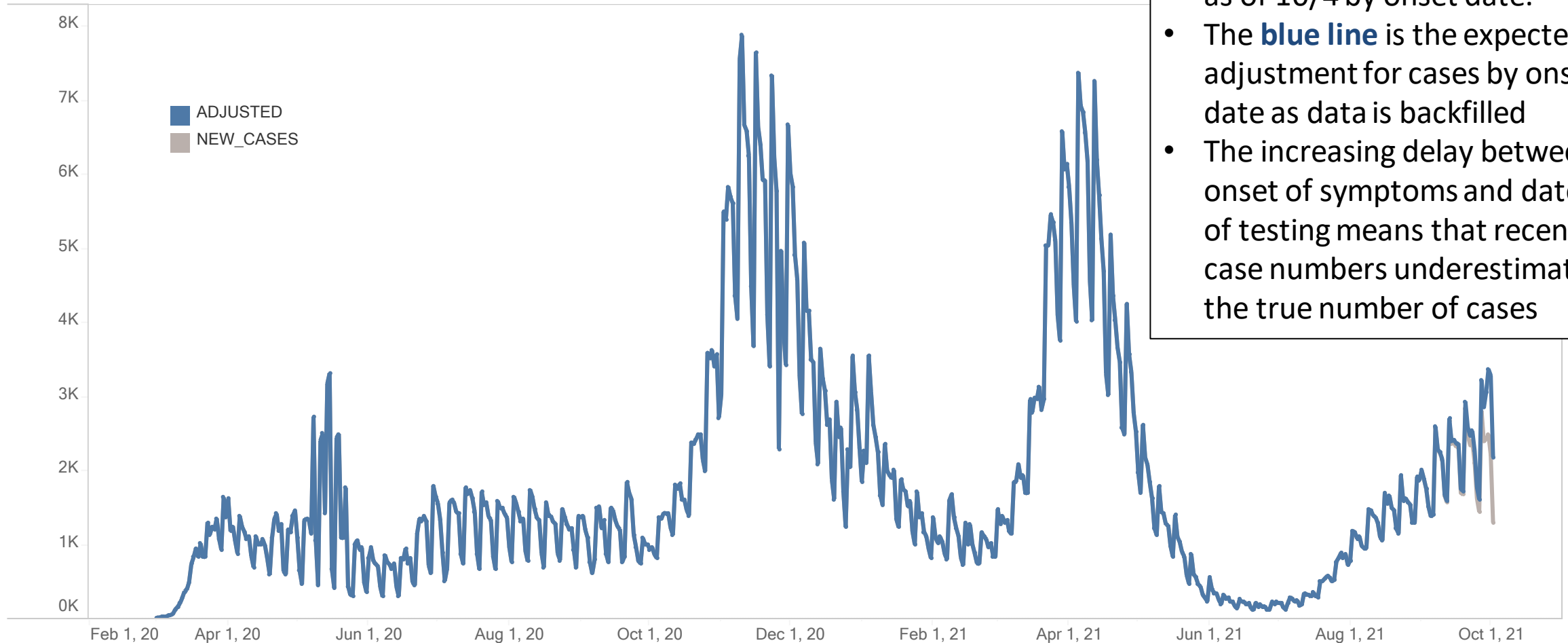


Positivity



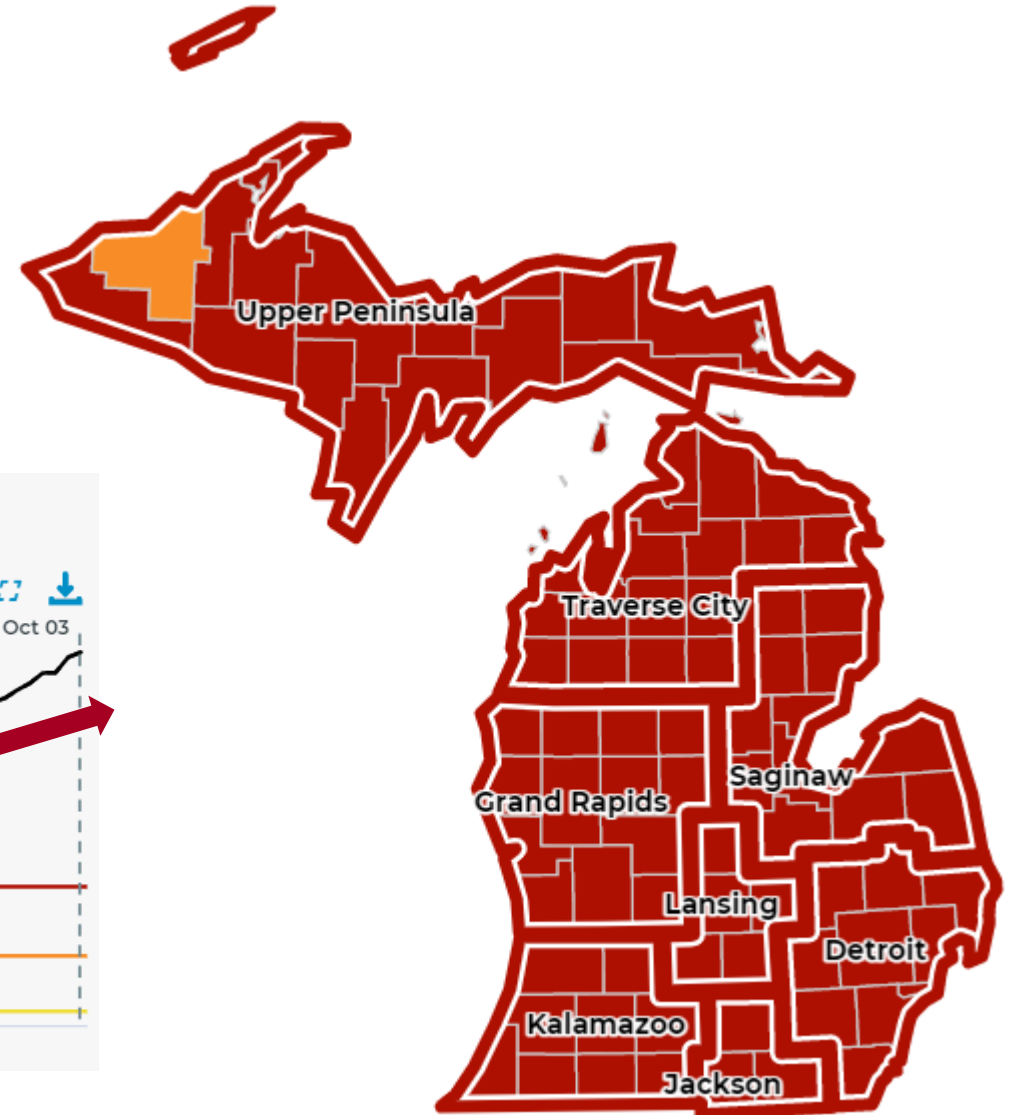
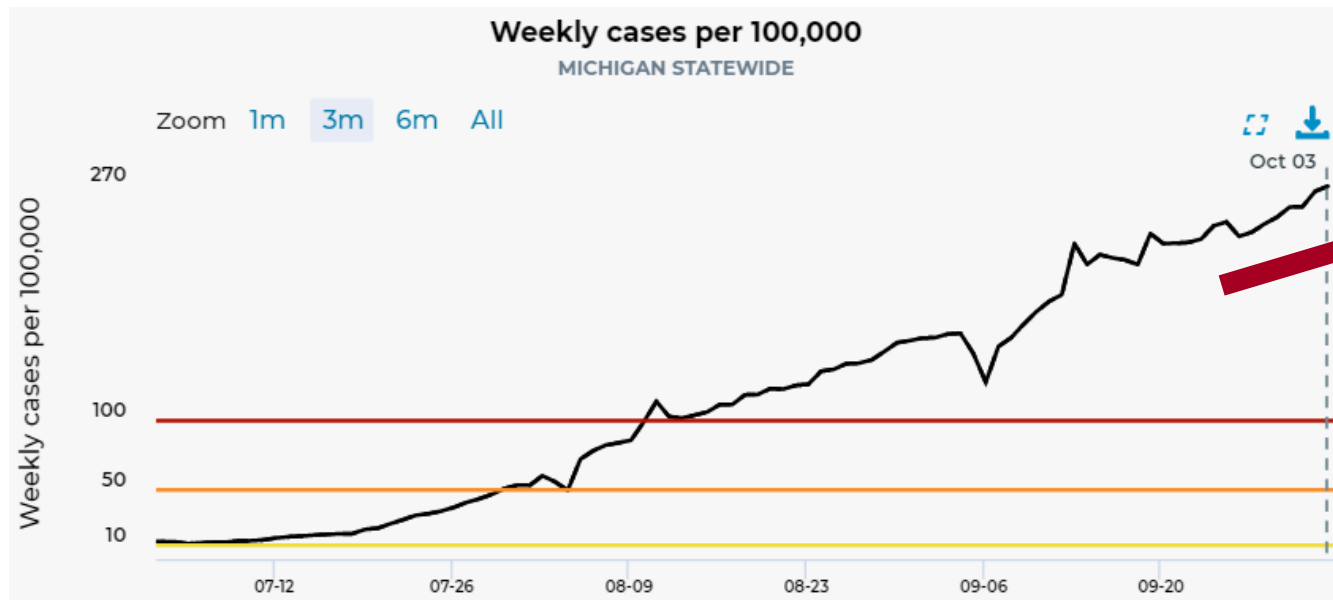
Michigan Lag adjusted new COVID cases by onset date

New confirmed cases by onset actual and adjusted as of October 4, 2021 (-2 days)



Michigan at High Transmission Level

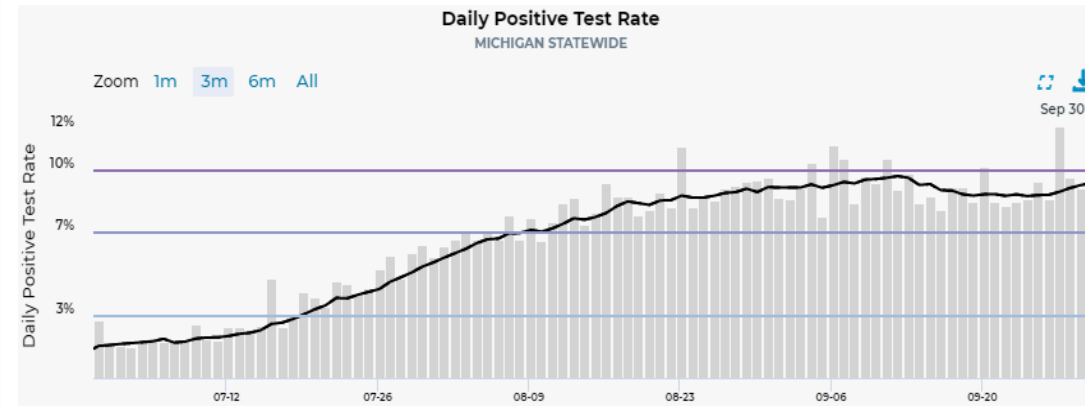
[Dashboard](#) | [CDC](#) | [MI Start Map](#) for most recent data by reporting date



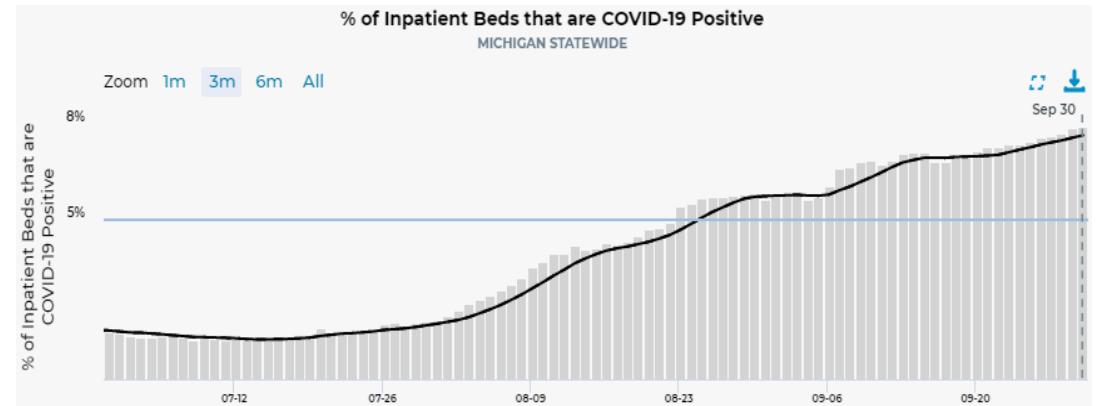
Time Trends – Positivity, Case Rates, Hospitalizations, Deaths

- Early indicators show Delta surge may be slowing but burden remains high

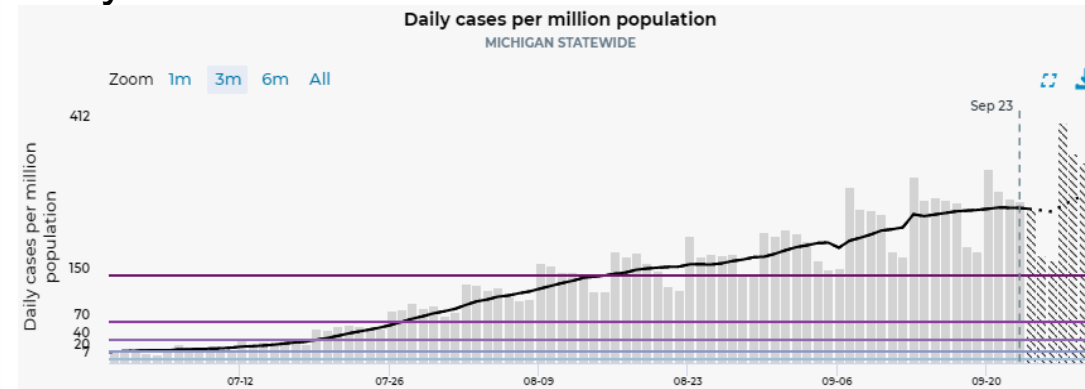
Daily Positive Test Rate



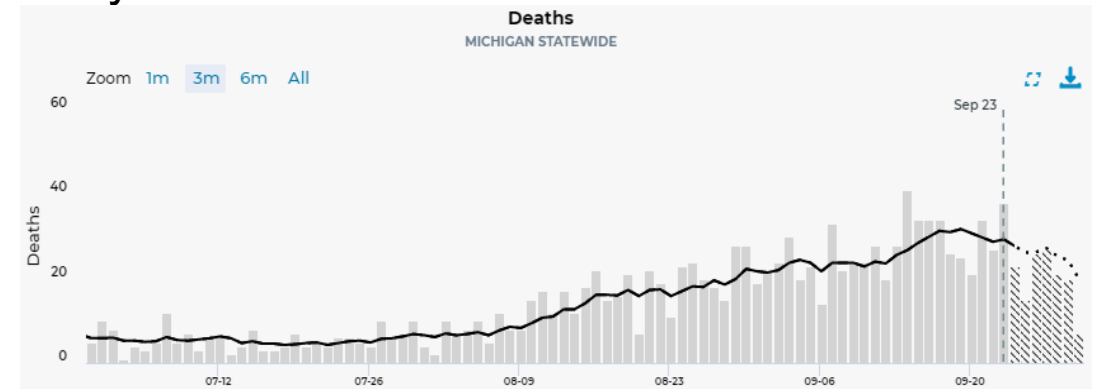
Daily Inpatient Beds Occupied by COVID patients



