

MI COVID RESPONSE DATA AND MODELING UPDATE

January 4, 2022

Executive Summary

Michigan remains at High Transmission

Percent positivity (30.0%) is increasing for 2 weeks (last week: 21.1%)

Case rate (785.2 cases/million) is increasing for 1 week (468.5 cases/million prior week)

In the last 7 days, Michigan reported the 11th **most cases** (last week's rank: 15th highest) and the 20th highest **case rate** (last week: 26th highest)

Cases among pediatric populations < 12 years have increased 24% since last week

Percent of inpatient beds occupied by individuals with COVID (19.6%) is increasing for 1 week (last week 18.4 %)

In the last 7 days, Michigan reported the 7th highest inpatient bed utilization (last week: 4th highest) and 9th highest adult ICU bed utilization (7th highest last week)

Daily pediatric hospital census have increased and are at a new high (double of where we were a week ago)

Death rate (6.8 deaths/million) is decreasing for one week (8.4 last week). There were 476 COVID deaths between Dec 21-Dec 27

Michigan has the 10th most deaths (8th highest last week), and 23rd highest death rate (17th highest last week) in the last 7 days

7-day average **state testing rate** is 5,166.7 tests/million/day. **Daily diagnostic tests (PCR)** is 51.4K per day, and the weekly average for PCR and antigen tests conducted in Michigan is 66.5K.

Over 14.0 million **COVID-19 vaccine** doses administered, 57.0% of the population is fully vaccinated (over 5.6 million people)

181,746 initial dose administrations in 5- to 11-year-olds as of 1/3

Year in Numbers

In 2021, nearly 1 in 10 Michiganders were reported with COVID-19, and more than 1 in 1,000 Michiganders died from COVID-19

Public Health responded with over 14.0 million COVID vaccines administered, 4.6 million rapid antigen tests distributed, and \$275 million allocated to local health departments to support COVID-19 efforts

Average mobility and encounter density are both above pre-pandemic baseline levels

Global, National and Michigan Trends

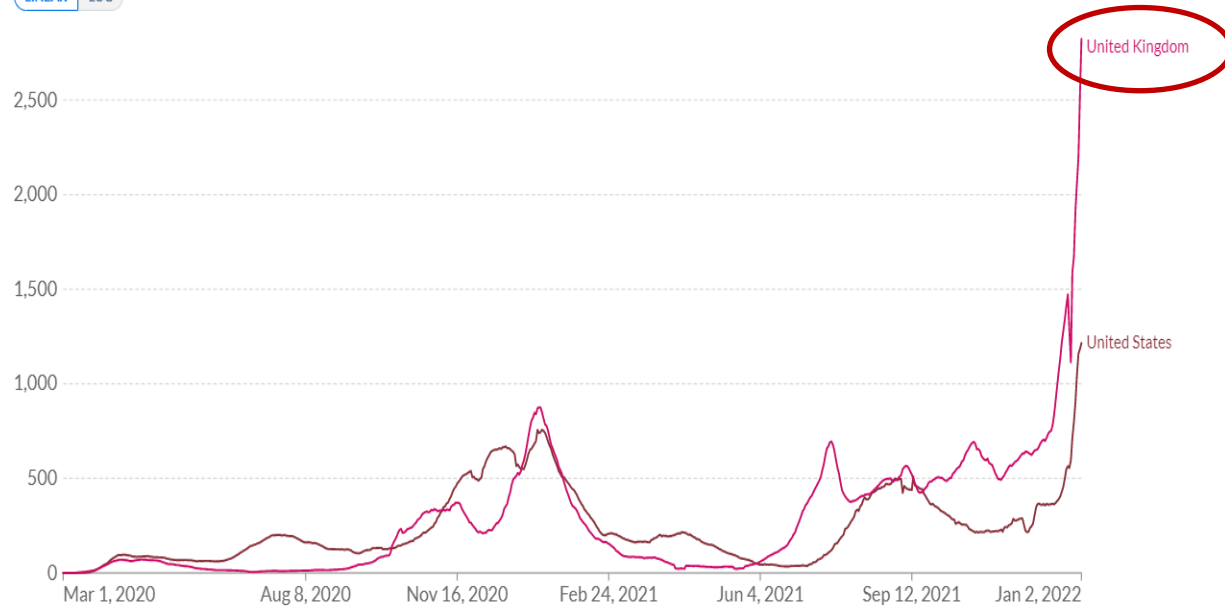
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Global and National Trends

Daily new confirmed COVID-19 cases per million people

7-day rolling average. Due to limited testing, the number of confirmed cases is lower than the true number of infections.

LINEAR LOG

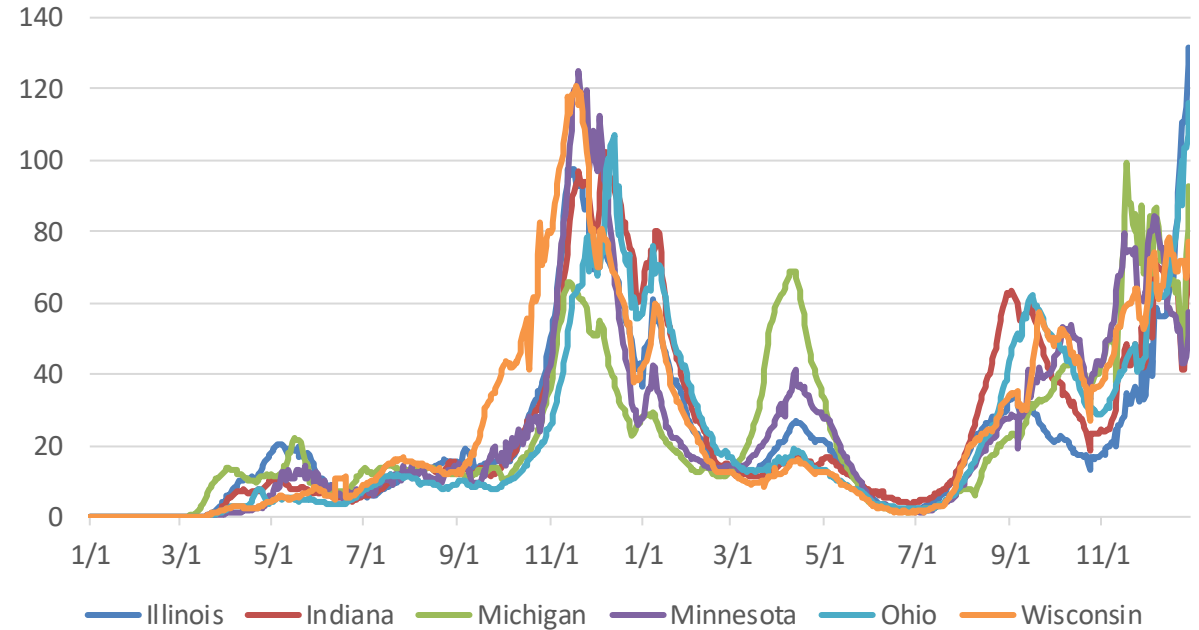


Source: Johns Hopkins University CSSE COVID-19 Data

Our World in Data

New COVID-19 Cases per 100,000 Reported to CDC in Region 5

7-day moving avg. of new cases per 100K



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Globally, 290,236,007 cases and 5,445,274 deaths (Data* through 1/3)

- Globally, the highest number of cases ever reported on a single day on 12/30 (1.95 million); & cases in many countries are increasing rapidly with Omicron variant

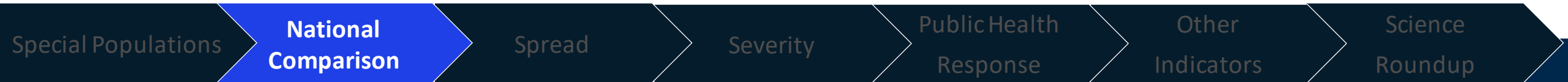
United States: Nearly all US jurisdictions have High or Substantial community transmission[¶]

- The U.S. is at High transmission level (666.9 cases/100,000 in last 7 days)

Midwest states maintain High transmission levels[†] and are increasing

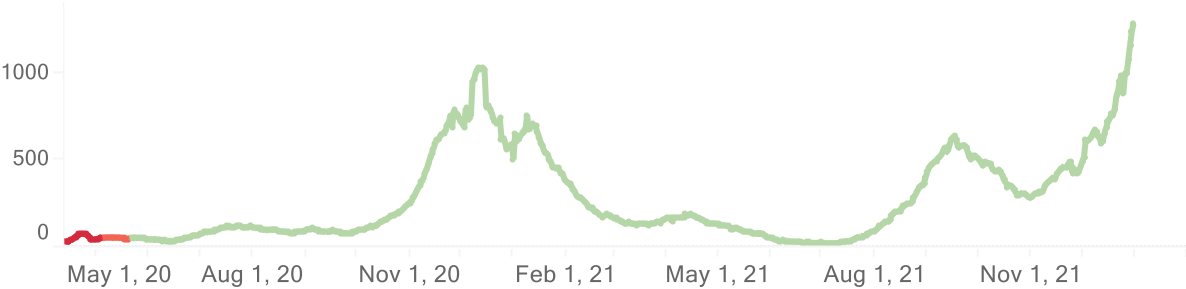
- Illinois and Ohio have the highest case rates *in Midwest*; Michigan is 3rd highest in the Midwest; New York City and D.C. have highest case rates in U.S.

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

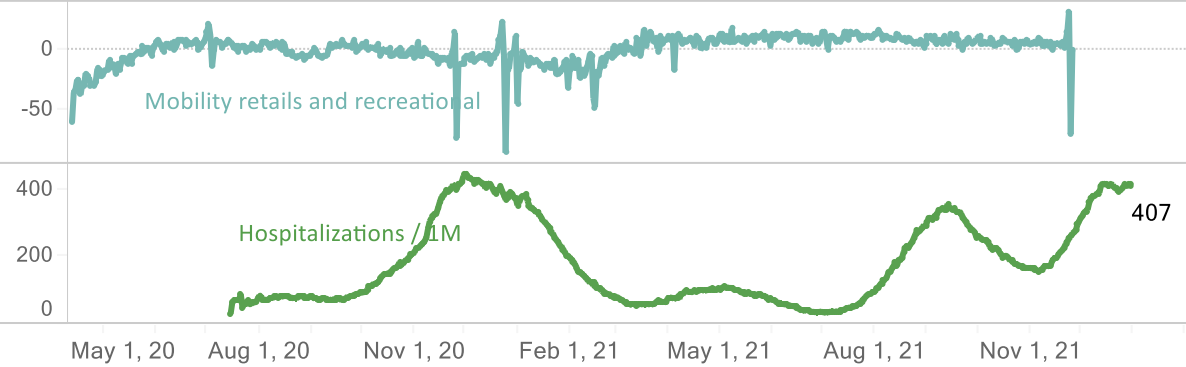
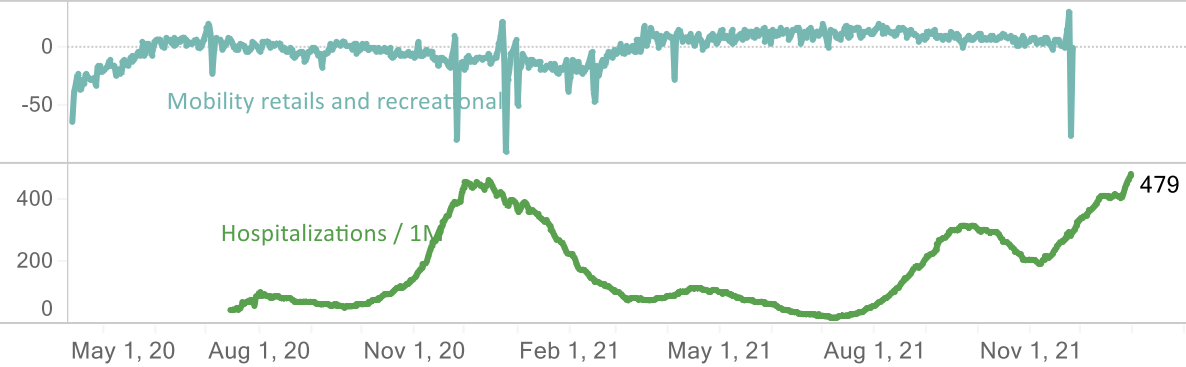
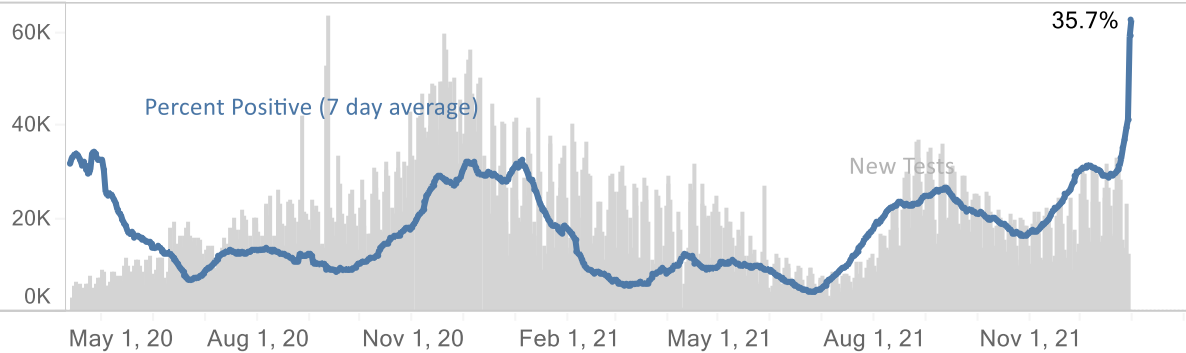
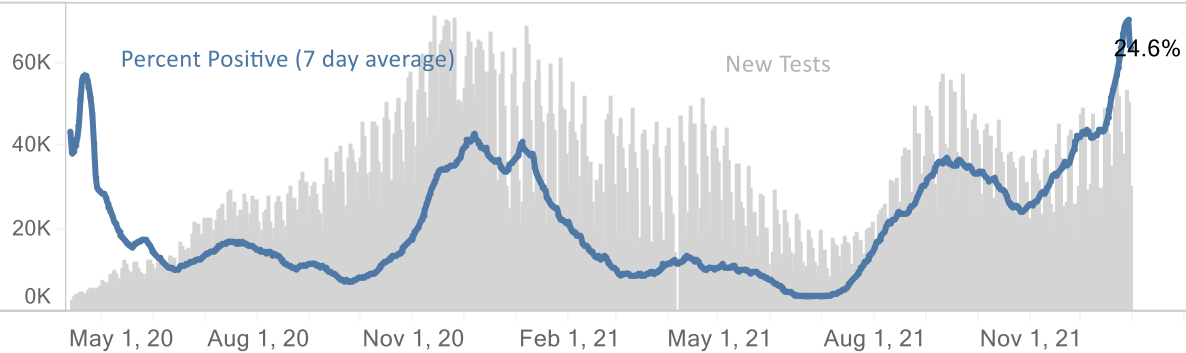
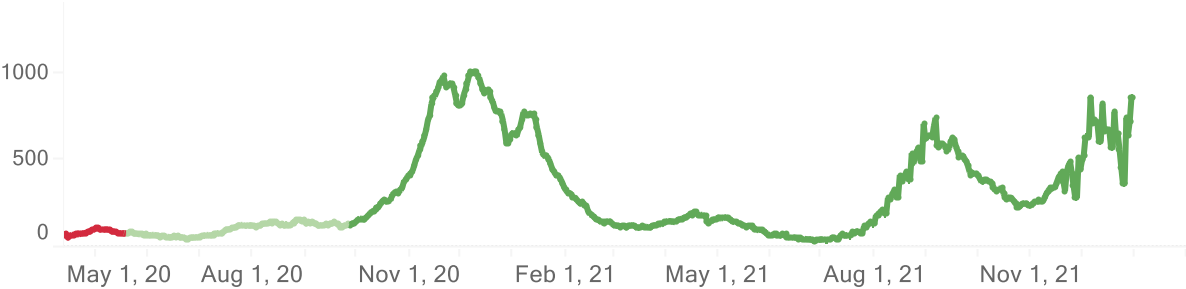


State Comparisons: Ohio and Indiana

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

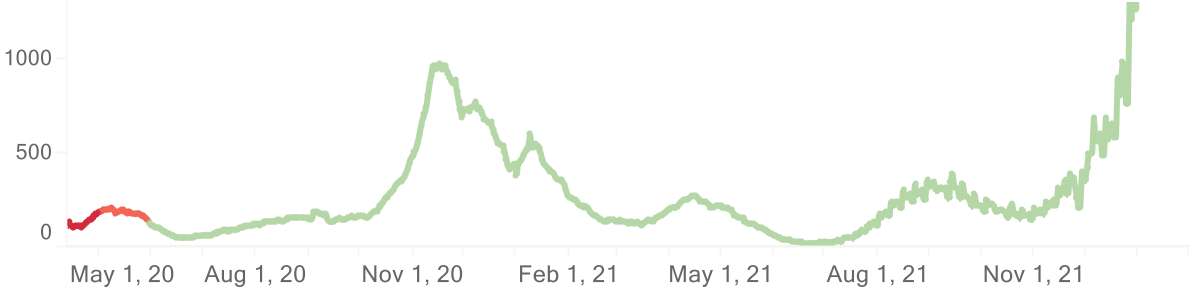


Indiana Confirmed New Cases / 1M (7 days average)

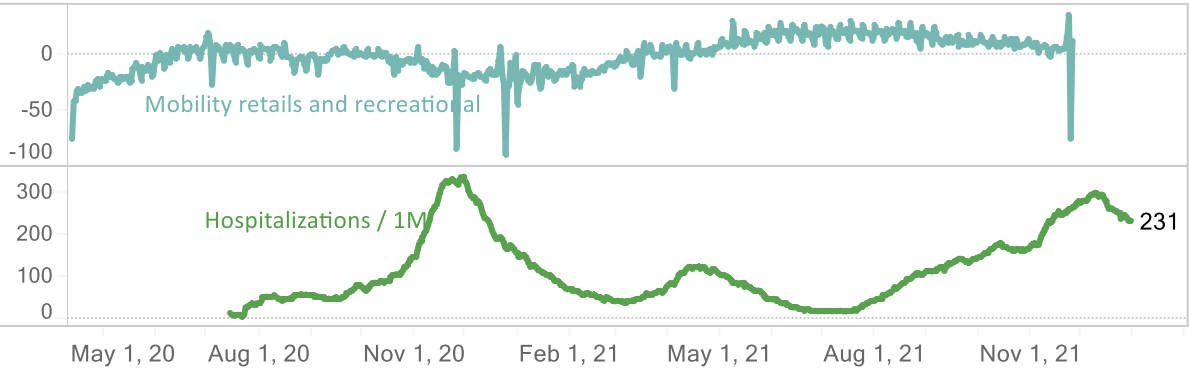
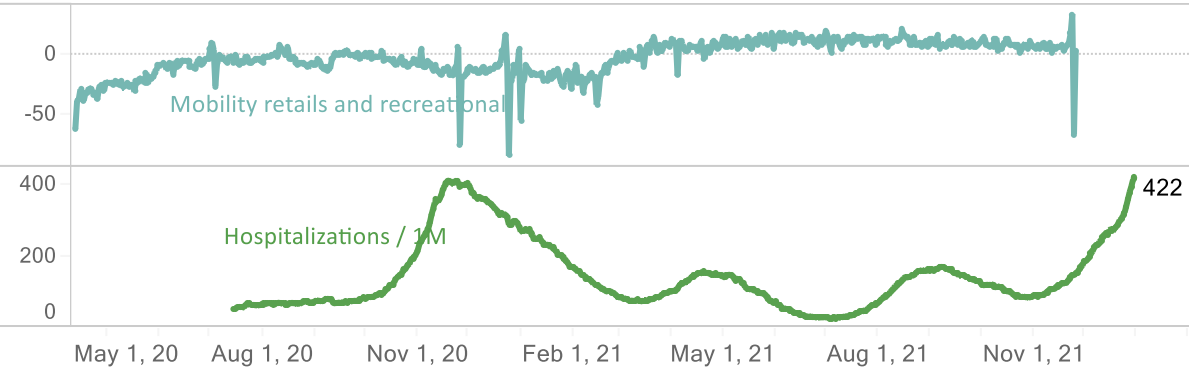
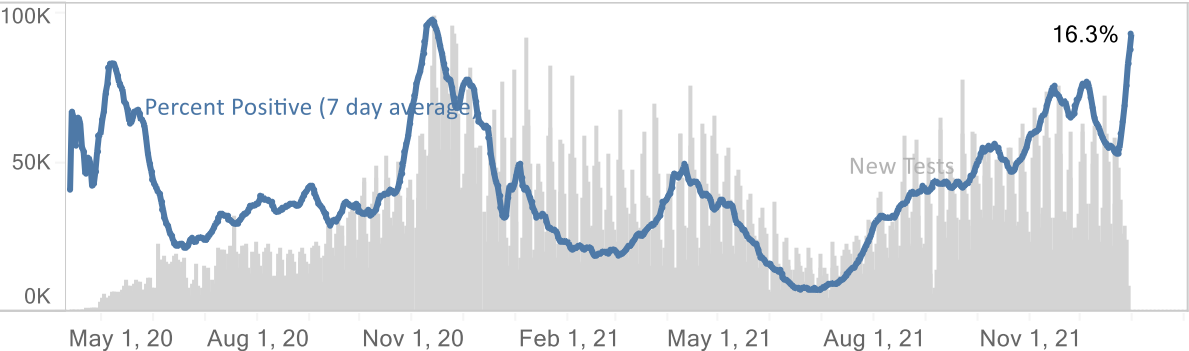
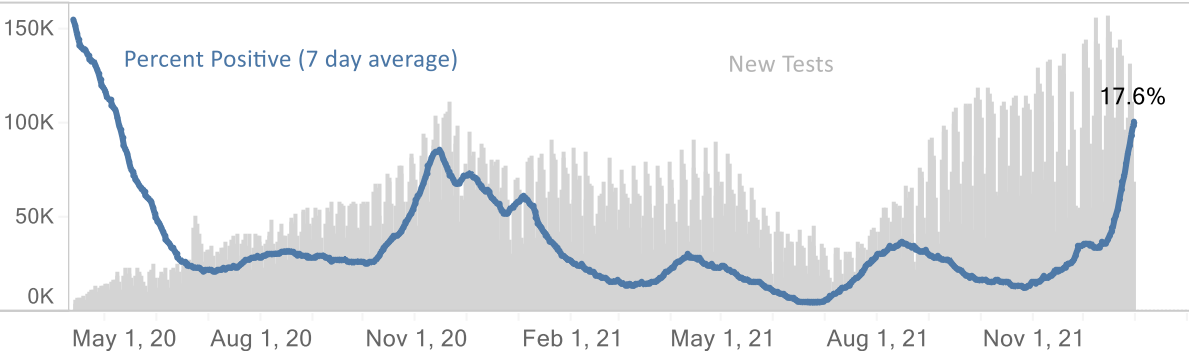
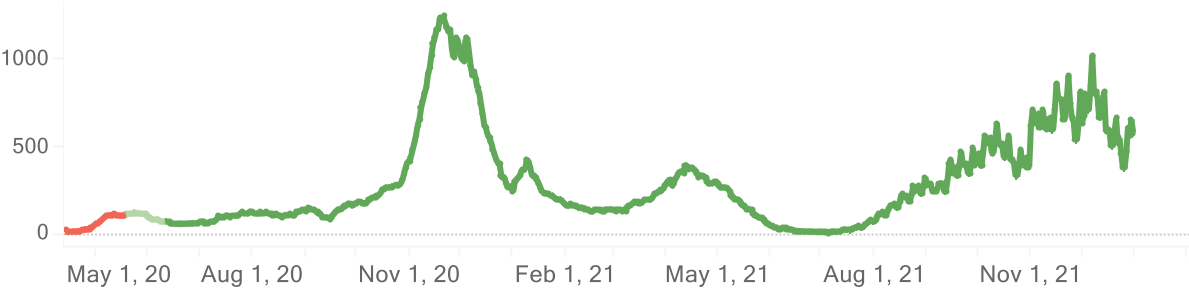


