MI COVID response
Data and modeling update

December 28, 2021

Executive Summary

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

Percent positivity (21.1%) is increasing for 1 week (last week: 16.2%)

Case rate (468.5 cases/million) is decreasing for 24 days (477.3 cases/million prior week)

In the last 7 days, Michigan reported the 15th **most cases** (last week's rank: 5th highest) and the 26th highest **case rate** (last week: 12th highest)

Cases among pediatric populations < 12 years have decreased 21% since last week

Percent of inpatient beds occupied by individuals with COVID (18.4%) is decreasing for 1 week (last week 20.8 %)

In the last 7 days, Michigan reported the 4th highest inpatient bed utilization (last week: highest) and 7th highest adult ICU bed utilization (5th highest last week)

Daily pediatric hospital census have plateaued but remain near 2021 highs

Death rate (8.4 deaths/million) is decreasing for one week (9.5 last week). There were 585 COVID deaths between Dec 15-Dec 21

Michigan has the 8th most deaths (6th highest last week), and T17th highest death rate (T16th highest last week) in the last 7 days

7-day average **state testing rate** is 3751.7 tests/million/day. **Daily diagnostic tests (PCR)** is 36.2K per day, and the weekly average for PCR and antigen tests conducted in Michigan is 48.1K.

Over 13.8 million **COVID-19 vaccine** doses administered, 56.6% of the population is fully vaccinated (5.6 million people)

172,749 initial dose administrations in 5- to 11-year-olds as of 12/27

Year in Numbers

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

Public Health responded with over 13.6 million COVID vaccines administrated, 4.6 million rapid antigen tests distributed, and $275 million allocated to local health departments to support COVID-19 efforts
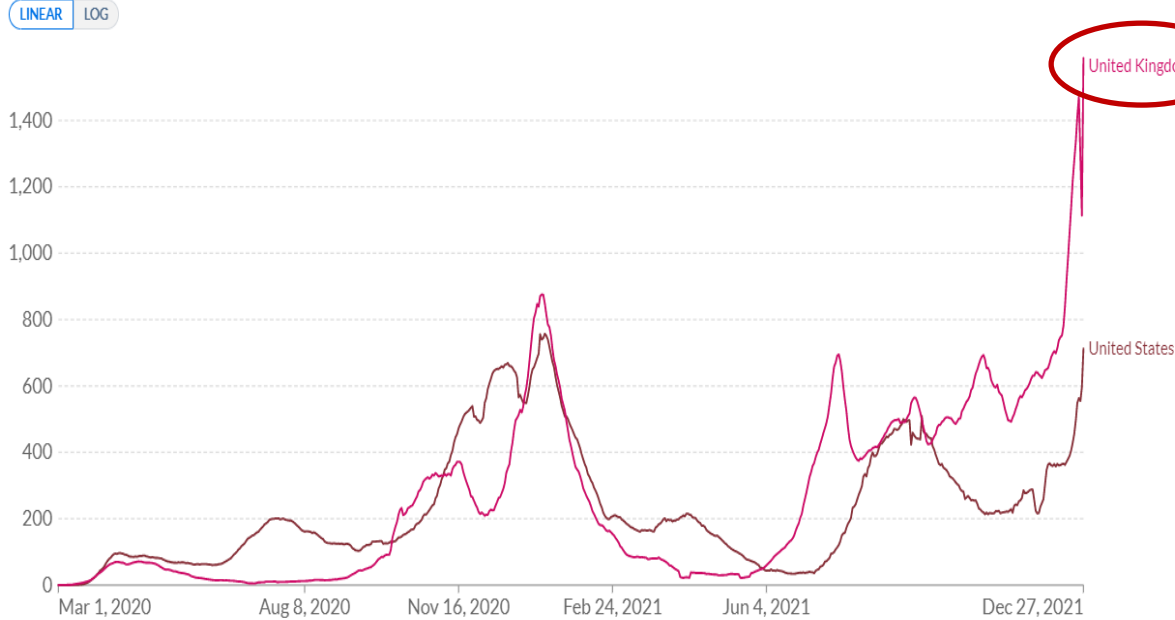
Global, National and Michigan Trends

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.
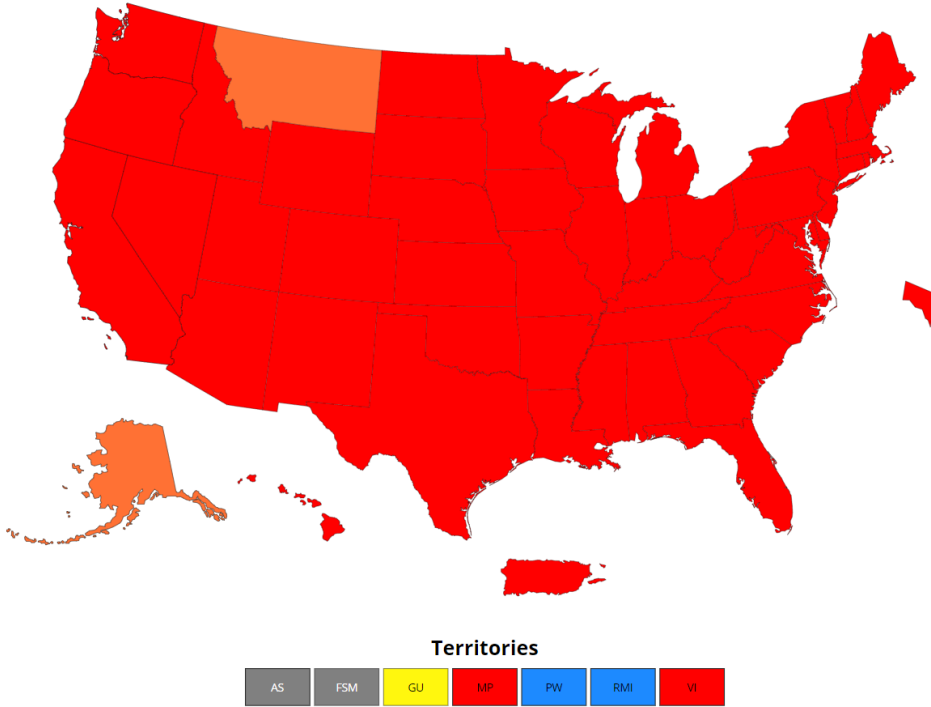
LINEAR | LOG

United Kingdom

United States

Source: Johns Hopkins University CSSE COVID-19 Data

CC BY

Level of Community Transmission of COVID-19, by State/Territory

Territories

AS | FSM | GU | MP | PW | RMI | VI

Globally, 281,548,693 cases and 5,409,588 deaths (Data* through 12/27)

- Globally, the highest number of cases ever reported on a single day yesterday (1.45 million); & cases in many countries are increasing rapidly with Omicron variant

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

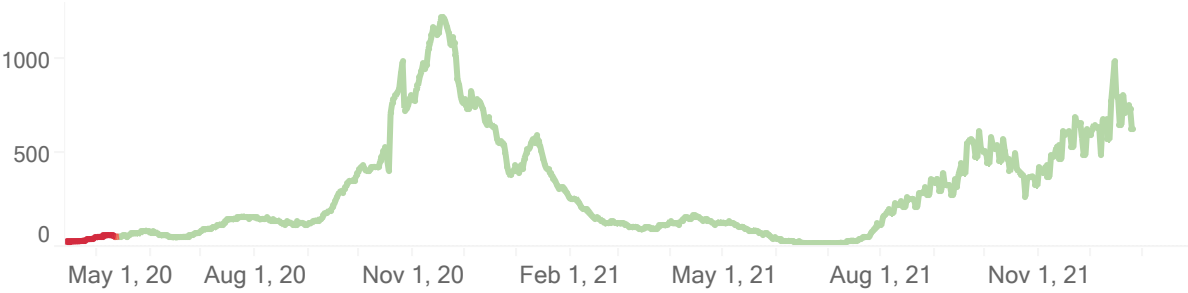- The U.S. is at High transmission level (435.6 cases/100,000 in last 7 days)

Midwest states maintain High transmission levels† and are increasing

- Ohio and Illinois have the highest case rates _in Midwest;_ Michigan is 4th highest in the Midwest; New York City and New York State have highest case rates in U.S.
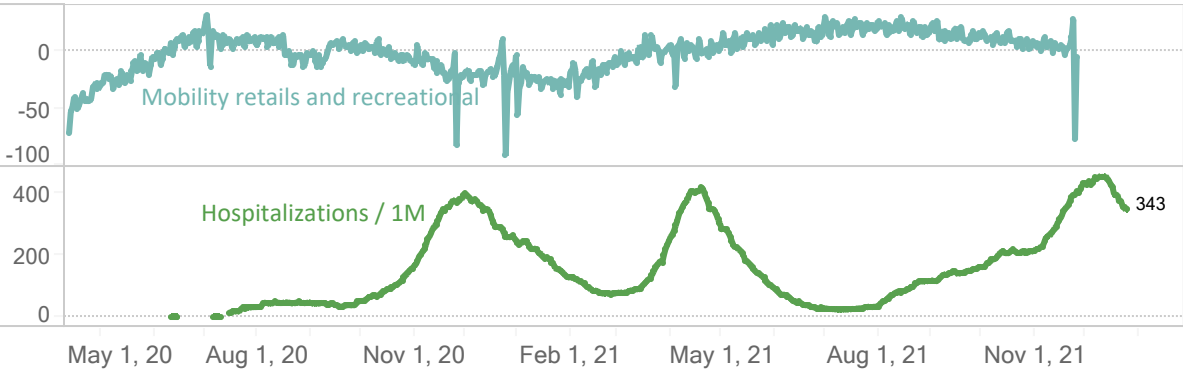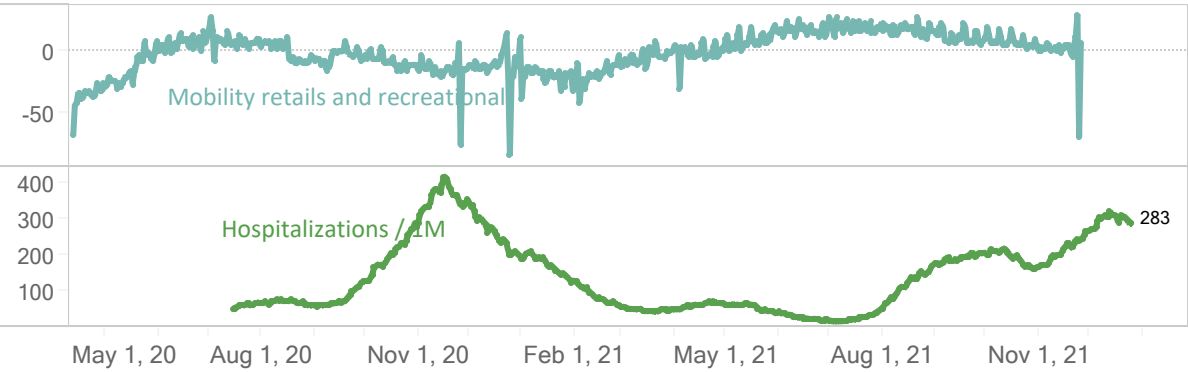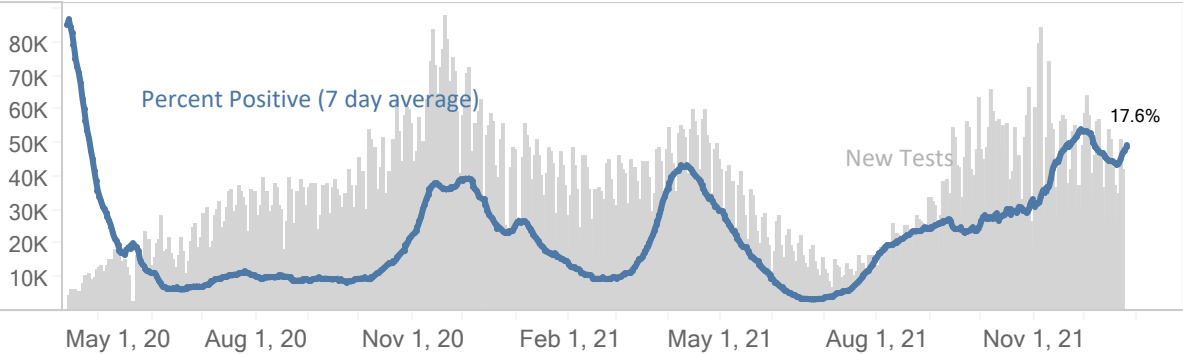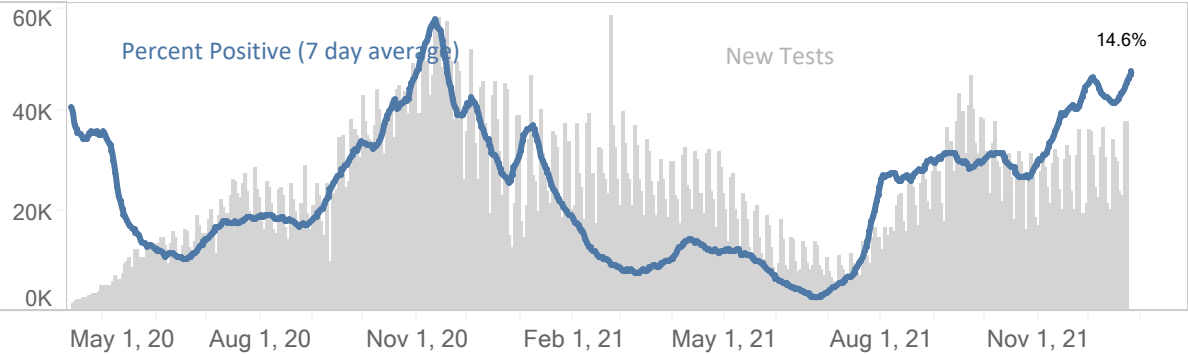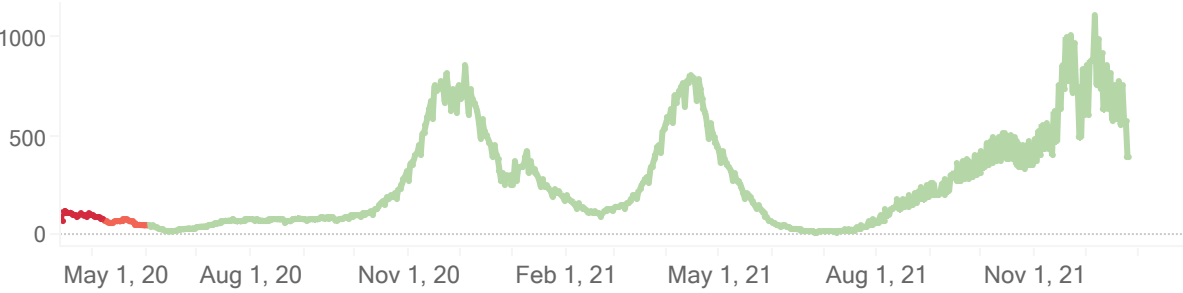
Source: * Johns Hopkins Coronavirus Resource Center; ¶ CDC COVID Data Tracker Weekly Review; † CDC COVID Data Tracker – CDC recently updated their methodology for reporting case rates