Daily Case Rate



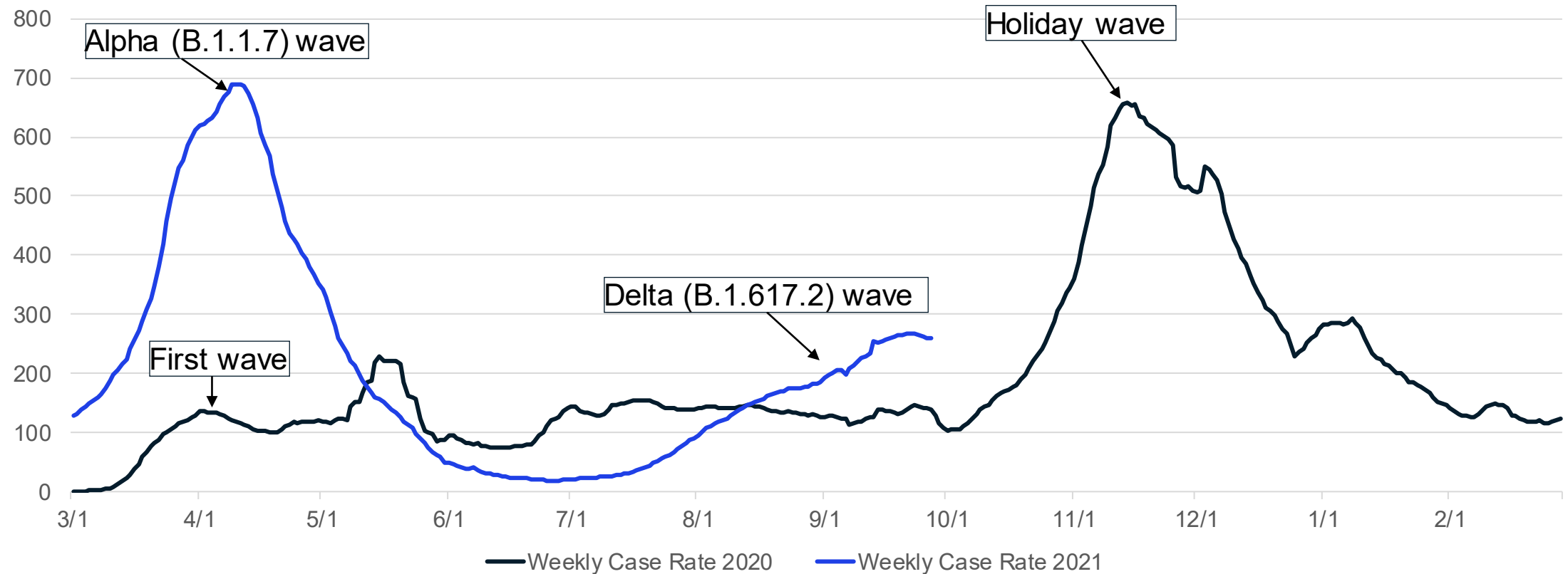
Daily Deaths



Time Trends – Annual Comparison

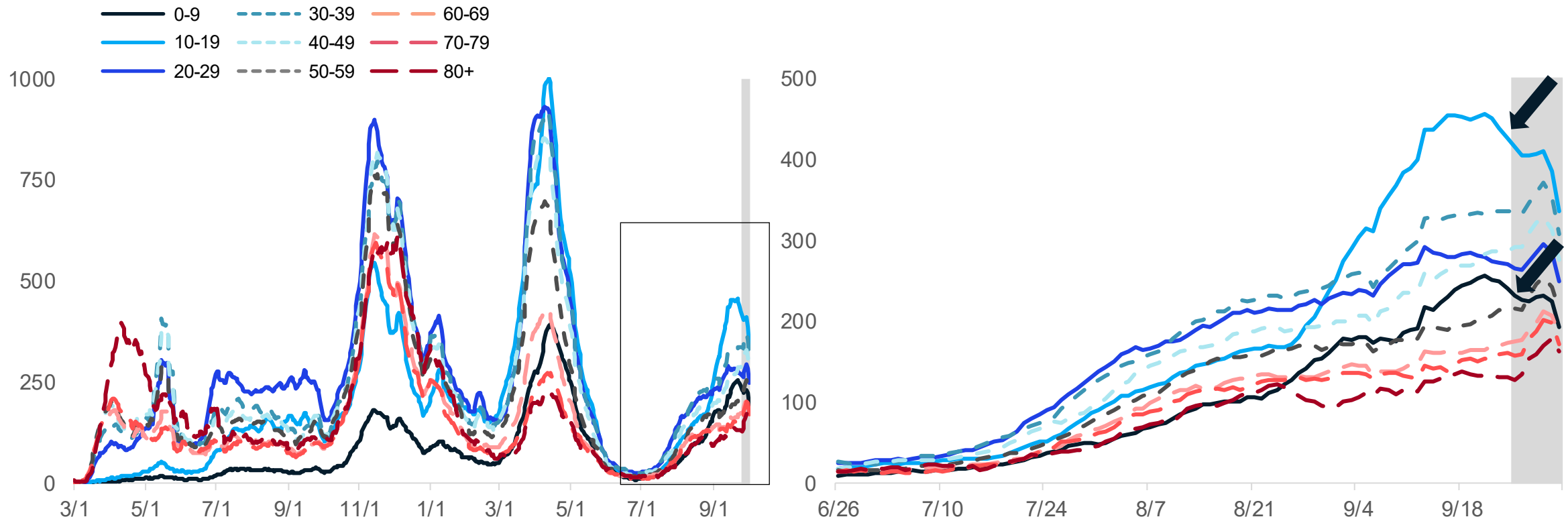
- We are heading into the winter months (and holiday season) starting at higher cases rates than last year

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 slowing and are decreasing for some age groups
- Case rates for all age groups are between 135 and 415 cases per million (through 9/27)
- 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

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	266.9	231.5	-9% (-26)
10-19	519.7	414.1	-10% (-56)
20-29	356.9	258.7	-8% (-30)
30-39	398.9	328.8	-2% (-8)
40-49	338.4	287.0	5% (+16)
50-59	287.1	212.7	5% (+13)
60-69	218.9	171.6	4% (+9)
70-79	124.7	162.6	7% (+8)
80+	56.0	135.2	0% (+<1)
Total¶	2587.0	258.9	-3% (-69)

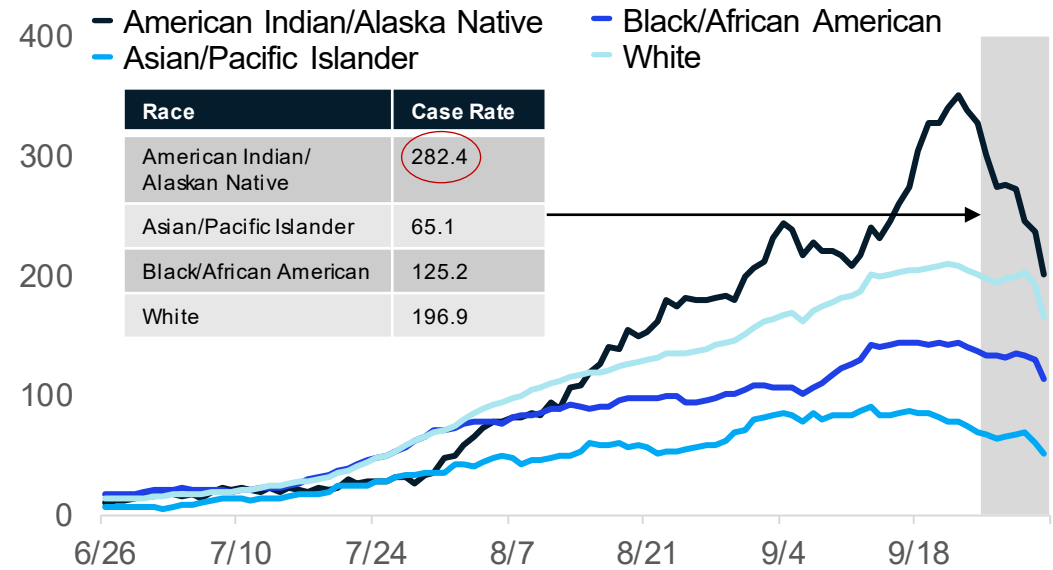
† Rolling 7-day average; ¶ Total may not reflect state due to missing age data
Note: Case information sourced from MDHHS and reflects date of onset of symptoms
Source: MDHHS – Michigan Disease Surveillance System

- Trend number are being impacted by longer backfill times and data suggest case trends are slowing
- Average daily number of cases (519.7) and avg. daily case rate (414.1 case/mil) are highest for those aged 10-19
- 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

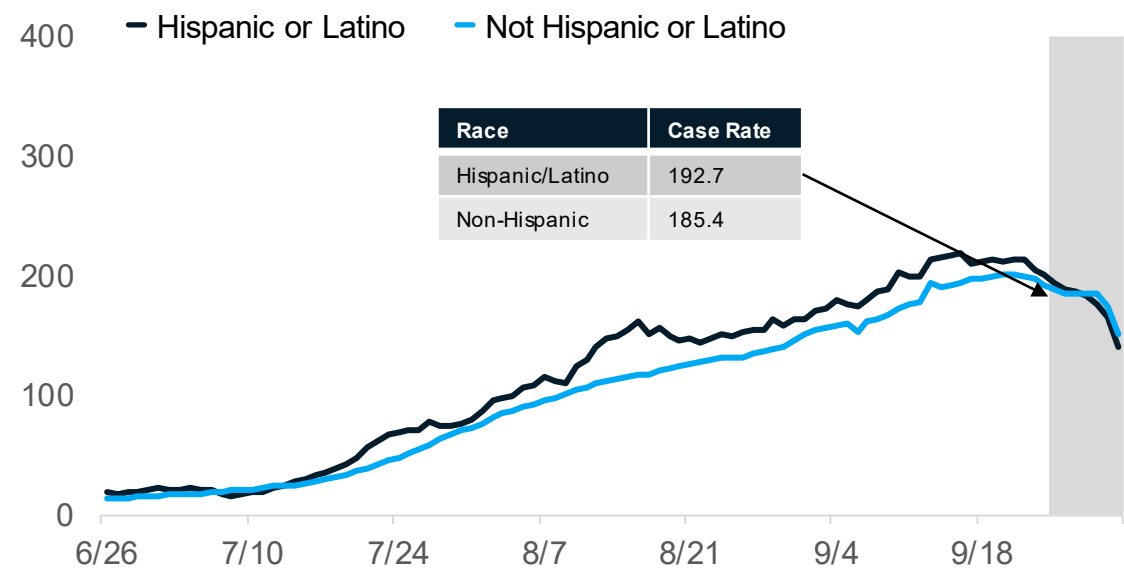


Case Rates by Reported Racial and Ethnic Group

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



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



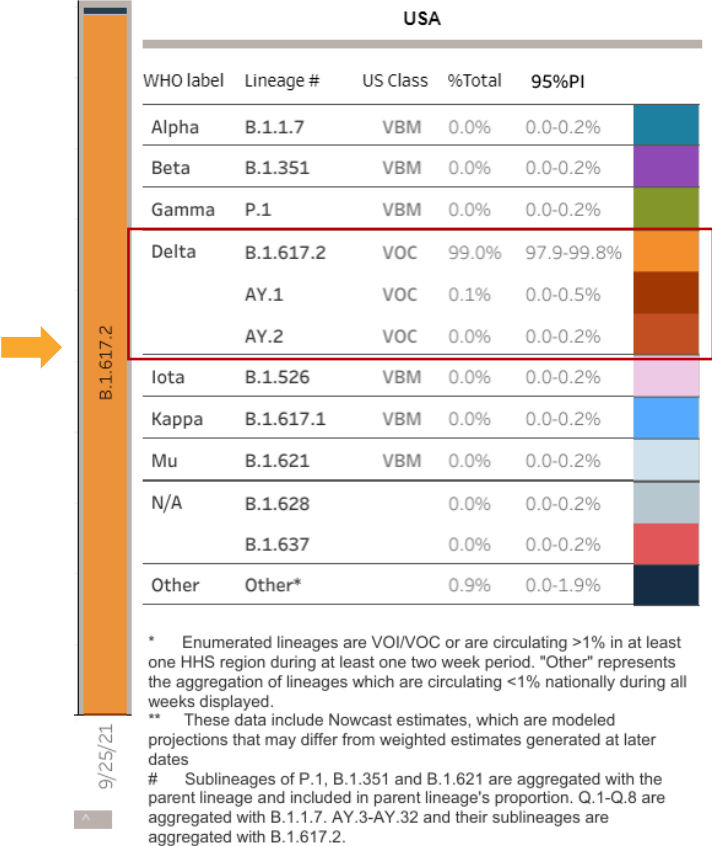
Updates since last week:

- Cases per million are steady for most races and ethnicities
- 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**
- In the past 30 days, 23% (↑1%) of race data and 28% (↑2%) ethnicity data was either missing or reported as unknown

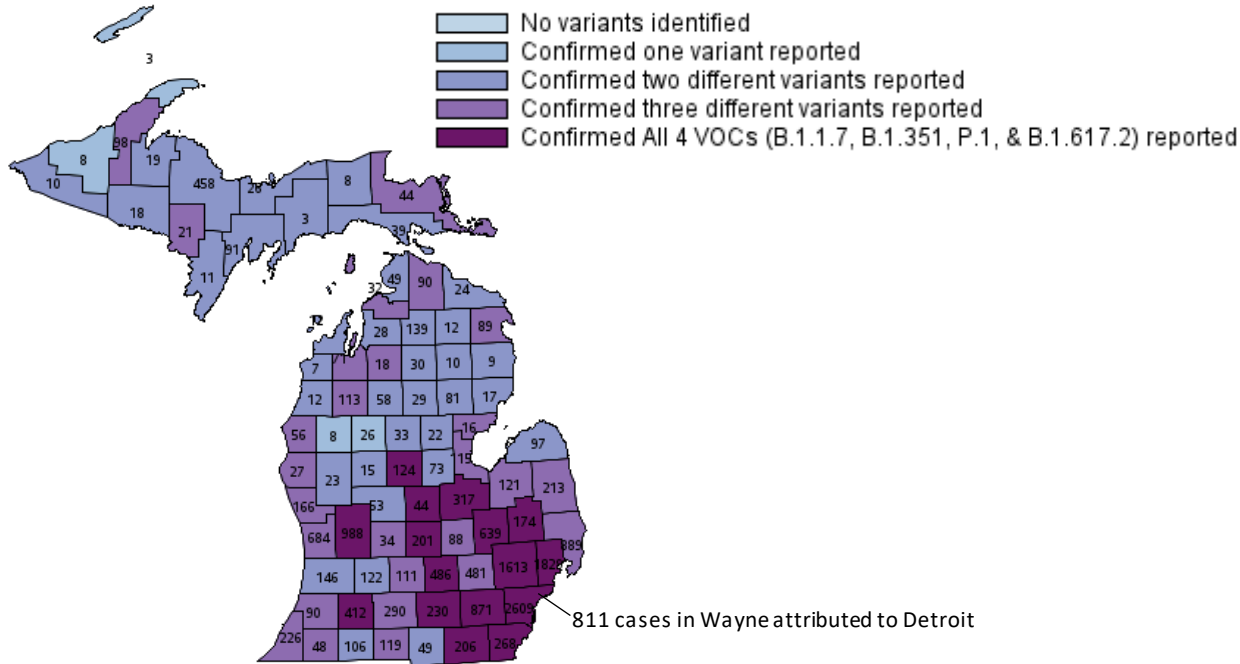
Note: Case information sourced from MDHHS and reflects date of death of confirmed and probable cases.
Source: MDHHS – Michigan Disease Surveillance System

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

Variants Circulating in United States, Sep 19 – Sep 25 (NOWCAST)