State Comparisons: Illinois and Minnesota

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

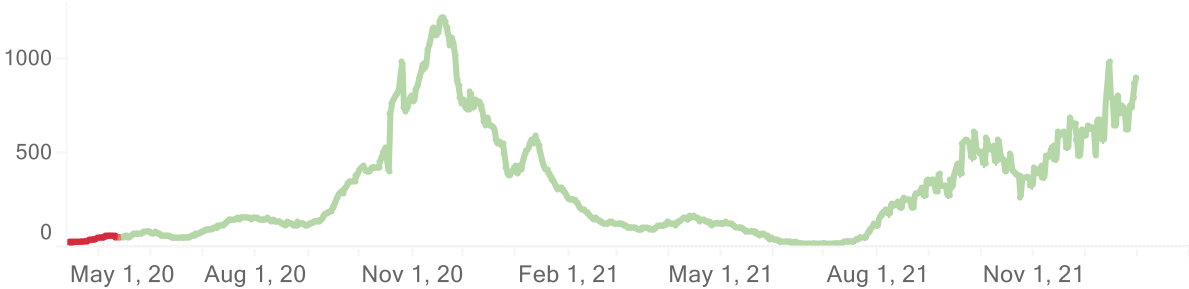


Minnesota Confirmed New Cases / 1M (7 days average)

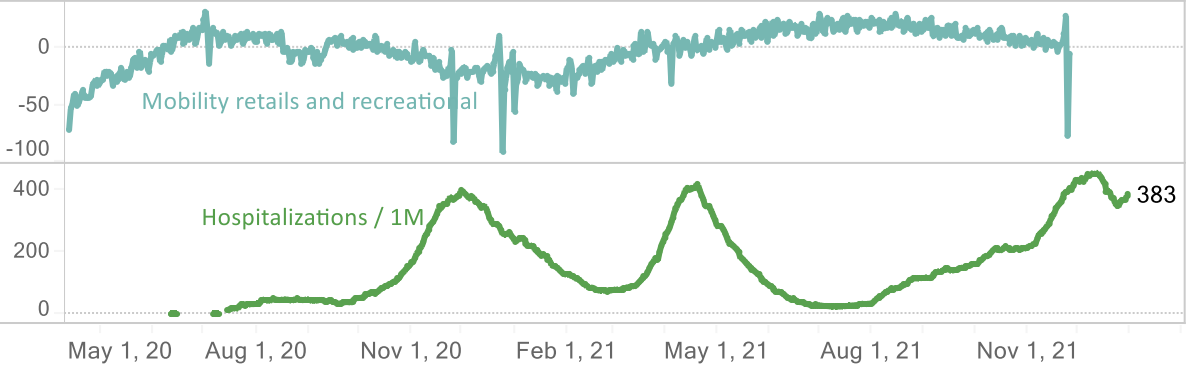
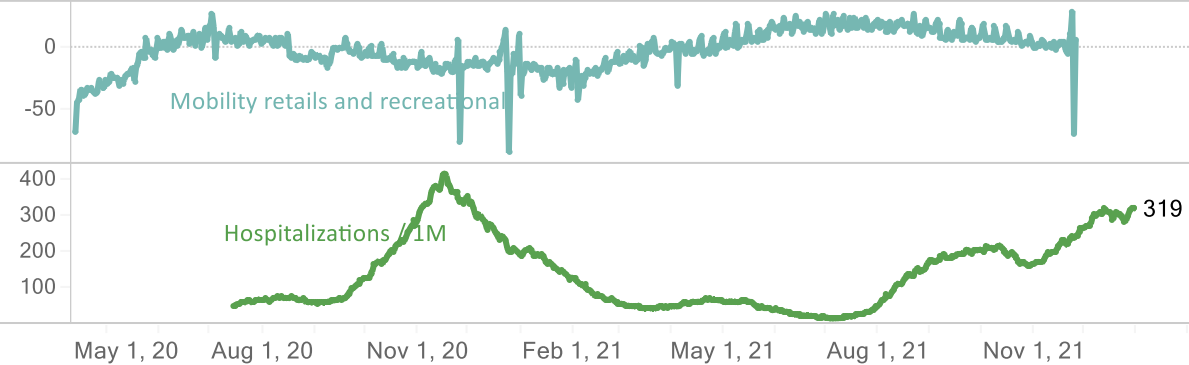
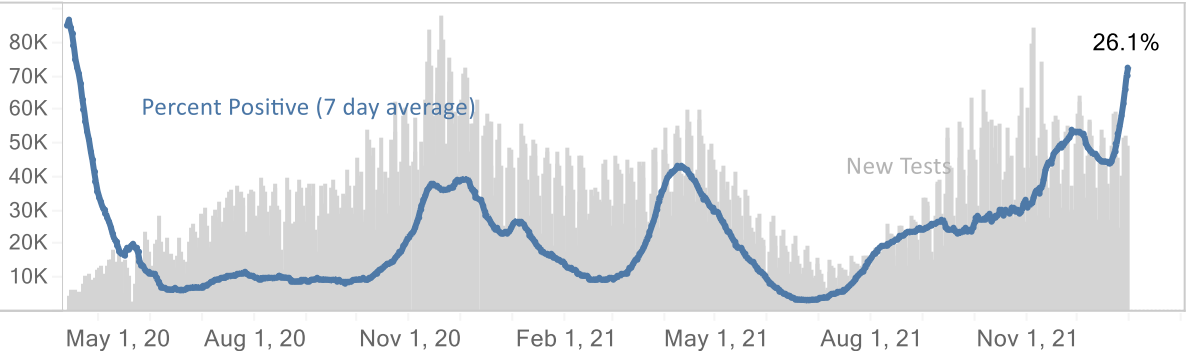
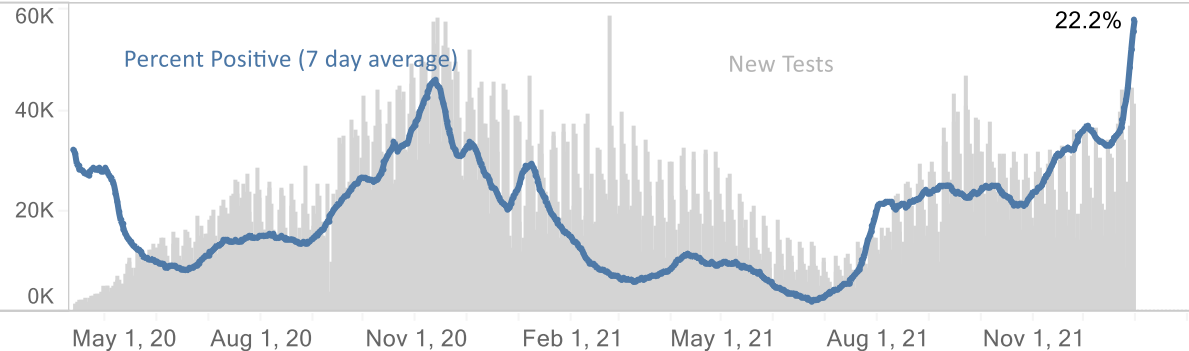
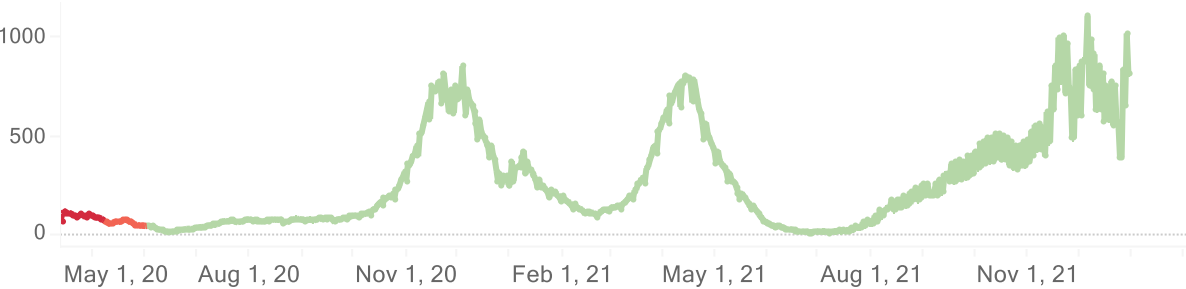


State Comparisons: Wisconsin and Michigan

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



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



Key Messages: COVID-19 Transmission Metrics Are Increasing

Michigan continues to be at High Transmission level

- All counties in Michigan are at High Transmission level
- CDC recommends all individuals, regardless of vaccination status, should mask in public indoor settings

Statewide positivity is 30.0% (last week: 21.1%)

- Trend is increasing for 2 weeks

Case rate is 785.2 cases/million (last week: 468.5 cases/million):

- Trend is increasing exponentially for 1 week
- Cases per million are increasing for all age groups and highest in those 20-39

Cases and outbreaks saw decreases in school but increases the long-term care setting

- Within the K-12 setting, the most cases and outbreaks continue to be in pre-kindergarten and elementary schools
- Case counts in LTCF have more staff case count than residents case count, week over week

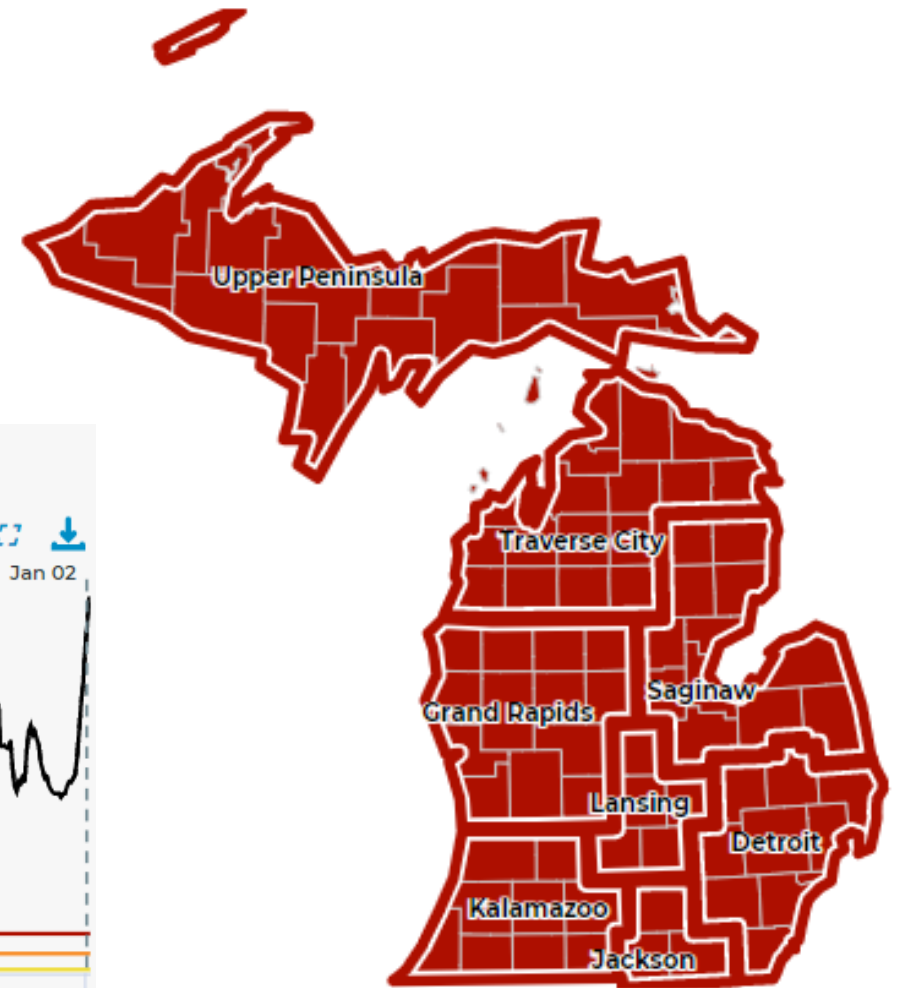
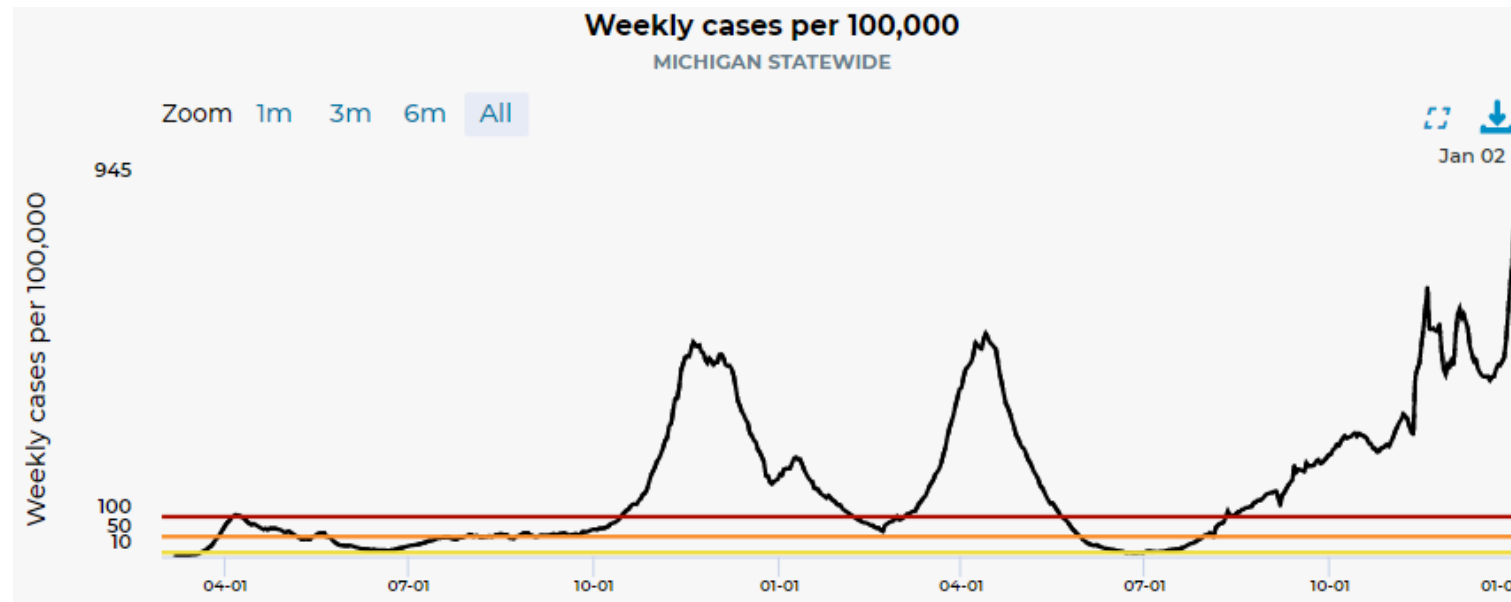
Breakthrough

- Approximately 2.0% of people who were fully vaccinated have been reported with a breakthrough infection
- Unvaccinated persons in Michigan had 4.3 times the risk of testing positive for COVID-19 and 13.2 times the risk of dying from COVID-19 compared to fully vaccinated persons; nationally risk of infection and death is lower for those who receive a booster dose

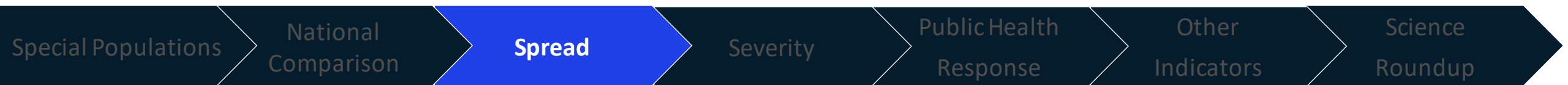


Michigan continuing to experience high daily case count during the pandemic

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

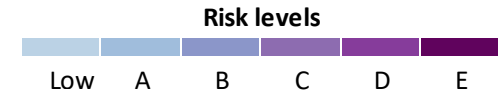


- All counties at High Transmission level
- Referrals sharply rose over New Year holiday weekend



Confirmed and probable case indicators

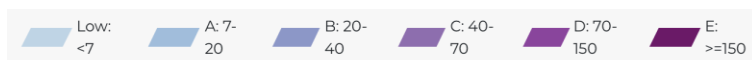
Table Date: 1/3/2021 (7 days from date table was produced: 12/27/2021)



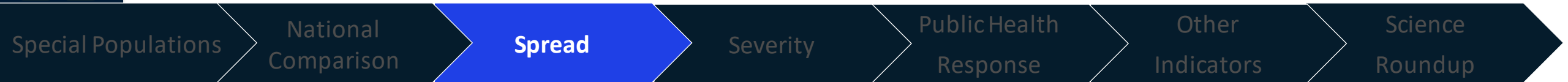
	CDC Transmission Risk Level	Absolute Cases (per million)	CDC Case Trend	Average Percent Positivity	Positivity Trend	Tests (per million)	% IP Beds Occupied by COVID-19 Cases	% Occupied IP Beds Trend	Absolute Deaths (per million)	Death Trend
Detroit	High	1066.8	elevated incidence growth	32.4	Increase - 2wk	6278.9	20.8	Increase - 1wk	6.0	Decrease - 2wk
Grand Rapids	High	497.8	elevated incidence growth	27.8	Increase - 1wk	4142.6	19.3	Decrease - 2wk	6.3	Decrease - 3wk
Kalamazoo	High	503.6	elevated incidence growth	26.5	Increase - 1wk	3623.2	21.8	Increase - 1wk	8.5	Decrease - 1wk
Saginaw	High	435.3	elevated incidence growth	23.5	Increase - 1wk	3367.1	13.8	Decrease - 3wk	8.6	Decrease - 1wk
Lansing	High	575.6	elevated incidence growth	25.8	Increase - 1wk	3996.6	21.4	Increase - 1wk	7.8	Decrease - 2wk
Traverse City	High	304.4	decline [40 days]	16.1	Increase - 1wk	2330.0	12.9	Decrease - 3wk	10.7	Increase - 1wk
Jackson	High	434.9	elevated incidence growth	22.7	Increase - 1wk	3707.4	20.8	Decrease - 2wk	9.0	Decrease - 1wk
Upper Peninsula	High	400.2	elevated incidence growth	20.0	Increase - 1wk	2661.0	10.1	Increase - 1wk	5.6	<20 wkly deaths
Michigan	High	785.2	elevated incidence growth	30.0	Increase - 2wk	5166.7	19.6	Increase - 1wk	6.8	Decrease - 2wk