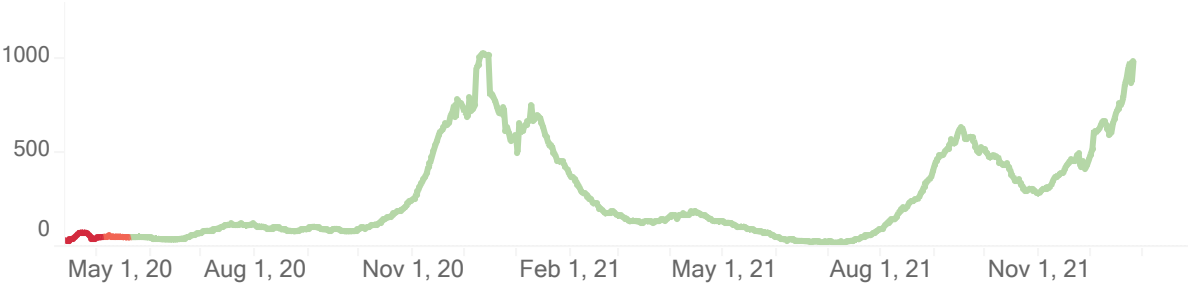# State Comparisons: Wisconsin and Michigan

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

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

Percent Positive (7 day average) — New Tests — 14.6%

Percent Positive (7 day average) — New Tests — 17.6%

Mobility retails and recreational

Hospitalizations / 1M — 283

Hospitalizations / 1M — 343

State Comparisons: Ohio and Indiana

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

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

Percent Positive (7 day average)   New Tests   19.9%

Percent Positive (7 day average)   New Tests   16.7%

Mobility retails and recreational

Mobility retails and recreational

Hospitalizations / 1M   399

Hospitalizations / 1M   400
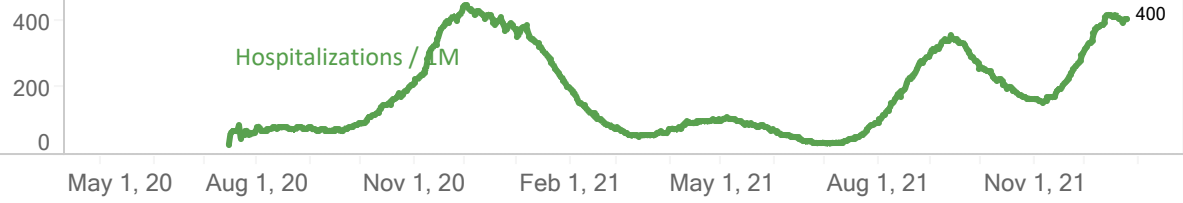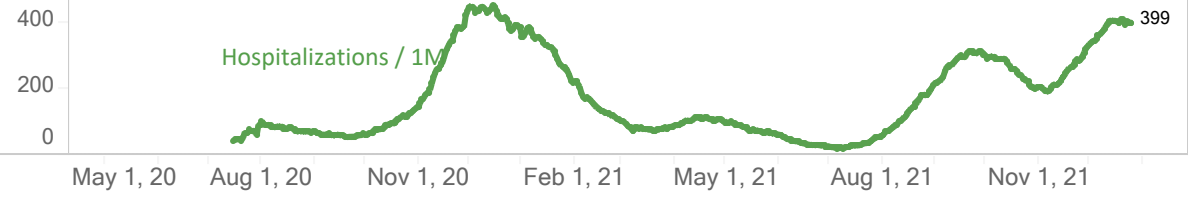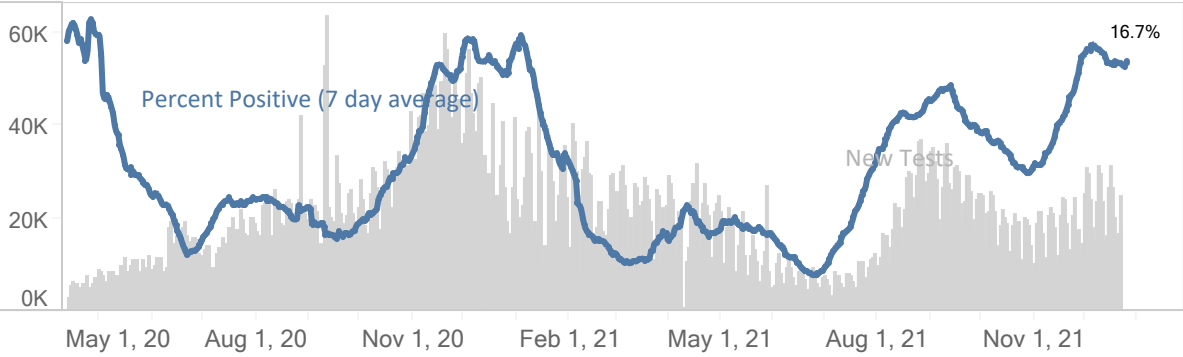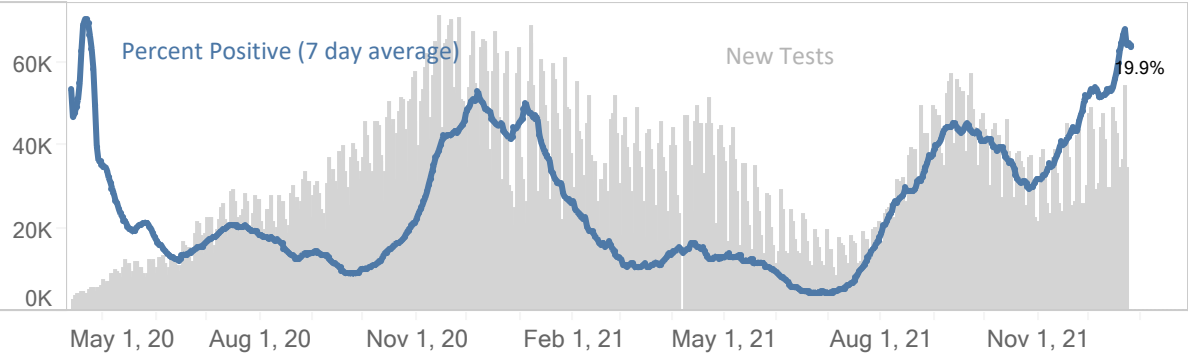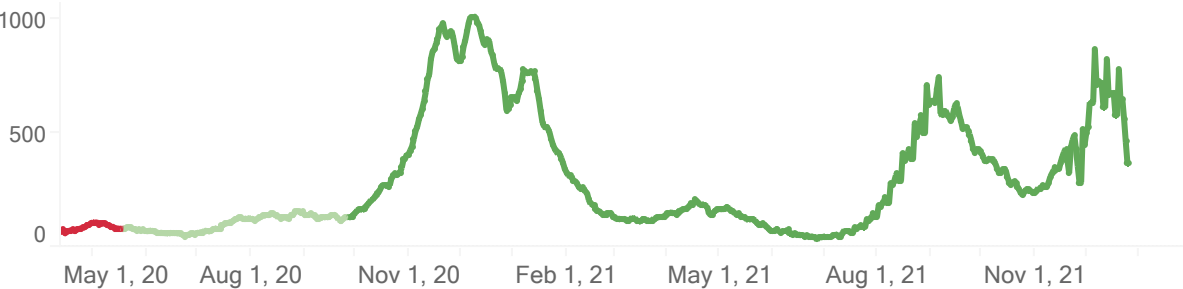
State Comparisons: Illinois and Minnesota

Illinois Confirmed New Cases / 1M (7 days average)
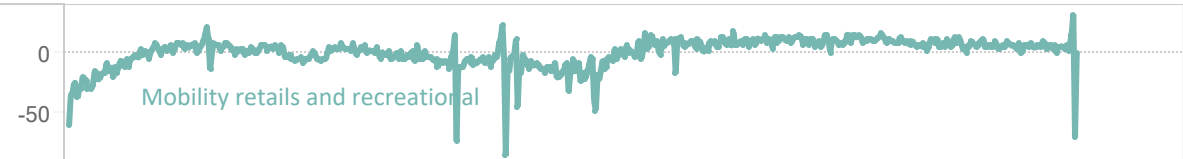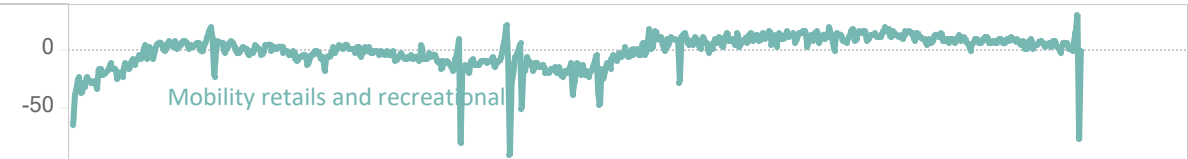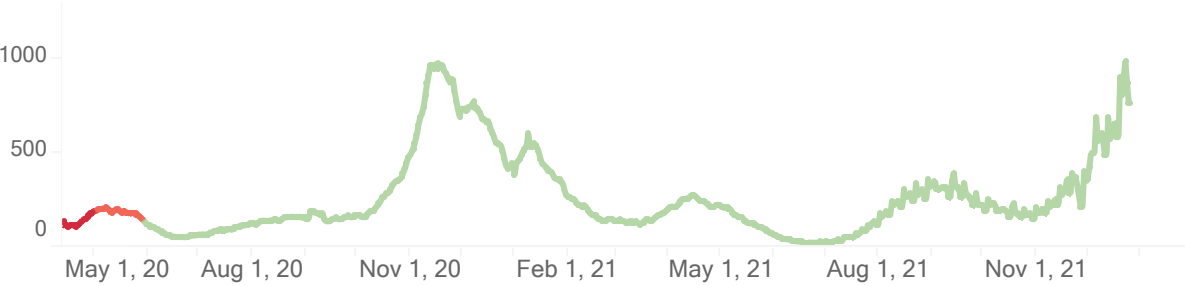
Minnesota Confirmed New Cases / 1M (7 days average)
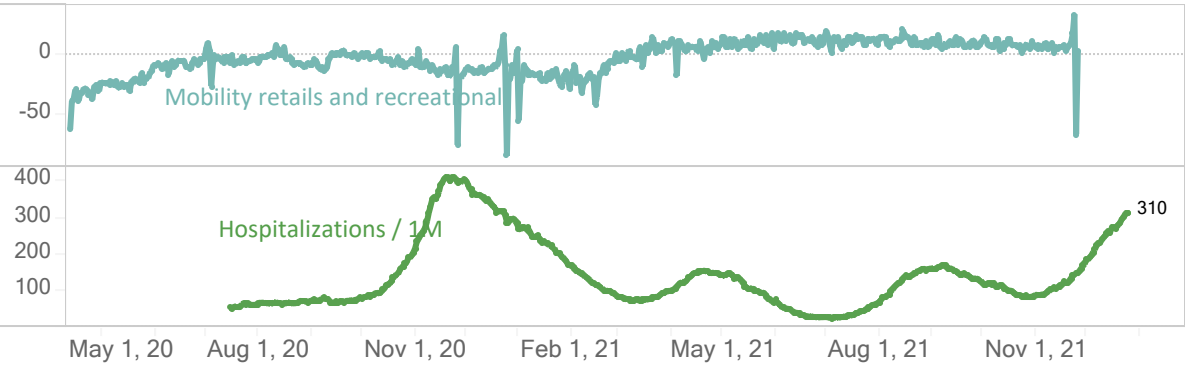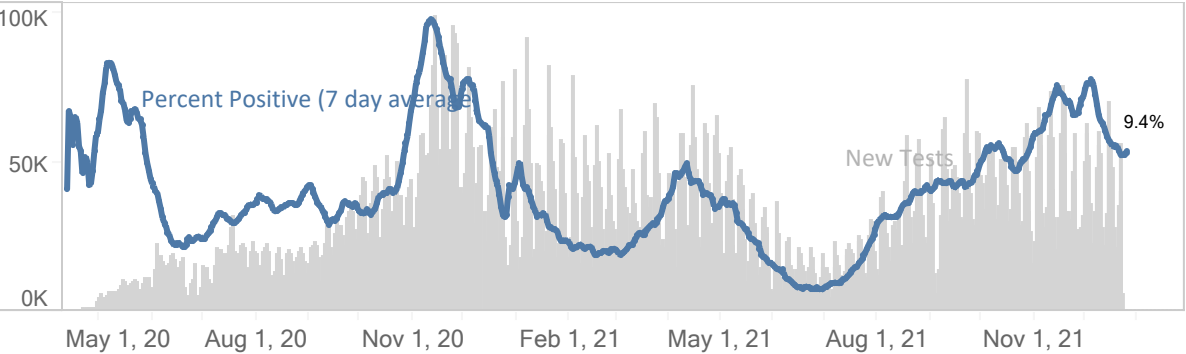
Percent Positive (7 day average) New Tests 12.7%