Variants of Concern in Michigan, Oct 4



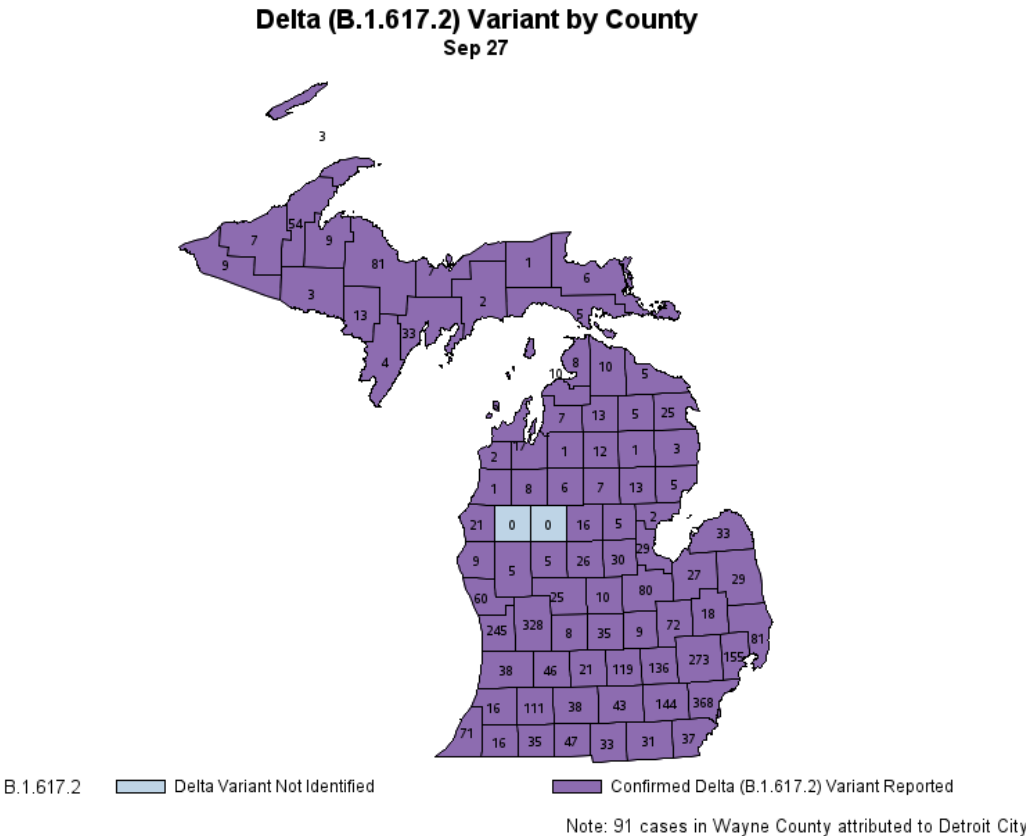
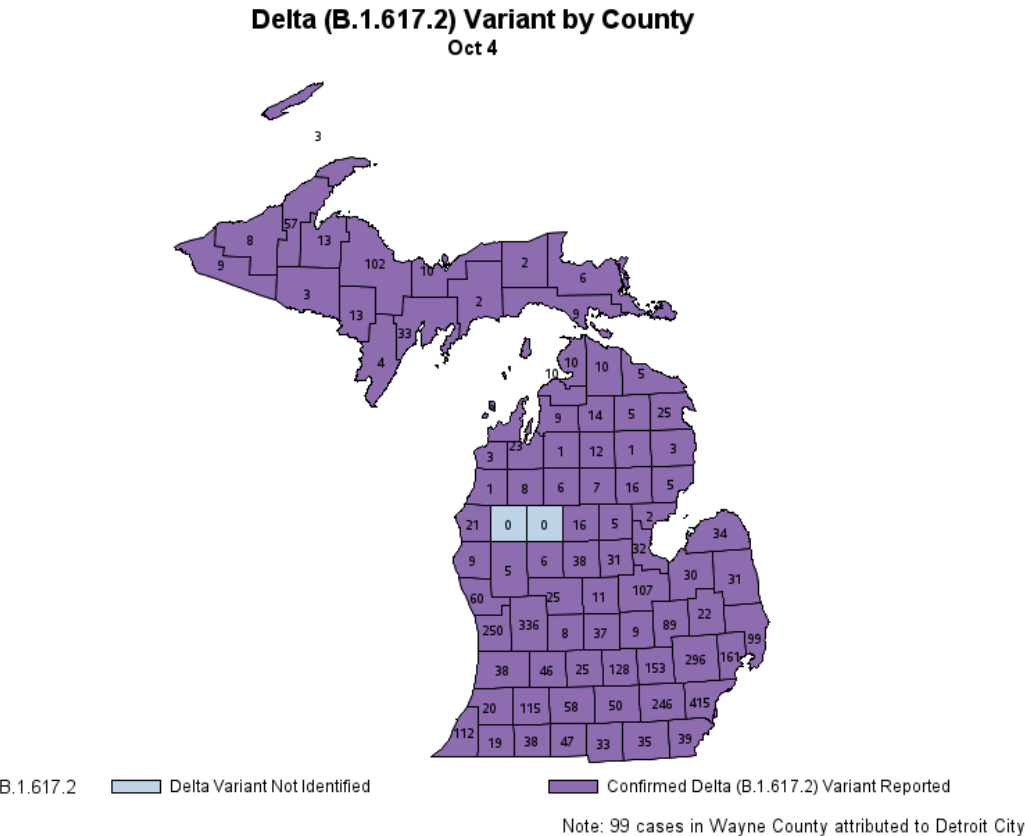
Variant	MI Reported Cases [¶]	# of Counties	% Specimens in last 4 wks
B.1.1.7 (alpha) now VBM	13,667*	81	0%
B.1.351 (beta) now VBM	88	24	0%
P.1 (gamma) now VBM	336	35	<1%
B.1.617.2 (delta)	3,949 (↑457)	81 (↔)	>99%

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

Identified COVID-19 Delta Variants by County

This week (Oct 4, 2021)

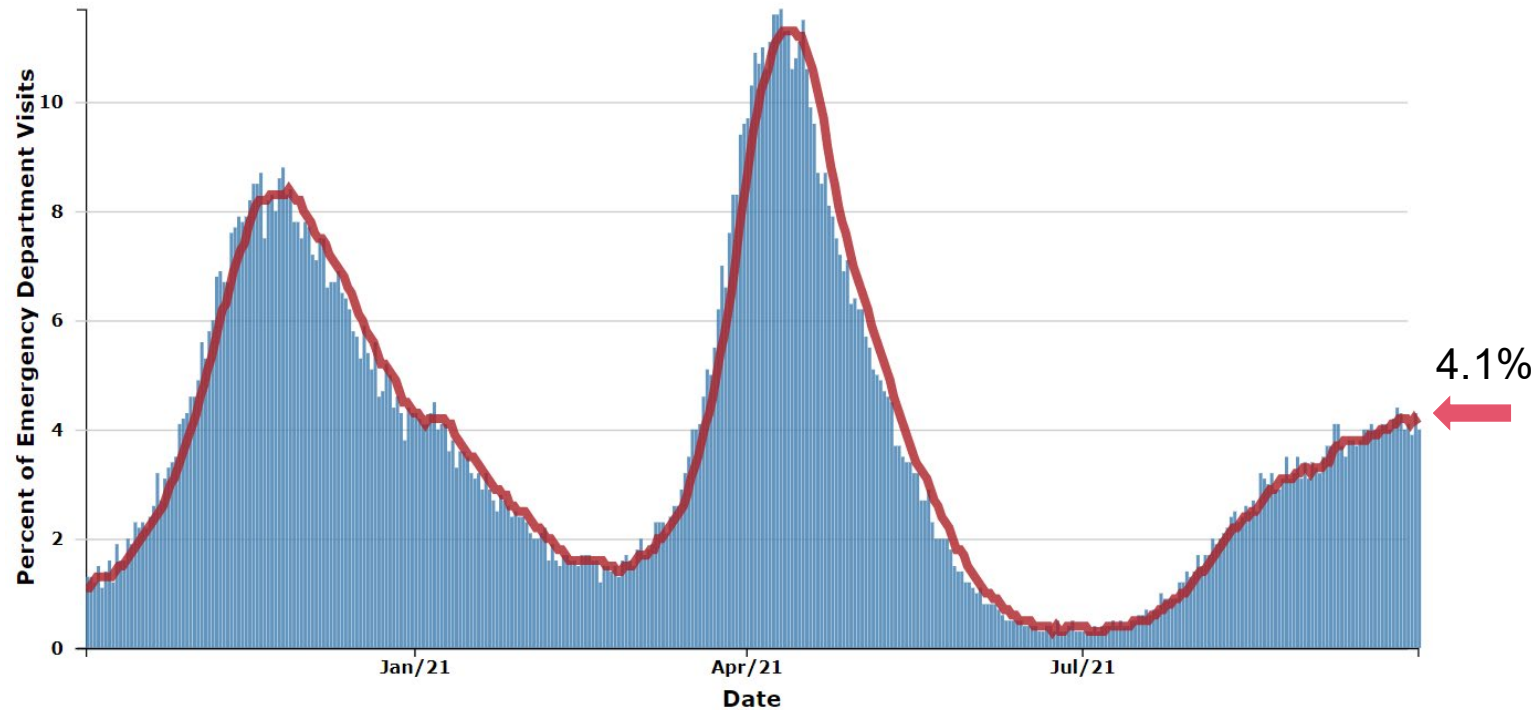
Last week (Sep 27, 2021)



Data last updated Oct 4, 2021
Source: MDSS

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

Percentage of Emergency Department visits with Diagnosed COVID-19 in Michigan, All Ages

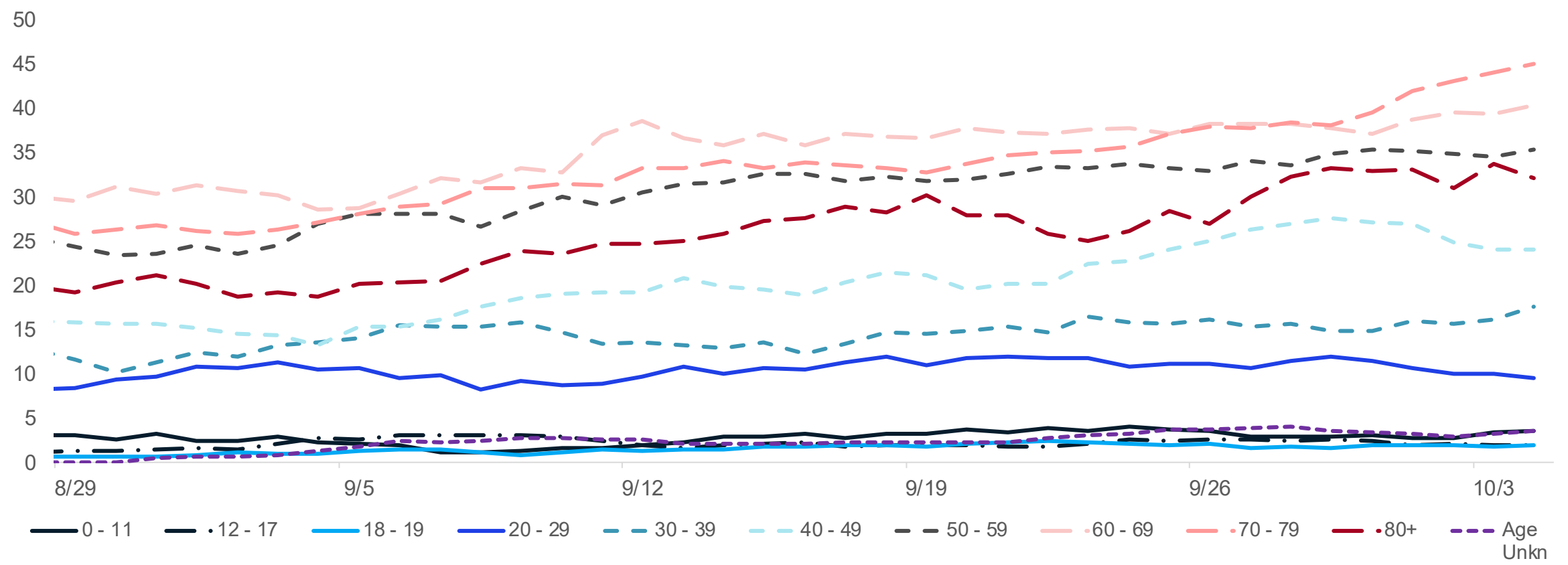


- Trends for ED visits have increased to 4.1% since last week (3.9% week prior)
- Trends vary by age groups with most age groups seeing an increase
- Over past week, those 40-49 years saw highest number of avg. daily ED CLI visits (5.9%), but those between 25 and 74 all above state average

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



Average Hospital Admissions by Age Groups

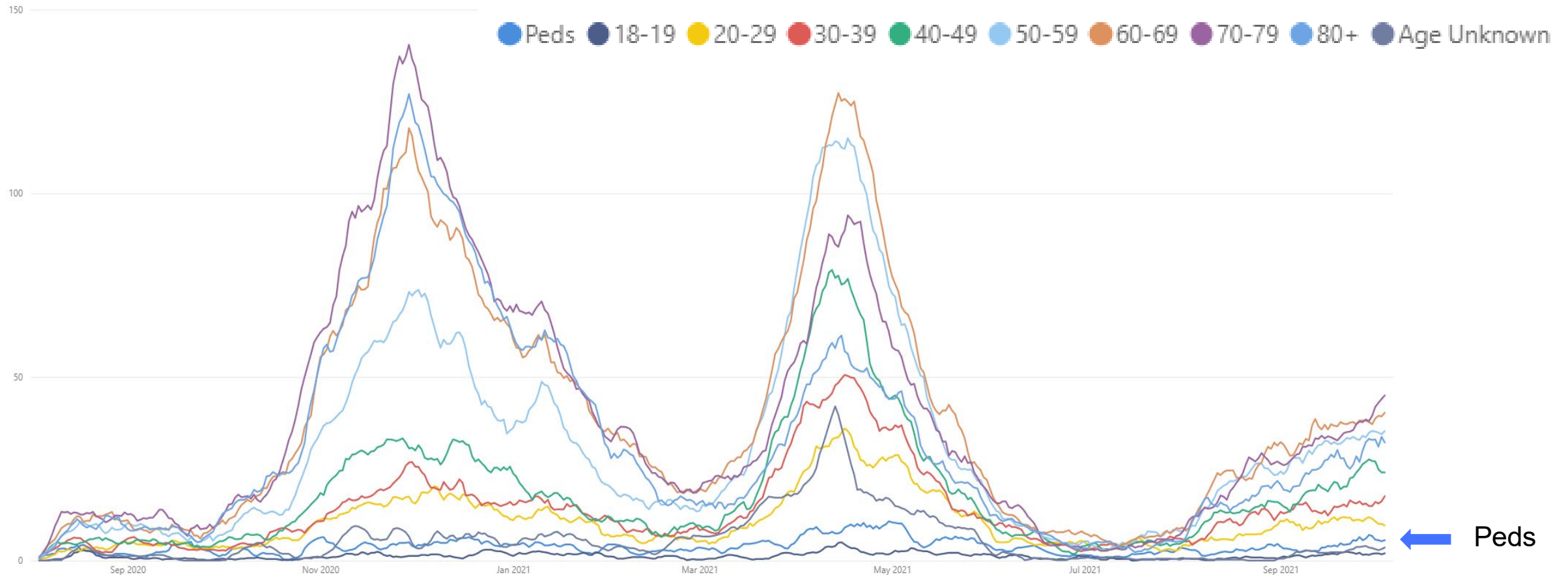


- Trends for daily average hospital admissions have increased 6% since last week (vs. 8% increase prior week)
- Most age groups experienced a one week increase in daily hospital admissions
- Over the past week, those 70-79 years have seen the highest number of avg. daily hospital admissions (45 admissions)

Source: CHECC & EM Resource



Average Hospital Admissions Are Increase for all Age Groups



- Trends for daily average hospital admissions have increased 8% since last week (vs. 5% 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 (38 admissions)

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	3.6	2.6	25% (+1)
12-17	1.9	2.5	-28% (-1)
18-19	2.0	7.6	27% (+<1)
20-29	9.6	6.9	-11% (-1)
30-39	17.6	14.5	15% (+2)
40-49	24.0	20.3	-9% (-2)
50-59	35.3	26.1	4% (+1)
60-69	40.3	31.6	6% (+2)
70-79	45.0	58.7	19% (+7)
80+	32.1	77.6	7% (+2)
Total[¶]	214.9	21.5	6% (+12)

- Through October 4, there were an average of 215 hospital admissions per day due to COVID-19, which is 12 (6%) more than last week
- The largest one week change in number of admissions was among those 70-79 years of age (+7)
- Average number of daily hospital admissions (45) are highest for those aged 70-79
- Average daily hospital admission rate (77.6 hospital admissions/million) are highest for those aged 80+

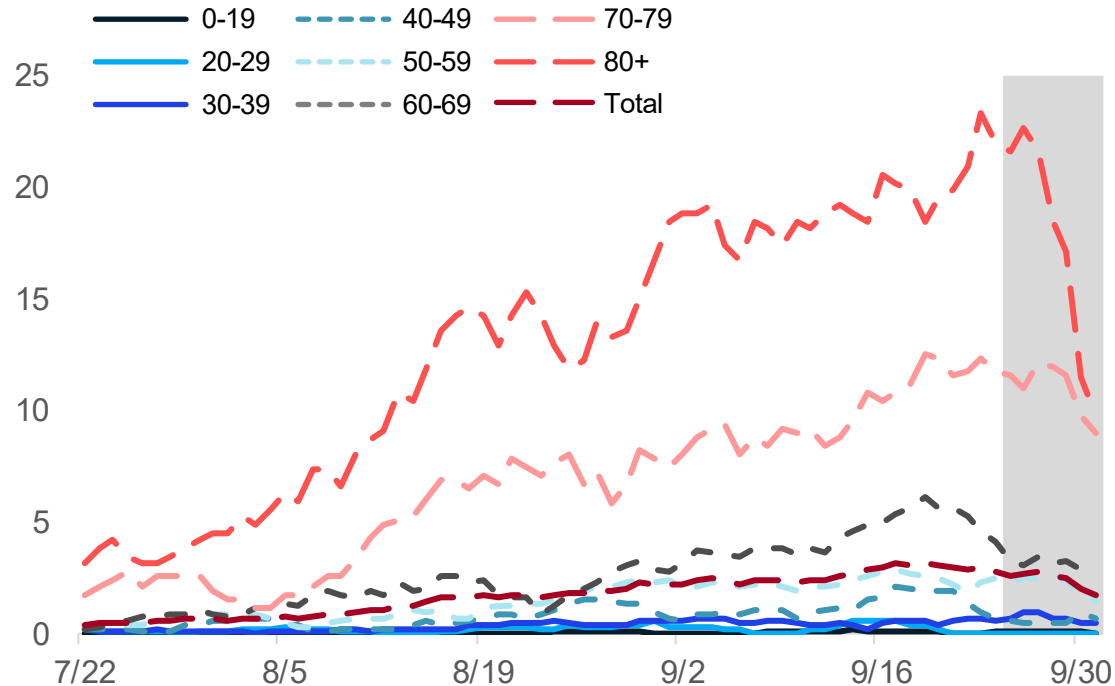
Note: for some age groups, small changes in number of hospitalization admissions can cause large change in One Week Percent Change