Cases



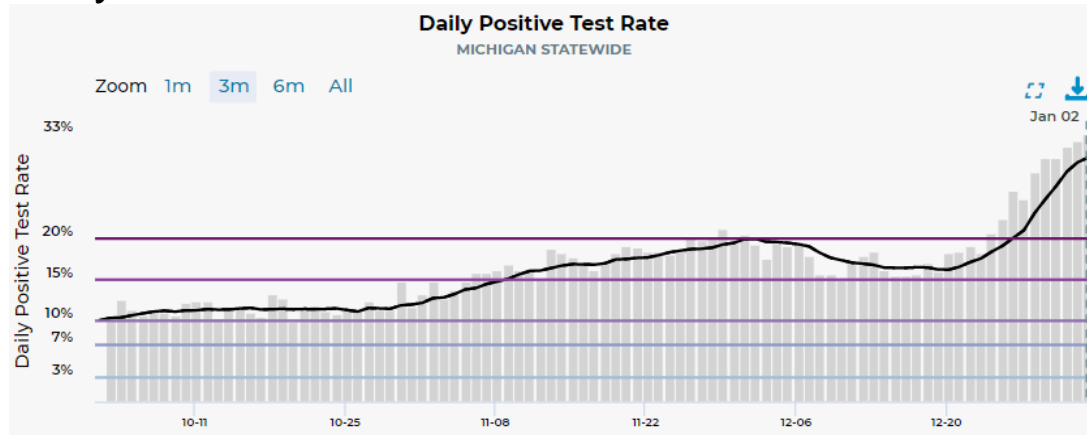
Positivity



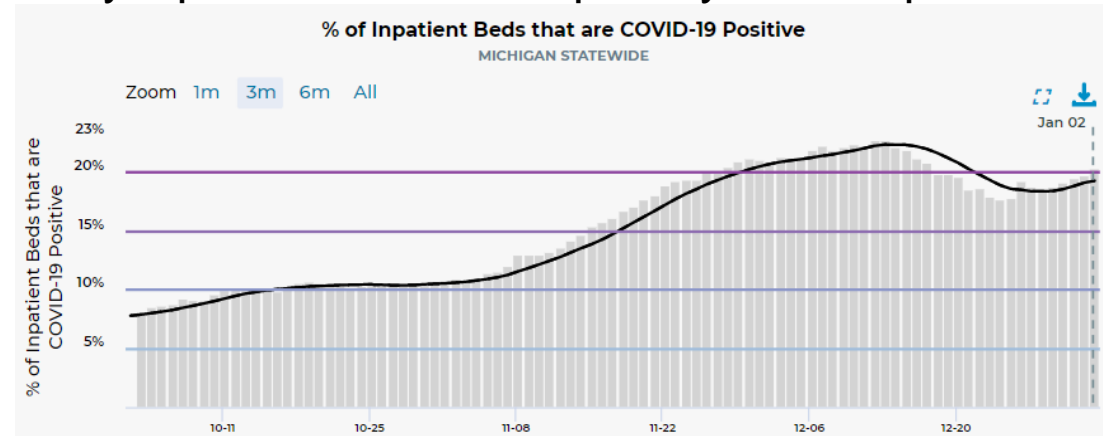
Time Trends – Positivity, Case Rates, Hospitalizations, Deaths

➤ Most COVID-19 indicators are at 2021 highs, and burden remains high in MI

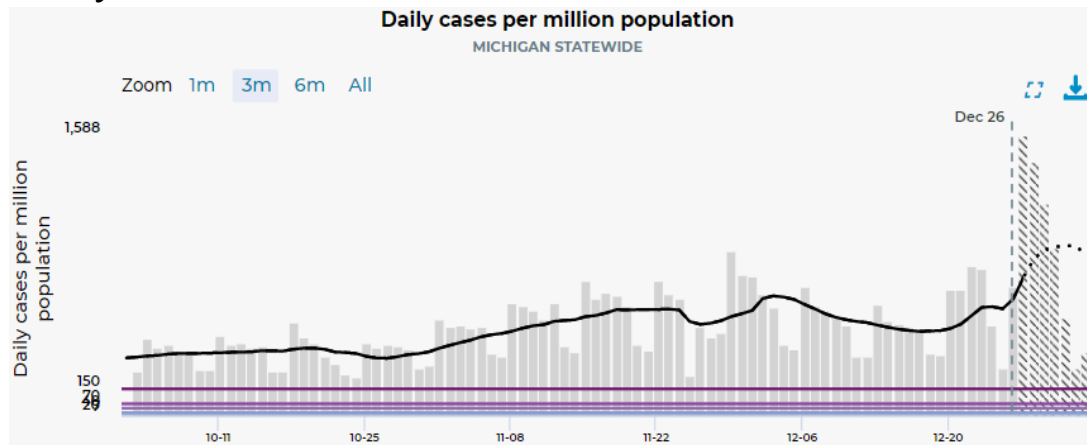
Daily Positive Test Rate



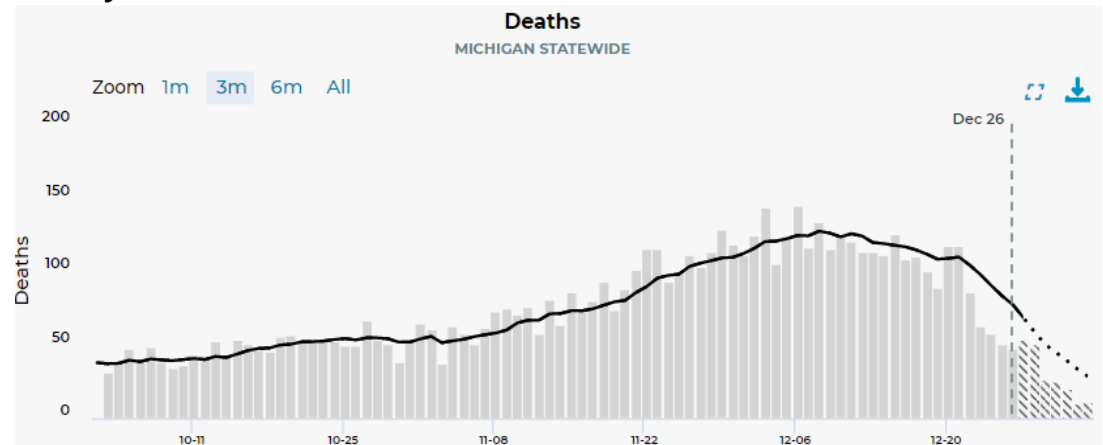
Daily Inpatient Beds Occupied by COVID patients



Daily Case Rate



Daily Deaths



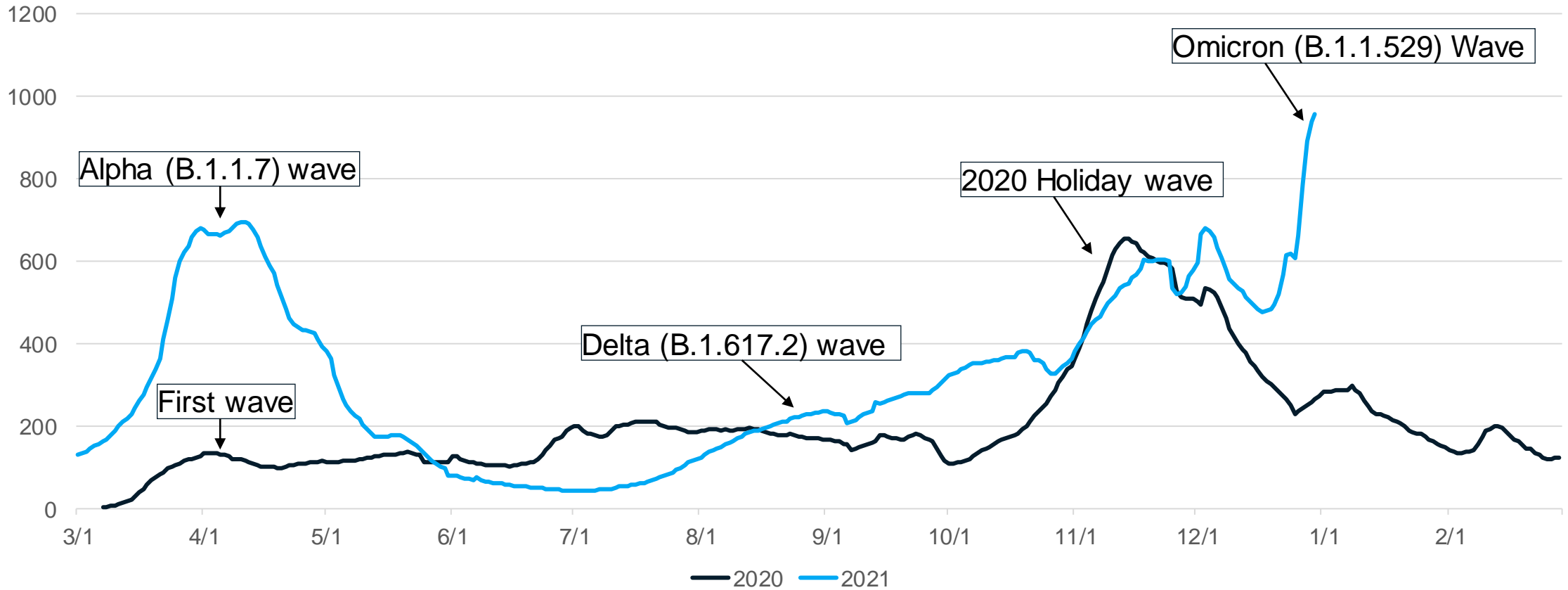
Source: Michigan Disease Surveillance System and <https://www.mistartmap.info/mism-indicators>



Time Trends – Annual Comparison

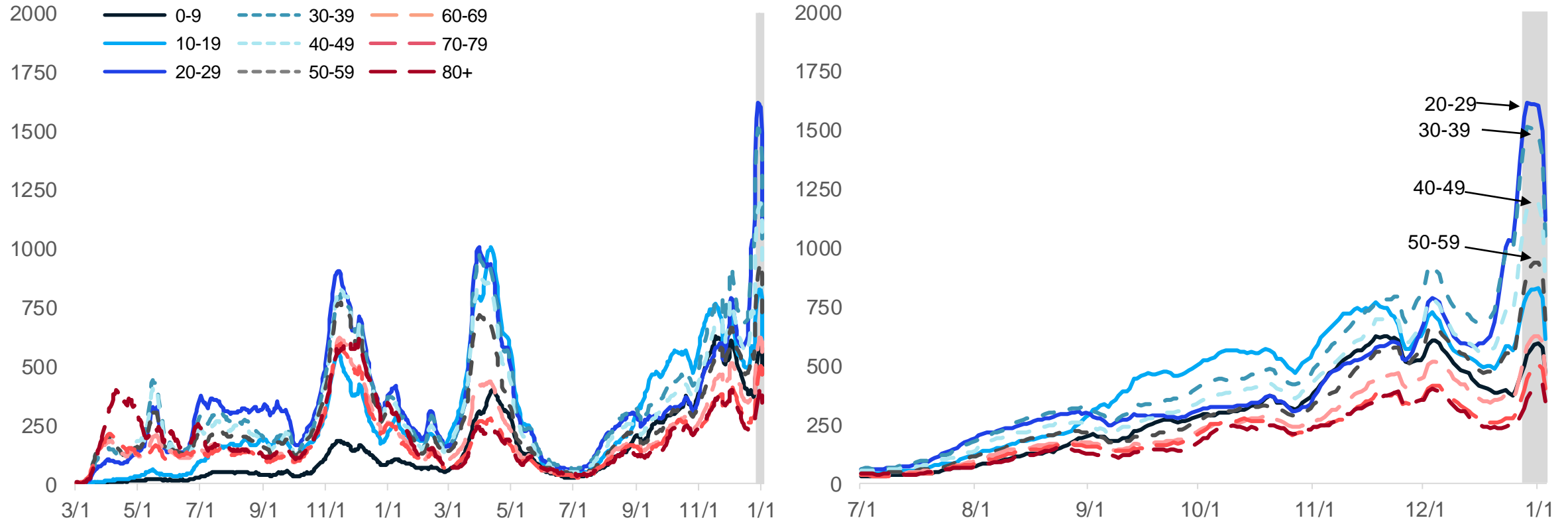
- Case rates (by onset date) are the highest of the pandemic
- Current increases after holidays due to spread of the Delta and Omicron variants

7- day rolling average of Rates 2020 vs 2021



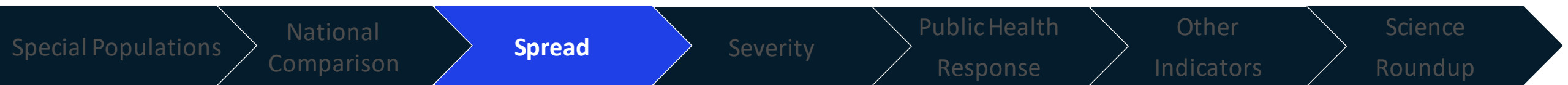
Case Rate Trends by Age Group

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



- Case rate trends for most age groups saw increases over the past week and are expected to increase further
- Case rates by onset date for all age groups are between 282 and 1,371 cases per million (through 12/27)
- Case counts and case rates are highest for 20-29-year-olds this week

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



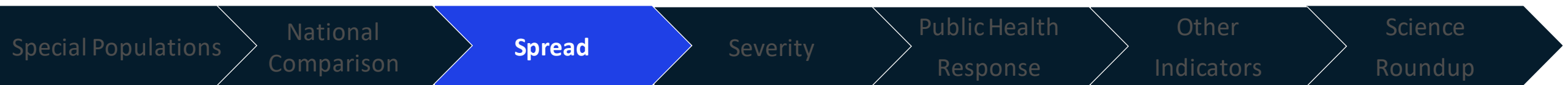
Number of Cases and Case Rates by Age Group, data as of Jan 3

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	514.4	446.3	+17% (+76)
10-19	866.3	690.3	+42% (+255)
20-29	1,891.7	1,371.2	+101% (+951)
30-39	1,569.6	1,293.8	+77% (+682)
40-49	1,150.7	975.7	+69% (+472)
50-59	956.1	708.1	+48% (+312)
60-69	580.9	455.3	+29% (+131)
70-79	260.6	339.8	+32% (+64)
80+	117.0	282.5	+19% (+18)
Total¶	7,917.4	785.2	+60% (+2,959)

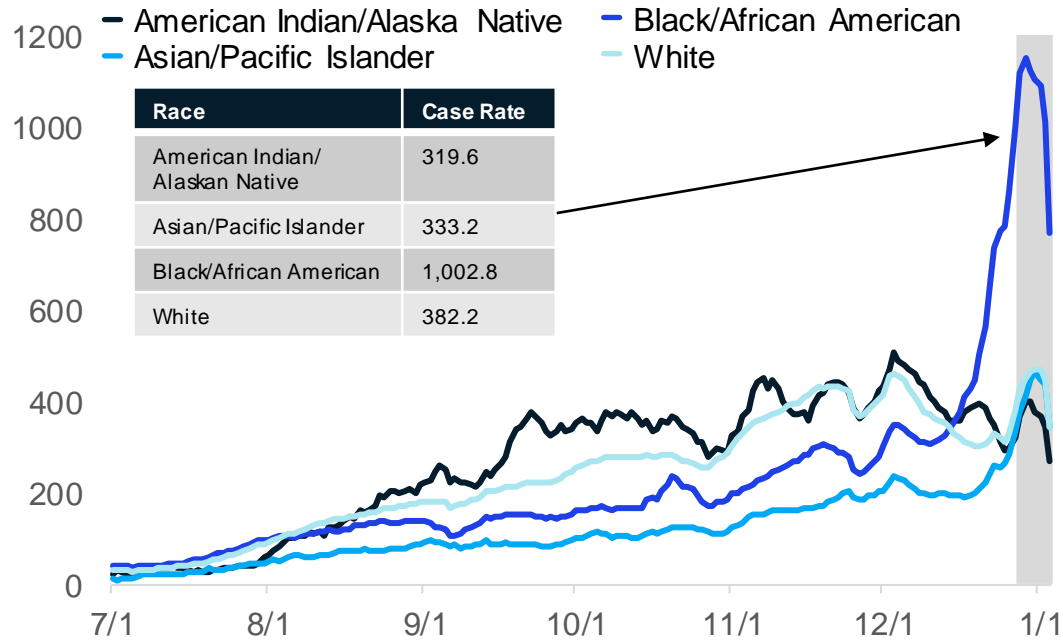
- Trend numbers and comparisons are being impacted by longer backfill times – the data in this table are comparing the two time points from the most recent data file
- Average daily number of cases (1,891.7) and average daily case rate (1,371.2 case/mil) are highest for those aged 20-29
- Case rates changes for all age groups have increased between the weeks of Dec 20 and Dec 27. These increases are continuing at an exponential pace after December 27 for all age groups.

† 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

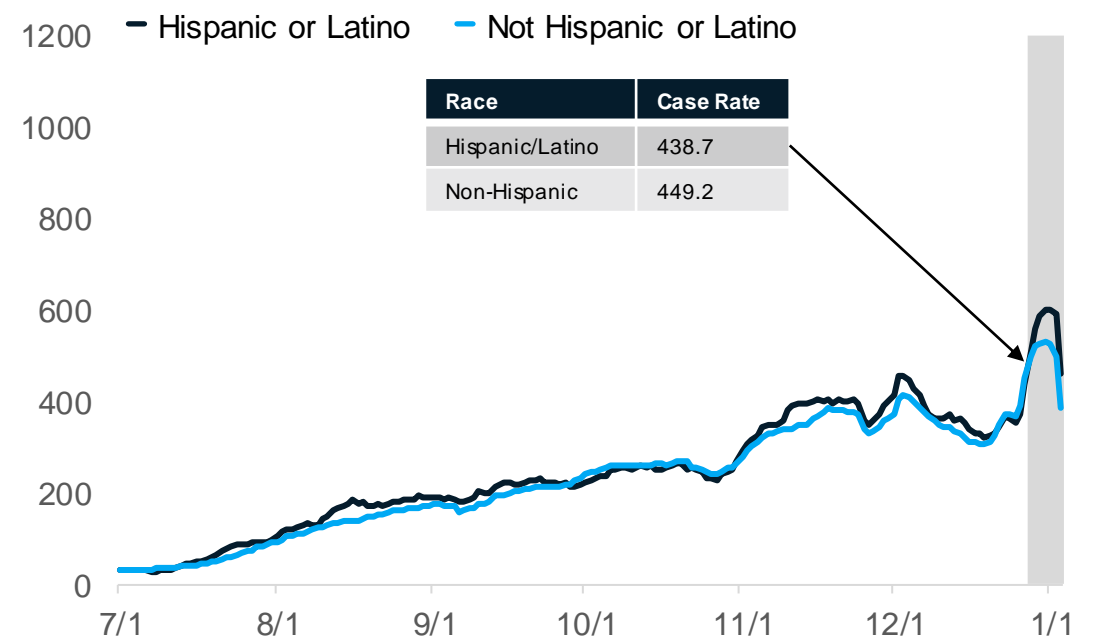


Case Rates by Reported Racial and Ethnic Group

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



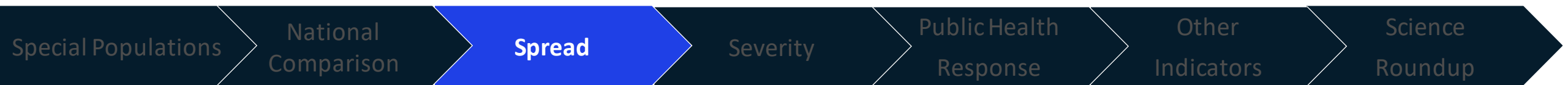
Daily new confirmed and probable cases per million (7 day rolling average) by ethnicity category



Updates since last week:

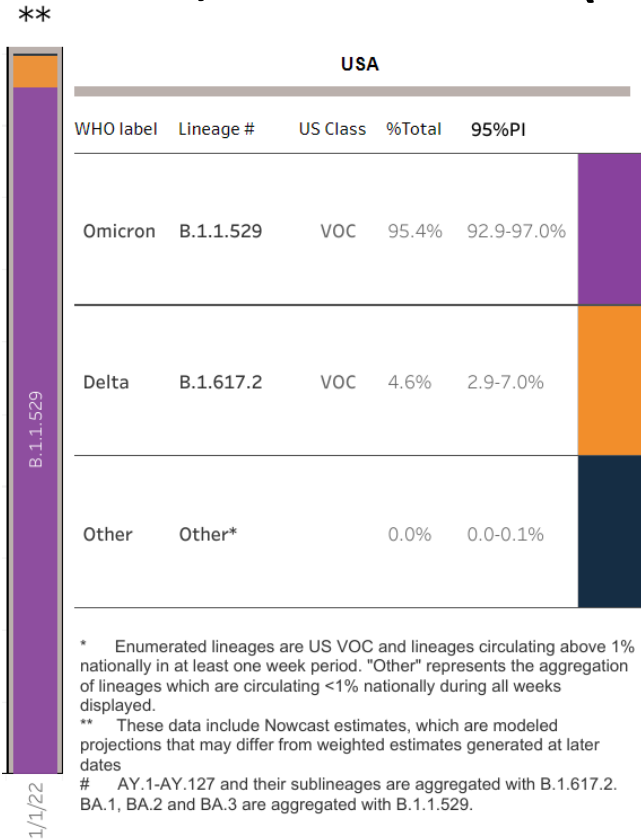
- Cases per million are increasing for most reported racial and ethnic groups and *are surging for Blacks/African Americans*
- The high number of cases with missing race/ethnicity data, and those multiracial or other are also impacting the case rates shown here
- In the past 30 days, 30% (↑1%) of race data and 40% (↑1%) ethnicity data was either missing or reported as unknown