Percent Positive (7 day average) New Tests 9.4%

Mobility retails and recreational

Mobility retails and recreational

Hospitalizations / 1M 310

Hospitalizations / 1M 248
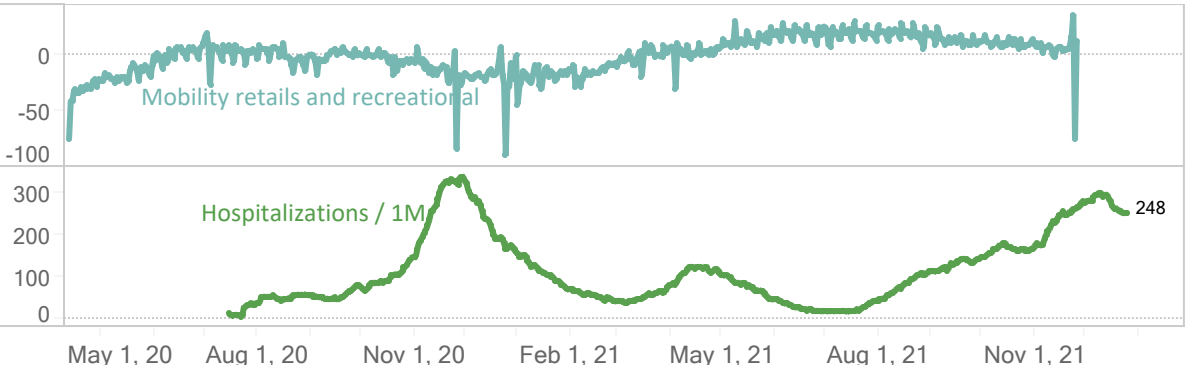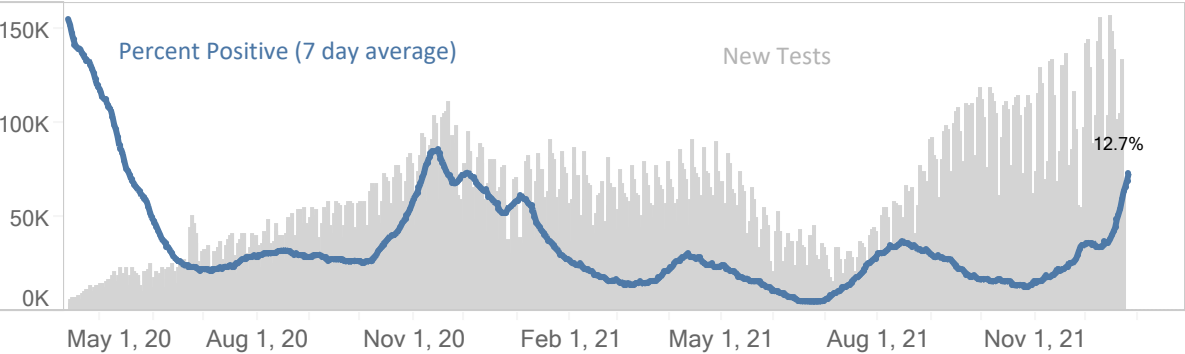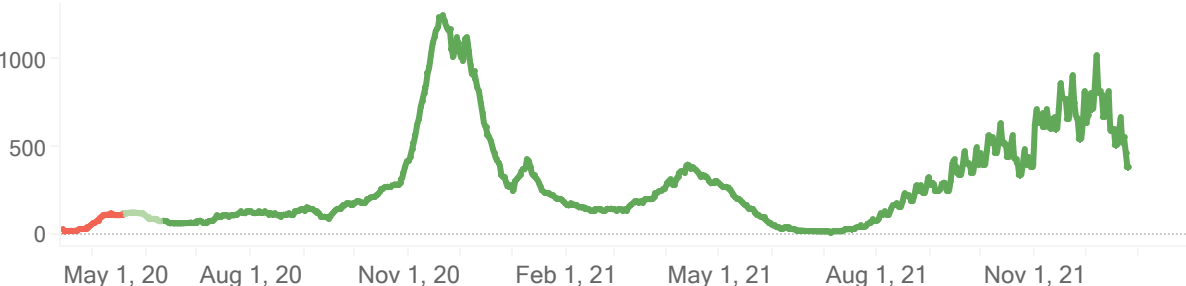
Key Messages: COVID-19 Transmission Metrics Are Mixed This Week

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 indoors

Statewide positivity is 21.1% (last week: 16.2%)

- The trend is increasing for 1 week

Case rate is 468.5 cases/million (last week: 477.3 cases/million):

- The trend is decreasing for 24 days but is expected to increase after holidays with Omicron
- Cases per million are increasing for some age groups

Cases and outbreaks saw decreases in school and 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; risk of infection and death is lower for those who receive a booster dose

Special Populations | National Comparison | **Spread** | Severity | Public Health Response | Other Indicators | Science Roundup
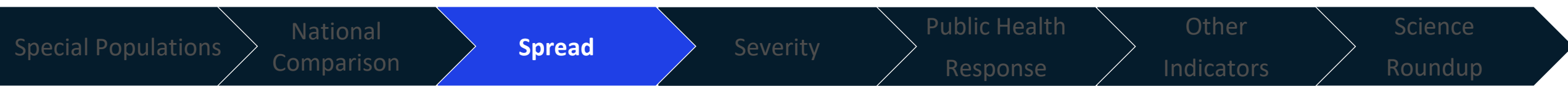
Michigan continuing to experience high daily case count during the pandemic

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

Weekly cases per 100,000
MICHIGAN STATEWIDE
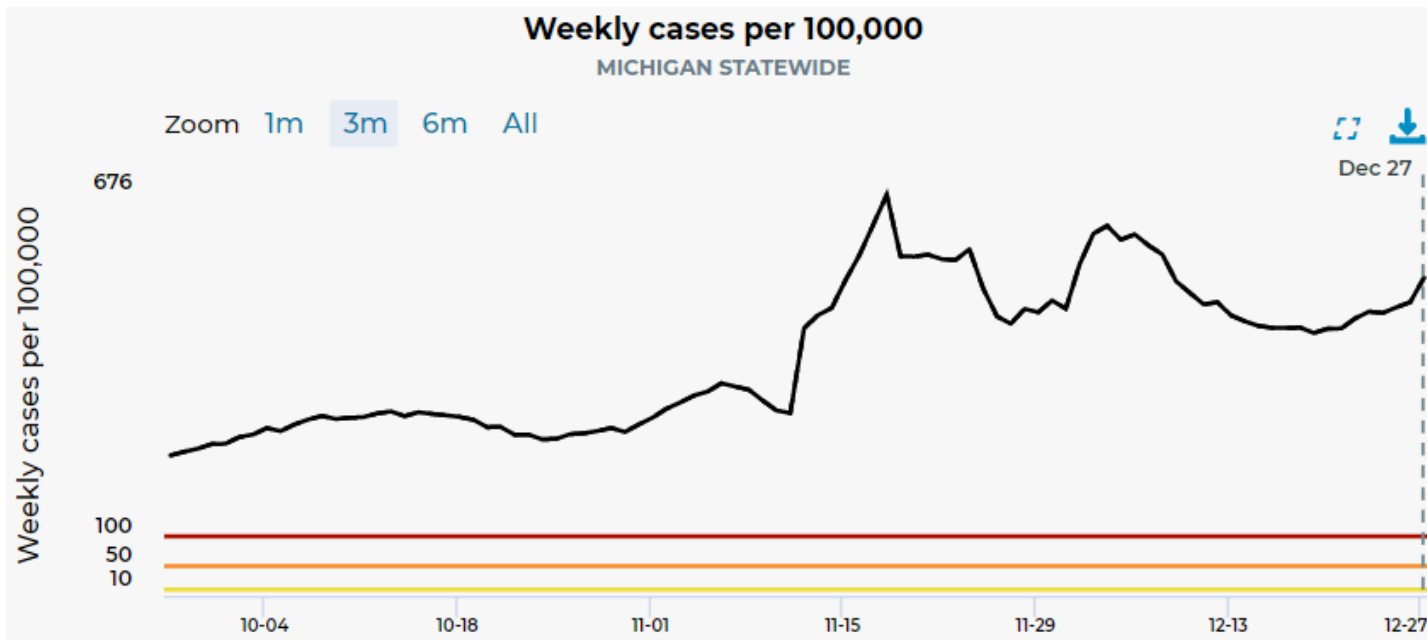
- All counties at High Transmission level
- Referrals sharply rose over Christmas holiday weekend

Confirmed and probable case indicators
Table Date: 12/27/2021 (7 days from date table was produced: 12/20/2021)

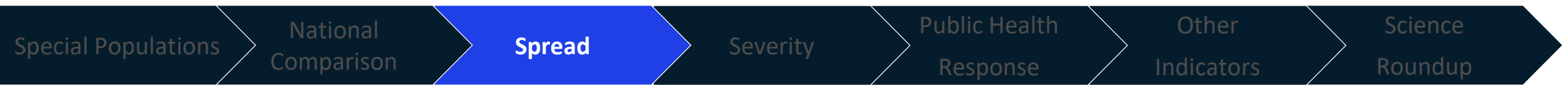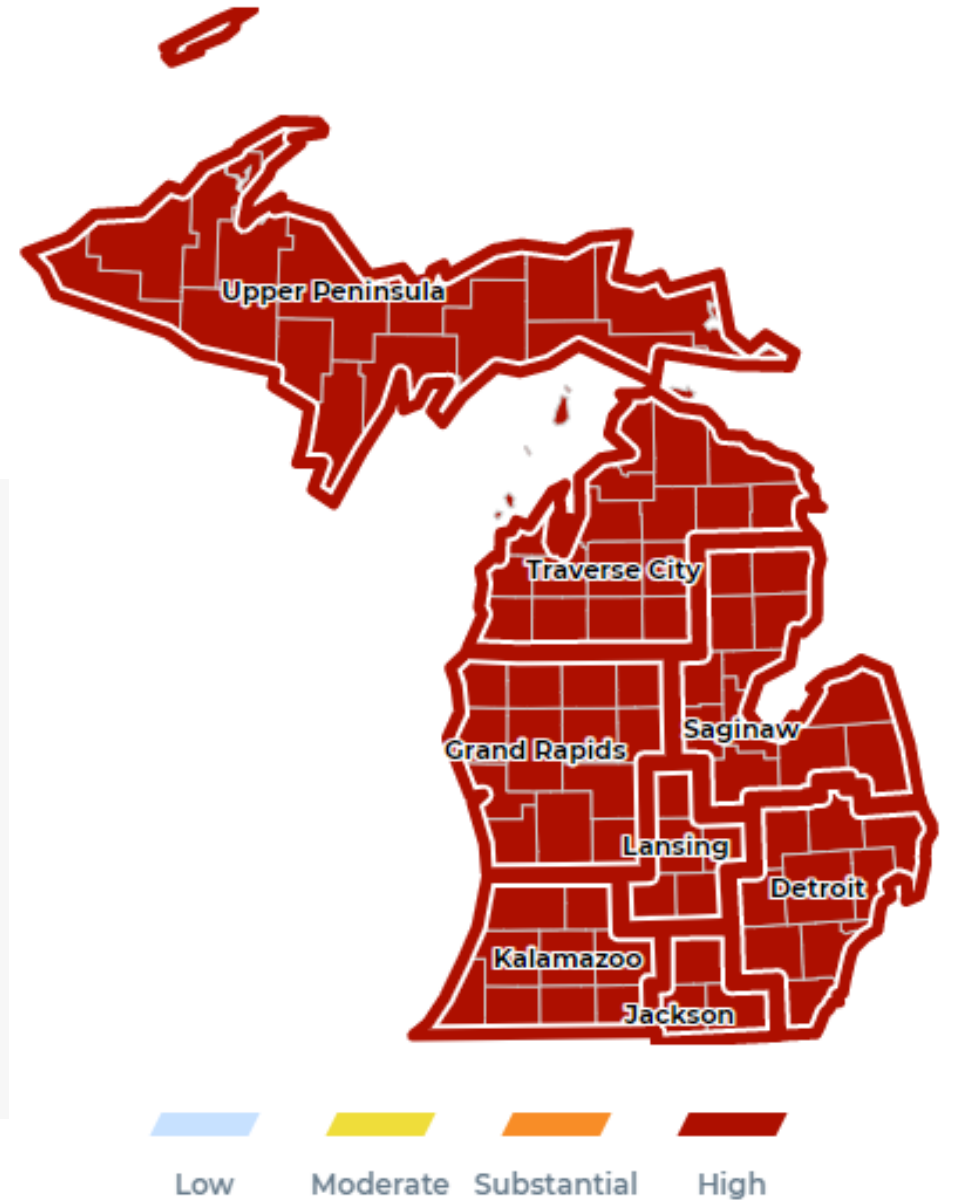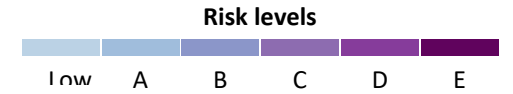|	CDC Transmission Risk Level	Absolute Cases (per million)	CDC Case Trend	Average Percent Positivity	Positivity Trend	Tests (per million)	% IP Beds Occupied by COVID-19 Cases	% Occupied IP Beds Trend	Absolute Deaths (per million)	Death Trend
Detroit	High	570.9	elevated incidence growth	22.6	Increase - 1wk	4619.2	18.4	Decrease - 1wk	7.7	Decrease - 1wk
Grand Rapids	High	334.4	decline [32 days]	19.7	Decrease - 3wk	2777.3	20.3	Decrease - 1wk	7.6	Decrease - 2wk
Kalamazoo	High	403.0	decline [24 days]	20.1	Decrease - 3wk	2670.3	21.4	Decrease - 2wk	9.3	Decrease - 1wk
Saginaw	High	367.4	decline [25 days]	16.4	Decrease - 3wk	2446.1	14.4	Decrease - 2wk	10.3	Increase - 1wk
Lansing	High	413.1	decline [33 days]	17.7	Decrease - 3wk	3002.3	20.7	Decrease - 2wk	9.7	Decrease - 1wk
Traverse City	High	304.1	decline [33 days]	13.7	Decrease - 3wk	1844.4	15.6	Decrease - 2wk	12.0	Decrease - 2wk
Jackson	High	297.3	decline [36 days]	15.9	Decrease - 5wk	2740.1	24.2	Decrease - 1wk	11.3	Increase - 1wk
Upper Peninsula	High	294.4	decline [31 days]	13.8	Decrease - 3wk	1986.3	9.8	Decrease - 2wk	7.1	<20 wkly deaths
Michigan	High	468.5	decline [24 days]	21.1	Increase - 1wk	3751.7	18.4	Decrease - 1wk	8.4	Decrease - 1wk