* 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



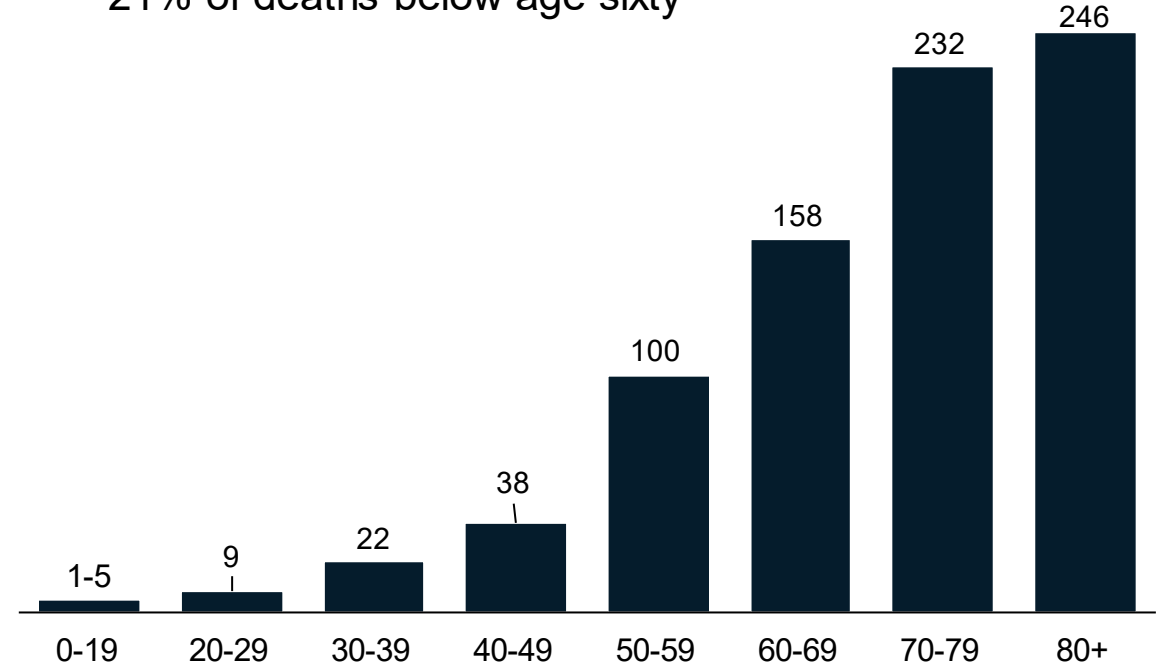
Average and total new deaths, by age group

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 9/27/2021)

- 21% of deaths below age sixty



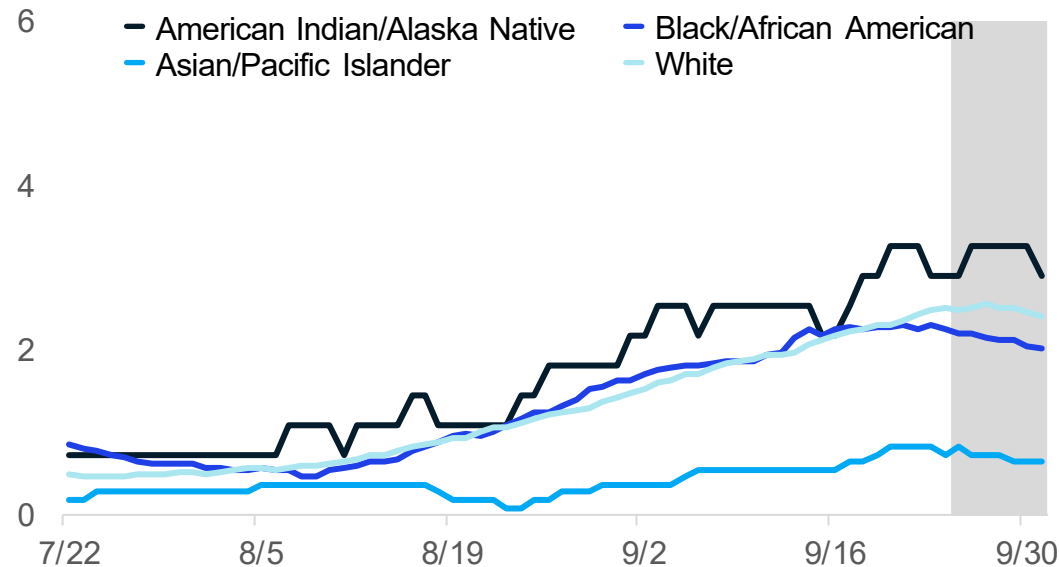
- Through 9/27, the 7-day avg. death rate is more than 12 daily deaths per million people for those over the age of 70
- 30-day proportion of deaths among those under 60 years of age has decreased from the prior week

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

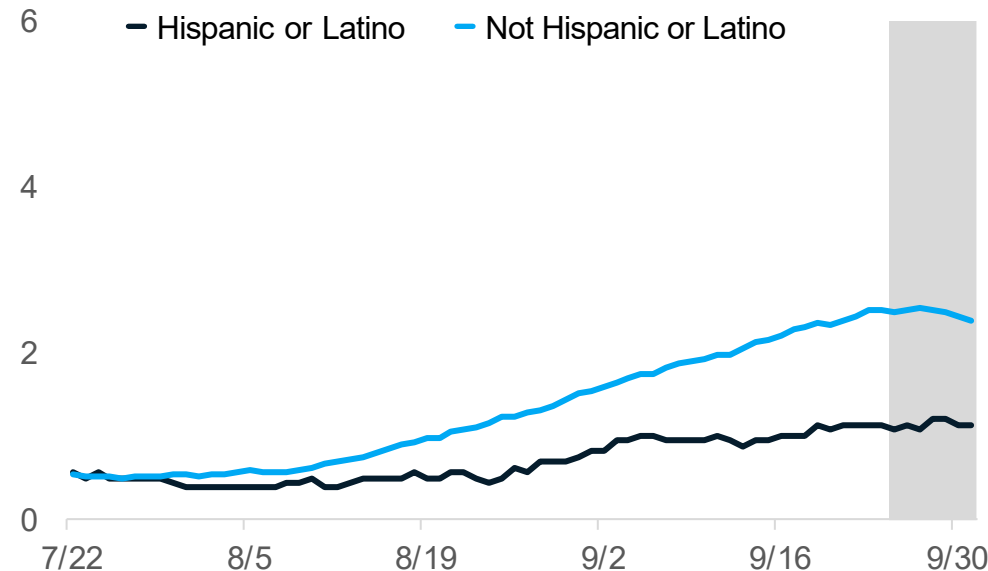


30-day rolling average daily deaths per million people by race and ethnicity

Average daily deaths per million people by race



Average daily deaths per million people by ethnicity



- Overall trends for daily average deaths are steady since last week
- Currently, American Indian/Alaskan Natives have the highest death rate
- In the past week, Whites have seen the largest increase in death rates (+12%)

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



Key Messages: Healthcare Capacity and COVID Severity

Hospitalizations and ICU utilization are increasing

- 4.1% of ED visits are for COVID diagnosis (up from 3.9% last week)
- Hospital admissions are increasing for most age groups this week
- Hospital census has increased 10% (vs. up 9% week prior)
- Most regions experienced **increasing** trends in hospital census this week
 - All regions, except Region 5, now have above 150/million population hospitalized
 - Most growth is in Regions 1, 3, 7, and 8
- Volume of COVID-19 patients in intensive care has increased 12% since last week (vs. 6% increase last week)

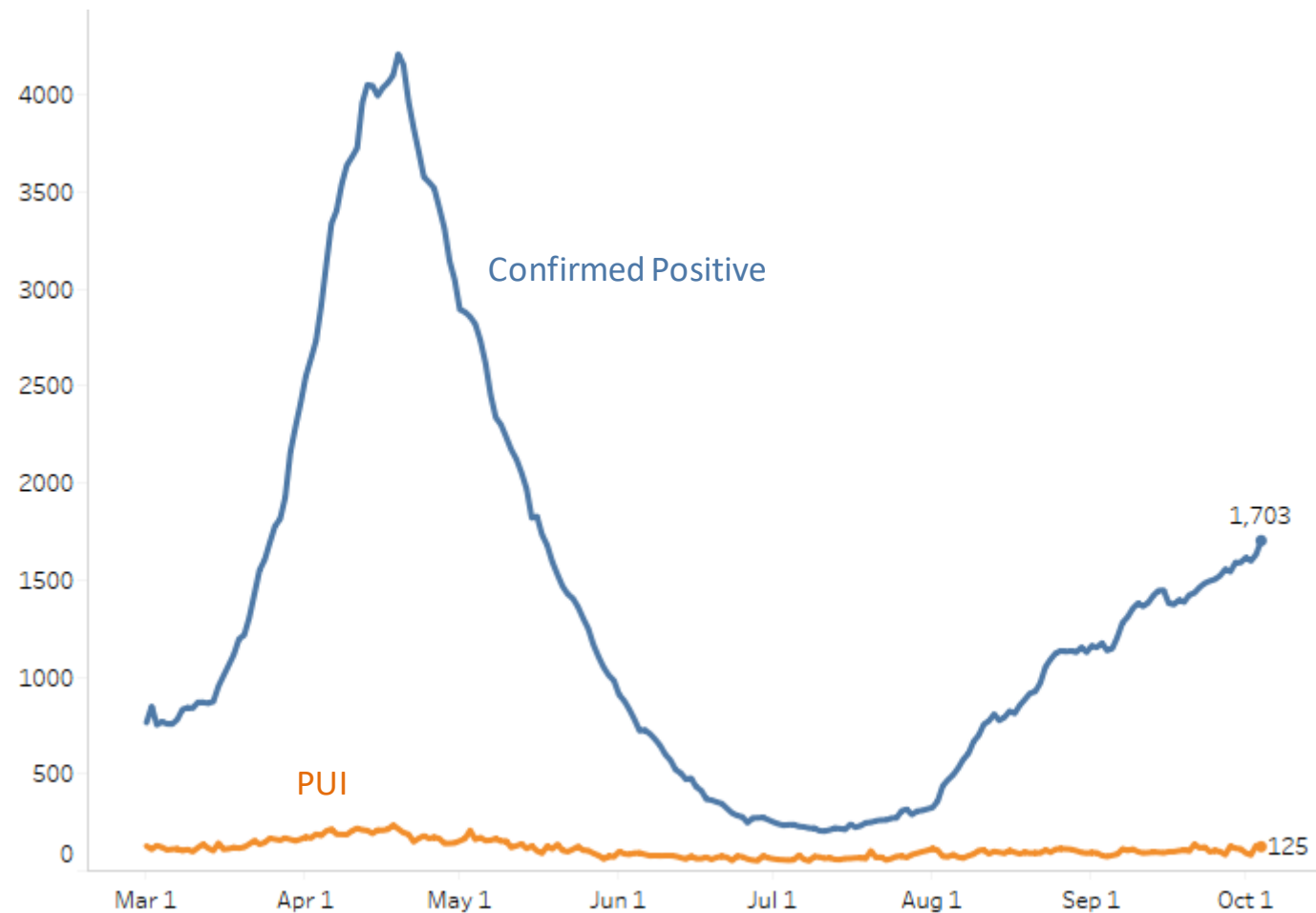
Death rate is plateaued at 2.8 daily deaths/million residents (up from 2.8 deaths/million last week)

- One week percent change is down 11% (vs. up 8% last week) [% change affected by backfill]
- 30-day proportion of deaths among those under 60 years of age has decreased from the prior week



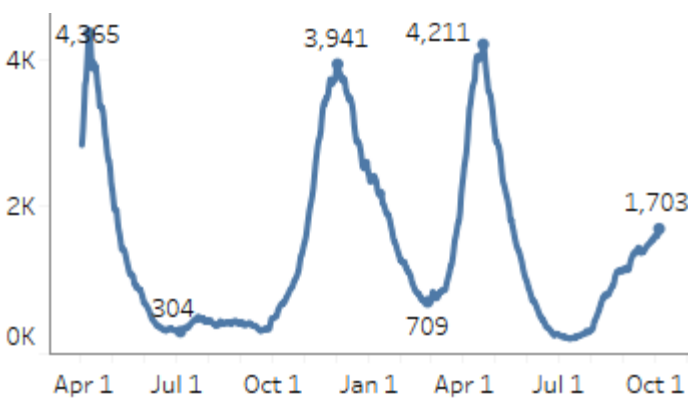
Statewide Hospitalization Trends: Total COVID+ Census

Hospitalization Trends 3/1/2021 – 10/4/2021
Confirmed Positive & Persons Under Investigation (PUI)



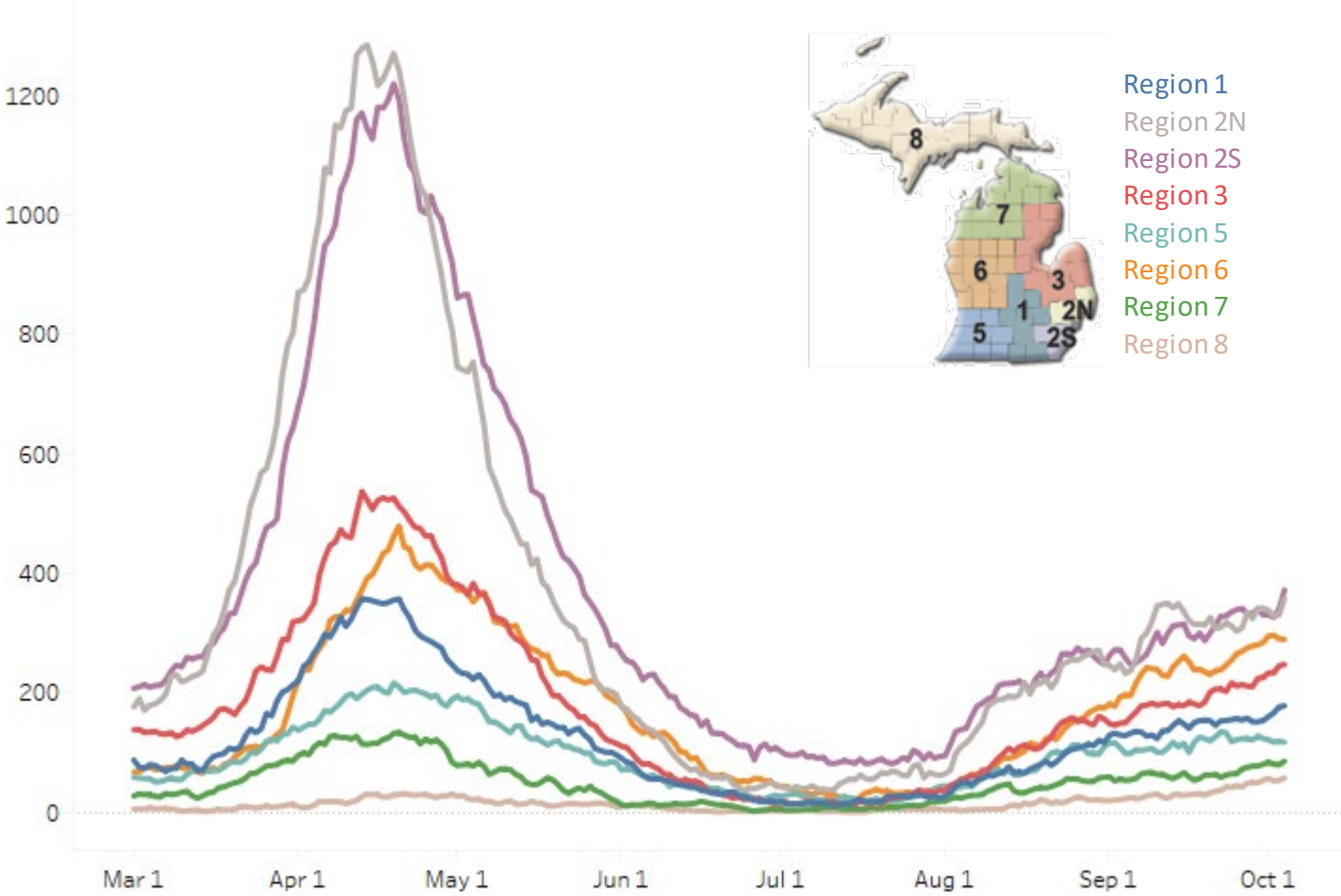
COVID+ census in hospitals has increased 10% from the previous week (previous week's increase was 9%)

Hospitalized COVID Positive Long Term Trend (beginning March 2020)