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

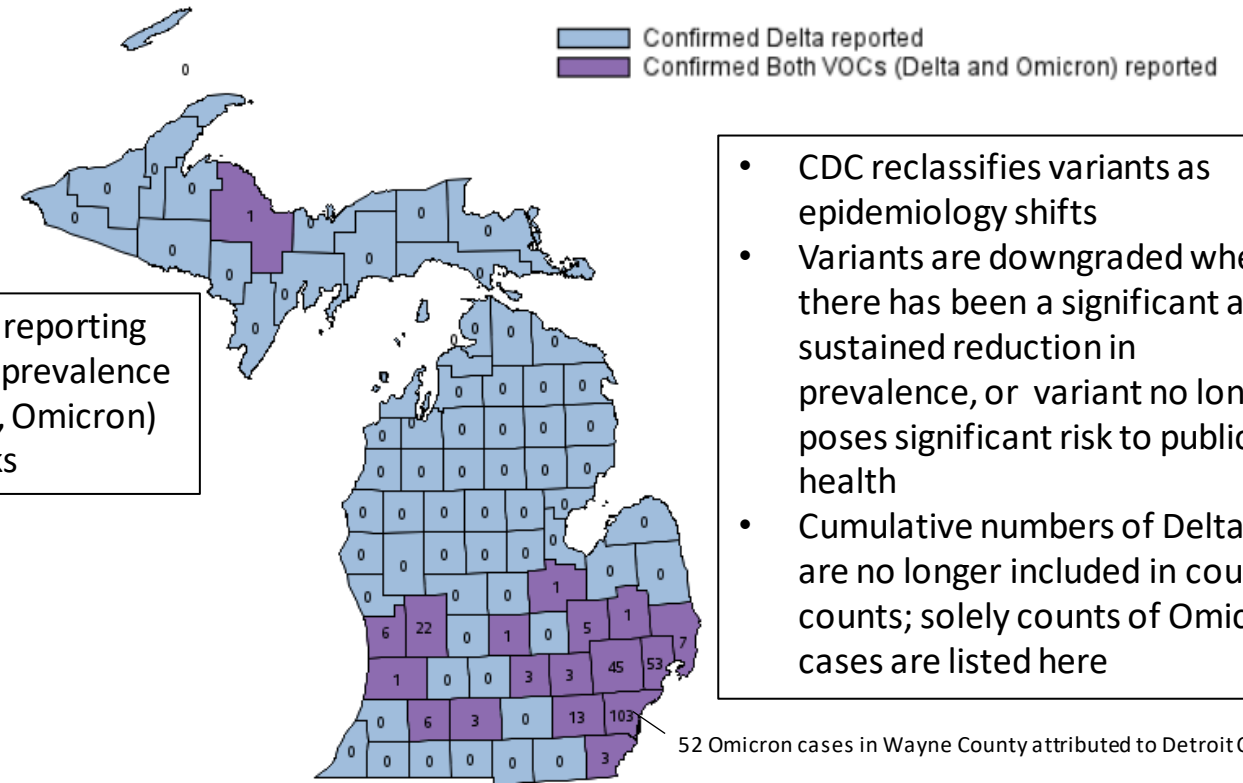


Identified COVID-19 Cases Caused by Variants of Concern (VOC) in US and Michigan

SARS-CoV-2 Variants Circulating in the United States, Dec 26 – Jan 1 (NOWCAST)



Variants of Concern in Michigan, Jan 3



Currently, CDC is reporting rapid increase in prevalence of B.1.1.529 (i.e., Omicron) over past 3 weeks

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

Variant	MI Reported Cases	# of Counties	MDHHS VOC Sequenced Prev. [¶]
B.1.617.2 (delta)	29,704	83	68.1%
B.1.1.529 (omicron)	289	18	31.9%

Data last updated Jan 3, 2022
 Source: MDSS

[¶] Sequence specimens are from the most recent week by onset date which may change as more specimens are sent in



Overview of metrics for individuals < 12 and <18

Region	Population (<12 yrs)	Population (<18 yrs)	Cumulative Case Count (<12 yrs)	7-day Average Daily Case Count (<12 yrs)	7-day Average Daily Case Rate per Million (<12 yrs)	7-day Average Daily Pediatric Hospitalization Count (<18 yrs)*	7-day Average Daily Pediatric Hospitalization Rate per Million (<18 yrs)*	7-day Average Daily Death Count (<12 yrs)	30-day Average Daily Death Count (<12 yrs)
Detroit	735529	1134247	74008	445.6	605.8	58.0	51.1	0	0.03
Grand Rapids	230120	350652	25095	60.3	262.0	11.1	31.7	0	0.00
Kalamazoo	140422	214801	13204	46.1	328.3	4.3	20.0	0	0.00
Saginaw	78759	122834	8292	22.0	279.3	1.7	13.8	0	0.00
Lansing	78140	119915	8563	26.3	336.6	2.1	17.5	0	0.00
Traverse City	53099	83462	4514	8.9	167.6	0.1	1.2	0	0.00
Jackson	41274	64091	4159	8.0	193.8	0.9	14.0	0	0.00
Upper Peninsula	34645	53875	4250	10.1	291.5	0.0	0.0	0	0.00
Michigan	1391988	2143877	142255	632.6	454.5	78.3	36.5	0	0.03

- Each day, 632 children under age 12 become infected with COVID-19, 123 more than last week
- Pediatric case rates increased to 454.5 cases/million (last week: 365.7 cases/million)
- Pediatric (<18) hospital census* is averaging approximately 78.3 per day (last week: 51.1 per day)

Note: Data as of 1/3; case data 12/27, hospitalization data 1/3. Hospitalization data is for pediatric patients (<18); * includes only confirmed COVID-19



K-12 school clusters and outbreaks, recent and ongoing, week ending Dec 29

Number of reported outbreaks/clusters decreased since last week (412 to 365), with decreases in Pre K-Elementary (221 to 195), and High Schools (110 to 102), and Middle/Jr High (81 to 68). Administration (0 to 0) remained the same.

Region	Number of reported cases, #	# Ongoing - Excluding New	# New	Number of outbreaks	Range of cases per outbreak
Region 1	1,140	10		65	2-82
Region 2n	456	17		44	5-54
Region 2s	351	37		46	3-44
Region 3	2,842	14		119	3-100
Region 5	71	15		17	3-17
Region 6	291	17		43	2-54
Region 7	177	0		11	3-51
Region 8	378	0		20	3-51
Total	5,706	110		365	2-99

Grade level	Number of reported cases, #	# Ongoing - Excluding New	# New	Number of outbreaks	Range of cases per outbreak
Pre-school - elem.	2,279	67		195	2-62
Jr. high/middle school	1,221	0		68	3-82
High school	2,206	43		102	2-100
Administrative	0	0		0	4
Total	5,706	110		365	2-99

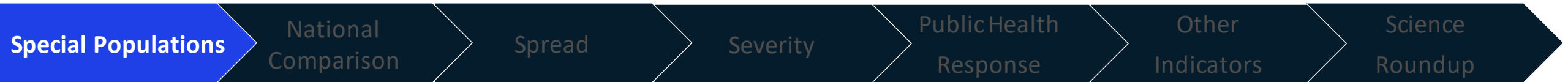
Many factors, including the lack of ability to conduct effective contact tracing in certain settings, may result in significant underreporting of outbreaks. This chart does not provide a complete picture of outbreaks in Michigan and the absence of identified outbreaks in a particular setting in no way provides evidence that, in fact, that setting is not having outbreaks. Week of 12/16 98% LHDs reporting due to technical difficulties.

NOTE (10/4): MDHHS adopted the new [CSTE school cluster and outbreak definition](#) which impacts how transmissions within school-sponsored settings are reported to the health department

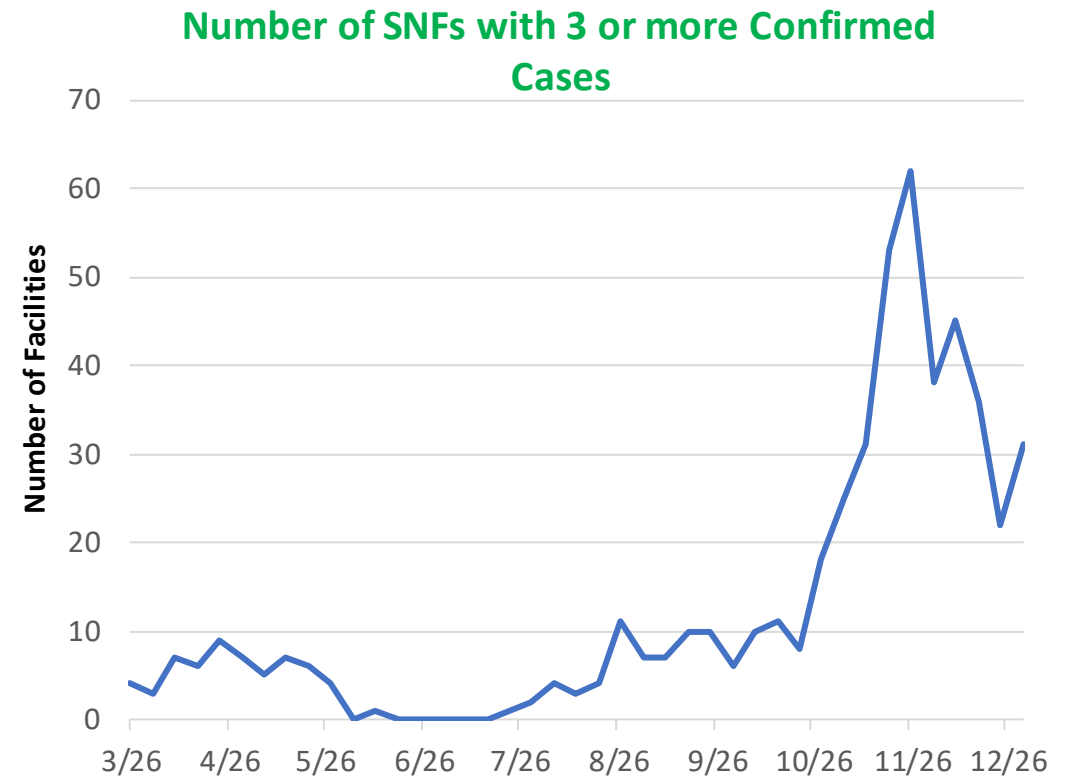
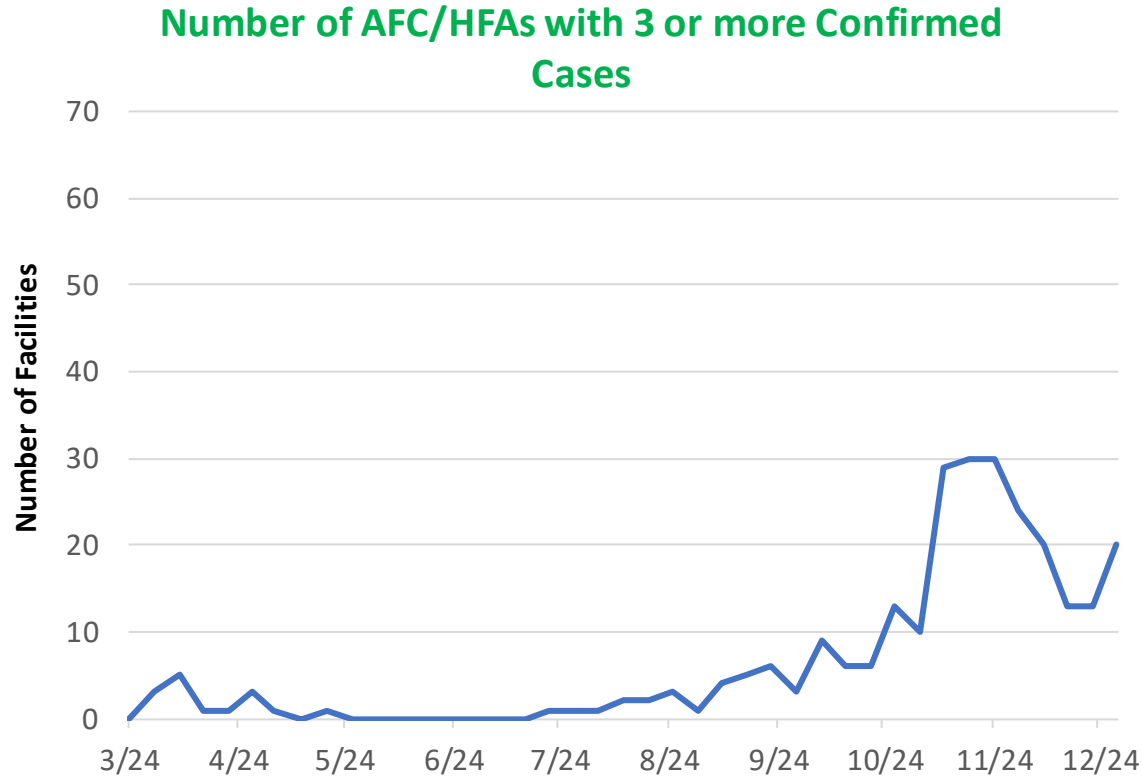
Source: LHD Weekly Sitreps



Long Term Care Facility Focus



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



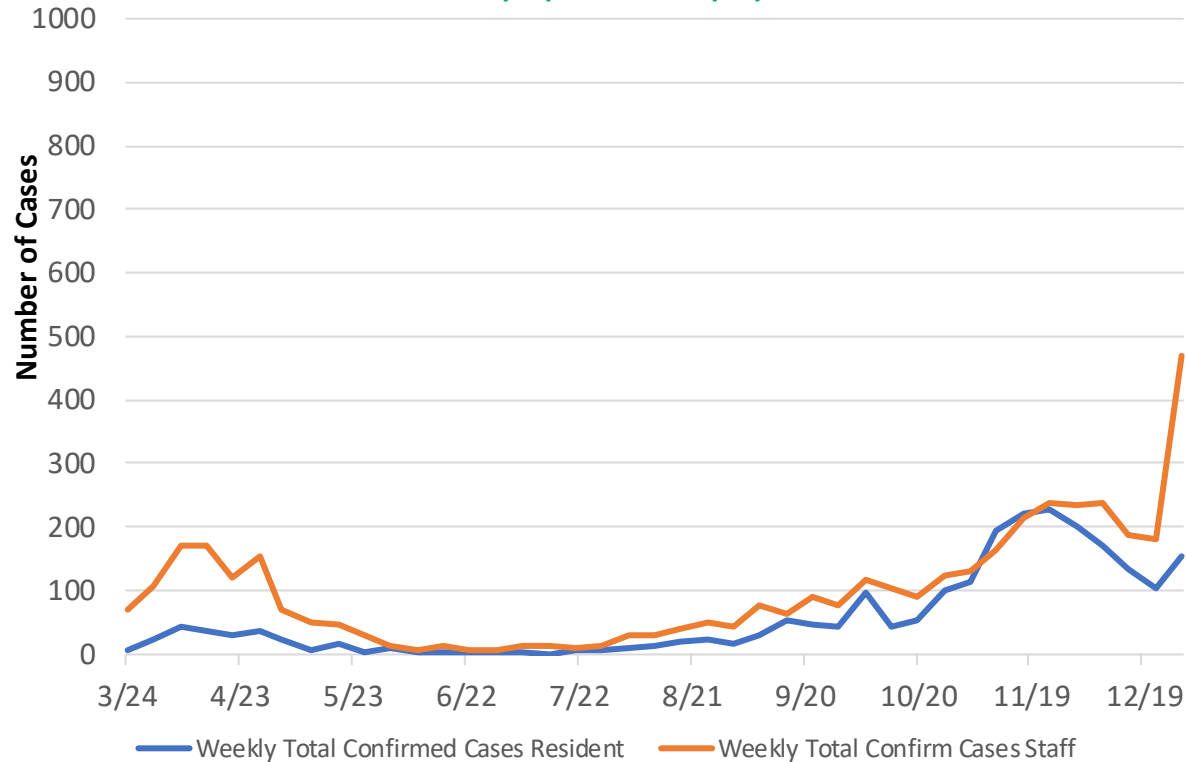
- The number of Long-Term Care Facilities reporting 3 or more cases within a single reporting period increased in both AFC/HFA (20) and SNF (31) in most recent data

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

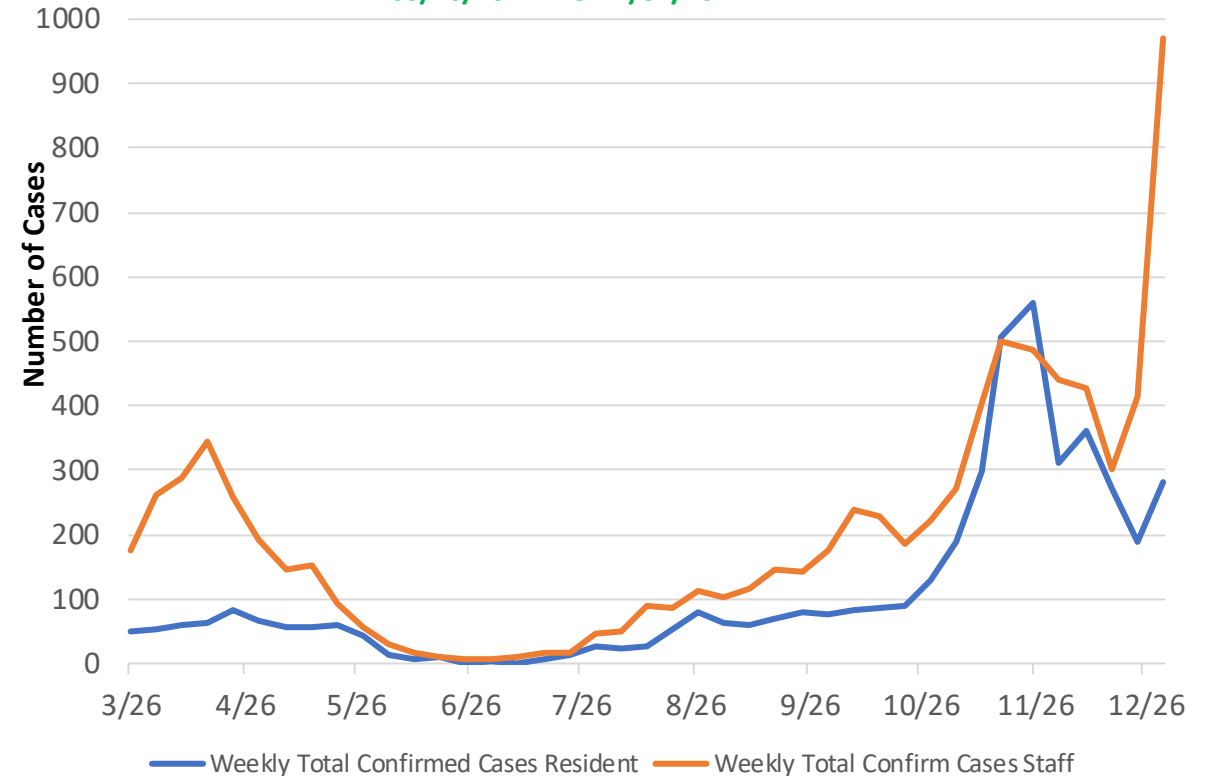
The data is from weekly reporting by facilities with bed occupancy of at least 13 beds.