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

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

Special Populations | National Comparison | **Spread** | Severity | Public Health Response | Other Indicators | Science Roundup
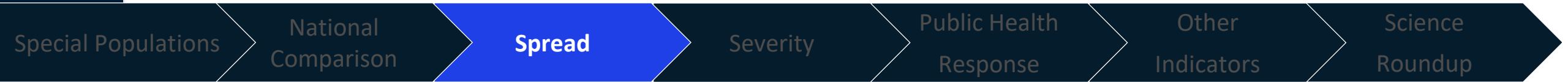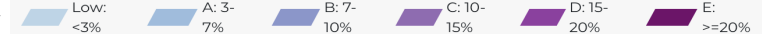
Time Trends – Positivity, Case Rates, Hospitalizations, Deaths

➤ Early COVID-19 indicators are starting to increase again, and burden remains high in MI

Daily Positive Test Rate
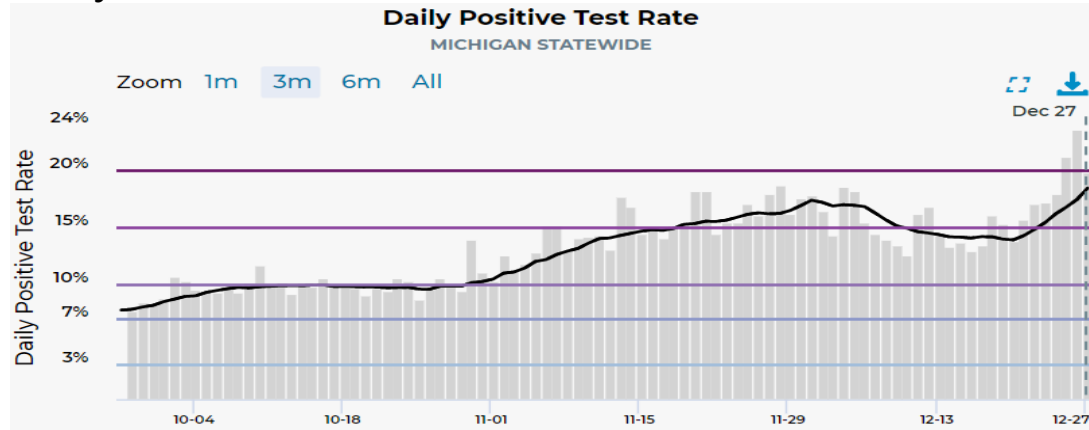
Daily Inpatient Beds Occupied by COVID patients
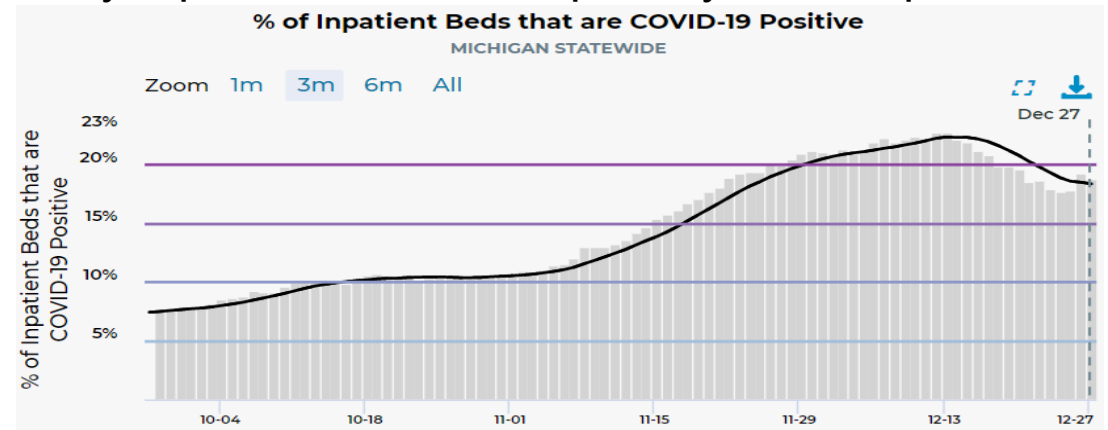
Daily Case Rate
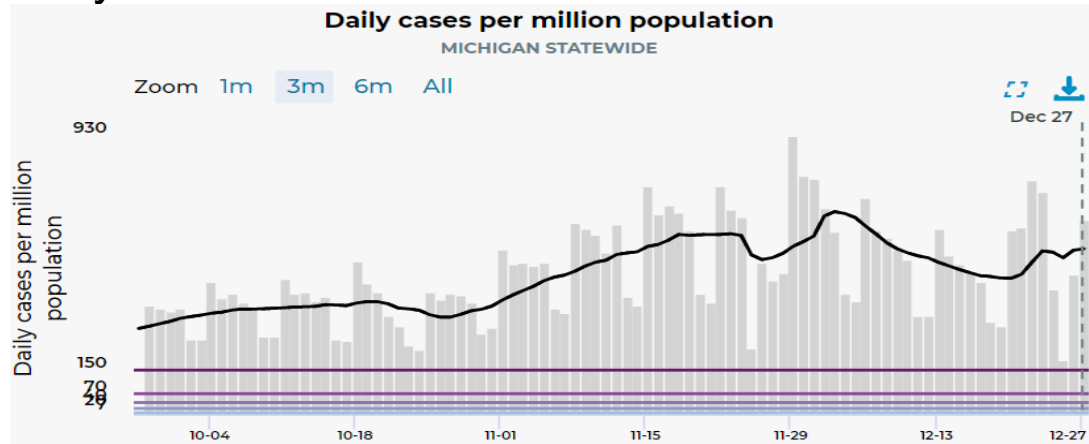
Daily Deaths

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

Special Populations | National Comparison | **Spread** | Severity | Public Health Response | Other Indicators | Science Roundup
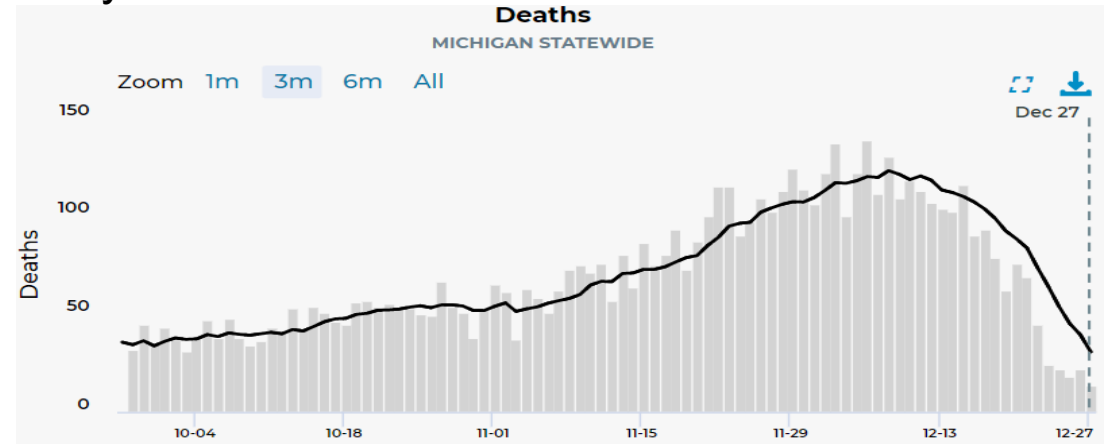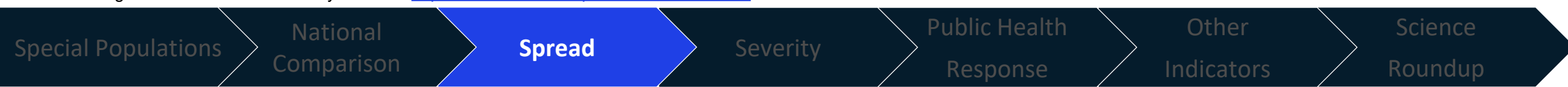
Time Trends – Annual Comparison

- Case rates are higher than this time last year (by onset date)
- Declines following Christmas are expected, but increases likely after holidays with spread of the Omicron variant

7- day rolling average of Rates 2020 vs 2021
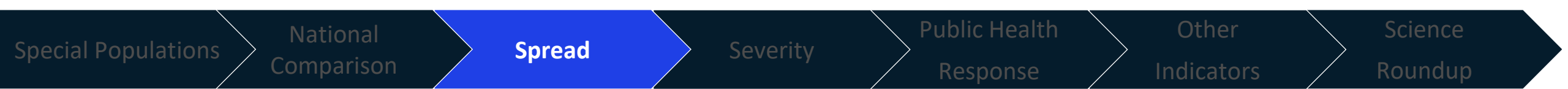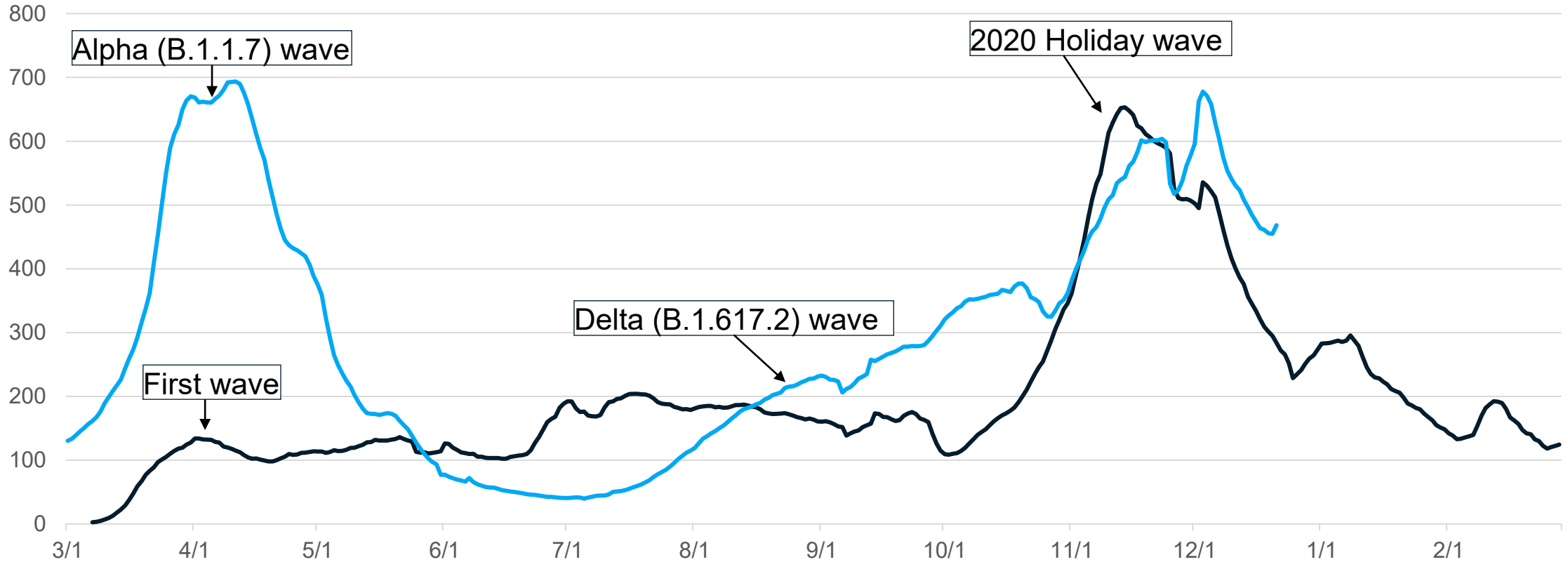
Case Rate Trends by Age Group