Statewide Hospitalization Trends: Regional COVID+ Census

Hospitalization Trends 3/1/2021 – 10/4/2021
Confirmed Positive by Region



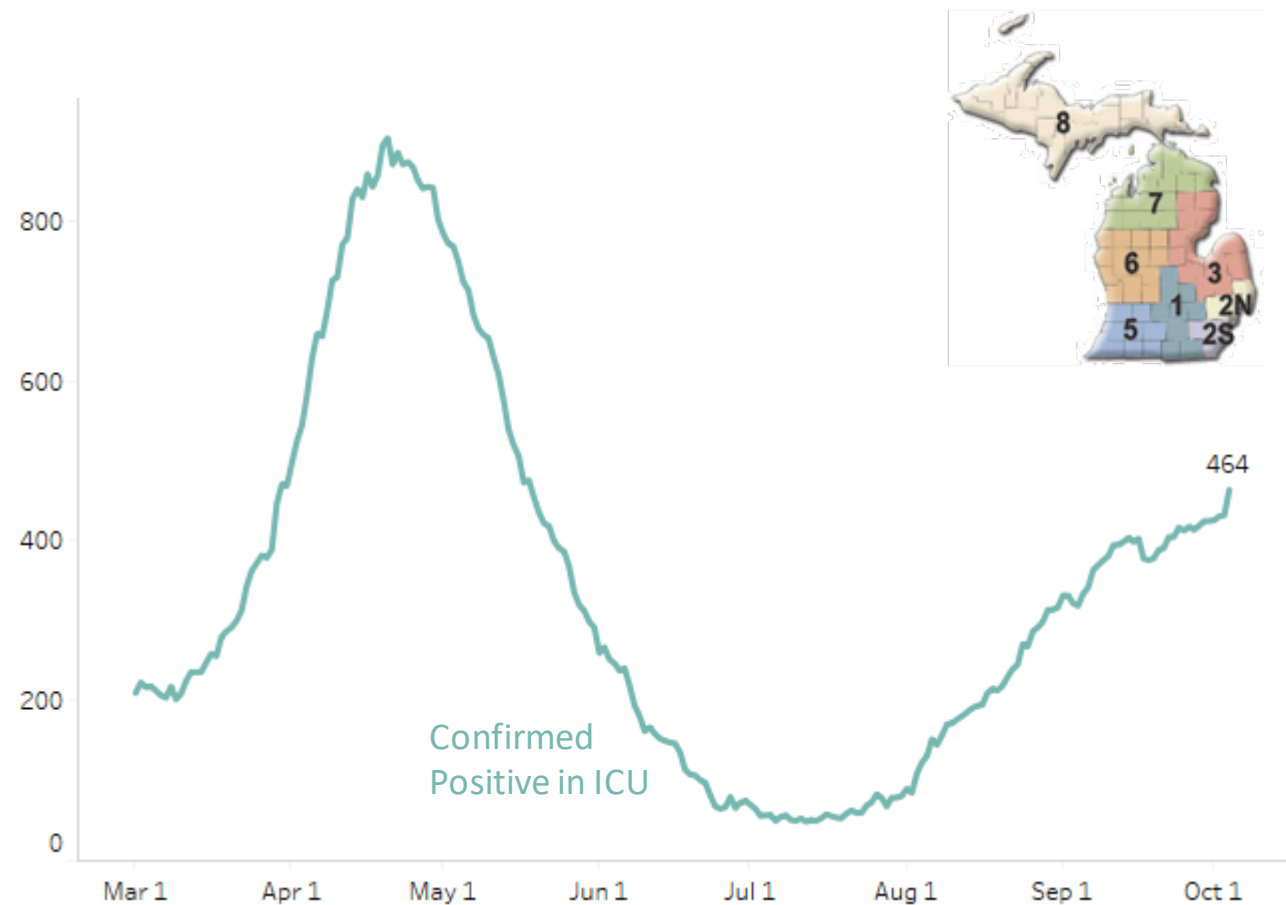
The hospital census of COVID+ patients has increased in each region, except Region 5.

All regions, except Region 5, now have above 150/M population hospitalized. Regions 3 has greater than 200 hospitalized/M population.

Region	COVID+ Hospitalizations (% Δ from last week)	COVID+ Hospitalizations / MM
Region 1	178 (13%)	165/M
Region 2N	358 (8%)	162/M
Region 2S	372 (12%)	167/M
Region 3	247 (17%)	218/M
Region 5	117 (-5%)	123/M
Region 6	289 (5%)	197/M
Region 7	85 (13%)	170/M
Region 8	57 (19%)	183/M

Statewide Hospitalization Trends: ICU COVID+ Census

Hospitalization Trends 3/1/2021 – 10/4/2021
Confirmed Positive in ICUs



Overall, the census of COVID+ patients in ICUs has increased by 12% from last week, with increases in every region.

Regions 1 and 3 have ICU occupancy at 90%.

Regions 1 and 6 have 30% or greater of adult ICU beds filled with COVID+ patients.

Region	Adult COVID+ in ICU (% Δ from last week)	Adult ICU Occupancy	% of Adult ICU beds COVID+
Region 1	52 (11%)	90%	30%
Region 2N	95 (17%)	72%	17%
Region 2S	89 (6%)	80%	13%
Region 3	63 (19%)	90%	18%
Region 5	34 (10%)	75%	19%
Region 6	81 (11%)	80%	34%
Region 7	35 (6%)	83%	24%
Region 8	15 (36%)	65%	24%

Key Messages: Public Health Response

COVID-19 Vaccination

- 4,399 first doses administered each day (7-day rolling average*); total administrations increasing
- Most administered frequently by pharmacies, local health departments, and hospitals
- More than 144K third doses administered since August 13th, may include additional dose or booster dose
- More than 5.25 million people (52.6%) 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 10/4/2021)

13,611,970 doses delivered to providers and 10,774,388 doses administered*

MI 7-day rolling average ending September 29th

- 19,826 total doses/day on average[†] (11,083 9/22)
- 4,399 first doses/day on average[†] (4,723 9/22)

Total primary series doses in month of September were most frequently administered[¶] by:

Pharmacies (200,658)

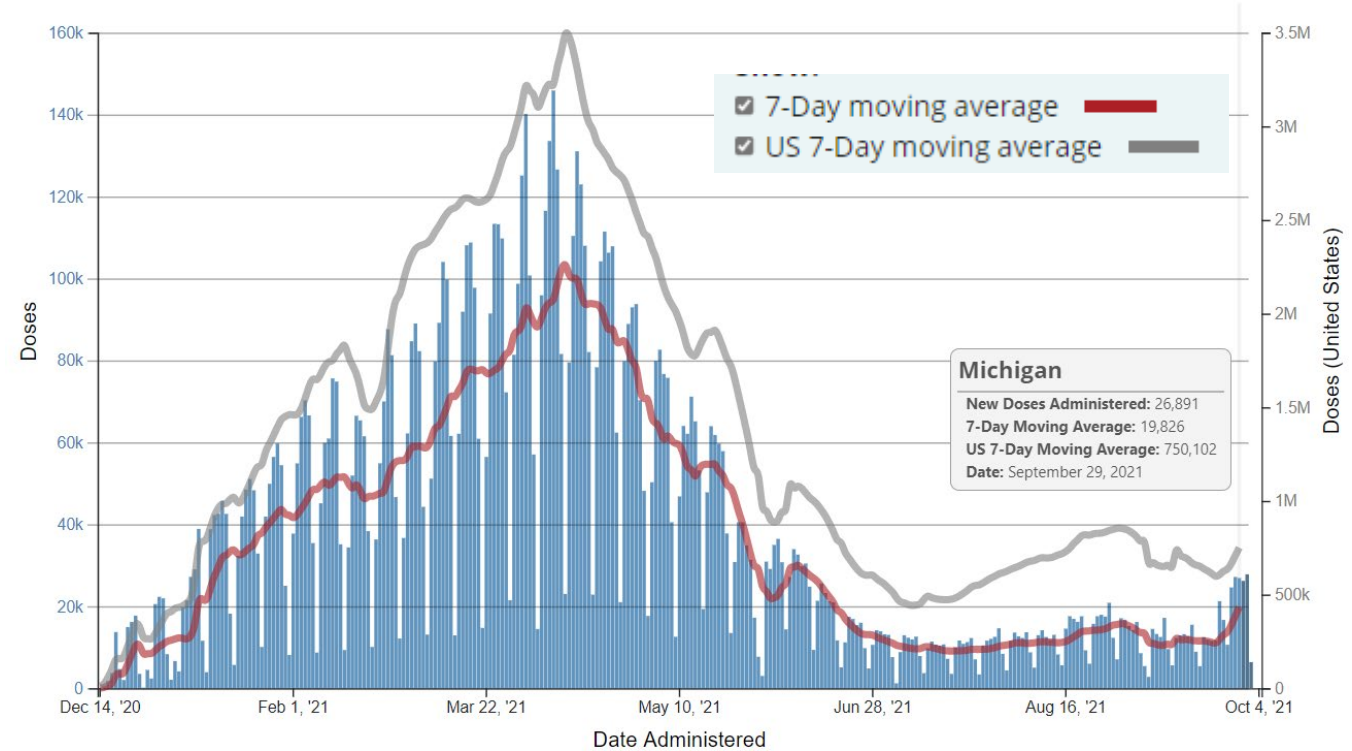
LHD (17,896) and hospitals (16,047)

Family practice (11,237) and FQHCs (9,241)

Third Doses

- 144,747 third doses administered as of 10/1

Daily Count of Total Doses Administered and Reported to CDC by Date Administered, Michigan



Source: *[CDC COVID Data Tracker > Vaccinations in the US](#), [†][CDC COVID Data Tracker > Vaccination Trends](#), [¶][MCIR COVID-19 Vaccine Dashboard](#)



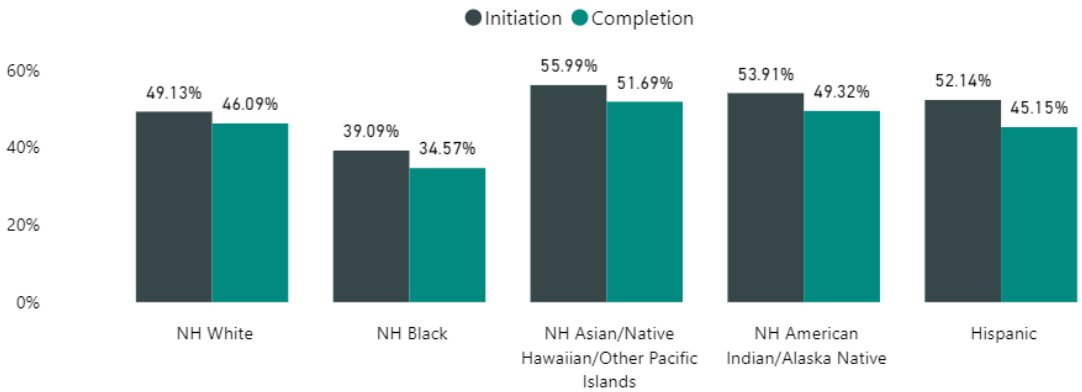
5.26 Million Michiganders fully vaccinated and 52.6% of total population fully vaccinated

- 5.26 million people in the state are fully vaccinated*
- 84.1% of people aged 65 and older have completed the series (+0.3%)*
- 57.4% of total population initiated (+0.3%)*
- Race/Ethnicity[¶] for those 12 years and older:
 - Initiation coverage highest among those of Non-Hispanic (NH) Asian, Native Hawaiian or Pacific Islander Race (55.9%), then NH American Indian (53.9%), NH White (49.1%), NH Black or African American Races (39.1%).
 - Initiation is at 52.1% for those of Hispanic ethnicity
 - Completion follows the same pattern
 - 18.0% data missing or unknown

Vaccination Coverage in Michigan as of 10/4/21

Age Group	% At Least One Dose	% Fully Vaccinated	Number Fully Vaccinated
Total Population	57.4%	52.6%	5,256,121
≥ 12 years	66.7%	61.2%	5,256,002
≥ 18 years	68.8%	63.3%	4,964,626
≥ 65 years	88.9%	84.1%	1,484,065

Coverage by Race*



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

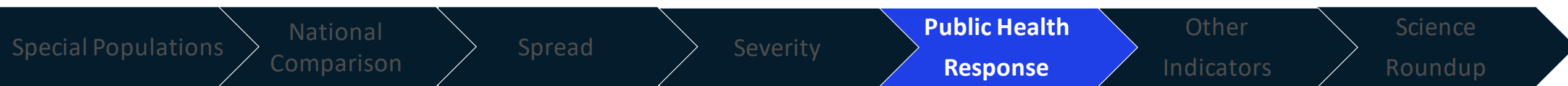
Source: [*CDC COVID Data Tracker > Vaccinations in the US](#), [¶] [MCIR COVID-19 Vaccine Dashboard](#)

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 9/28/21):

- **32,802 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 488 deaths (427 in persons ages 65 years or older)**
 - **1,296 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 184 million people in the United States have been fully vaccinated as of September 30, 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.



Update on breakthrough cases

DRAFT



Cumulative COVID-19 Cases by Vaccination Status, Michigan, Jan 15 – Sep 28

Fully Vaccinated People (4,888,124)		
Cases	Hospitalization	Deaths
Percent of Cases In People Not Fully Vaccinated (488,965 / 521,767) 93.7%	Percent of Hospitalizations In People Not Fully Vaccinated (13,279 / 14,575) 91.1%	Percent of Deaths In People Not Fully Vaccinated (5,545 / 6,033) 91.9%
488,965 Total Cases Not Fully Vaccinated	13,279 Total Hospitalized Not Fully Vaccinated	5,545 Total Deaths Not Fully Vaccinated
Total Breakthrough Cases 32,802	Total Breakthrough Hospitalizations 1,296	Total Breakthrough Deaths 488
0.671% Percent of Fully Vaccinated People who Developed COVID-19 (32,802/ 4,888,124)	0.027% Percent of Fully Vaccinated People Who Were Hospitalized for COVID-19 (1,296 / 4,888,124)	0.0010% Percent of Fully Vaccinated People Who Died of COVID-19 (488 / 4,888,124)
6.3% Percent of Cases Who Were Fully Vaccinated (32,802 / 521,767)	8.9% Percent of Hospitalizations Who Were Fully Vaccinated (1,296 / 14,575)	8.1% Percent of Deaths Who Were Fully Vaccinated (488 / 6,033)
Total Cases: 521,767	Total Hospitalizations: 14,575	Total Deaths: 6,033

Michigan Disease Surveillance System may underestimate the frequency of COVID-19 hospitalizations:

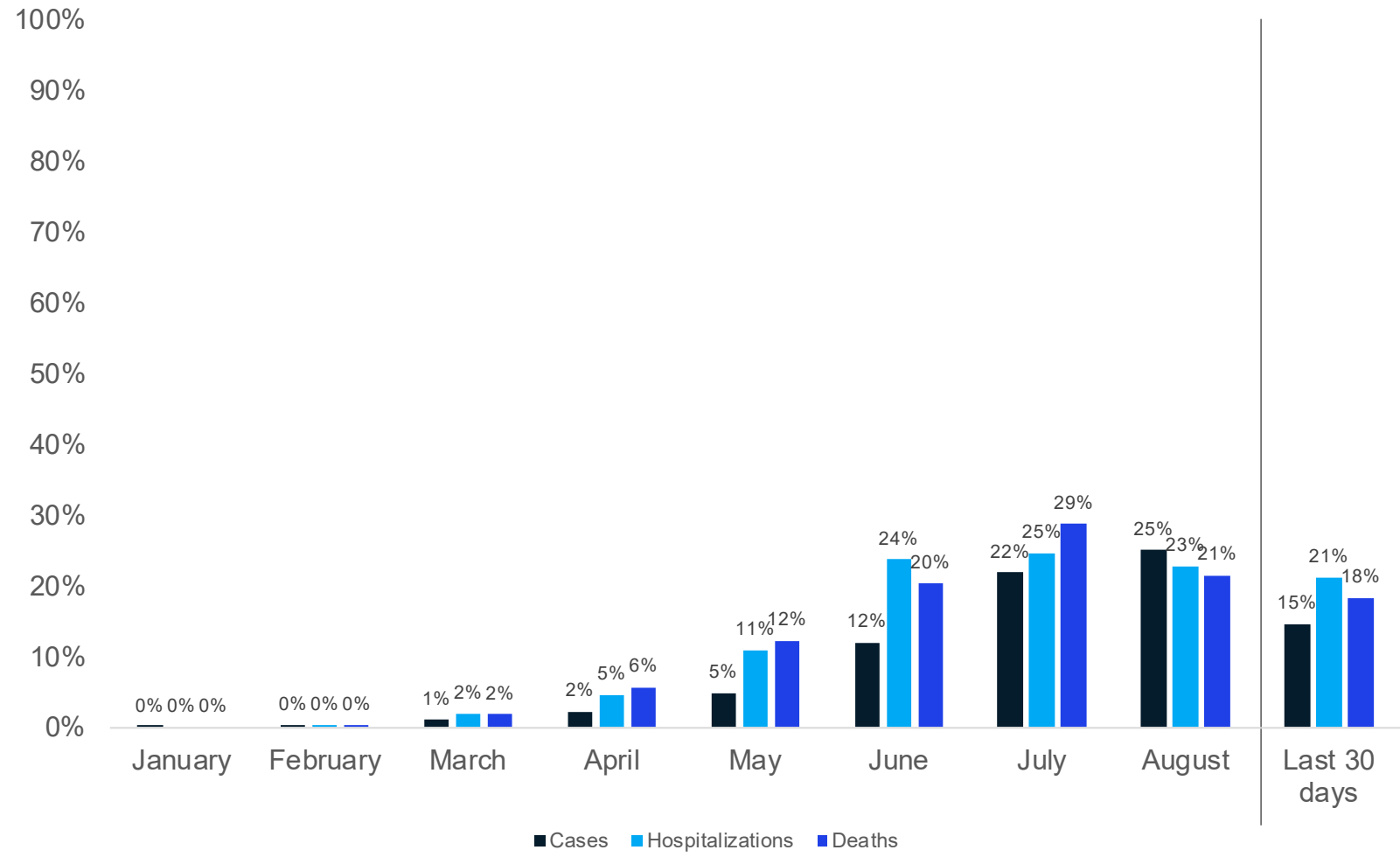
- Case investigation and follow-up is more difficult for individuals who get vaccinated (e.g., they are too ill to speak to investigators, don't answer their phone, or otherwise).
- These hospitalizations include individuals who are hospitalized for issues other than COVID19 (the same as breakthrough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