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

STATE OF MICHIGAN WEEKLY TOTAL CONFIRMED COVID-19 CASES IN AFC/HFA RESIDENTS AND STAFF 03/24/2021 TO 12/29/2021



STATE OF MICHIGAN WEEKLY TOTAL CONFIRMED COVID-19 CASES IN SNF RESIDENTS AND STAFF 03/26/2021 TO 12/31/2021

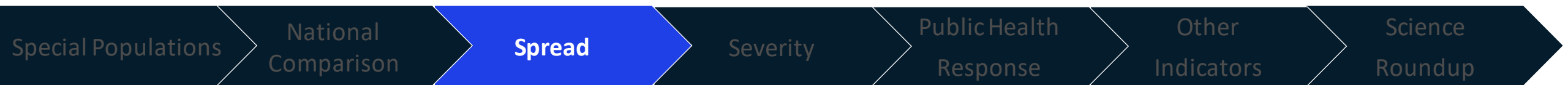


- Case counts in residents and staff are increasing and have peaked to 971 cases in SNF staff and 471 cases in AFC/HFA staff
- Case counts in LTCF have maintained the typical pattern of more cases among staff than residents

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

Breakthrough Cases

DRAFT



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

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

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

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

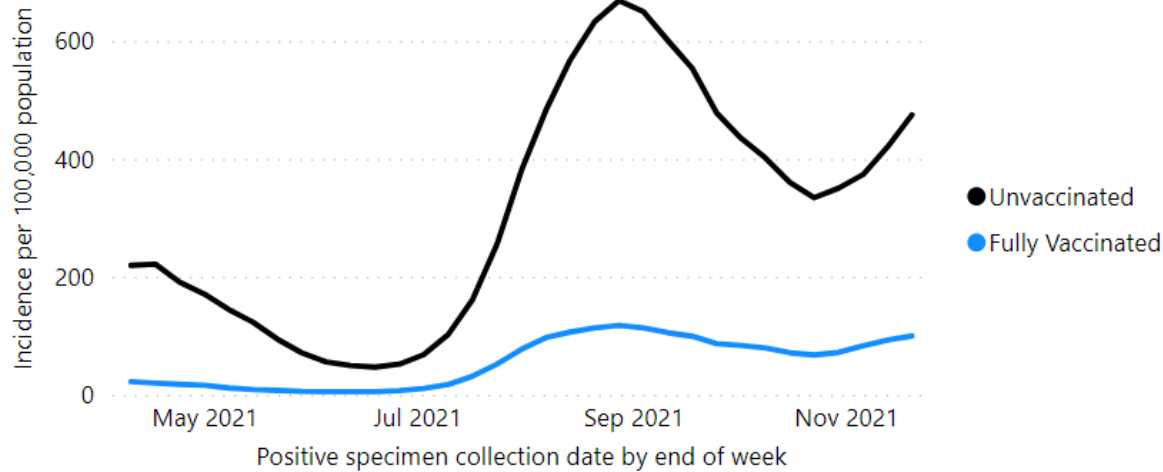


Science Roundup

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

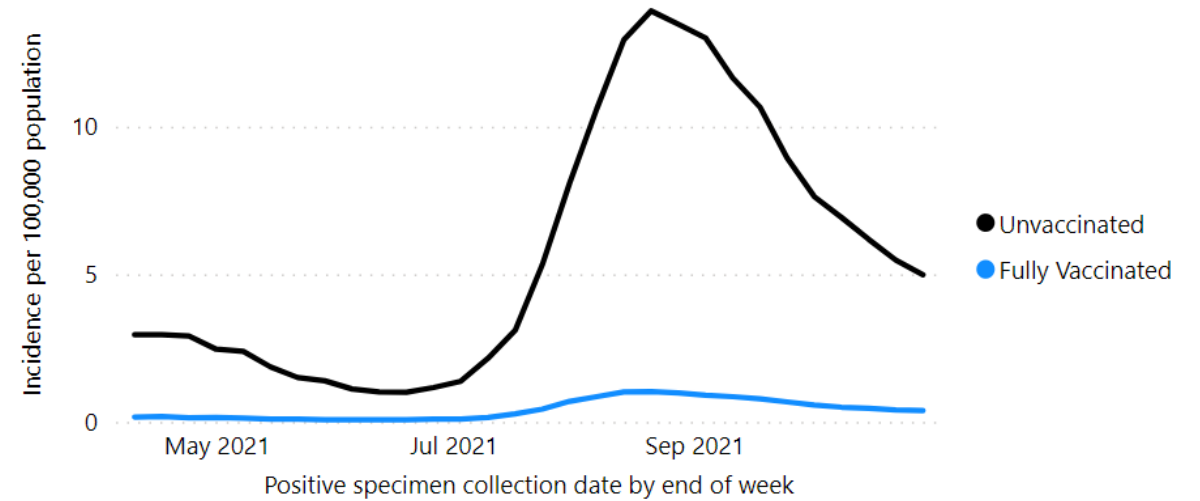
Rates of COVID-19 Cases by Vaccination Status

April 04 - November 20, 2021 (27 U.S. jurisdictions)



Rates of COVID-19 Deaths by Vaccination Status

April 04 - October 30, 2021 (27 U.S. jurisdictions)



In October, unvaccinated persons had:

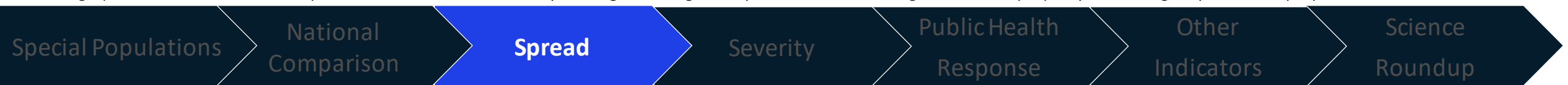
5X
Risk of Testing Positive for COVID-19

AND

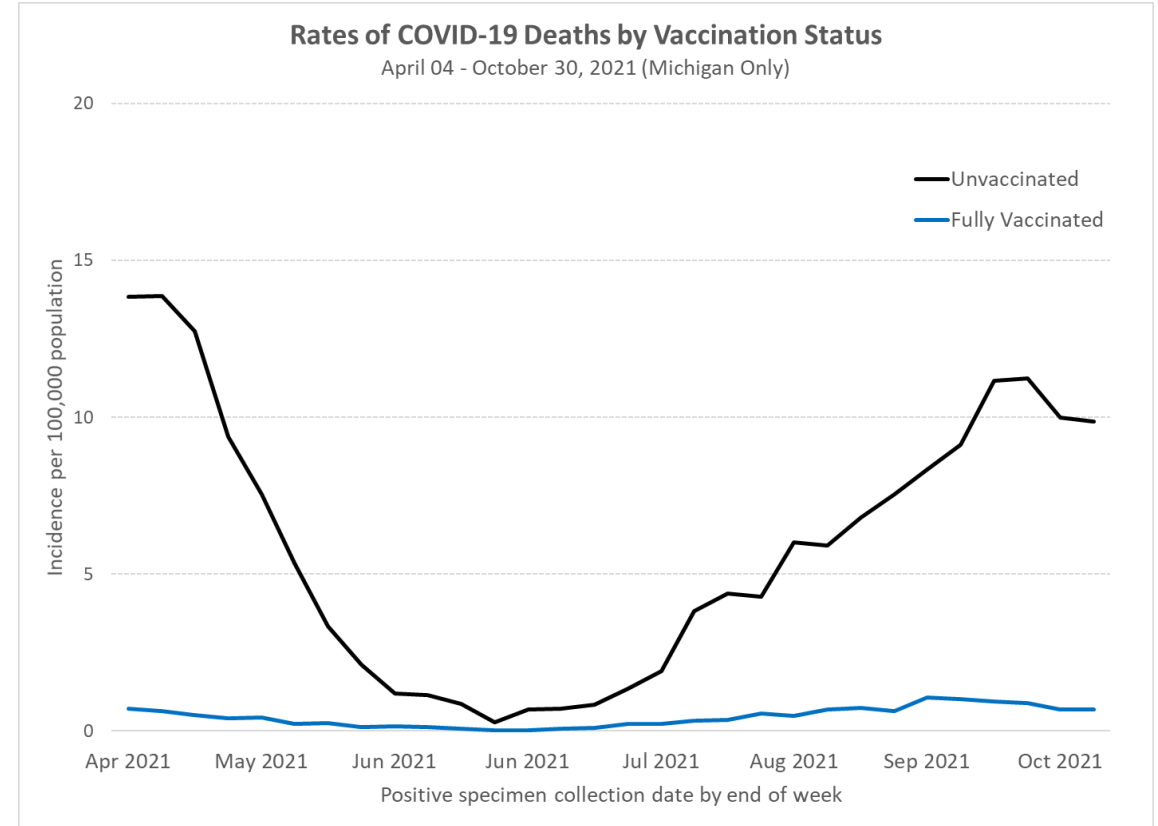
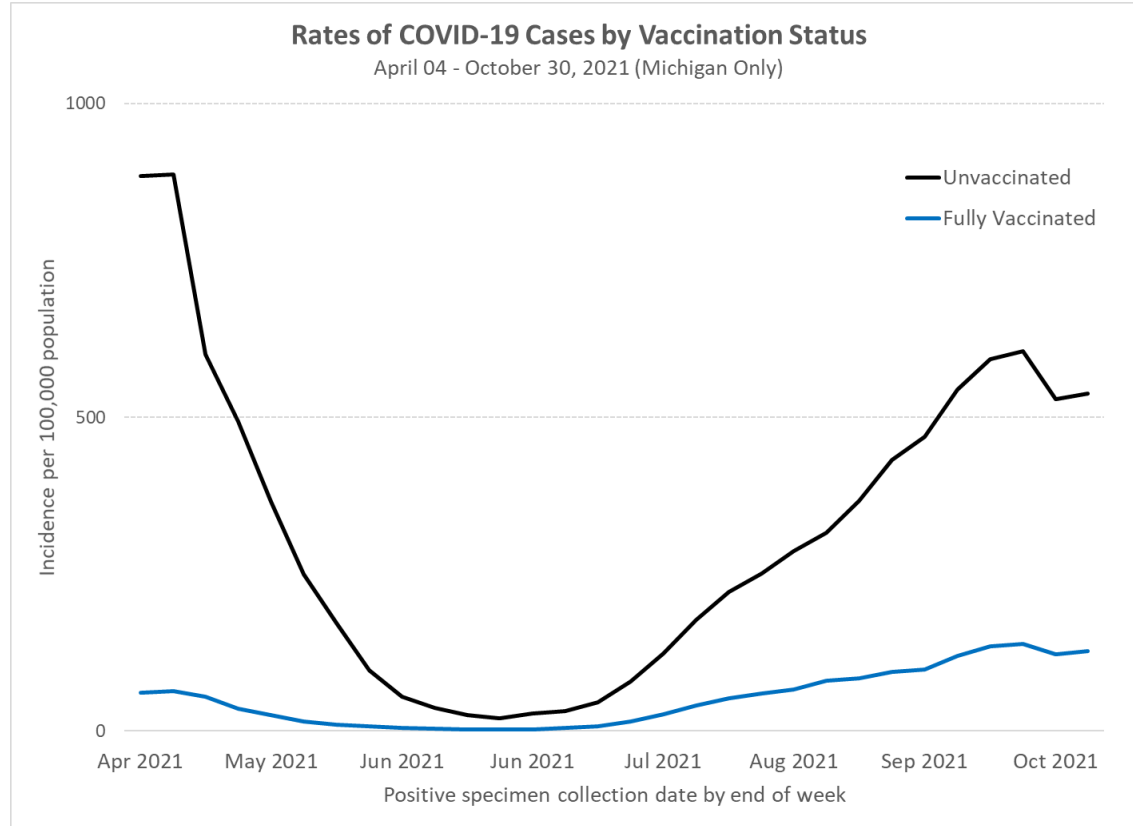
14X
Risk of Dying from COVID-19

compared to fully vaccinated persons

Footnotes: Incidence rates were age-standardized using the 2000 U.S. Census standard population; and rates are not adjusted for time since vaccination, underlying conditions, or other demographic factors besides age. | Incidence rate ratios for the past one month were calculated by dividing the average weekly incidence rates among unvaccinated people by that among fully vaccinated people.



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



In October, unvaccinated persons had:

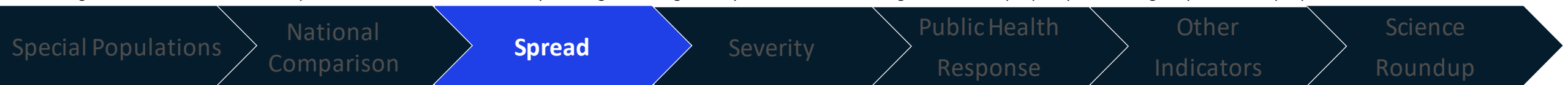
4.3 X
Risk of Testing Positive for COVID-19

AND

13.2 X
Risk of Dying from COVID-19

compared to fully vaccinated persons

Footnotes: Incidence rates were age-standardized using the 2000 U.S. Census standard population; and rates are not adjusted for time since vaccination, underlying conditions, or other demographic factors besides age. Incidence rate ratios for the past one month were calculated by dividing the average weekly incidence rates among unvaccinated people by that among fully vaccinated people.



Risk of becoming ill or dying much higher in unvaccinated individuals

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

In October 2021:

Unvaccinated persons in Michigan had **4.3 times** the risk of testing positive for COVID-19 compared to fully vaccinated persons

- 566.2 cases per 100,000 unvaccinated persons compared to 130.9 cases per 100,000 fully vaccinated persons

Unvaccinated persons in Michigan had **13.2 times** the risk of dying from COVID-19 compared to fully vaccinated persons

- 10.6 deaths per 100,000 unvaccinated persons compared to 0.8 deaths per 100,000 fully vaccinated persons

Fully Vaccinated

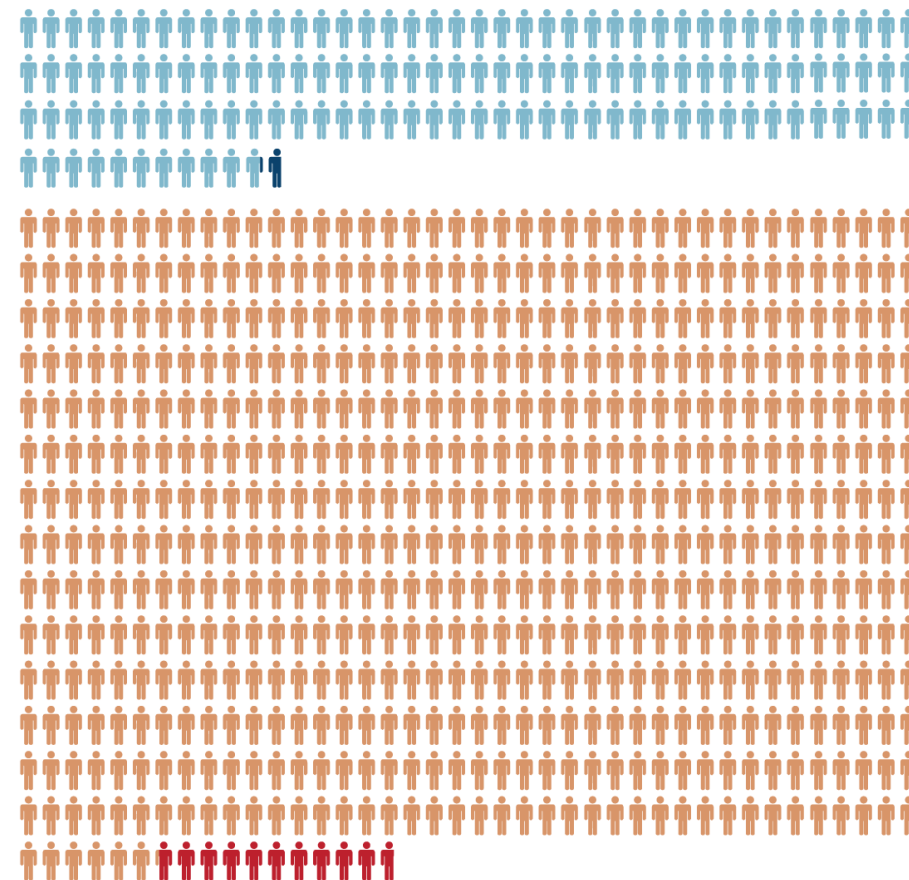
Per 100,000 Fully Vaccinated People (age-adjusted)

● 130.9 cases ● 0.8 deaths

Unvaccinated

Per 100,000 Unvaccinated People (age-adjusted)

● 566.2 cases ● 10.6 deaths



Footnotes: Incidence rates were age-standardized using the 2000 U.S. Census standard population; and rates are not adjusted for time since vaccination, underlying conditions, or other demographic factors besides age. Incidence rate ratios for the past one month were calculated by dividing the average weekly incidence rates among unvaccinated people by that among fully vaccinated people.

Special Populations

National Comparison

Spread

Severity

Public Health Response

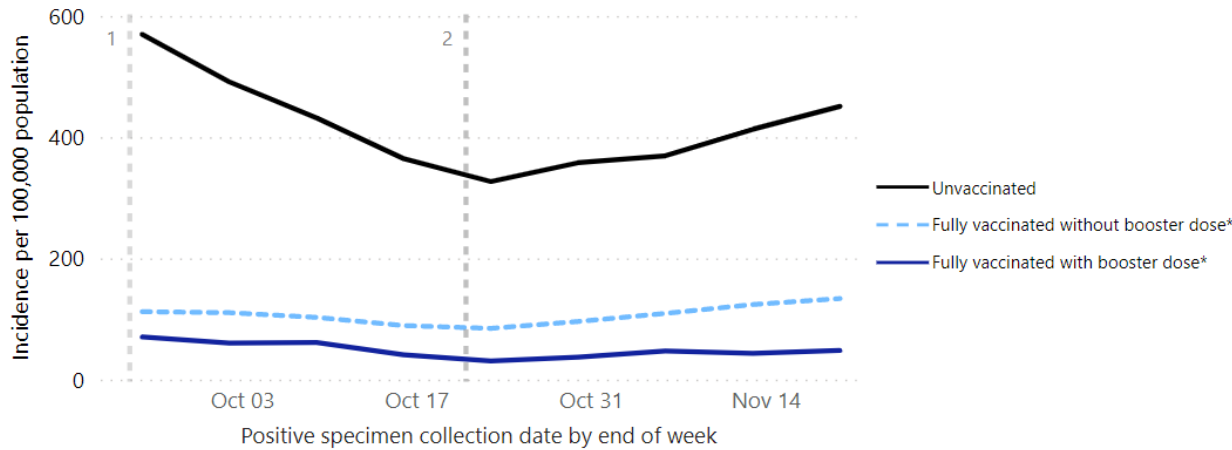
Other Indicators

Science Roundup

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

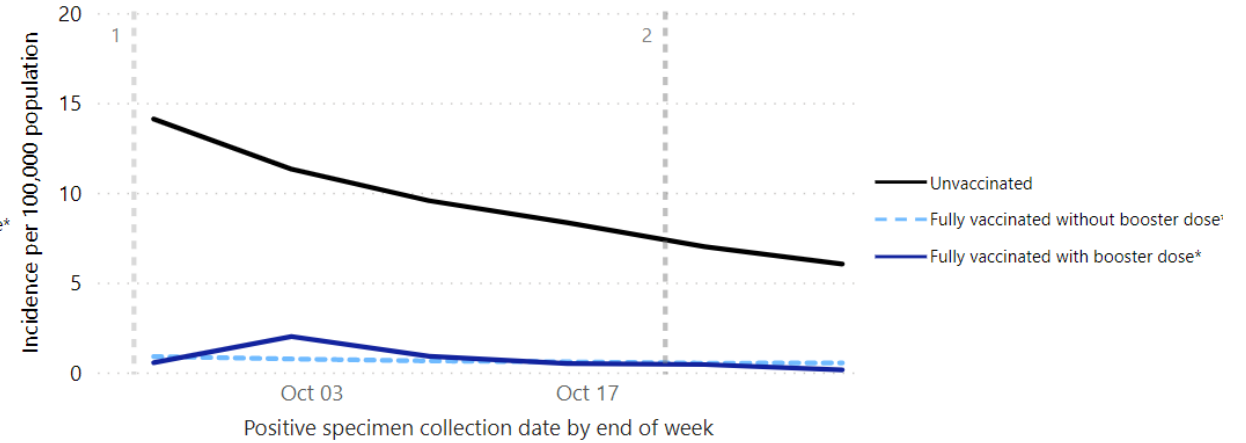
Rates of COVID-19 Cases by Vaccination Status and Booster Dose*

September 19 - November 20, 2021 (17 U.S. jurisdictions)



Rates of COVID-19 Deaths by Vaccination Status and Booster Dose*

September 19 - October 30, 2021 (17 U.S. jurisdictions)



In October, unvaccinated persons had:

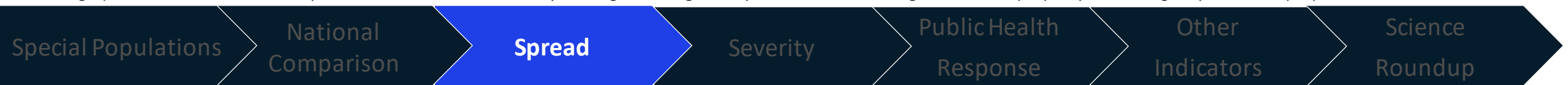
10X
Risk of Testing Positive for COVID-19

AND

20X
Risk of Dying from COVID-19

compared to fully vaccinated persons with additional or booster doses

Footnotes: Incidence rates were age-standardized using the 2000 U.S. Census standard population; and rates are not adjusted for time since vaccination, underlying conditions, or other demographic factors besides age. | Incidence rate ratios for the past one month were calculated by dividing the average weekly incidence rates among unvaccinated people by that among fully vaccinated people.