Daily new confirmed and probable cases per million by age group (7-day rolling average)
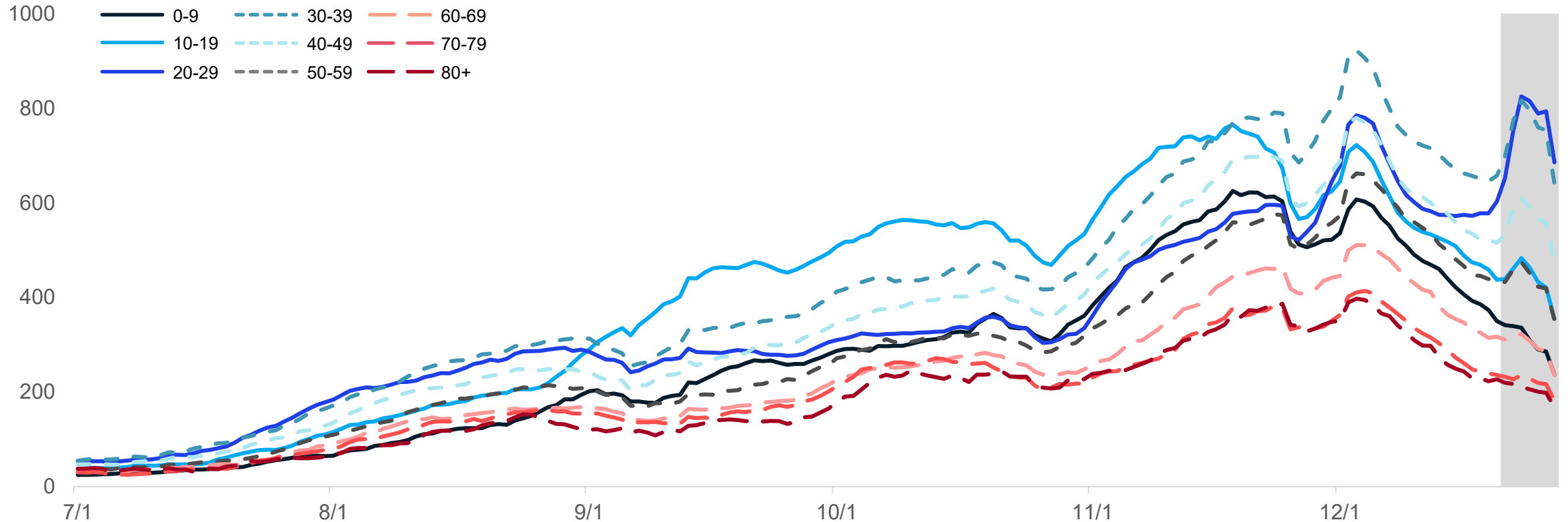
- Case rate trends for most age groups saw decreases over the past week but data for the lag period is showing increases

- Case rates by onset date for all age groups are between 225 and 660 cases per million (through 12/20)

- Case counts and case rates are highest for 30-39-year-olds this week

Note: Case information sourced from MDHHS and reflects date of onset of symptoms
Source: MDHHS – Michigan Disease Surveillance System
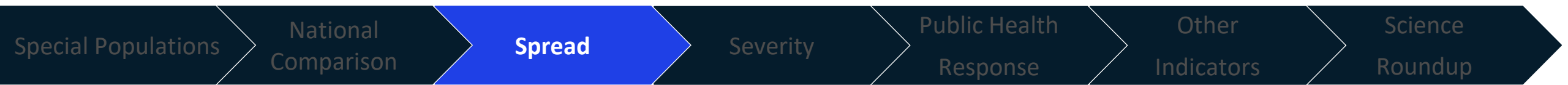
Number of Cases and Case Rates by Age Group, data as of Dec 27

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	403.7	350.2	-24% (-127)
10-19	549.1	437.6	-17% (-110)
20-29	**831.1**	**602.5**	+5% (+38)
30-39	**797.0**	**657.0**	-6% (-55)
40-49	608.0	**515.5**	-12% (-83)
50-59	586.4	434.3	-15% (-106)
60-69	404.6	317.1	-17% (-82)
70-79	181.0	236.0	-22% (-51)
80+	94.1	227.3	-17% (-19)
Total¶	**4,465.6**	**468.5**	**-12% (-598)**

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

- **Trend numbers and comparisons are being impacted by longer backfill times – the data in this table are comparing the two time points from the most recent data file**

- Average daily number of cases (831.1) are highest among those aged 20-29; and average daily case rate (657.0 case/mil) are highest for those aged 30-39

- Case rates changes for most age groups have decreased between the weeks of Dec 13 and Dec 20. However, there are early indicators of increasing after December 20 for several age groups.
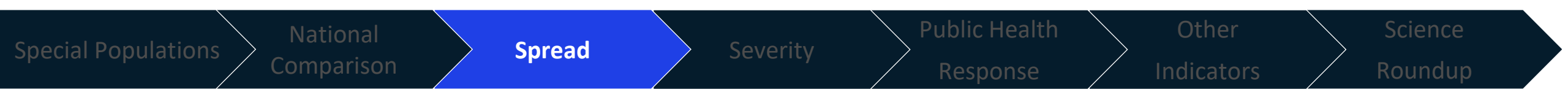
Case Rates by Reported Racial and Ethnic Group

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

Legend:
- American Indian/Alaska Native
- Black/African American
- Asian/Pacific Islander
- White

Race	Case Rate
American Indian/Alaskan Native	346.0
Asian/Pacific Islander	177.0
Black/African American	446.8
White	264.6
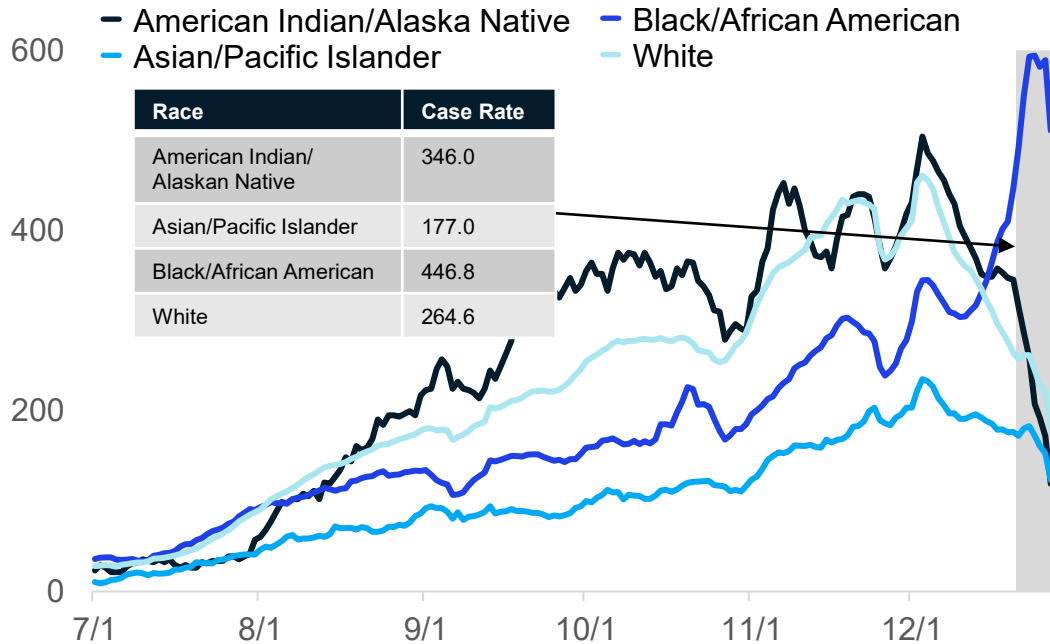
Daily new confirmed and probable cases per million (7 day rolling average) by ethnicity category

Legend:
- Hispanic or Latino
- Not Hispanic or Latino

Race	Case Rate
Hispanic/Latino	287.8
Non-Hispanic	272.2
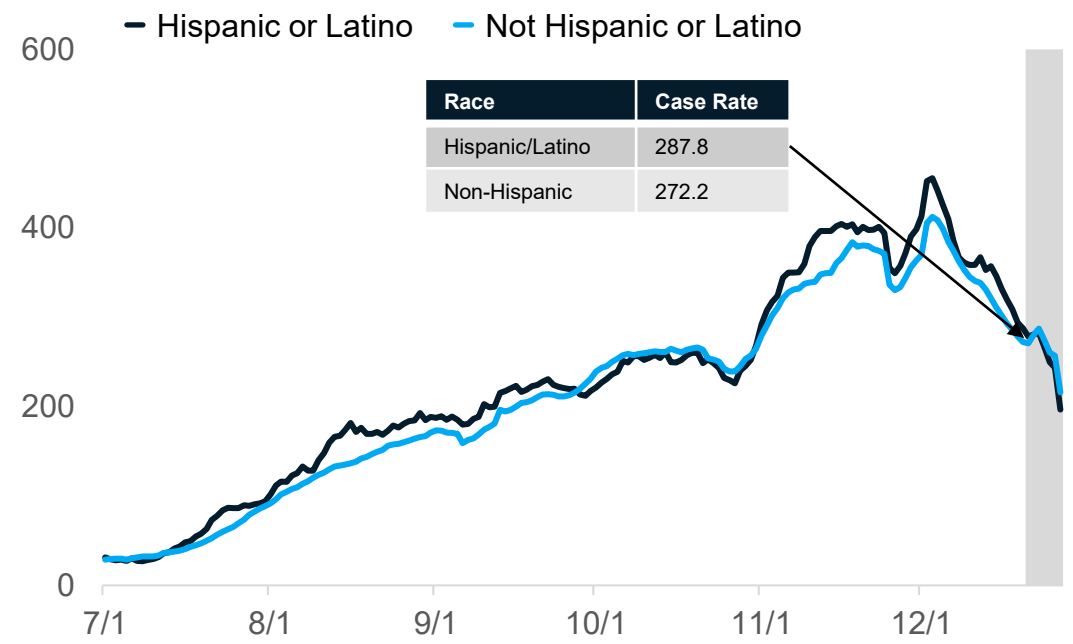
Updates since last week:

- Cases per million are decreasing for most reported racial and ethnic groups but case rates for Blacks/African Americans have increased

- The high number of cases with missing race/ethnicity data, and those multiracial or other are also impacting the case rates shown here

- In the past 30 days, 29% (↔) of race data and 39% (↔) 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
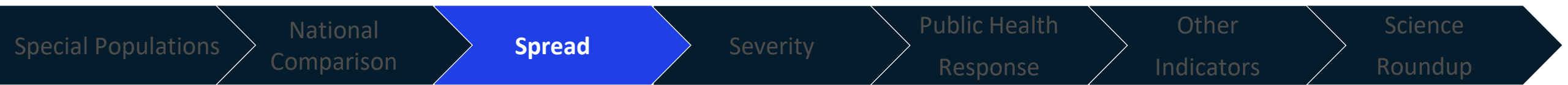
Identified COVID-19 Cases Caused by Variants of Concern (VOC) in US and Michigan

SARS-CoV-2 Variants Circulating in the United States, Dec 19 – Dec 25 (NOWCAST) **

USA

WHO label	Lineage #	US Class	%Total	95%PI
Delta	B.1.617.2	VOC	77.0%	68.1-84.2%
Omicron	B.1.1.529	VOC	22.5%	15.4-31.5%
Other	Other*		0.5%	0.3-0.7%

*   Enumerated lineages are US VOC and lineages circulating above 1% nationally in at least one week period. "Other" represents the aggregation of lineages which are circulating <1% nationally during all weeks displayed.
**   These data include Nowcast estimates, which are modeled projections that may differ from weighted estimates generated at later dates
#   AY.1-AY.127 and their sublineages are aggregated with B.1.617.2. BA.1, BA.2 and BA.3 are aggregated with B.1.1.529.

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

Data last updated Dec 27, 2021
Source: MDSS

Variants of Concern in Michigan, Dec 27

Confirmed Delta reported
Confirmed Both VOCs (Delta and Omicron) reported

12 Omicron cases in Wayne County attributed to Detroit City

- 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)	28,697	83	>99%
B.1.1.529 (omicron)	54	9	<1%

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	70065	325.3	442.3	33.1	29.2	0	0.03
Grand Rapids	230120	350652	24531	51.4	223.4	11.6	33.1	0	0.00
Kalamazoo	140422	214801	12838	41.3	294.1	2.7	12.6	0	0.00
Saginaw	78759	122834	8113	28.7	364.4	1.0	8.1	0	0.00
Lansing	78140	119915	8329	27.0	345.5	2.6	21.7	0	0.00
Traverse City	53099	83462	4442	12.7	239.2	0.1	1.2	0	0.00
Jackson	41274	64091	4089	8.1	196.2	0.0	0.0	0	0.00
Upper Peninsula	34645	53875	4165	13.9	401.2	0.0	0.0	0	0.00
Michigan	1391988	2143877	136704	509.0	365.7	51.1	23.8	0	0.03

- Each day, 509 children under age 12 become infected with COVID-19, 133 fewer than last week
- Pediatric case rates increased to 365.7 cases/million (last week: 461.4 cases/million)
- Pediatric (<18) hospital census* is averaging approximately 51.1 per day (last week: 48 per day)

Note: Data as of 12/20; case data 12/13, hospitalization data 1/20. Hospitalization data is for pediatric patients (<18); * includes only confirmed COVID-19

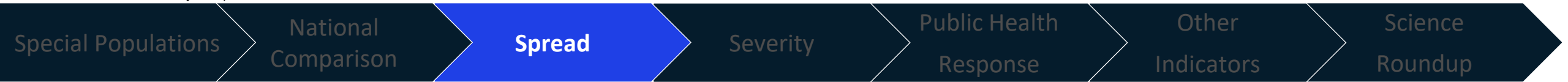# K-12 school clusters and outbreaks, recent and ongoing, week ending Dec 22

Number of reported outbreaks/clusters decreased since last week (442 to 412), with decreases in Pre K-Elementary (252 to 221), and High Schools (110 to 110). Middle/Jr High (80 to 81), and Administration (0 to 0) were about the same.