Trends in Breakthrough Cases, Hospitalizations, and Deaths

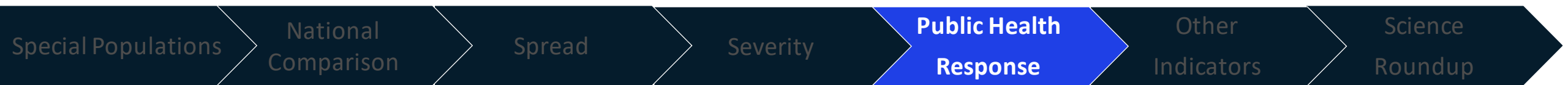
- 52.3% of the population is fully vaccinated yet only account for ~20-25% of cases, hospitalizations, and deaths
- As the fully vaccinated population has increased, so have the percent of breakthrough incidents; but breakthrough burden remains lower

In the last 30 days (Aug 30 – Sep 28), 11,033 (15%) of 75,560 cases, 258 (21%) of 1,217 hospitalizations, and 66 (18%) of 361 deaths were among fully vaccinated individuals

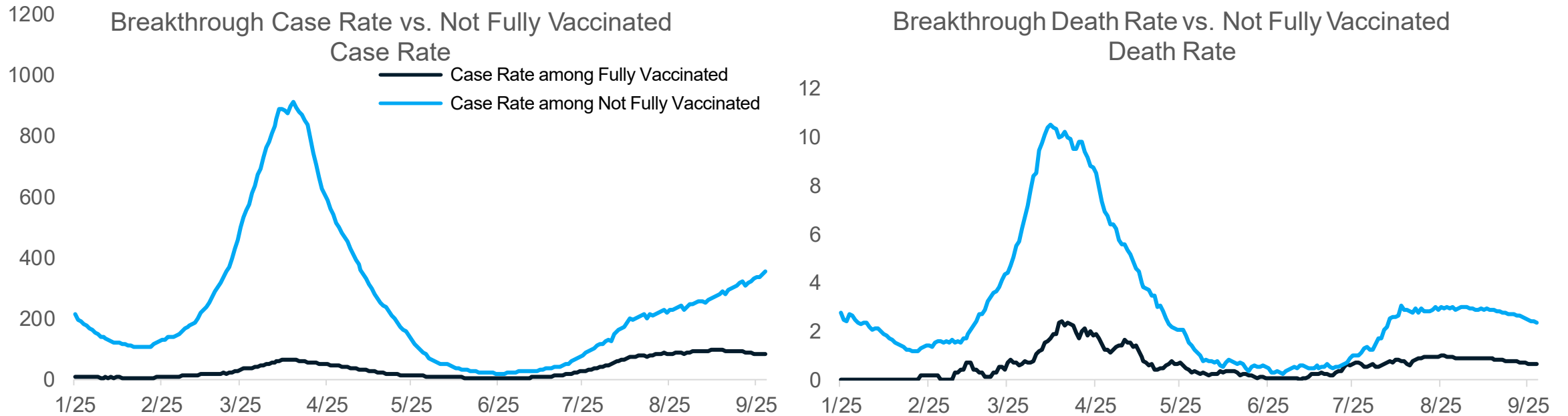


Michigan Disease Surveillance System may underestimate the frequency of COVID-19 hospitalizations:

- 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.



COVID-19 Vaccination Breakthrough Cases and Deaths

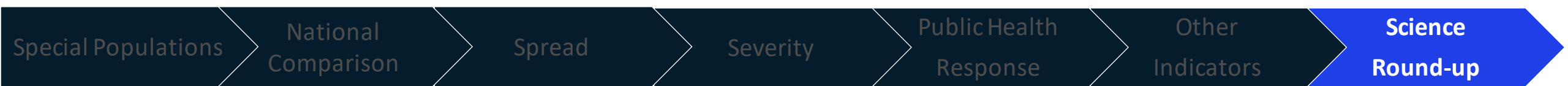


- Trends over time show that both case and death rates among the Fully Vaccinated are lower than the Not Fully vaccinated rates in Michigan
- The *proportion* of breakthrough cases and deaths among all cases and deaths has shown some increases as more people become fully vaccinated
 - However, the risk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

Science Round Up

Projection trends: What is expected to happen over the next few months in other states and what is projected for Michigan

- Ridge regression model projects continued increases for Michigan
- Michigan CDC model projections suggest plateau or slowed increases in cases, hospitalizations, and deaths



Deeper look at trends: What is happening in other states and COVID forecasts for Michigan

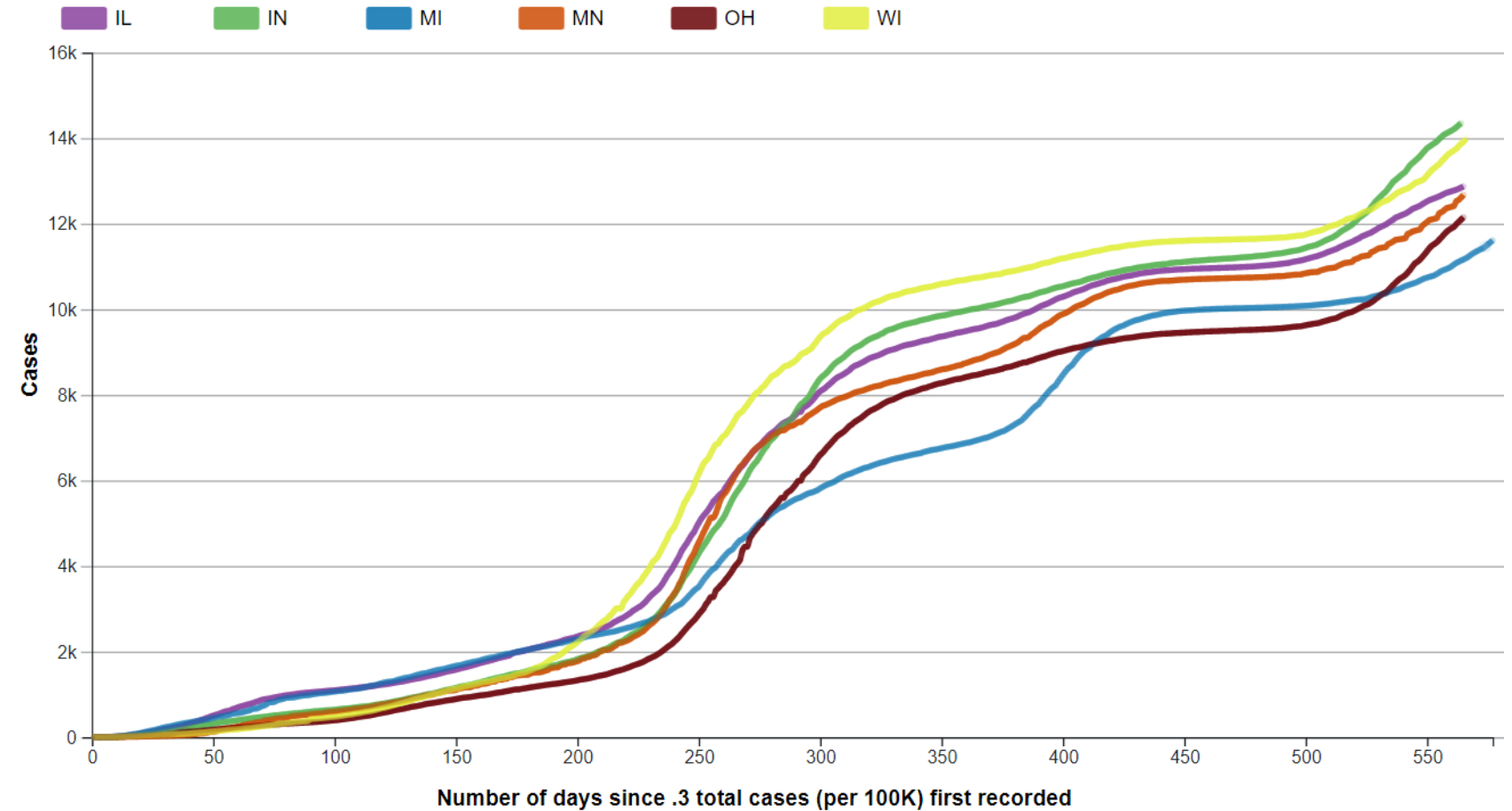


COVID-19 Case Rates: Midwest Comparison (Cumulative Numbers)

Cumulative cases of Covid-19, reported to CDC, in IL, IN, MI, MN, OH, and WI

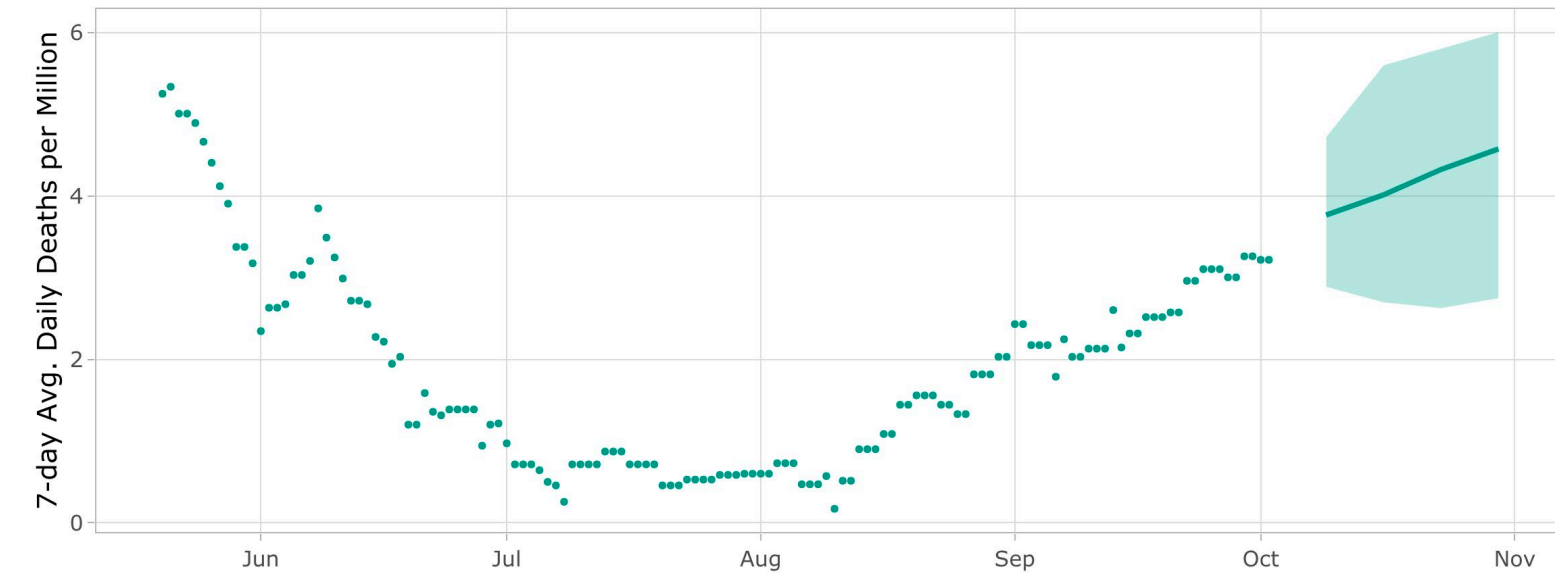
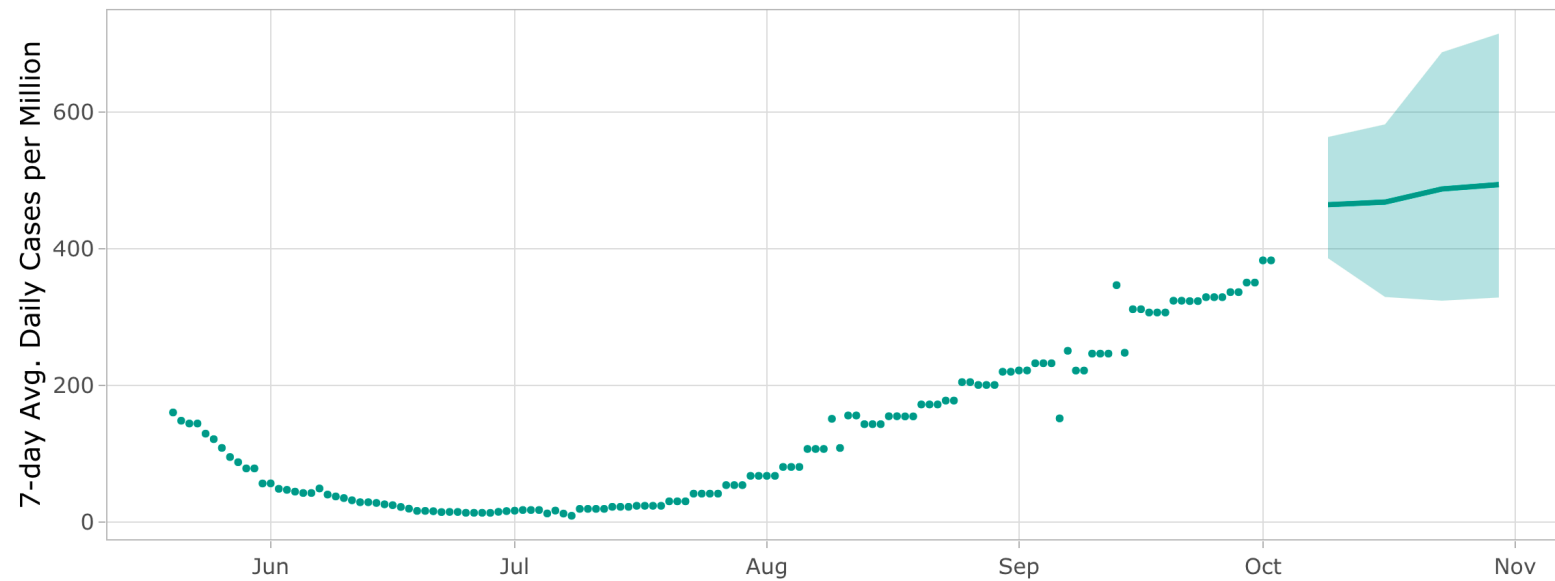
Cumulative cases (per 100K), by number of days since .3 total cases (per 100K) first recorded.