Key Messages: Healthcare Capacity and COVID Severity

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

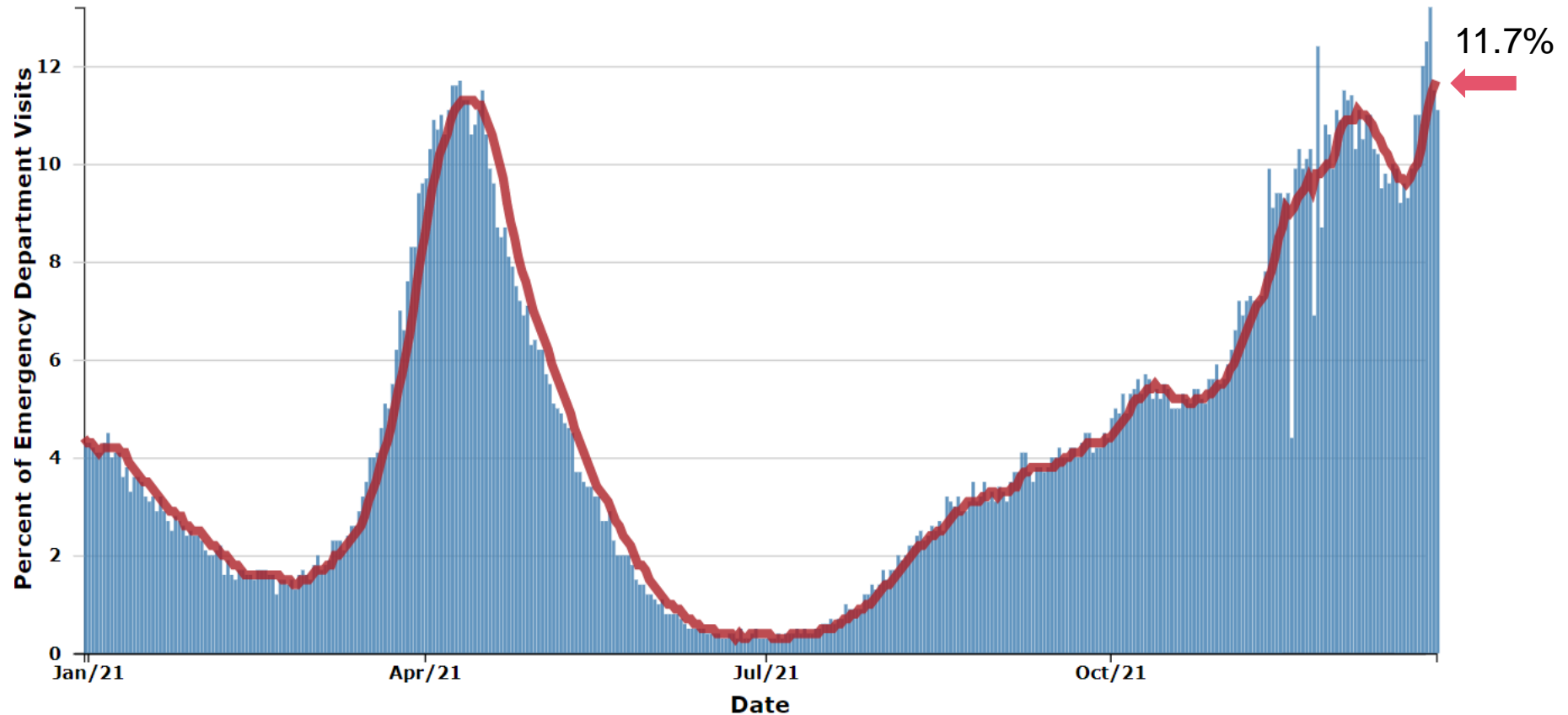
- 11.7% of ED visits are for COVID diagnosis (last week: 10.4%)
- Hospital admissions for nearly all age groups are increasing over the past week
- Hospital census has increased 11% since last week (vs. 6% decrease week prior)
- Half of regions are seeing increasing trends in hospital census this week
 - Regions 1, 2N, 2S and 8 show increasing trends over the past week
 - Two preparedness regions (2N, 2S) have greater than 400/Million population hospitalized
- Overall, volume of COVID-19 patients in intensive care has decreased 8% (vs. 12% decrease week prior)
 - Three regions (1, 3, and 6) have overall adult ICU occupancy greater than 85%, with Regions 1 and 3 at or above 90% occupancy
 - Pediatric hospitalizations have risen significantly; nearly doubling since last week and reaching a new pandemic high

Death rate is 6.8 daily deaths/million residents over last 7 days (Last week: 8.4 deaths/million)

- Trends for daily average deaths are decreasing this week for most reported racial and ethnic groups
- In the past week, American Indian/Alaskan Natives have the highest death rate (10.5 deaths/million) followed by Whites (10.1 deaths/million)
- In the past 30 days, the proportion of deaths among those over 60 is steady



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

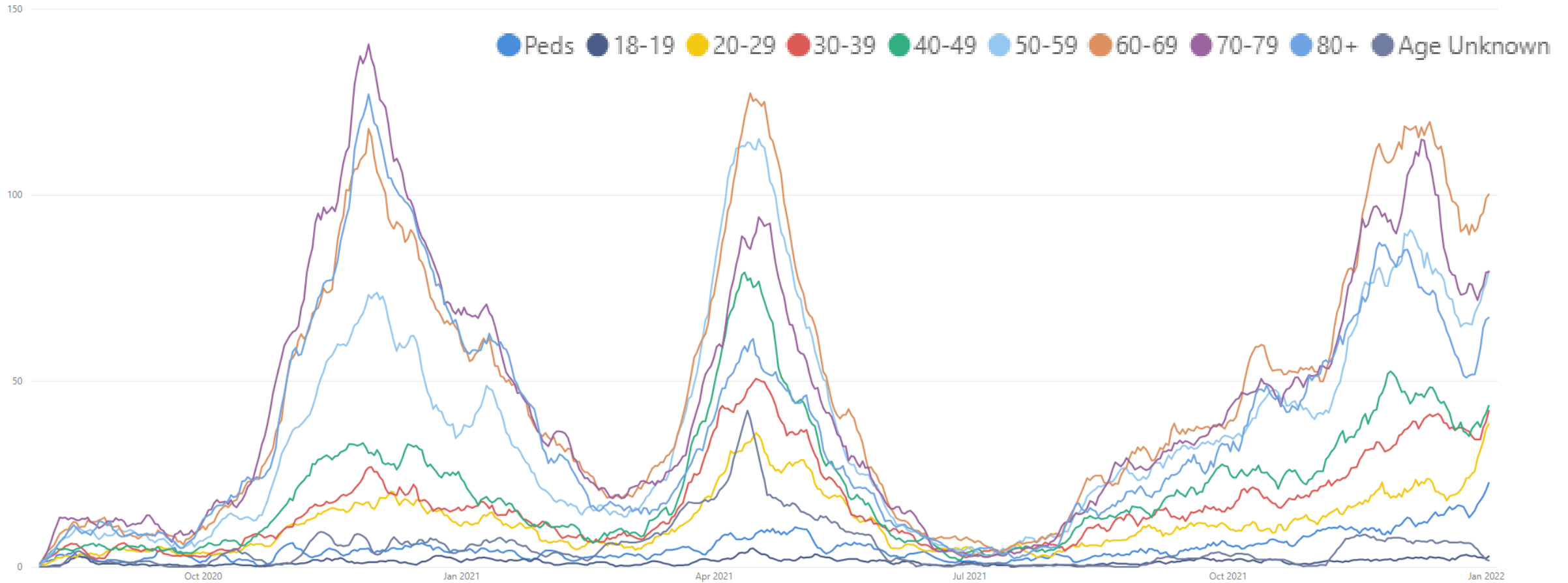


- Trends for ED visits have increased to 11.7% since last week (last week: 10.4%)
- Over past week, those 25-39 years saw highest number of avg. daily ED CLI visits (14.5%), but those between 18-64 all above state average

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



Average Hospital Admissions Are Increasing for all Age Groups



- Trends for daily average hospital admissions have increased 20% since last week (vs. 5% decrease prior week)
- Overall, many age groups saw increases this week following the holiday
- More than 70 daily hospital admissions was seen for each of the age groups of 50-59, 60-69, 70-79, and 80+

Source: CHECC & EM Resource



Hospital Admissions and Admission Rates by Age Group

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

Age Group	Average† daily number of hospital admissions	Average† Daily Hospital Admission Rate*	One Week % Change (Δ #)
0-11	18.4	13.2	+82% (+8)
12-17	5.1	6.8	+24% (+1)
18-19	2.7	10.3	-5% (-<1)
20-29	38.3	27.8	+53% (+13)
30-39	44.7	36.9	+27% (+10)
40-49	44.3	37.6	+19% (+7)
50-59	80.4	59.6	+23% (+15)
60-69	99.6	78.0	+8% (+8)
70-79	80.9	105.4	+7% (+5)
80+	70.0	169.0	+35% (+18)
Total¶	486.6	48.7	+20% (+81)

- Through Jan 3, there were an average of 486.6 hospital admissions per day due to COVID-19; an increase from last week (+20%, +81)
- Most age groups saw increases this week
- The largest one-week percent increase was among those 0-11 years (+82%) which accounted for 18.4 hospital admission per day (+8)
- Average daily hospital admission count (99 hospital admissions per day) were highest among those 60-69
- Average daily hospital admission rate (169.0 hospital admissions/million) were highest for those aged 80+
- More than 70 daily hospital admissions were seen for those aged 50-59, 60-69, 70-79, and 80+

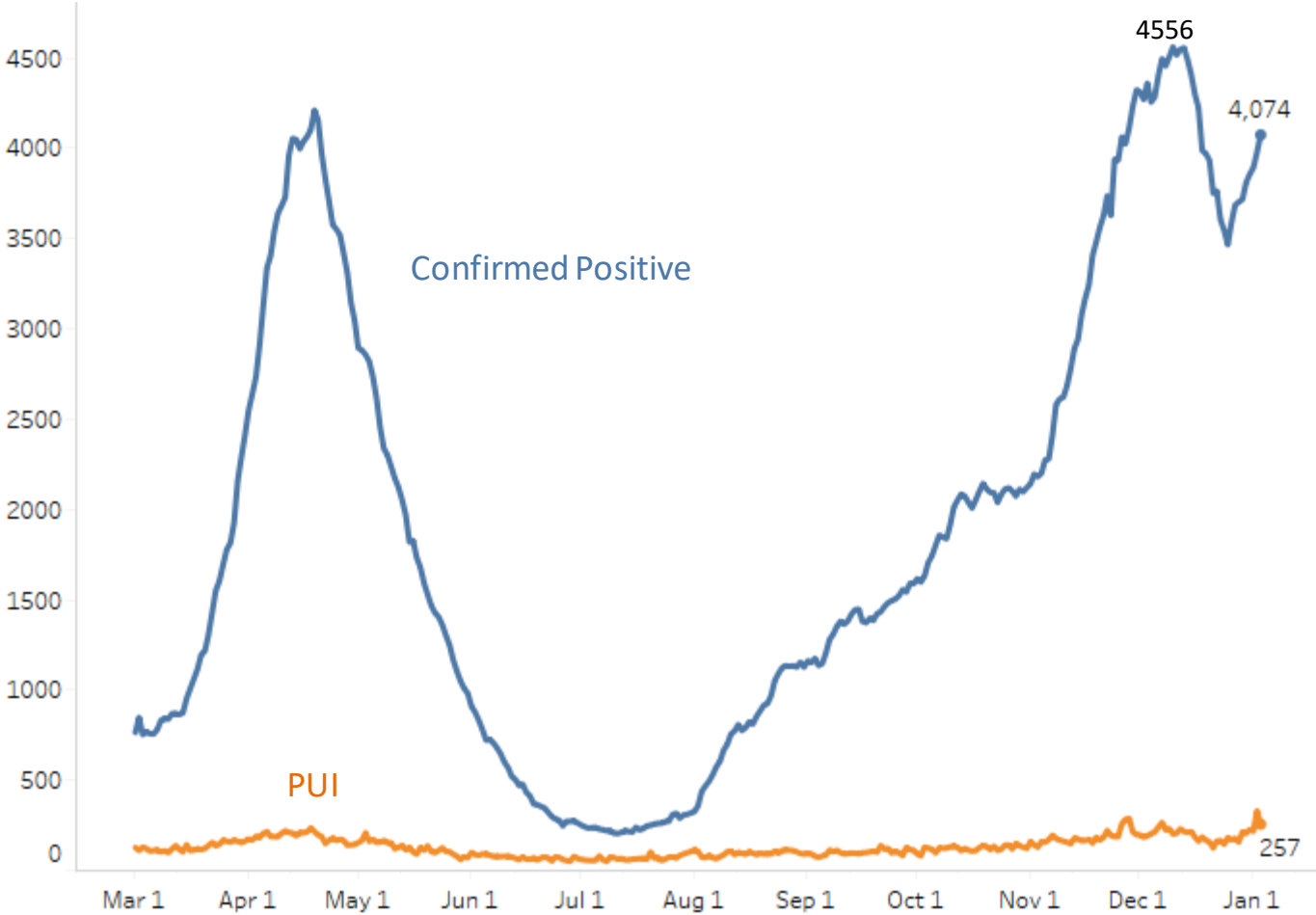
Note: for some age groups, small changes in number of hospitalization admissions can cause large change in One Week Percent Change

* 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



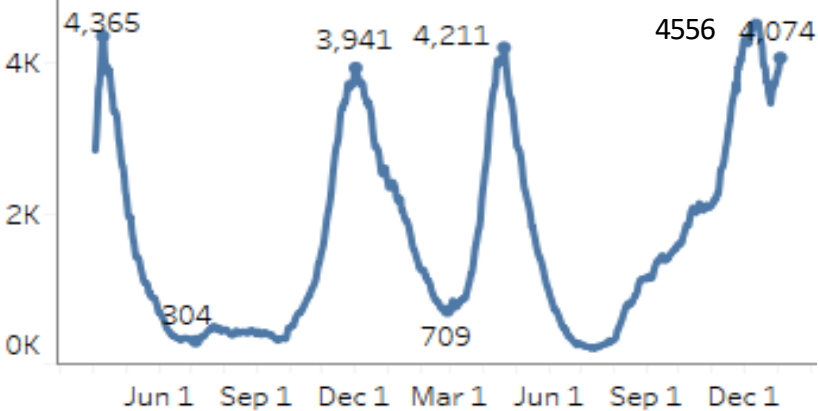
Statewide Hospitalization Trends: Total COVID+ Census

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



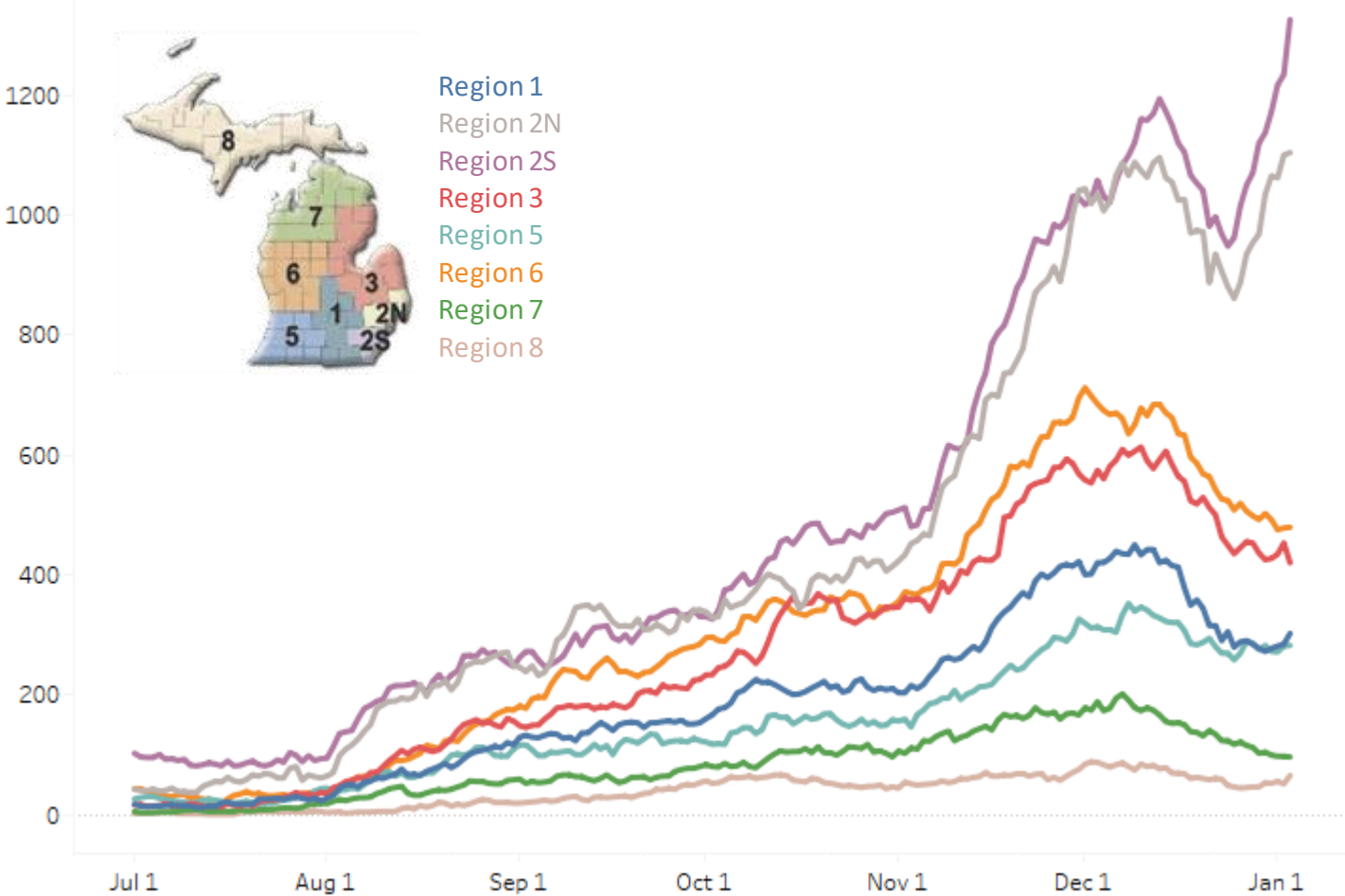
The COVID+ census in hospitals has increased by 11% over the past week and is now again over 4,000 patients.

Hospitalized COVID Positive Long Term Trend (beginning March 2020)



Statewide Hospitalization Trends: Regional COVID+ Census

Hospitalization Trends 6/1/2021 – 1/3/2022
Confirmed Positive by Region



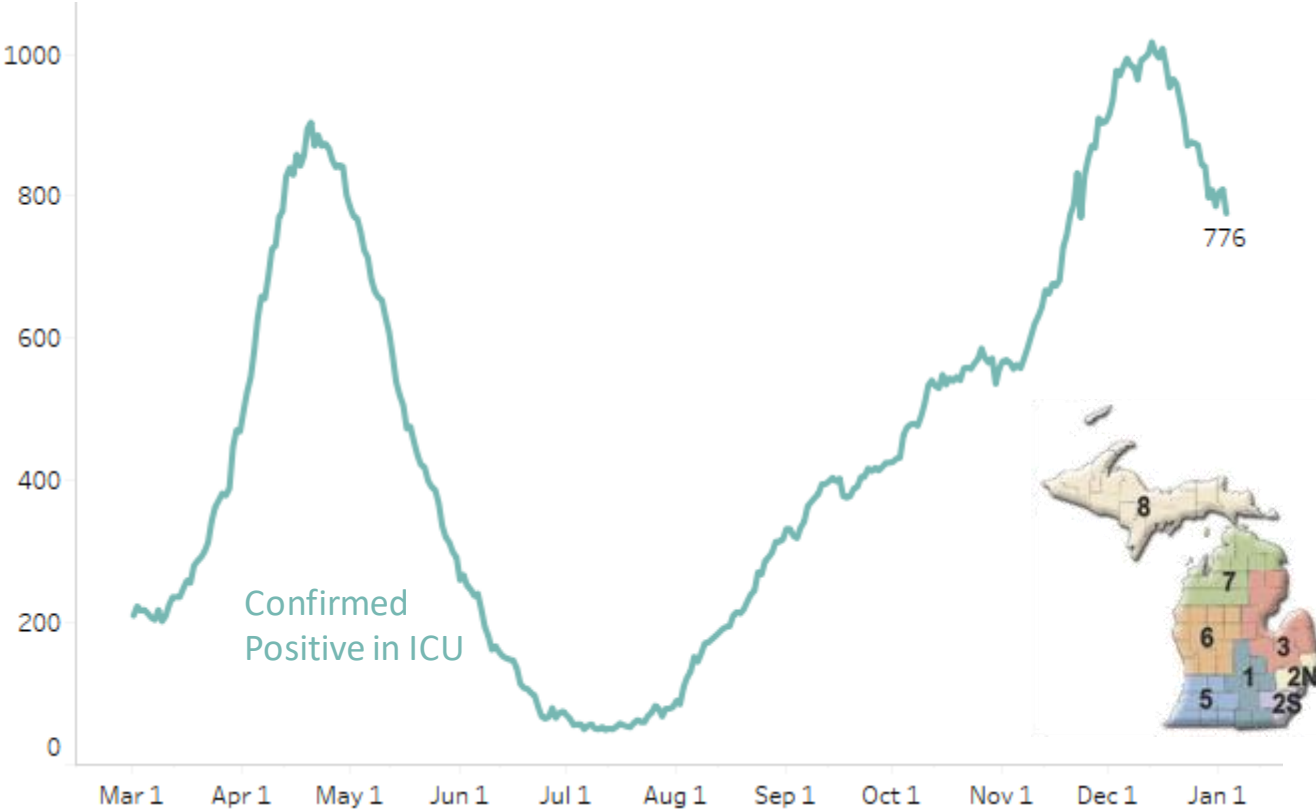
Growth has been focused in Regions 2S and 2N although Regions 1 and 8 also show growth in the most recent days. Regions 3, 5, 6, and 7 show decreasing trends this week.

Regions 2N and 2S have greater than 400/Million Population hospitalized and Region 2S is over 500/Million population hospitalized.

Region	COVID+ Hospitalizations (% Δ from last week)	COVID+ Hospitalizations / MM
Region 1	302 (4%)	279/M
Region 2N	1104 (18%)	499/M
Region 2S	1326 (26%)	595/M
Region 3	420 (-8%)	370/M
Region 5	282 (-2%)	296/M
Region 6	479 (-5%)	327/M
Region 7	96 (-17%)	192/M
Region 8	65 (44%)	209/M

Statewide Hospitalization Trends: ICU COVID+ Census

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



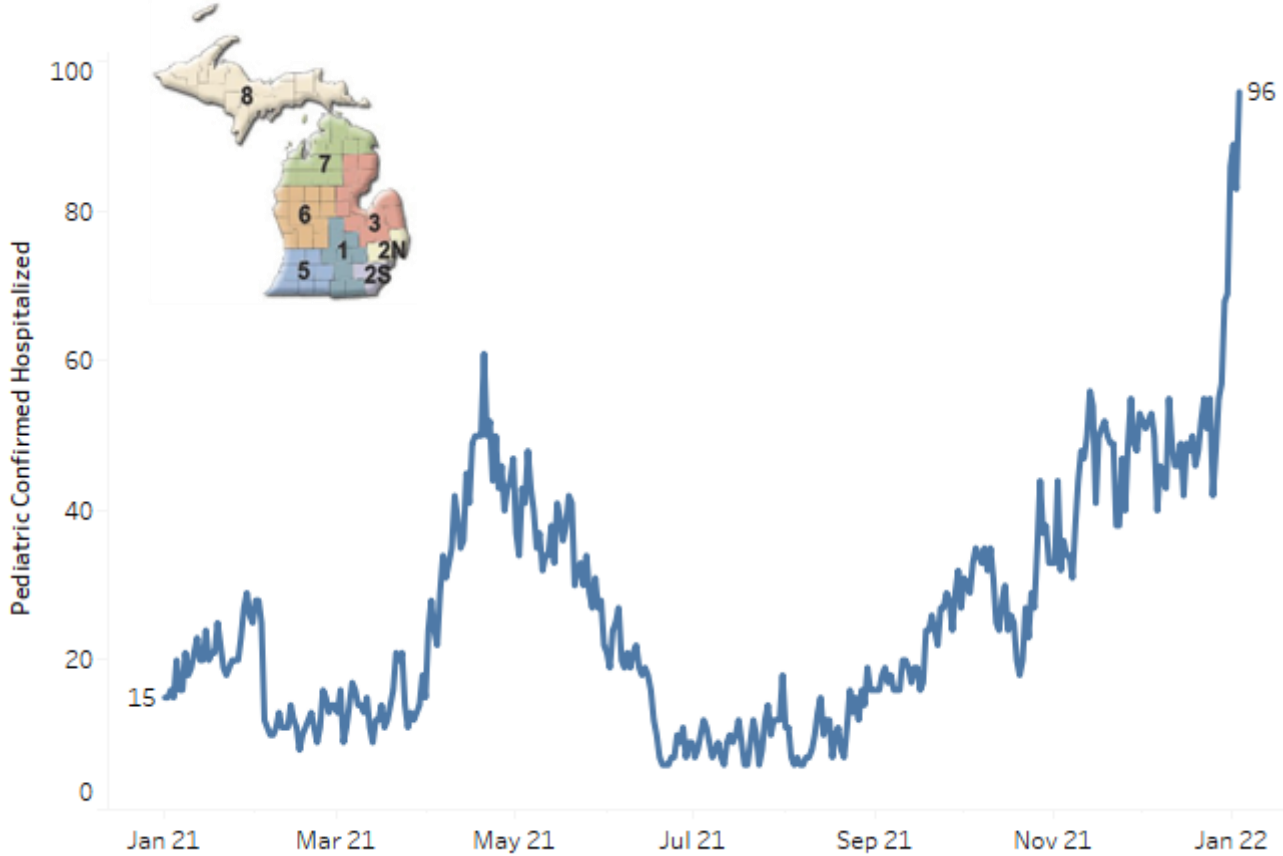
Overall, the census of COVID+ patients in ICUs has decreased 8% from last week. Census in ICUs has decreased in all regions except for Regions 1 and 8.