Region	Number of reported cases, #	Number of outbreaks	Range of cases per outbreak
Region 1	1,419 / 24	84	2-82
Region 2n	392 / 49	34	3-53
Region 2s	327 / 91	45	3-44
Region 3	3,332 / 32	138	3-99
Region 5	97 / 6	20	3-17
Region 6	335 / 11	50	2-54
Region 7	178 / 3	12	3-51
Region 8	558 / 3	29	3-52
Total	6,638 / 219	**412**	**2-99**

Legend: ■ # Ongoing - Excluding New ■ # New

Grade level	Number of reported cases, #	Number of outbreaks	Range of cases per outbreak
Pre-school - elem.	2,693 / 122	221	2-62
Jr. high/middle school	1,454 / 46	81	2-82
High school	2,491 / 51	110	2-99
Administrative	0 / 0	0	4
Total	6,638 / 219	**412**	**2-99**

Legend: ■ # Ongoing - Excluding New ■ # New

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
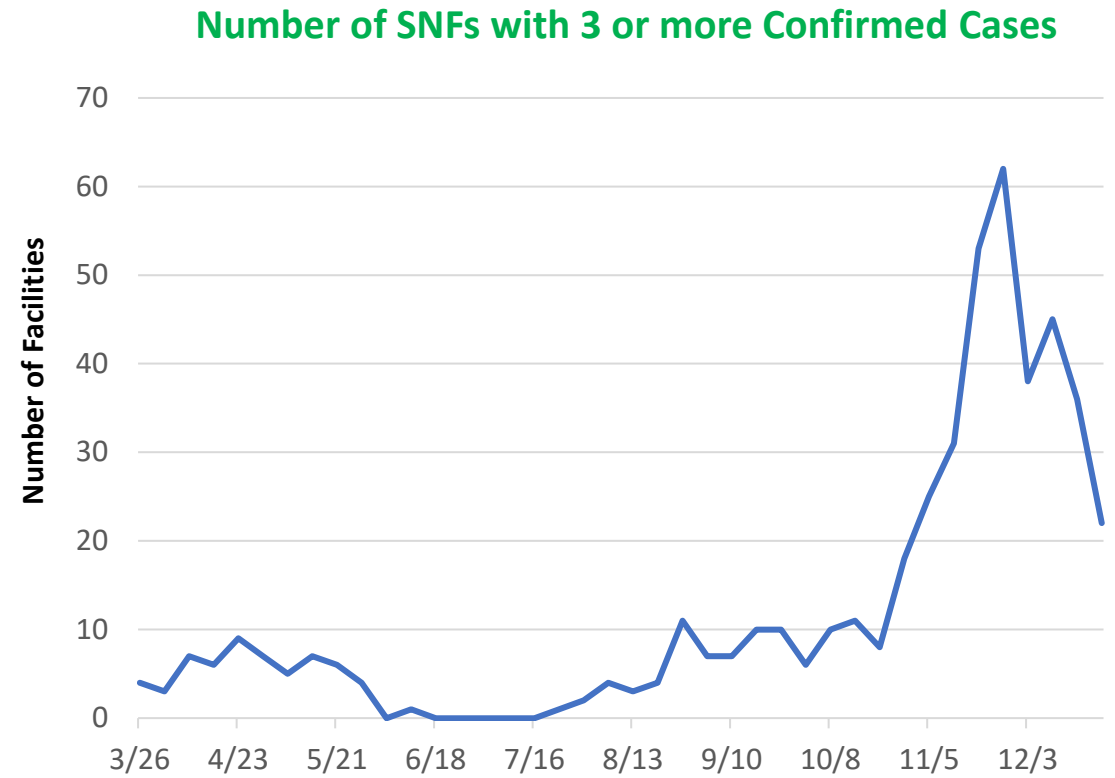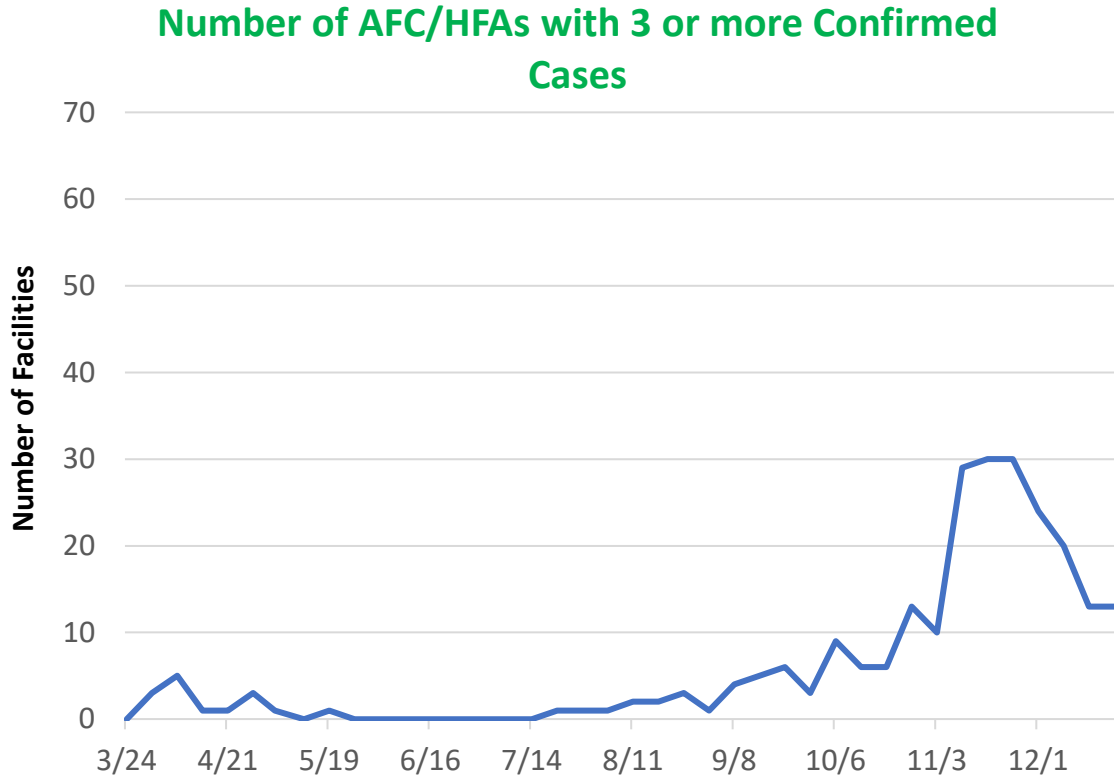
Source: LHD Weekly Sitreps

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

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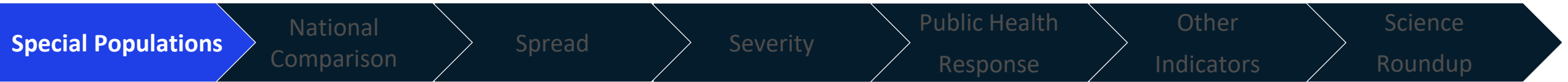
Reported Outbreaks within Long Term Care Facilities: Adult Foster Care, Homes for the Aged, and Skilled Nursing Cases

Number of AFC/HFAs with 3 or more Confirmed Cases

Number of SNFs with 3 or more Confirmed Cases

- The number of Long-Term Care Facilities reporting 3 or more cases within a single reporting period plateaued at a 7-week low of 13 for AFC/HFA facilities and declined to a 6-week low of 22 in SNF 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)

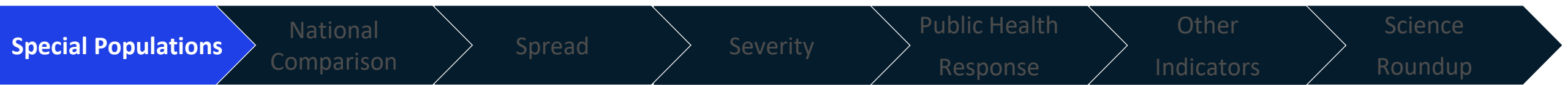**The data is from weekly reporting by facilities with bed occupancy of at least 13 beds.**

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 12/22/2021
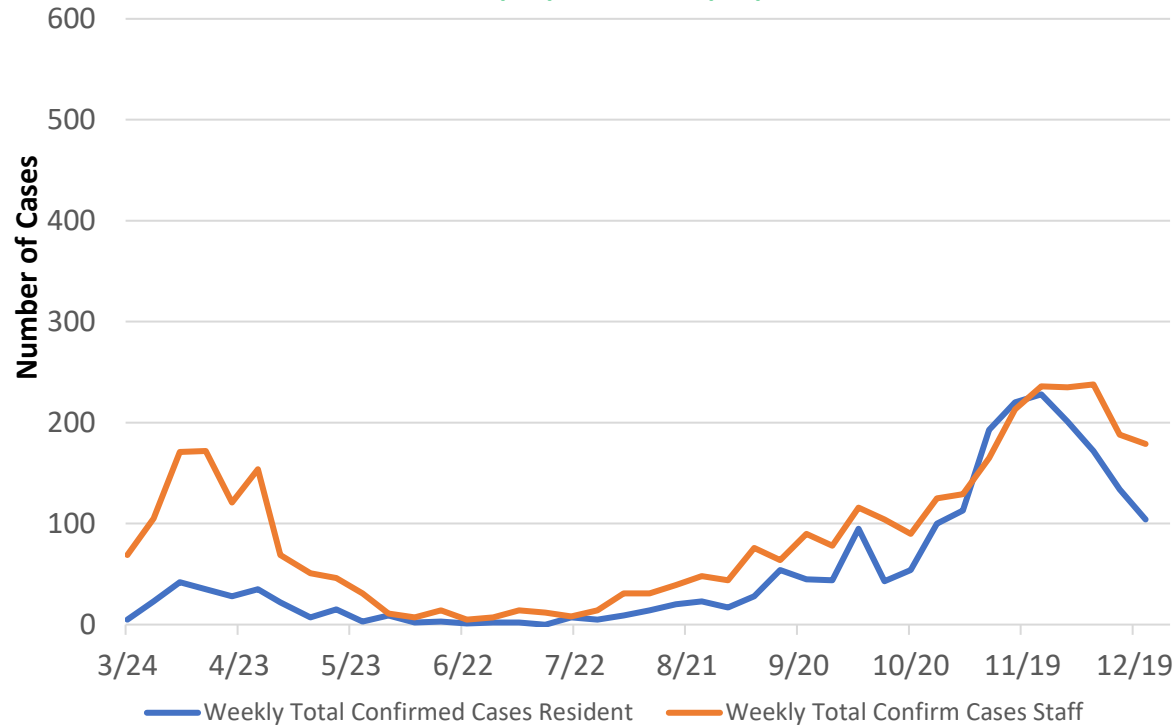
STATE OF MICHIGAN WEEKLY TOTAL CONFIRMED COVID-19 CASES IN SNF RESIDENTS AND STAFF 03/26/2021 TO 12/24/2021
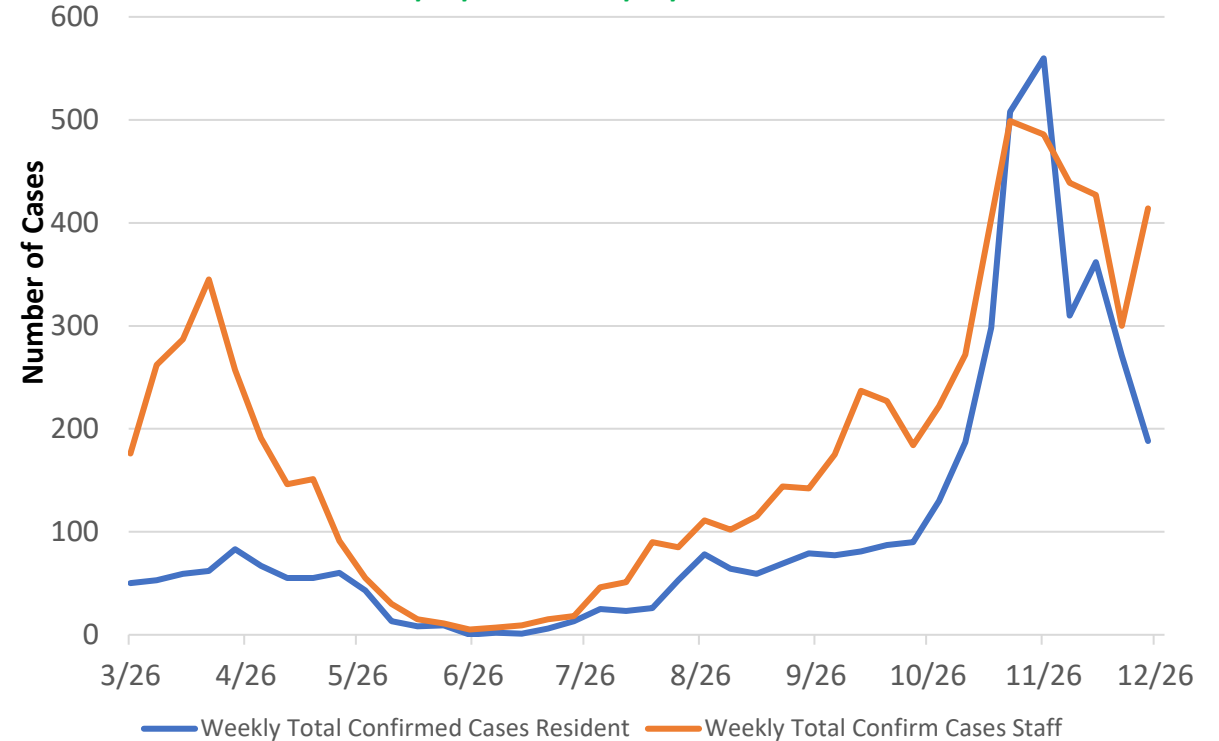
- Case count in residents and staff declining within the AFC/HFA but there was an increase in SNF staff case count to 414
- Case counts in LTCF have maintained the typical pattern of more staff case count than residents case count

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

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

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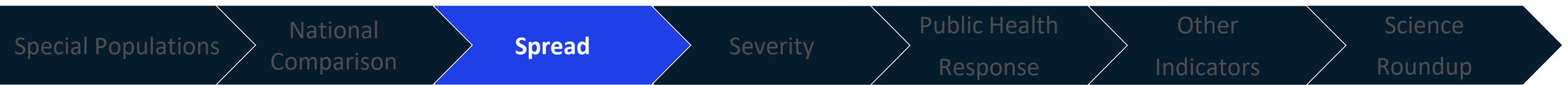
Cumulative COVID-19 Cases by Vaccination Status, Michigan, Jan 15 – Dec 3