- Average daily incidence per 100,000 cases in Michigan is currently lower than other Midwestern states experiencing a surge in delta cases
- Currently, Michigan has experienced 11.6K/100,000 cumulatively (~12%) while national seroprevalence suggests this is closer to 28%



Source: [CDC COVID Data Tracker – State Trend Comparison](#)

Ridge regression model projects plateauing cases and continued increases in deaths for Michigan

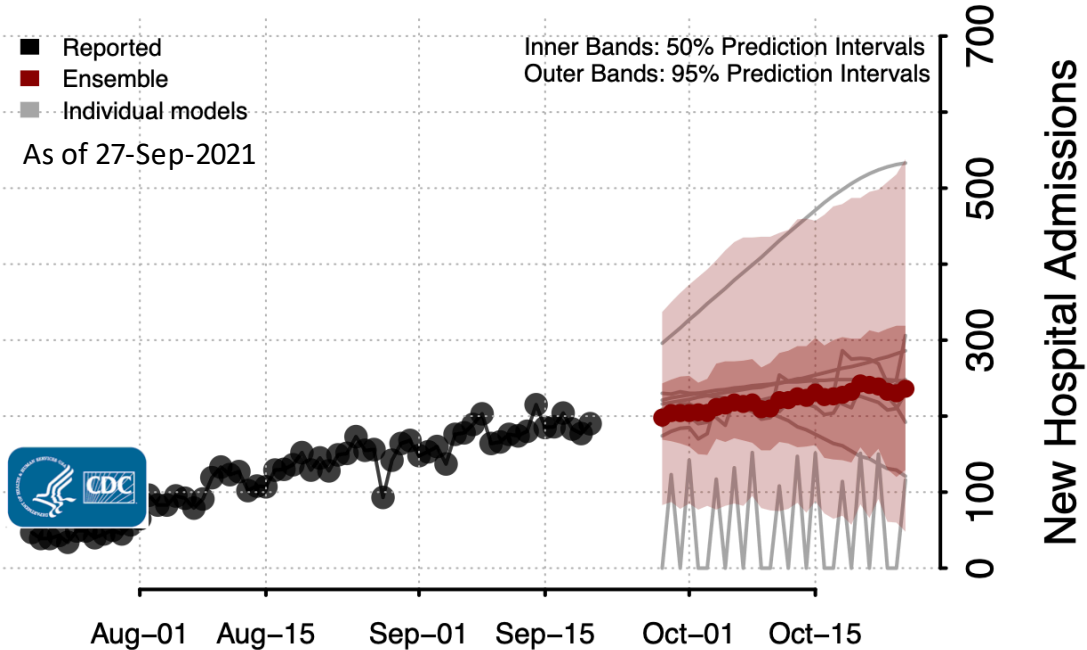


- Model projects plateau in cases and continued increase in deaths
- Uncertainty ranges for cases and deaths include plateaus or continued increases
- Line is the ridge regression model projection, and the shaded region represents the 95% confidence region (2.5% and 97.5% quantiles).
- Projections are based on previous data on cases, hospitalizations, and deaths, as well as data on mobility and vaccinations.
- Cases are plotted by report date.
- Projections as of 10/4/2021
- For full projections and comparison to other Midwest states, see dataepi.org

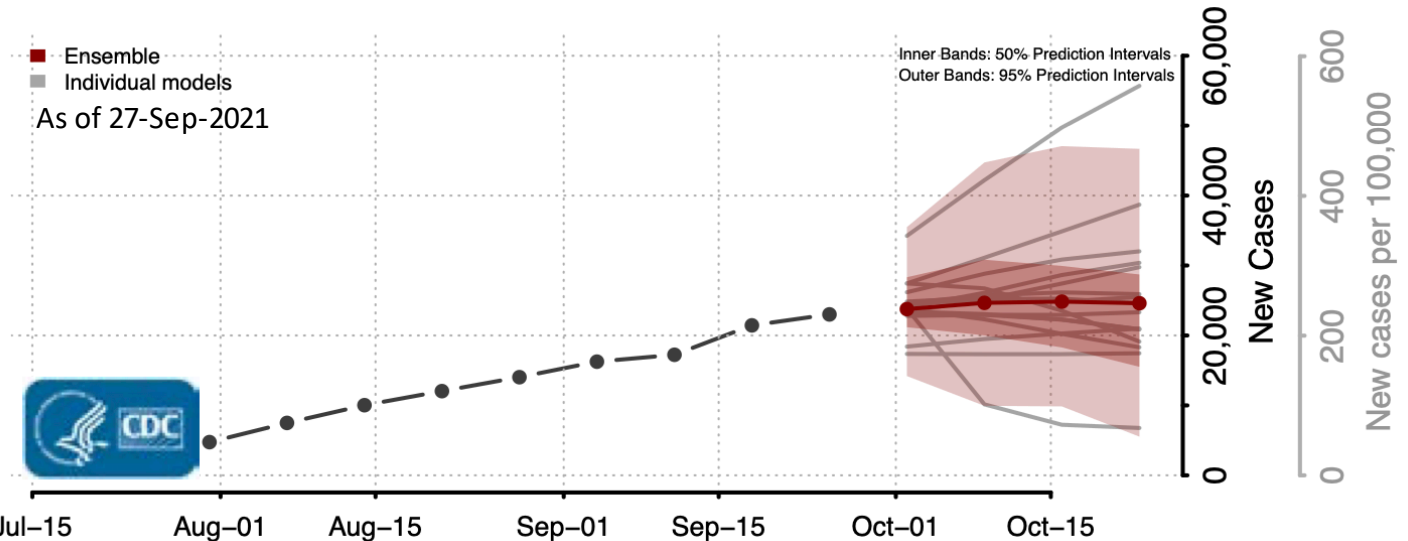
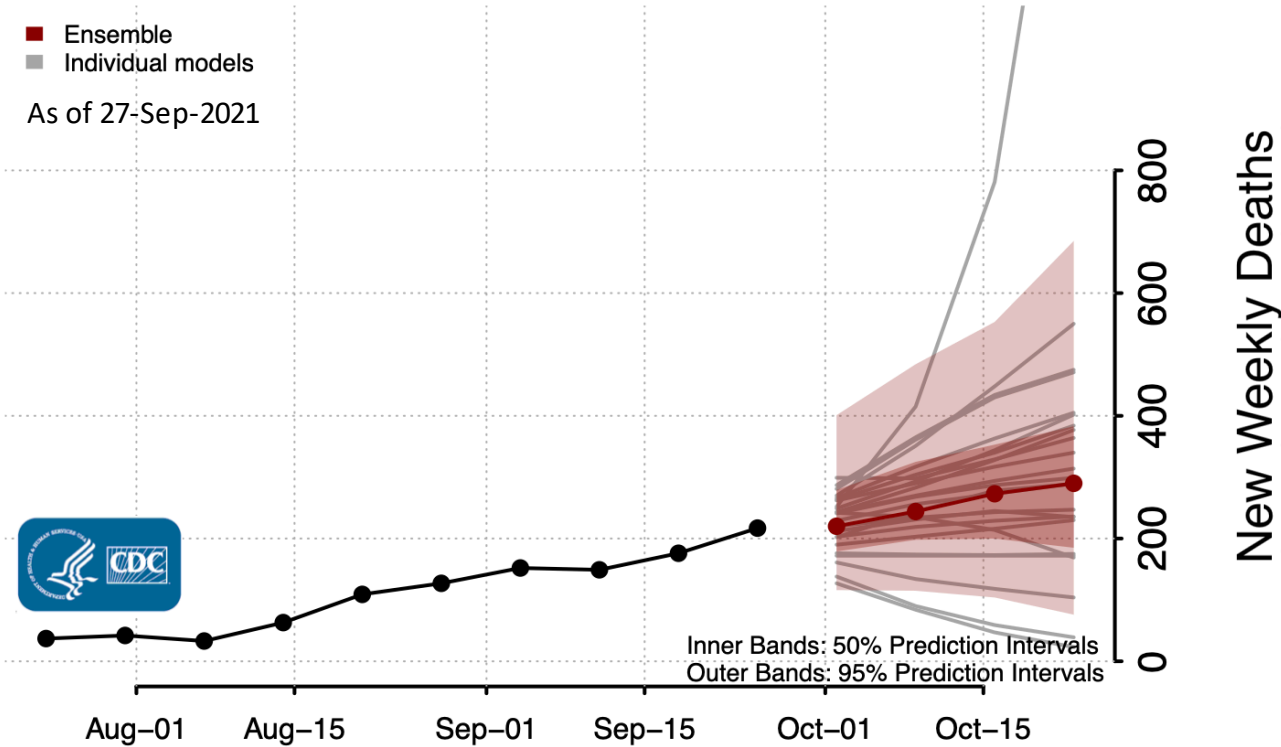
Sources: Data from MDHHS/JHU,
[UM Ridge Regression Model](#)



Michigan CDC model projections suggest plateau or slowed increases in cases, hospitalizations, and deaths



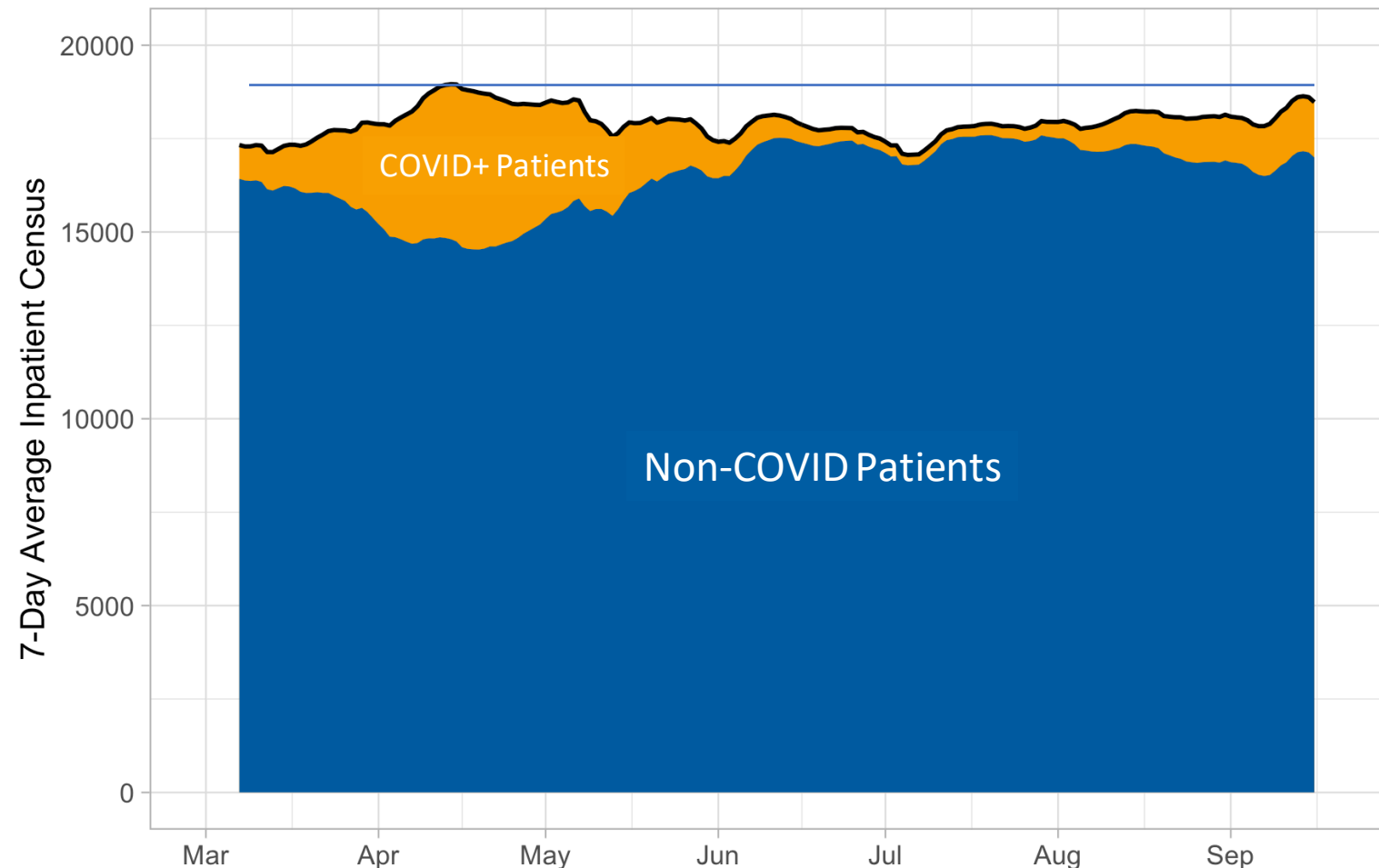
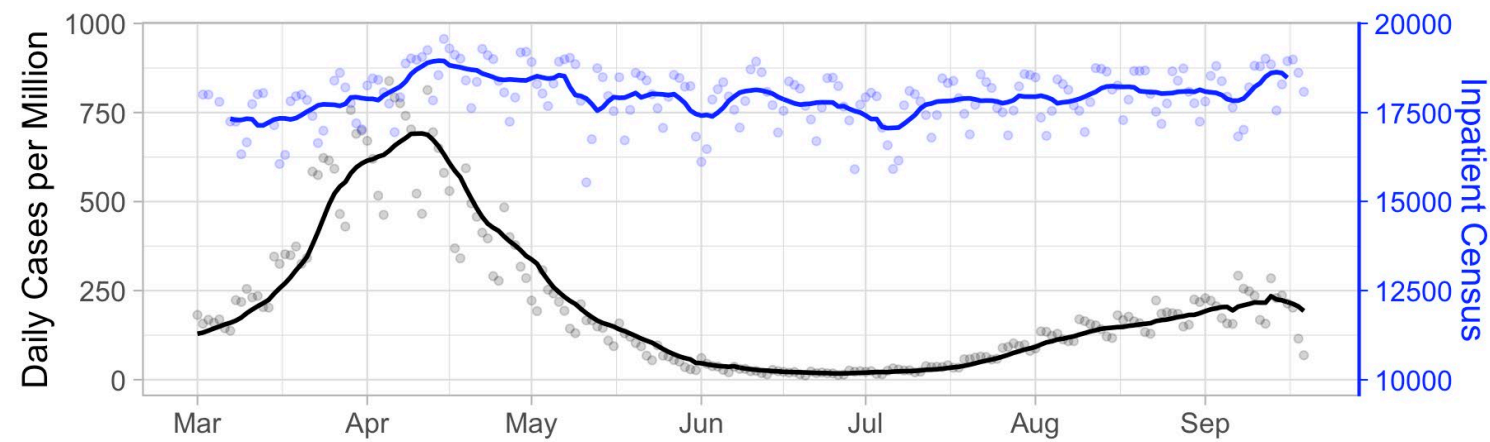
New Hospital Admissions



Data Sources: [CDC mathematical model forecasting](#), [CovidComplete Data Center](#) model forecast evaluations. Individual models shown as grey lines, ensemble shown in red

Inpatient census is near spring peak levels

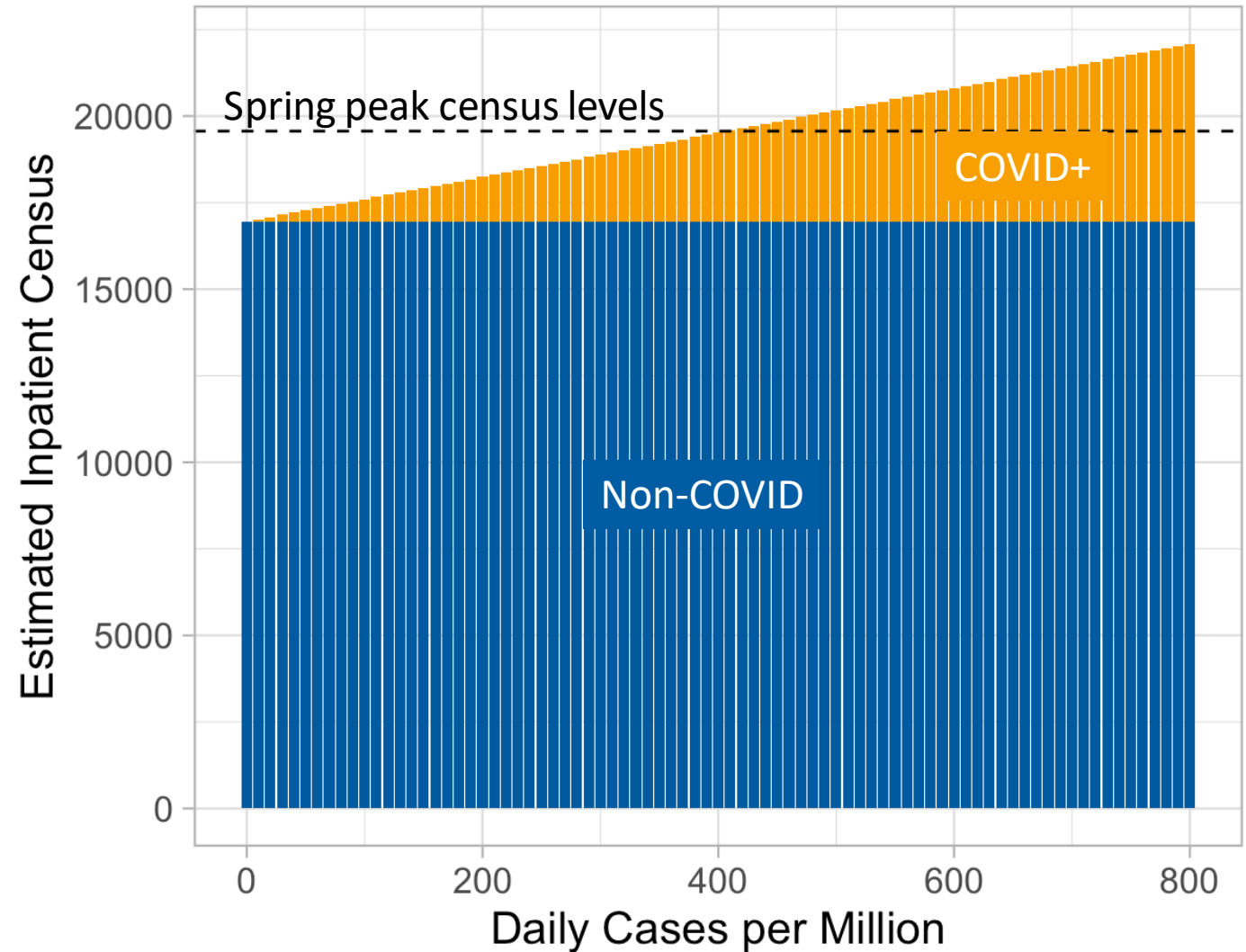
- Cases and COVID+ census have risen, though they are currently lower than spring peak
- However non-COVID care has increased since the spring surge
- Together, the overall inpatient census is near spring peak levels (see horizontal line)



Data Sources: MDSS (case data as of 9/20/21), HHS Protect (hospital [admissions](#) and [inpatient census](#) data through 9/19/2021). Note that COVID+ patient reporting is based on fewer hospitals (~158 hospitals) than overall inpatient census (~161 hospitals), so fraction of patients that are COVID+ may be an underestimate.

Given the increase in non-COVID care, how do current cases translate to hospitalizations?