Regions 1 and 3 have ICU occupancy greater than 85%. Regions 1, 2S, 3, and 6 have more than 30% of ICU beds occupied by COVID patients.

Region	Adult COVID+ in ICU (% Δ from last week)	Adult ICU Occupancy	% of Adult ICU beds COVID+
Region 1	68 (10%)	92%	34%
Region 2N	150 (-5%)	77%	27%
Region 2S	223 (-4%)	84%	32%
Region 3	117 (-18%)	91%	36%
Region 5	41 (0%)	80%	27%
Region 6	128 (-7%)	86%	45%
Region 7	33 (-43%)	81%	24%
Region 8	16 (7%)	71%	25%

Statewide Hospitalization Trends: Pediatric COVID+ Census

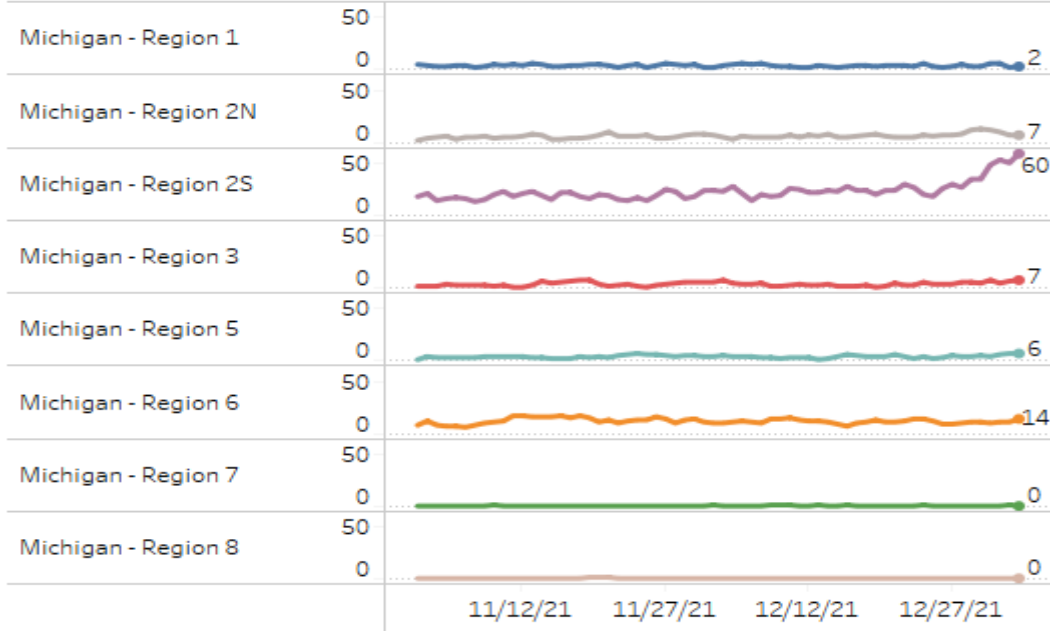
Hospitalization Trends 1/1/2021 – 1/3/2022
 Pediatric Hospitalizations, Confirmed



Pediatric hospitalizations have risen significantly with the COVID+ census nearly doubling since last week and reaching a new record for the pandemic.

The increase is predominantly in Region 2S where two of the state’s largest Children’s hospitals are located.

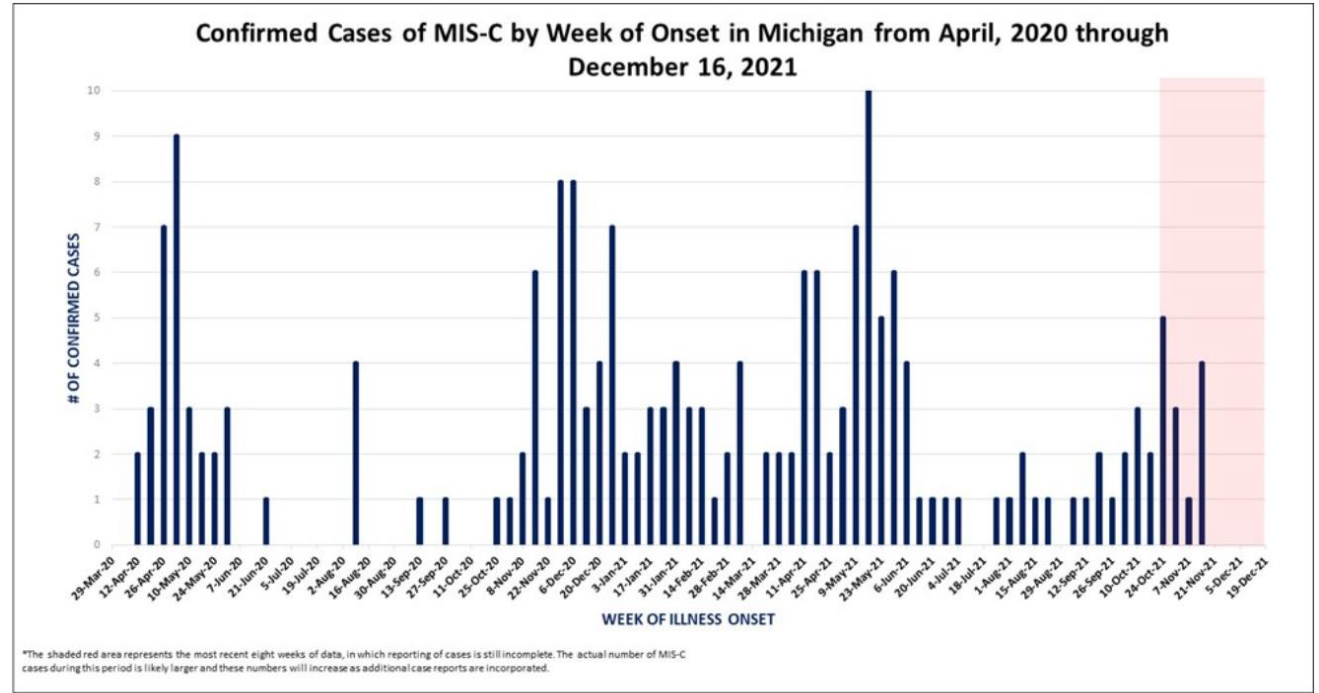
Pediatric Hospitalizations by Region
 (Nov 2021-Jan 2022)



Multisystem Inflammatory Syndrome in Children (MIS-C)

Michigan Surveillance

- Higher community transmissions is followed by higher incidence of MIS-C cases
- 196 cases identified in Michigan
- More than 60% of those children are elementary and pre-school aged
- Black/African American children are disproportionately impacted
- 70.4% children with MIS-C are treated in the ICU



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.

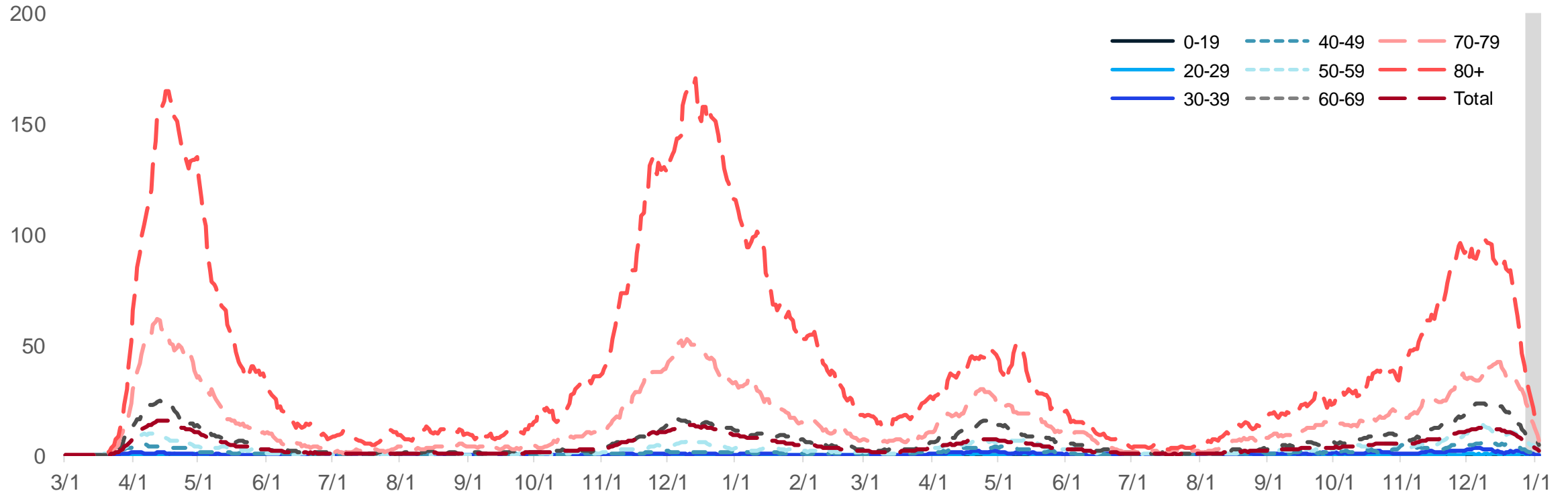
DEMOGRAPHIC INFORMATION (N=196)					
Age Group	Count	%	Race	Count	%
0-4 yrs	50	25.5%	Black/African American	78	39.8%
5-10 yrs	79	40.3%	Caucasian	83	42.3%
>10 yrs	67	34.2%	All Others / Unknown	35	17.9%
Gender	Counts	%	Ethnicity	Count	%
Male	117	59.7%	Not Hispanic or Latino	142	72.4%
Female	79	40.3%	Hispanic or Latino	16	8.2%
Unknown	0	0.0%	Unknown	38	19.4%

Source: [MDHHS and MIS-C Data and Reporting](#); Data through 12/16



Average and total new deaths, by age group

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



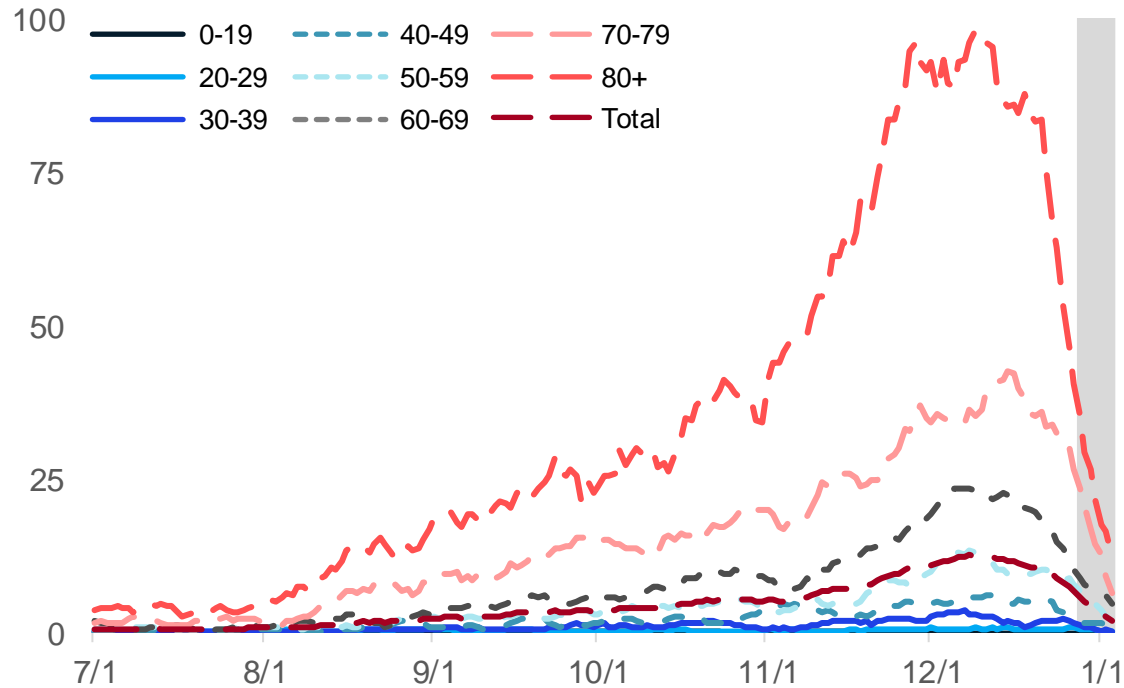
- Through 12/27, the 7-day avg. death rate is 40 daily deaths per million people for those over the age of 80
- Deaths rates have decreased over the last week for all age groups except 20-29- and 30–39-year-olds

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



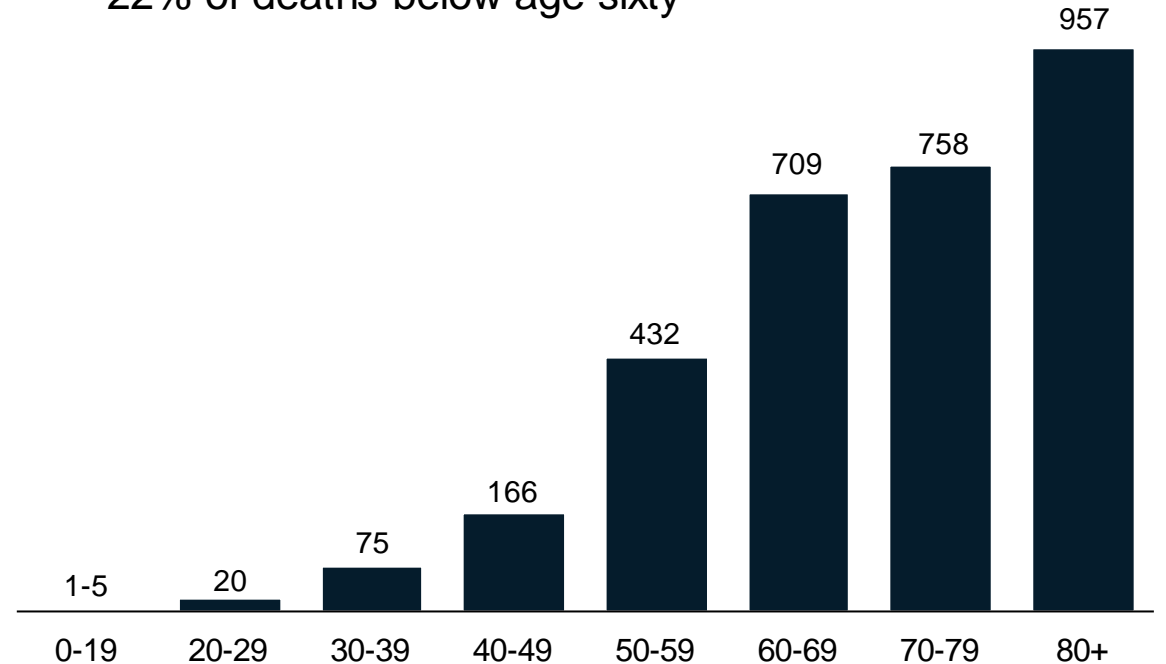
Average and total new deaths, by age group

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



Total COVID-19 deaths in confirmed and probable cases by age group (past 30 days, ending 12/27/2021)

- 22% of deaths below age sixty



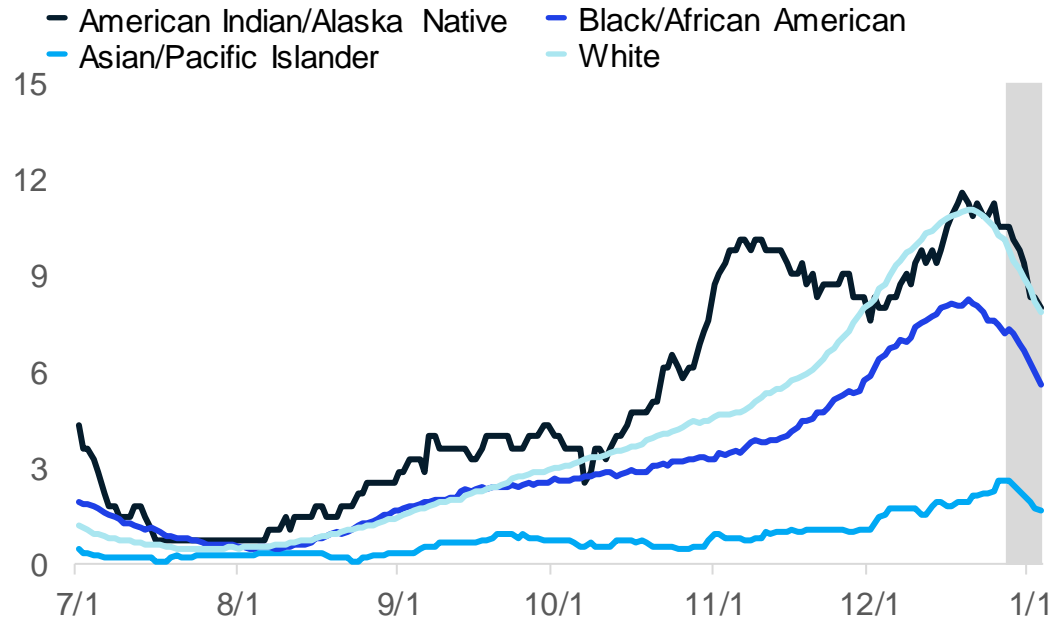
- Through 12/27, the 7-day avg. death rate is more than 40 daily deaths per million people for those over the age of 80
- In the past 30 days, the proportion of deaths among those over 60 is steady

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

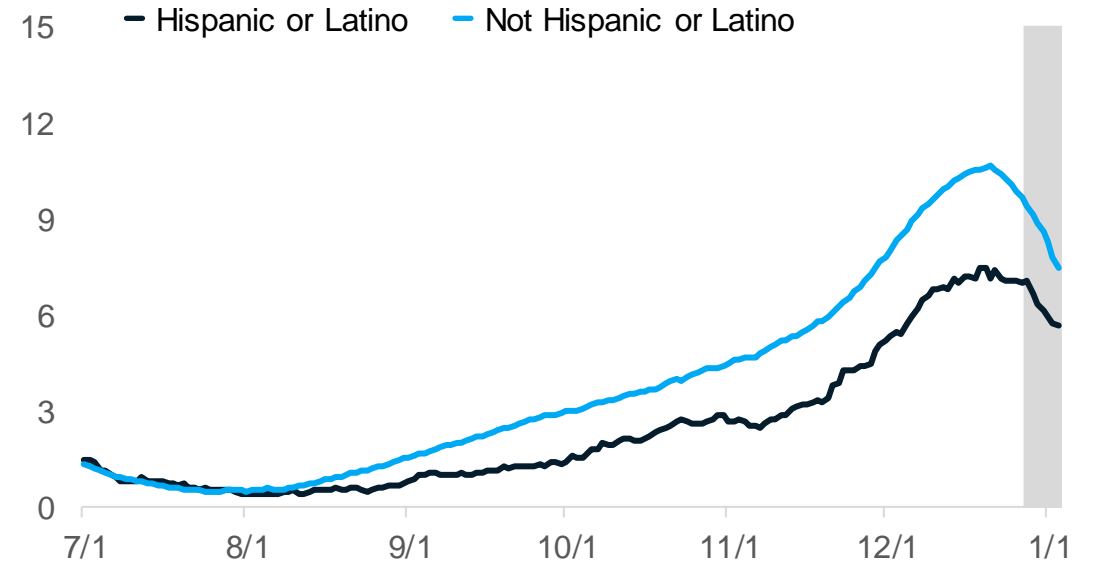


30-day rolling average daily deaths per million people by race and ethnicity

Average daily deaths per million people by race



Average daily deaths per million people by ethnicity



- Deaths are lagging indicator of other metrics
- Trends for daily average deaths are decreasing for all reported races and ethnicities except Asian/Pacific Islanders
- Currently, American Indian/Alaskan Native have the highest death rate (10.5 deaths/million) followed by Whites (10.1 deaths/million)

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

- 4,445 first doses administered each day (7-day rolling average)
- Over 5.6 million people (57.0% of the population) in the state are fully vaccinated

COVID-19 Boosters

- Over 2.3 million people have received an additional/booster dose in Michigan
- More than 67.9% of fully vaccinated Michiganders over the age of 65+ have been administered a booster dose