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

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

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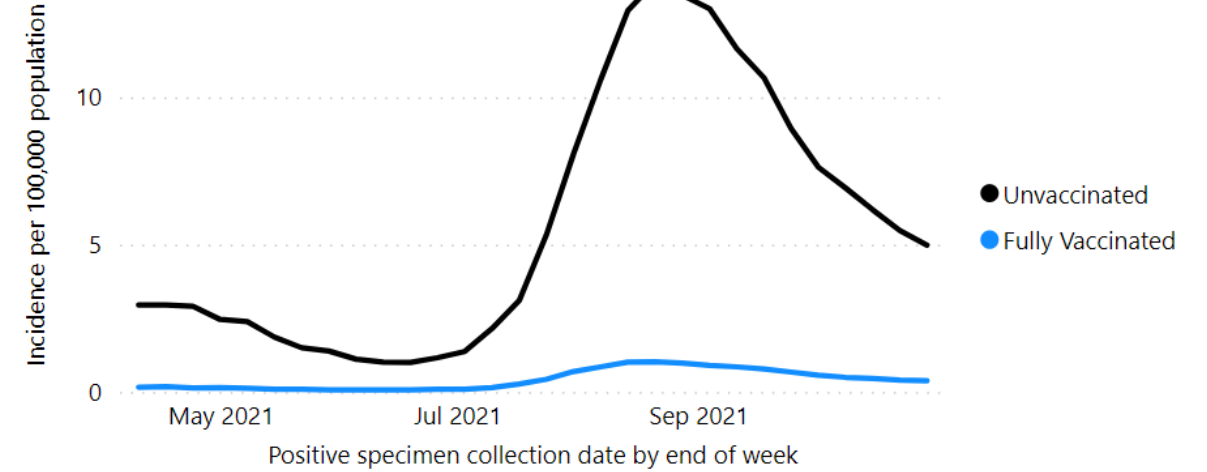

Rates of COVID-19 Cases by Vaccination Status
April 04 - November 20, 2021 (27 U.S. jurisdictions)
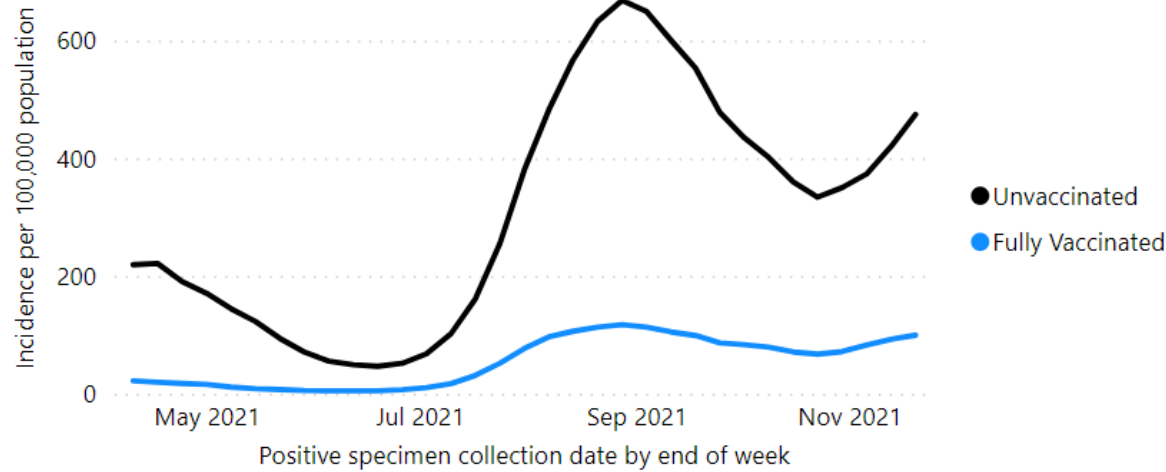
Rates of COVID-19 Deaths by Vaccination Status
April 04 - October 30, 2021 (27 U.S. jurisdictions)

In October, unvaccinated persons had:

5X	AND	14X
Risk of Testing Positive for COVID-19		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

Rates of COVID-19 Cases by Vaccination Status
April 04 - October 30, 2021 (Michigan Only)

Rates of COVID-19 Deaths by Vaccination Status
April 04 - October 30, 2021 (Michigan Only)

In October, unvaccinated persons had:

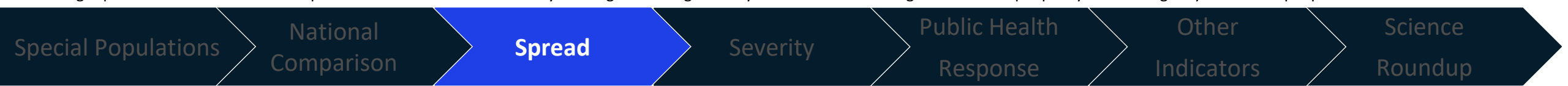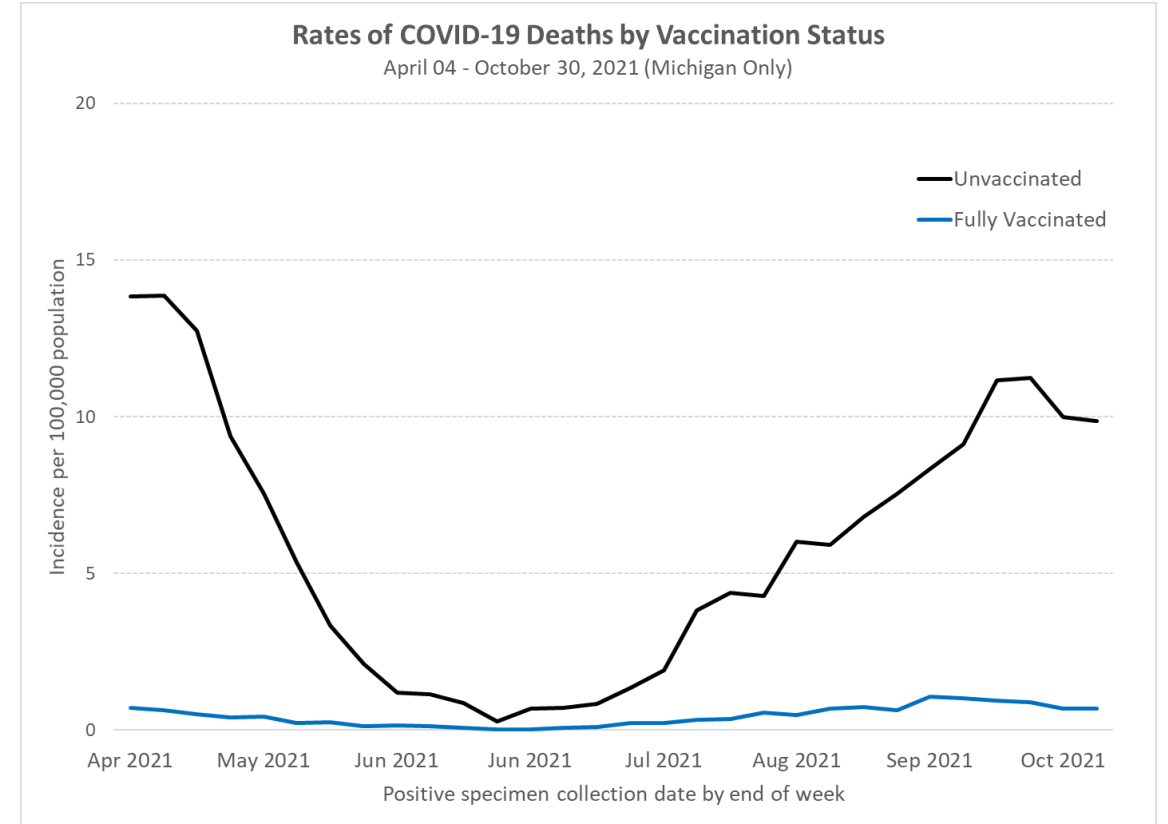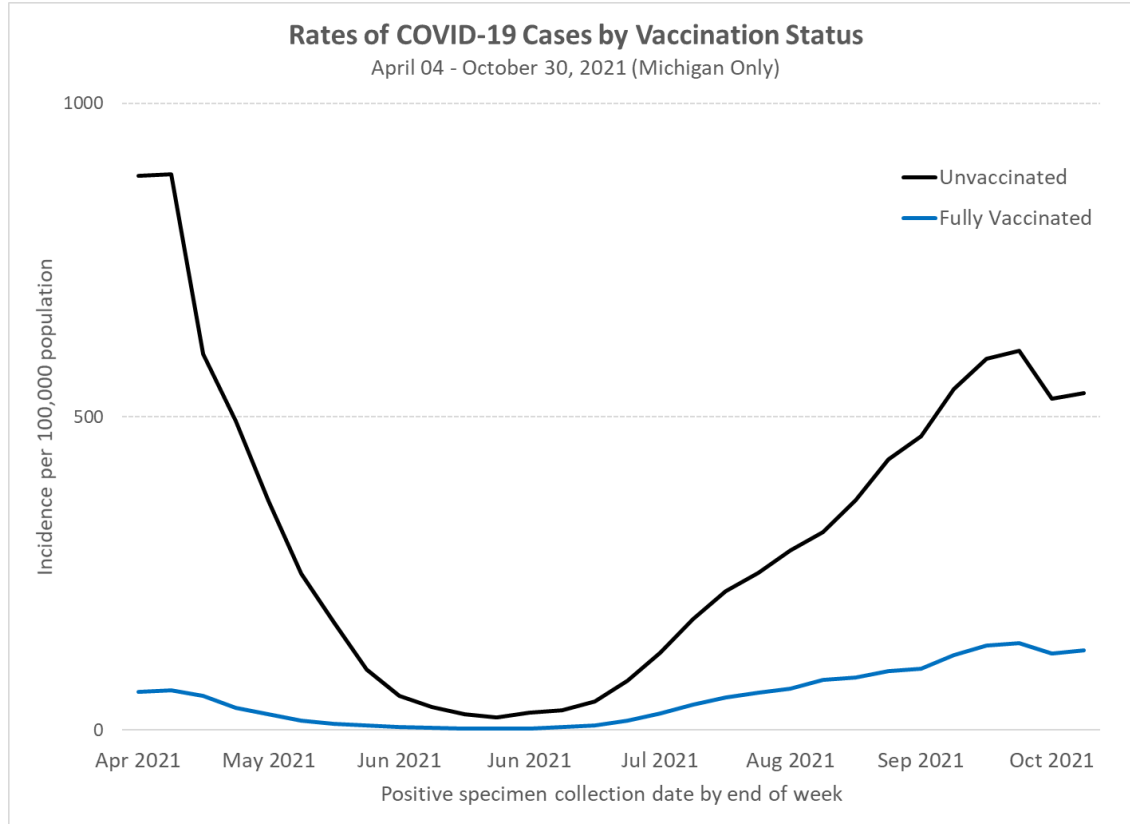| 4.3 X	AND	13.2 X
Risk of Testing Positive for COVID-19		Risk of Dying from COVID-19

compared to fully vaccinated persons

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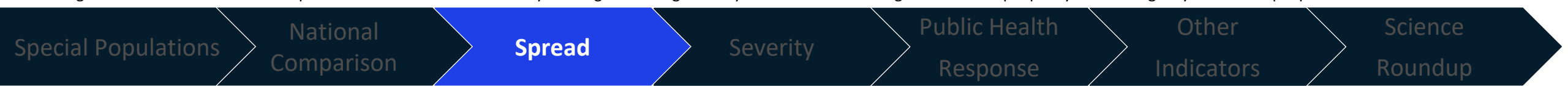
Risk of becoming ill or dying much higher in unvaccinated individuals

In 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

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

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
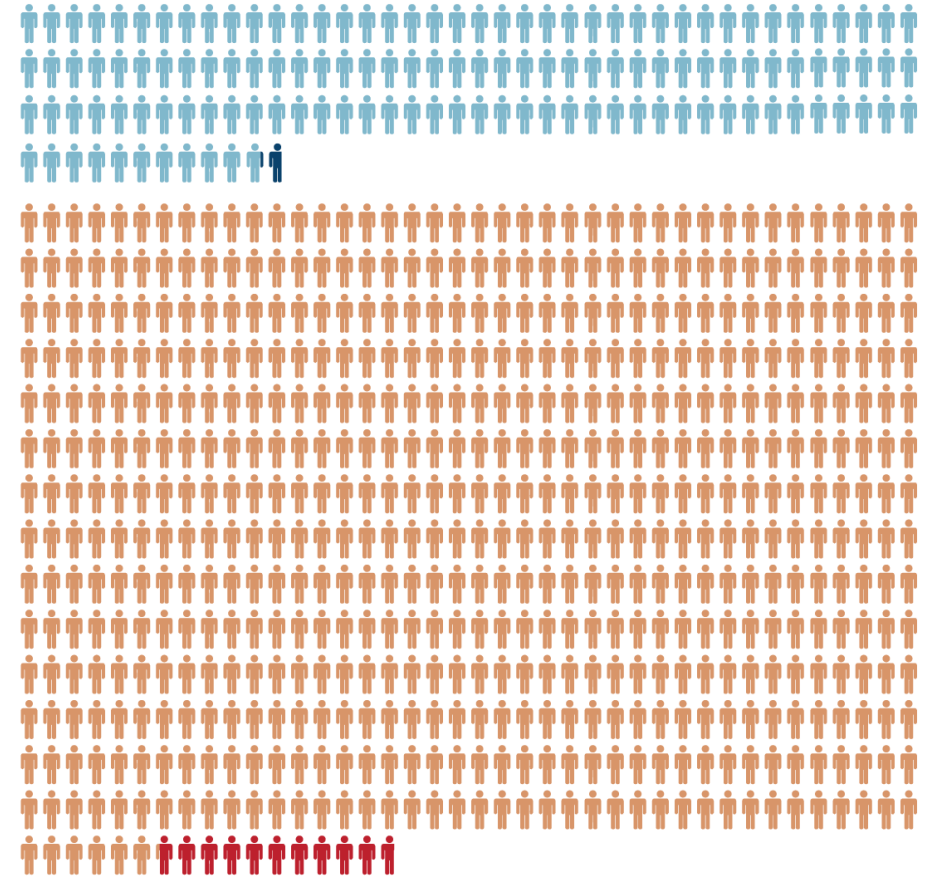
October 2021