- Non-COVID census estimated based on average census levels over the last 30 days
- Assumes constant steady state case levels and hospitalization rate
- Translated case rate to inpatient census based on the case hospitalization rate and estimated length of stay over the last 30 days
- Note spring peak census levels occurred with lower non-COVID care levels



Data Sources: MDSS (case data as of 9/20/21), HHS Protect (hospital [admissions](#) and [inpatient census](#) data through 9/19/2021). Note that COVID+ patient reporting is based on fewer hospitals (~158 hospitals) than overall inpatient census (~161 hospitals), so fraction of patients that are COVID+ may be an underestimate.

Appendix

DRAFT

August 2, 2021

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)
Detroit	735529	1134247	29139	25.0	34.0	11.0	9.7	0
Grand Rapids	230120	350652	9951	6.9	30.0	0.0	0.0	0
Kalamazoo	140422	214801	5405	5.9	42.0	1.4	6.5	0
Saginaw	78759	122834	3295	2.4	30.5	0.0	0.0	0
Lansing	78140	119915	3220	5.0	64.0	0.0	0.0	0
Traverse City	53099	83462	1569	1.9	35.8	0.1	1.2	0
Jackson	41274	64091	1512	1.6	38.8	0.0	0.0	0
Upper Peninsula	34645	53875	1424	1.4	40.4	0.0	0.0	0
Michigan	1391988	2143877	55561	50.4	36.2	12.6	5.9	0

August 9, 2021

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)
Detroit	735529	1134247	29468	37.1	50.4	5.9	5.2	0
Grand Rapids	230120	350652	10042	11.6	50.4	0.3	0.9	0
Kalamazoo	140422	214801	5472	8.9	63.4	0.3	1.4	0
Saginaw	78759	122834	3327	4.1	52.1	0.1	0.8	0
Lansing	78140	119915	3261	4.3	55.0	0.0	0.0	0
Traverse City	53099	83462	1589	2.6	49.0	0.0	0.0	0
Jackson	41274	64091	1523	1.3	31.5	0.0	0.0	0
Upper Peninsula	34645	53875	1436	1.3	37.5	0.0	0.0	0
Michigan	1391988	2143877	56168	71.6	51.4	6.6	3.1	0

August 16, 2021

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)
Detroit	735529	1134247	29870	47.1	64.0	7.0	6.2	0
Grand Rapids	230120	350652	10154	12.9	56.1	2.3	6.6	0
Kalamazoo	140422	214801	5571	13.0	92.6	0.3	1.4	0
Saginaw	78759	122834	3367	5.7	72.4	0.0	0.0	0
Lansing	78140	119915	3310	5.6	71.7	1.1	9.2	0
Traverse City	53099	83462	1617	3.4	64.0	0.3	3.6	0
Jackson	41274	64091	1546	2.4	58.1	0.1	1.6	0
Upper Peninsula	34645	53875	1454	2.1	60.6	0.1	1.9	0
Michigan	1391988	2143877	56944	92.7	66.6	11.3	5.3	0

August 23, 2021

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)
Detroit	735529	1134247	30439	64.3	87.4	6.9	6.1	0
Grand Rapids	230120	350652	10348	22.1	96.0	1.6	4.6	0
Kalamazoo	140422	214801	5671	12.0	85.5	0.3	1.4	0
Saginaw	78759	122834	3405	4.6	58.4	0.0	0.0	0
Lansing	78140	119915	3385	8.4	107.5	0.4	3.3	0
Traverse City	53099	83462	1649	3.9	73.4	0.9	10.8	0
Jackson	41274	64091	1581	3.6	87.2	0.1	1.6	0
Upper Peninsula	34645	53875	1497	5.7	164.5	0.0	0.0	0
Michigan	1391988	2143877	58034	125.0	89.8	10.1	4.7	0

August 30, 2021

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)
Detroit	735529	1134247	31121	76.7	104.3	10.6	9.3	0
Grand Rapids	230120	350652	10549	23.3	101.3	3.1	8.8	0
Kalamazoo	140422	214801	5803	15.7	111.8	0.3	1.4	0
Saginaw	78759	122834	3469	8.3	105.4	0.6	4.9	0
Lansing	78140	119915	3461	9.1	116.5	0.4	3.3	0
Traverse City	53099	83462	1696	5.0	94.2	0.1	1.2	0
Jackson	41274	64091	1612	3.4	82.4	0.1	1.6	0
Upper Peninsula	34645	53875	1529	4.4	127.0	0.0	0.0	0
Michigan	1391988	2143877	59297	146.0	104.9	15.3	7.1	0

September 6, 2021

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)
Detroit	735529	1134247	32881	103.9	141.3	12.0	10.6	0.0
Grand Rapids	230120	350652	11305	44.1	191.6	3.6	10.3	0.1
Kalamazoo	140422	214801	6179	24.9	177.3	0.1	0.5	0.0
Saginaw	78759	122834	3671	13.7	173.9	0.3	2.4	0.0
Lansing	78140	119915	3705	16.4	209.9	1.6	13.3	0.0
Traverse City	53099	83462	1778	4.6	86.6	0.0	0.0	0.0
Jackson	41274	64091	1764	10.7	259.2	0.0	0.0	0.0
Upper Peninsula	34645	53875	1699	13.6	392.6	0.0	0.0	0.0
Michigan	1391988	2143877	63065	234.1	168.2	17.6	8.2	0.1

September 13, 2021

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)
Detroit	735529	1134247	32881	103.9	141.3	12.0	10.6	0
Grand Rapids	230120	350652	11305	44.1	191.6	3.6	10.3	0
Kalamazoo	140422	214801	6179	24.9	177.3	0.1	0.5	0
Saginaw	78759	122834	3671	13.7	173.9	0.3	2.4	0
Lansing	78140	119915	3705	16.4	209.9	1.6	13.3	0
Traverse City	53099	83462	1778	4.6	86.6	0.0	0.0	0
Jackson	41274	64091	1764	10.7	259.2	0.0	0.0	0
Upper Peninsula	34645	53875	1699	13.6	392.6	0.0	0.0	0
Michigan	1391988	2143877	63065	234.1	168.2	17.6	8.2	0

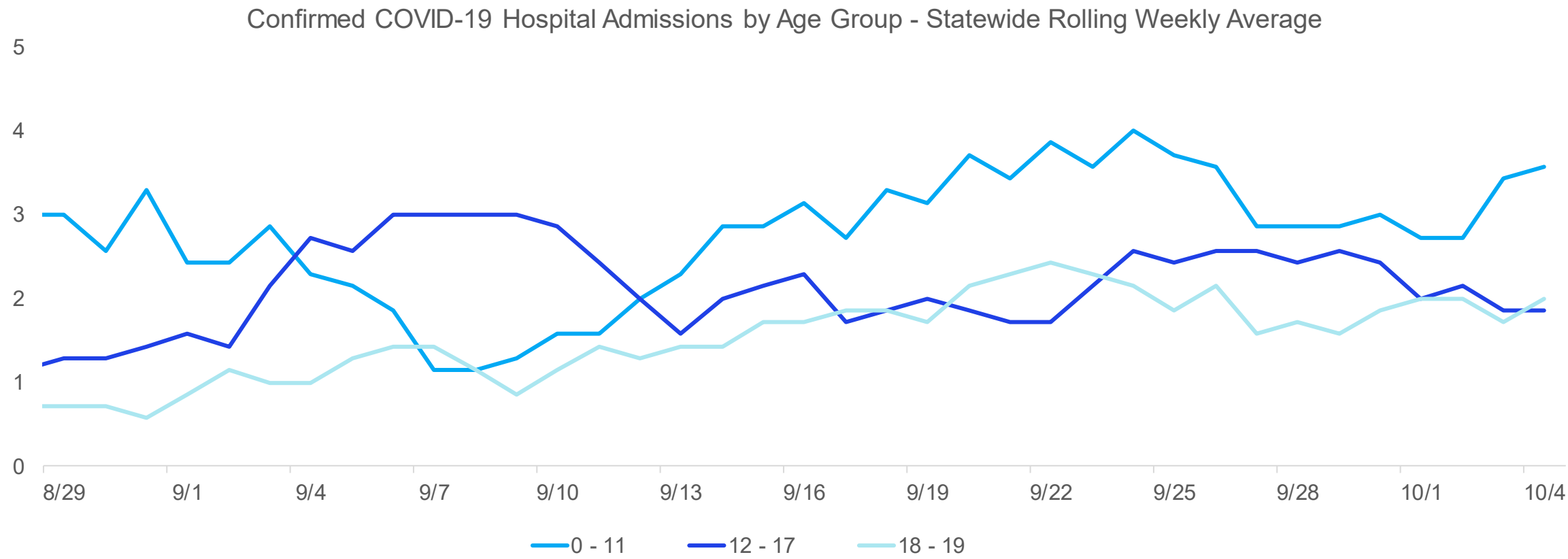
September 20, 2021

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)
Detroit	735529	1134247	33953	126.0	171.3	13.1	11.5	0.0
Grand Rapids	230120	350652	11886	66.1	287.2	3.4	9.7	0.0
Kalamazoo	140422	214801	6496	36.9	262.8	1.4	6.5	0.1
Saginaw	78759	122834	3881	25.3	321.2	0.1	0.8	0.1
Lansing	78140	119915	3835	15.6	199.6	2.1	17.5	0.0
Traverse City	53099	83462	1897	15.7	295.7	0.1	1.2	0.0
Jackson	41274	64091	1860	11.4	276.2	0.0	0.0	0.0
Upper Peninsula	34645	53875	1856	18.9	545.5	0.1	1.9	0.0
Michigan	1391988	2143877	65752	316.6	227.4	20.6	9.6	0.3

September 27, 2021

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)
Detroit	735529	1134247	35302	161.7	219.8	19.7	17.4	0
Grand Rapids	230120	350652	12505	73.0	317.2	4.7	13.4	0
Kalamazoo	140422	214801	6778	31.1	221.5	0.7	3.3	0
Saginaw	78759	122834	4122	29.3	372.0	0.4	3.3	0
Lansing	78140	119915	4014	21.1	270.0	0.3	2.5	0
Traverse City	53099	83462	2031	16.9	318.3	0.0	0.0	0
Jackson	41274	64091	1976	14.4	348.9	0.0	0.0	0
Upper Peninsula	34645	53875	2034	21.4	617.7	0.0	0.0	0
Michigan	1391988	2143877	68852	369.4	265.4	25.9	12.1	0

Average Hospital Admissions for 0-11, 12-17, and 18-19

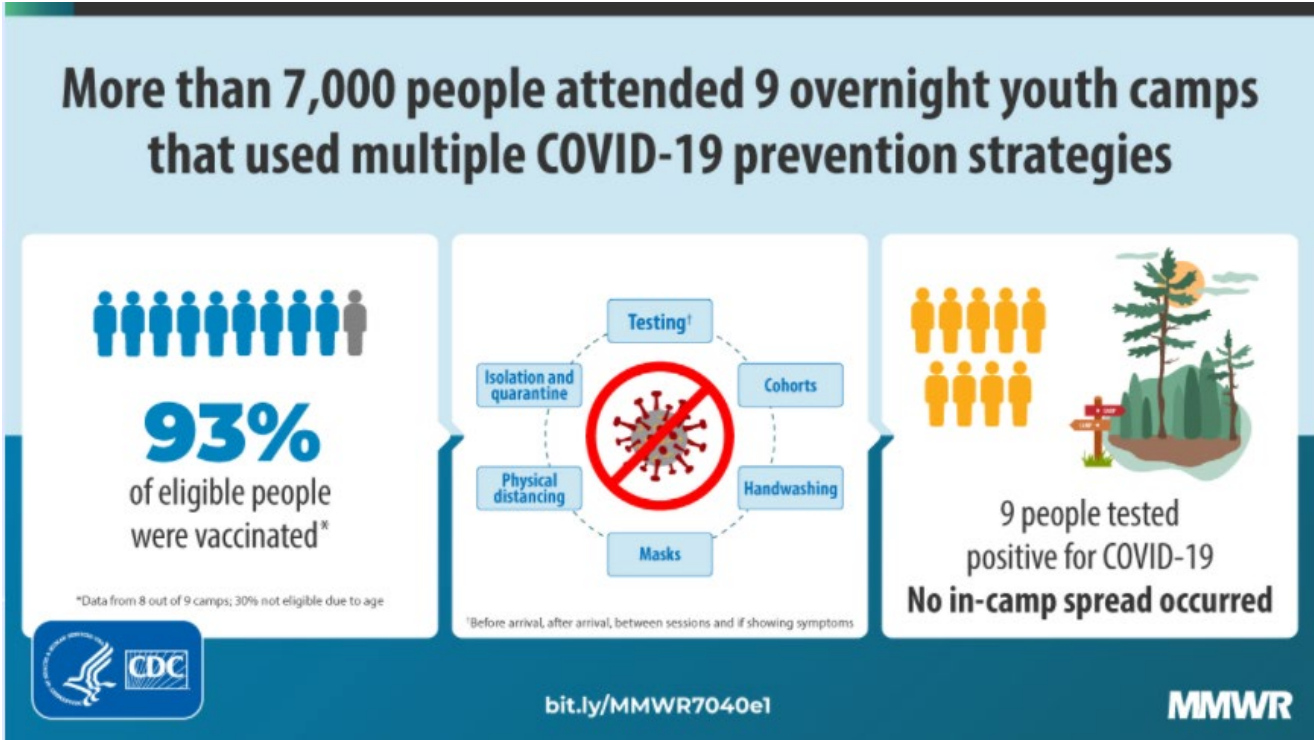


Source: CHECC & EM Resource

Multicomponent Strategies Prevent SARS-CoV-2 Transmission

Study of over 100,000 students from 13 North Carolina school districts to demonstrate the impact of social distancing tools on disease transmission to support safe school opening.

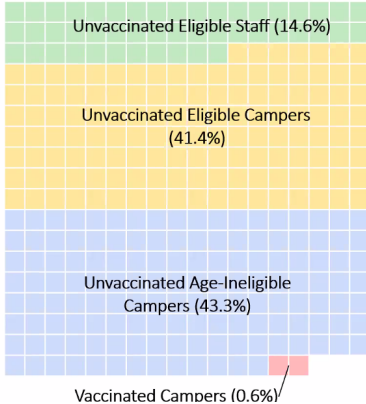
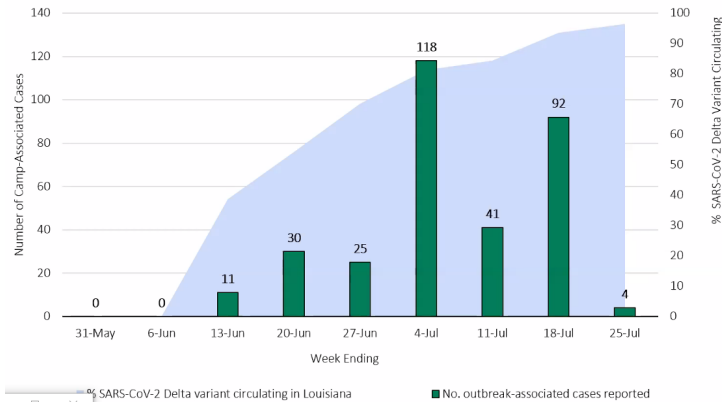
- School-acquired infections remained stable and uncommon, with a <1% secondary attack rate.
- With strict adherence to masking and some distancing, school-acquired SARS-CoV-2 infection is uncommon, even in the setting of high community infection rates. Consistent with previous data, schools can and should reopen safely.



COVID-19 Outbreaks at Youth Summer Camps Louisiana, June-July 2021

Camp Outbreak-Associated COVID-19 cases and SARS-CoV-2 Delta Variant Levels

COVID-19 Cases by Vaccination Eligibility Status (N=321)



Source 1. [Van Naarden Braun K, Rozenfeld RA, et al. Multicomponent Strategies to Prevent SARS-CoV-2 Transmission — Nine Overnight Youth Summer Camps, United States, June–August 2021. MMWR Morb Mortal Wkly Rep. ePub: 1 Oct 2021.](#)

Source 2. [Tonzel JL, Sokol T. COVID-19 Outbreaks at Youth Summer Camps— Louisiana, June–July 2021. MMWR Morb Mortal Wkly Rep. ePub: 1 Oct 2021](#)

Source 3. [Zimmerman, KO et al. Community SARS-CoV-2 Surge and Within-School Transmission. Pediatrics October 2021, 148 \(4\).](#)

Appendix: Mask Index Details

Mask index category	Outline of Mask Rules
High	Mask Requirement = Yes
High	Mask Requirement = Yes; Local health department put rule in place; plus details included requirements on buses
High	Mask Requirement = Yes; Local health department put rule in place
Medium	Mask Requirement = Yes (tiered system)
Medium	Mask Requirement = Yes for K-6/K-2 and/or unvaccinated individuals only plus details included requirements on buses and details on masks required for staff
Medium	Mask Requirement = Yes for K-6/K-2 and/or unvaccinated individuals only plus details included requirements on buses
Medium	Mask Requirement = Yes for K-6/K-2 and/or unvaccinated individuals only
Medium	Mask Requirement = No but details on mask rules for staff and/or unvaccinated staff included
Low	Mask Requirement = No but details on mask rules included requirements on buses
Low	Mask Requirement = No
Low	Mask Requirement Rules = Unknown or TBD