Pediatric Vaccination

- Interactive dashboard now includes pediatrics vaccination doses (live updates effective 11/5)
- 181,746 initial dose and 129,575 second dose administrations in 5- to 11-year-olds as of 1/3/22

Mask Protections in K-12 Schools

- 35% (184/533) of K-12 school districts have mandatory mask policies
- School districts with mandatory mask policies cover 53% (667,005/1,252,808) of K-12 students
- 14% of K-12 school districts have rescinded their mask policies



5.6 Million Michiganders fully vaccinated and 57.0% of total population fully vaccinated

Vaccination Coverage in Michigan as of 1/4/2021

Vaccination Coverage

Over 5.6 million people in the state are fully vaccinated*

86.4% of people aged 65 and older have completed the series*

63.7% of total population initiated*

Booster Coverage

67.9% of fully vaccinated people aged 65 and older have received a booster dose

42.6% of Michiganders in the state who are fully vaccinated have received their booster dose

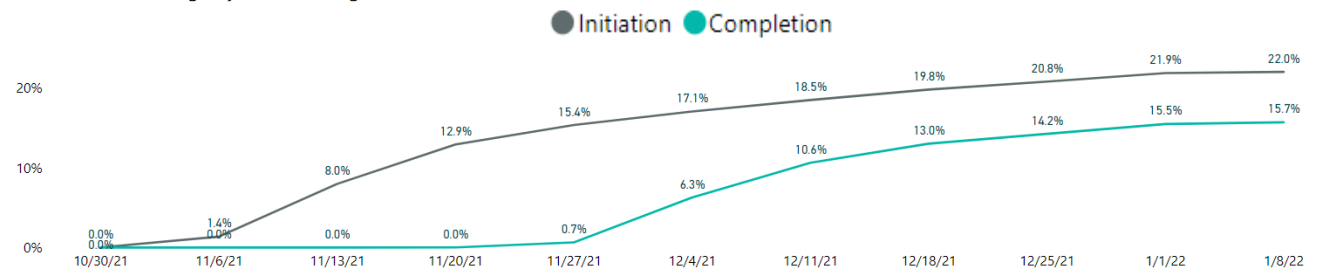


Age Group	% At Least One Dose	% Fully Vaccinated	% Boosted**	Number Fully Vaccinated
Total Population	63.7%	57.0%	42.6%	5,690,977
≥ 5 years	67.5%	60.4%	N/A	5,690,926
≥ 12 years	71.9%	64.7%	N/A	5,562,054
≥ 18 years	74.1%	66.8%	46.0%	5,235,740
≥ 65 years	94.6%	86.4%	67.9%	1,525,841

** Percentage of the fully vaccinated population

5-11 years

Cumulative Coverage by Week Ending Date



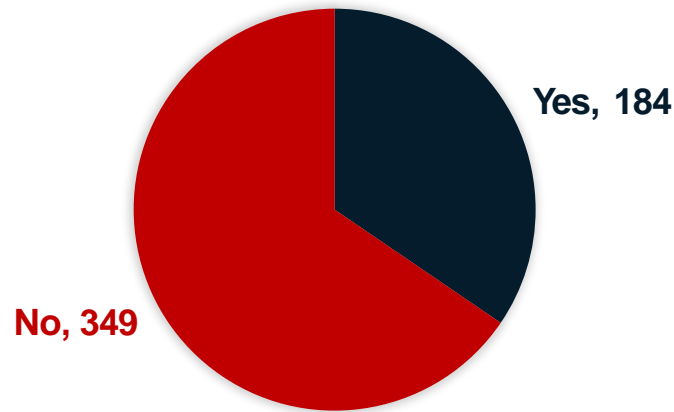
Source: *[CDC COVID Data Tracker > Vaccinations in the US](#), † [MCIR COVID-19 Vaccine Dashboard](#)

MI School Districts and Mask Policy as of Jan 3, 2023

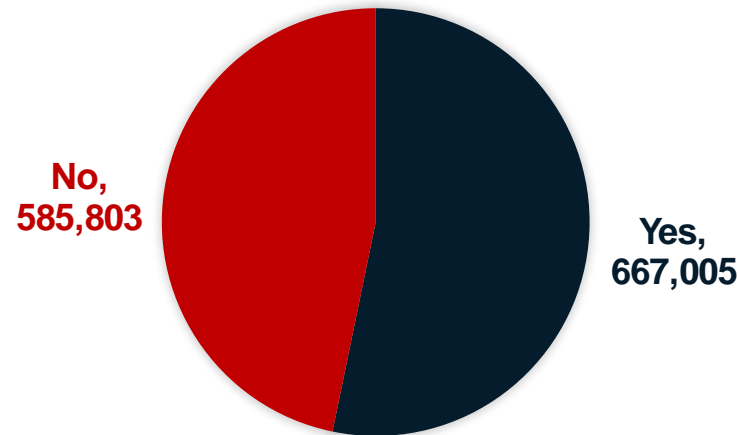
Yes – Any masking policy in some subset of school grades

No – No mask policies (includes unknown)

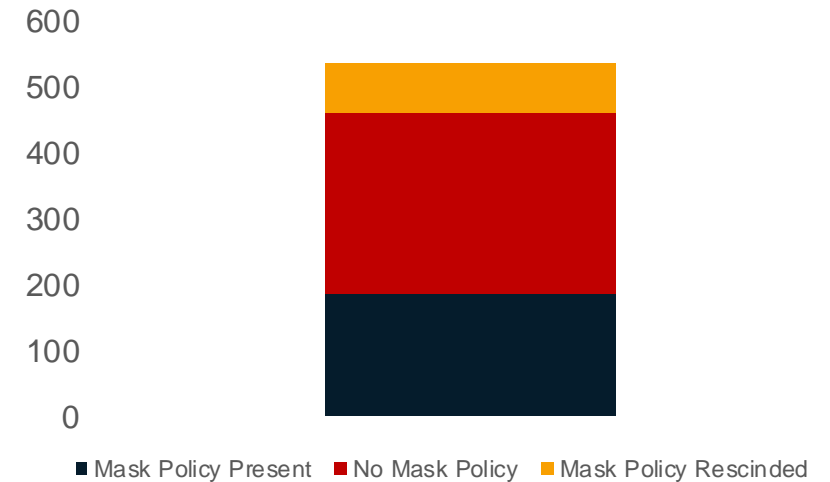
NUMBER OF SCHOOL DISTRICTS WITH MASK POLICIES IN K-12 SETTINGS



NUMBER OF STUDENTS* IN SCHOOL DISTRICTS WITH MASK POLICIES



NUMBER OF SCHOOL DISTRICTS WITH MASK POLICY REVERSAL



- 35% (184/533) of K-12 school districts have mandatory mask policies
- School districts with mandatory mask policies cover 53% (667,005/1,252,808) of K-12 students*
- Not all K-12 grades or students may be covered by mask policies; examples include policies for those through K-6, or only during higher levels of community transmission
- 14% 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



Key Messages: Science Round Up

Year End Review: Epidemic Summary

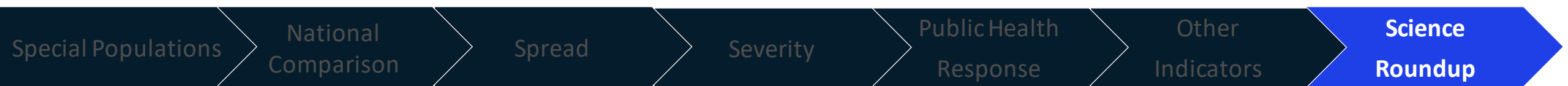
- Nearly 1 in every 10 Michiganders were reported with COVID-19 in 2021
- More than 1 in every 1,000 Michiganders died from COVID-19 in 2021

Year End Review: Public Health Response Summary

- Over 13.6 million COVID vaccines administered
- 6.2 million with at least one dose
- 4.6 million rapid antigen tests distributed
- \$275 million went to local health departments to support COVID-19 efforts

Michigan Mobility Update

- Average mobility and encounter density are both above pre-pandemic baseline levels and plateaued or increasing

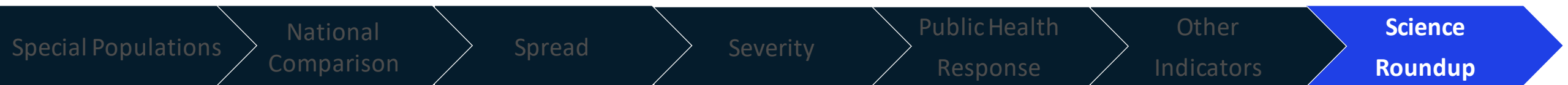


Year in Review – Pandemic in Numbers

Data 1/1/2021 through 12/20/2021

- *Nearly 1 in every 10 Michiganders were reported with COVID-19 in 2021*
 - *More than 1 (1.3) in every 10 people aged 30-39 reported COVID-19 infection in 2021*
 - *4.6 times more children 0-9 were reported infected with COVID-19 in 2021 compared to 2020, the highest relative increase of any age group*
 - *Enough cases in 2021 to fill the Big House 8 times*
- *Nearly 1 in every 100 Michiganders has been admitted to the hospital for COVID-19 in 2021*
 - *One hospital admission every 7 minutes for COVID-19*
- *More than 1 in every 1,000 Michiganders died from COVID-19 in 2021*
 - *4.7 times more children 0-19 died from COVID-19 in 2021 compared to 2020, the highest relative increase of any age group*
 - *More than 1 in every 100 Michiganders over 80 years old died from COVID-19 in 2021*

Source: Michigan Disease Surveillance System (MDSS); these number include confirmed and probable



Year in Review – Public Health Response in Numbers

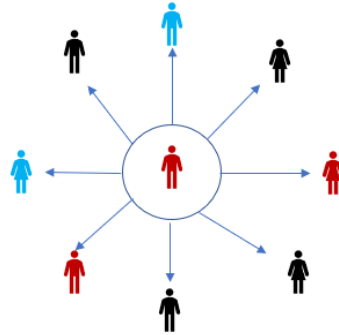
Case Investigation and Contact Tracing

Cases (Cumulative)

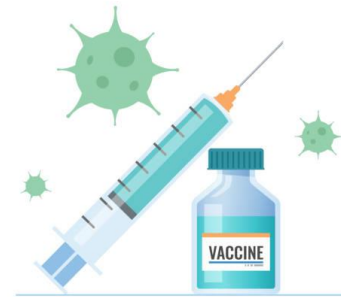
- 917,000 interview attempted
- 663,000 interview completed
- 243,000 cases with contacts elicited

Contacts

- 592,000 contacts
- 351,000 contacts successfully reached

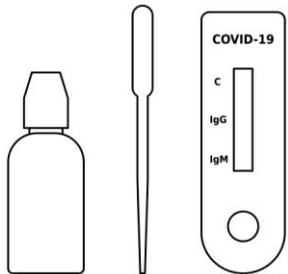


Vaccination



- Over 14.0 million COVID vaccines administered
- 6.2 million with at least one dose
- 5.6 million fully vaccinated
- Over 2.1 million booster doses administered
- 3,613 mobile vaccine events in 2021 with 30,351 vaccines administered

Testing



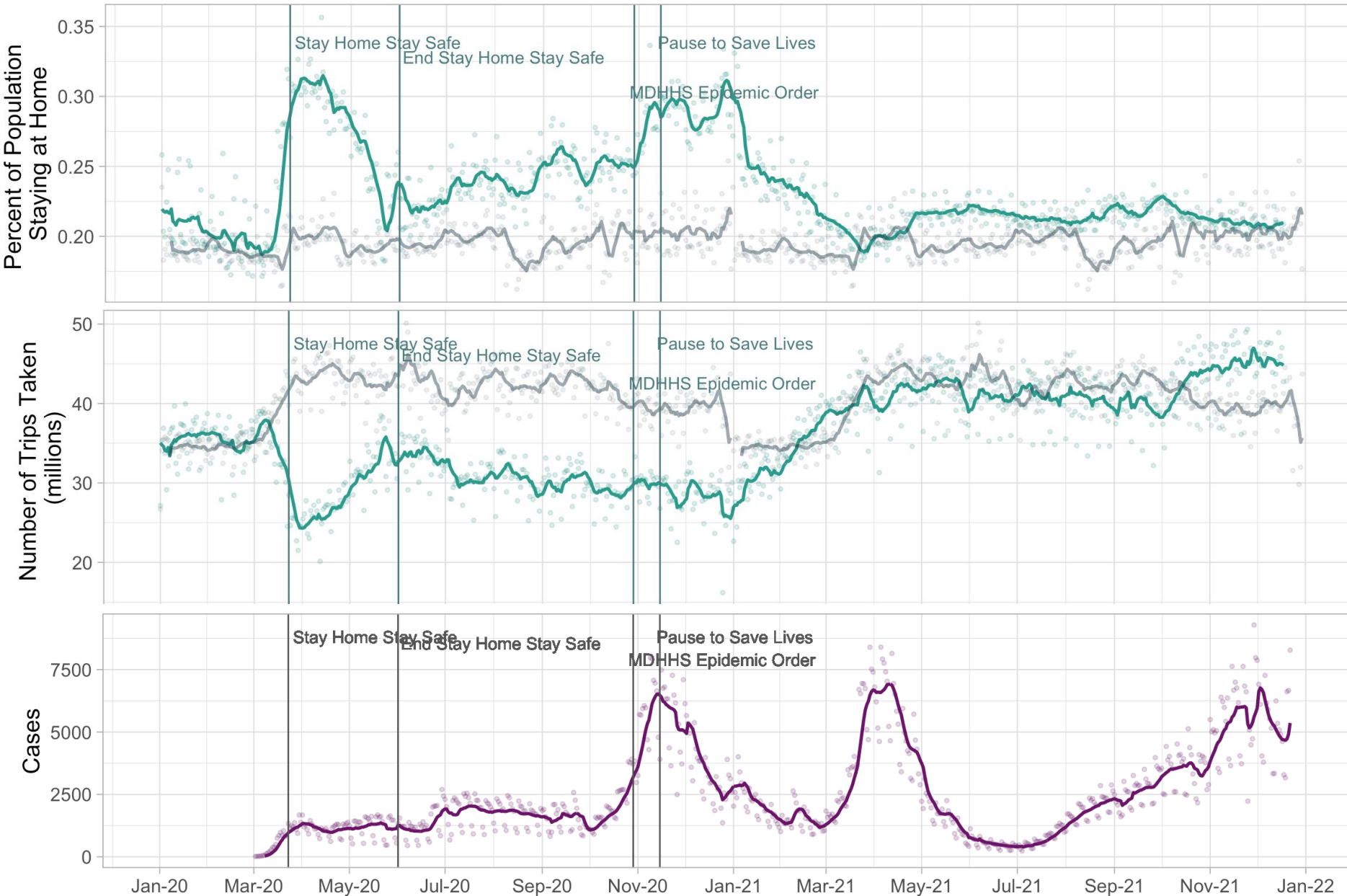
- 4.6 million rapid antigen tests distributed
 - 2.6 million to schools and for school-based and sports-based testing
 - 554K to Corrections
 - 913K to Long Term Care Facilities
- 5,731 testing events and 323K tests at points of entry, community, and neighborhood sites
- MI Backpack Over the Counter Test Project
 - 118 schools and 120,000 at home tests

Funding

Total of \$275 million went to local health departments to support COVID-19 efforts through fiscal year 2022.

Source: Michigan Disease Surveillance System (MDSS); these number include confirmed and probable

How many people are staying at home in Michigan?



- % Stay-at-home levels and number of trips taken/day are at or near 2019 levels
- Most recent data is 12/18/21 (data as of 12/27/21)

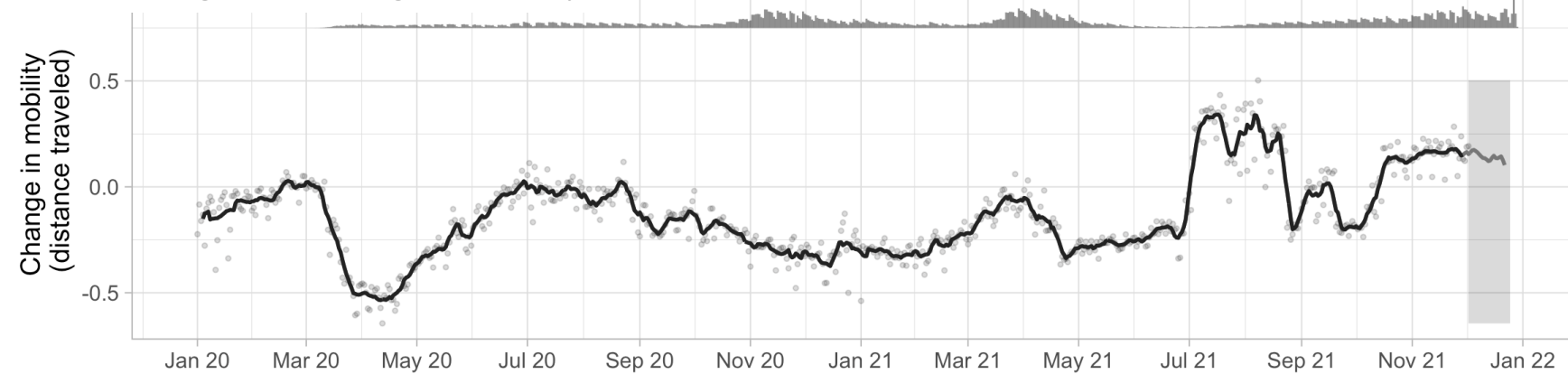
Data Source: [Bureau of Transportation Statistics](#)



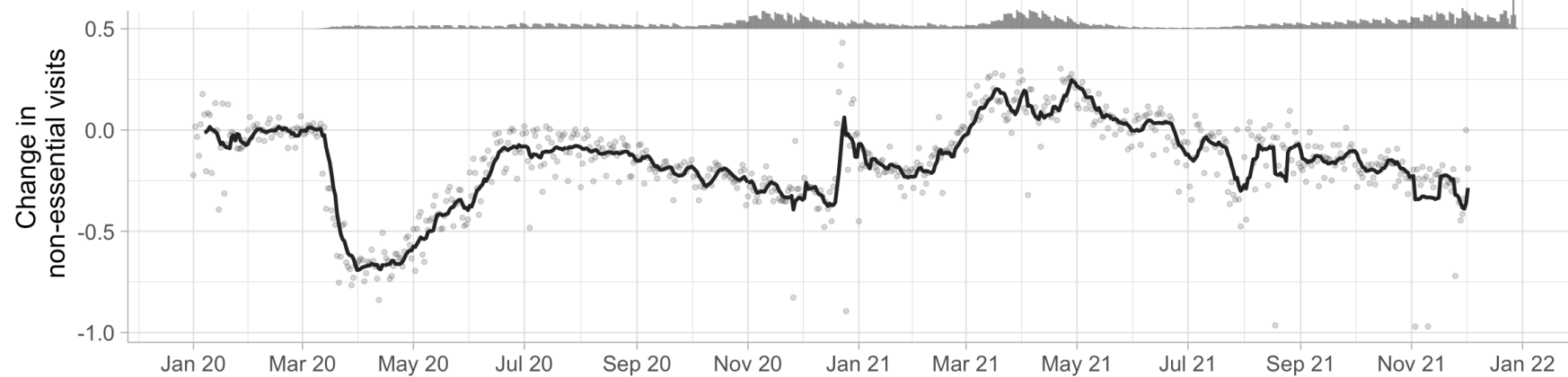
Unacast mobility patterns in MI

- Average mobility and encounter density are both above pre-pandemic baseline levels and plateaued or increasing
- Number of non-essential visits is decreasing
- Cases shown as bars at top of each chart
- Non-essential visit data is currently incomplete (only through November)

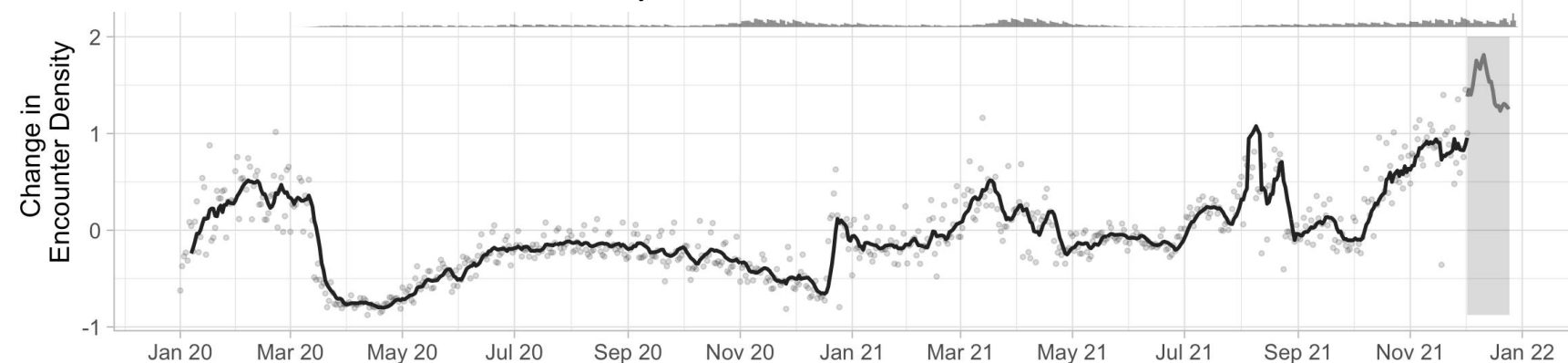
Change in average mobility



Change in non-essential visits



Difference in encounter density



Unacast social distancing data as of 12/29/21. Dots and solid black line show metrics and 7-day average data. Grey line and shaded region shows the 7-day average using more recent, less stable data (4-day lookback vs. 26-day lookback).