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

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)
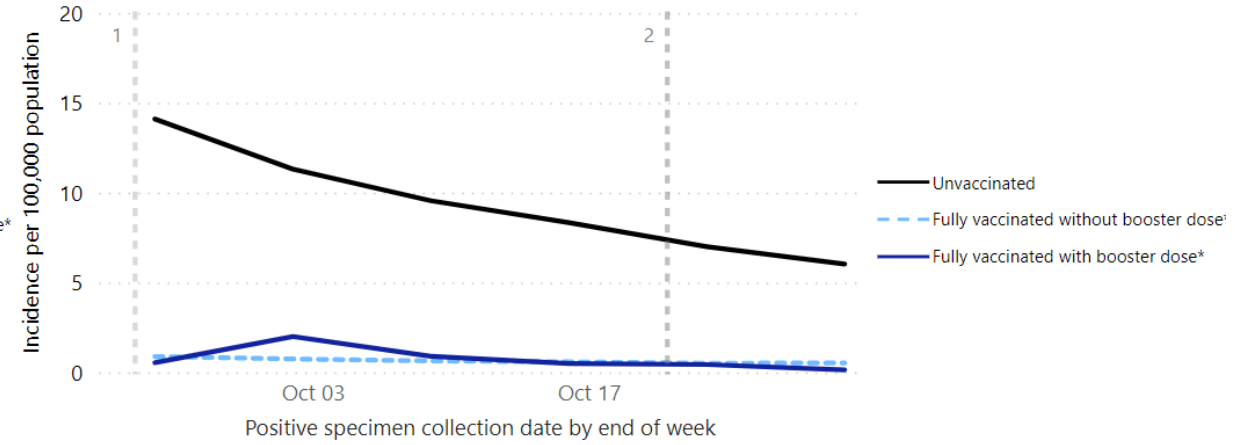
In October, unvaccinated persons had:

10X Risk of Testing Positive for COVID-19	**AND**	**20X** Risk of Dying from COVID-19

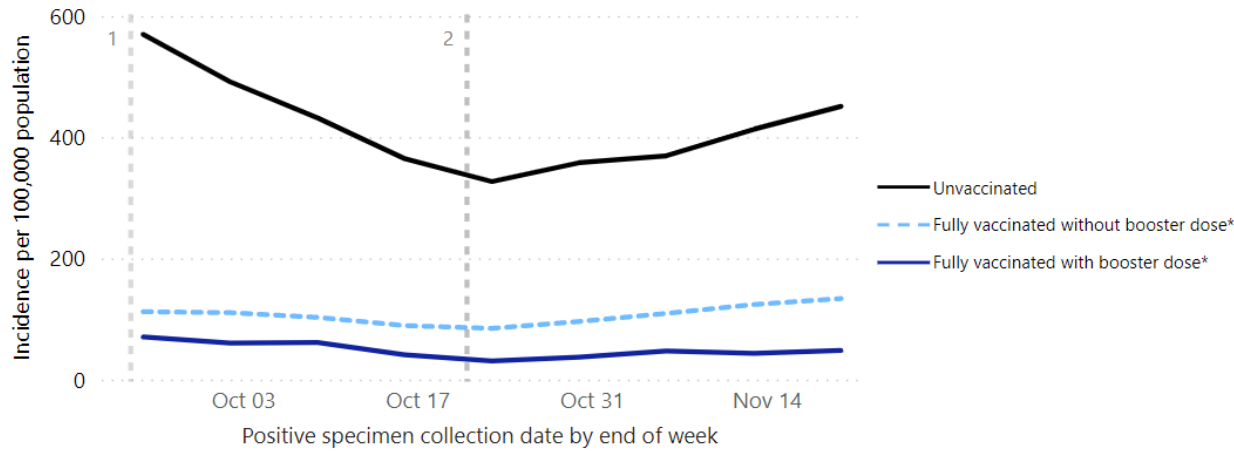**compared to fully vaccinated persons with additional or booster doses**

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.
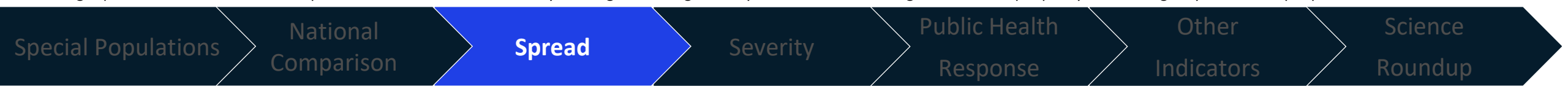
Key Messages: Healthcare Capacity and COVID Severity

Emergency Department visits, Hospital Admissions, and Hospital Census trends for COVID are mixed
- 10.4% of ED visits are for COVID diagnosis (last week: 9.2%)
- Hospital admissions for most older age groups are decreasing over the past week, but younger ages are increasing
- Hospital census has decreased 6% since last week (vs. 14% decrease week prior)
- Most regional trends in hospital census this week are declining
 - Regions 2N and 2S show increasing trends in the last 2-3 days
  - Three preparedness regions (2N, 2S, 3) have greater than 400/Million population hospitalized
- Overall, volume of COVID-19 patients in intensive care has decreased 12% (vs. 5% increase last week)
  - All regions except 1, 2N and 8 have overall adult ICU occupancy greater than or equal to 85%, with Regions 3 and 6 at or above 90% occupancy

Death rate is 8.4 daily deaths/million residents over last 7 days (Last week: 9.5 deaths/million)
- Trends for daily average deaths are increasing this week for most reported racial and ethnic groups
- In the past week, Whites have the highest death rate (10.3 deaths/million)
- In the past 30 days, the proportion of deaths among those over 60 is steady

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

10.4%
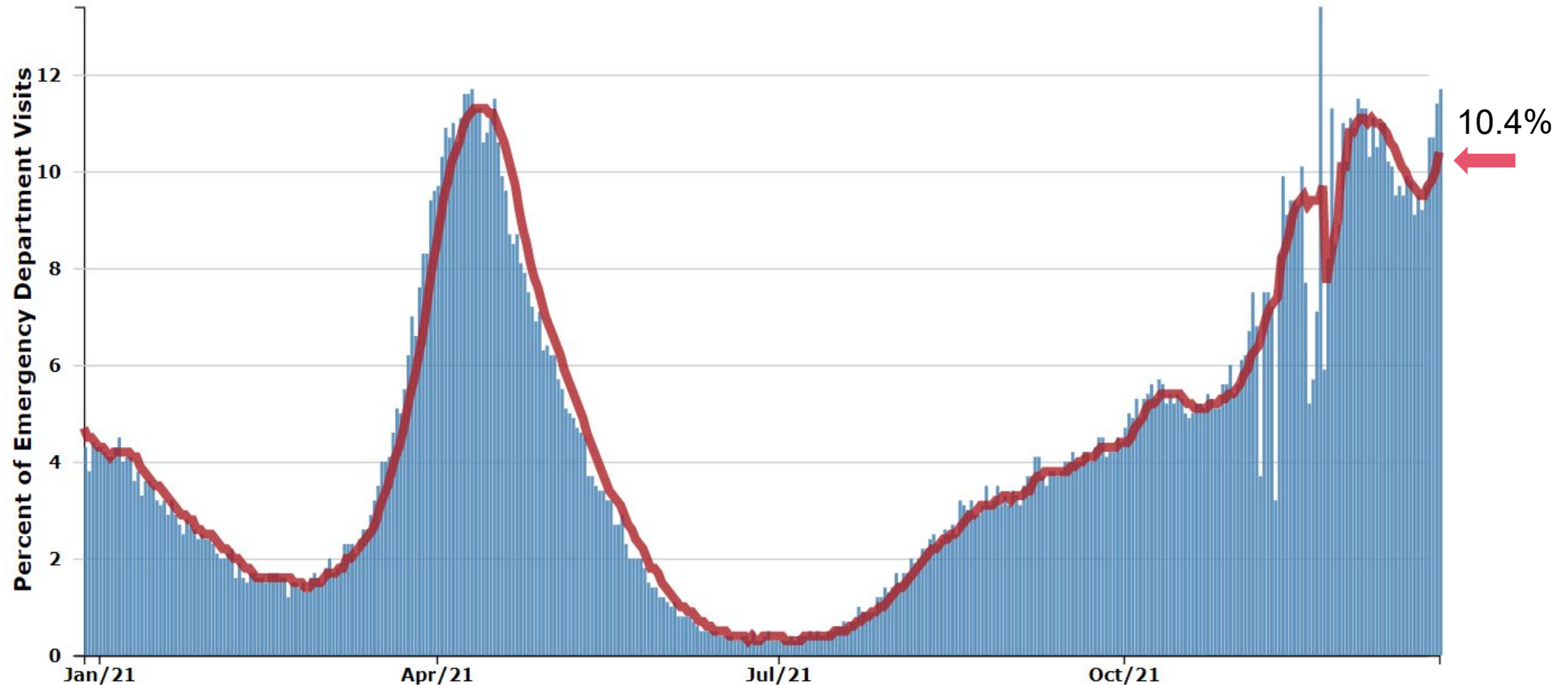
- Trends for ED visits have increased to 10.4% since last week (last week: 9.2%)

- Over past week, those 25-39 years saw highest number of avg. daily ED CLI visits (12.8%), but those between 25-64 all above state average

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

Average Hospital Admissions Are Increasing for all Age Groups

Legend: Peds • 18-19 • 20-29 • 30-39 • 40-49 • 50-59 • 60-69 • 70-79 • 80+ • Age Unknown
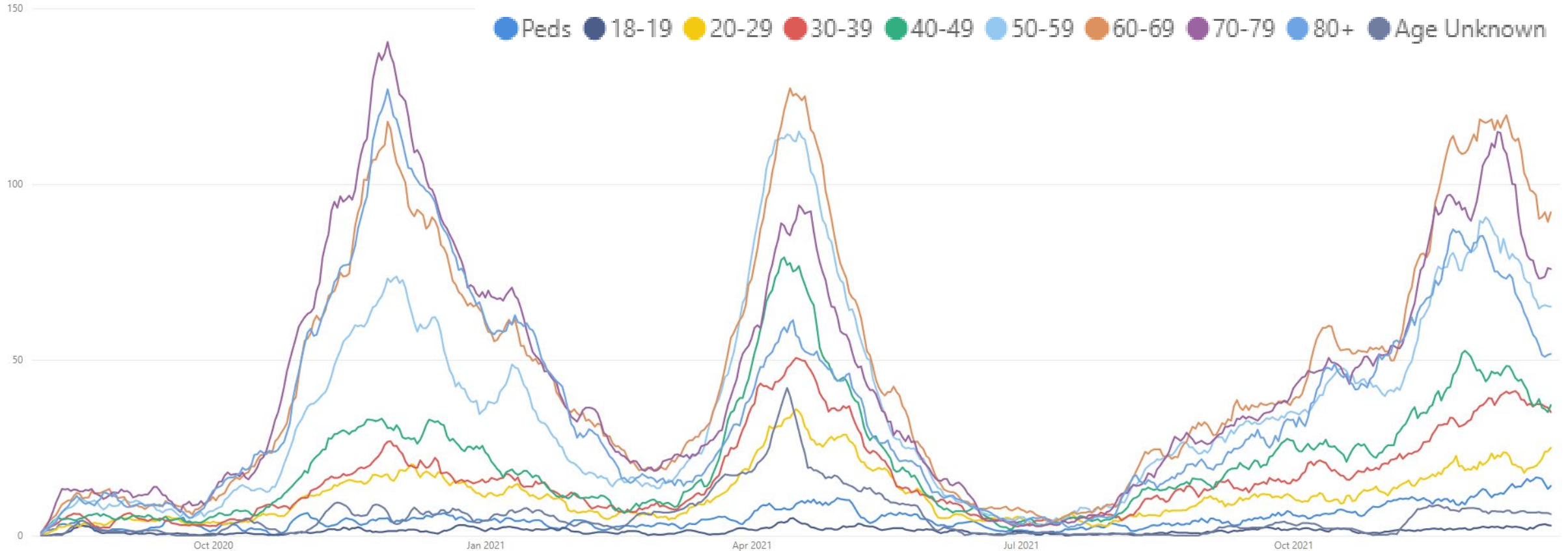
- Trends for daily average hospital admissions have decreased 5% since last week (vs. 17% decrease prior week)
- Overall, many age groups saw decreases this week, but several younger age groups saw increases
- More than 50 daily hospital admissions was seen for each of the age groups of 60-69, 70-79, 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	10.1	7.3	+39% (+3)
12-17	4.1	5.5	-17% (-1)
18-19	2.9	10.8	+25% (+1)
20-29	25.0	18.1	+30% (+6)
30-39	35.1	29.0	-6% (-2)
40-49	37.1	31.5	-4% (-1)
50-59	**65.1**	**48.2**	**-9% (-7)**
60-69	**92.0**	**72.1**	**-6% (-6)**
70-79	**75.9**	**98.9**	**-3% (-3)**
80+	**51.7**	**124.8**	**-13% (-8)**
Total¶	**405.3**	**40.6**	**-5% (-20)**

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

- Through Dec 27, there were an average of 405.3 hospital admissions per day due to COVID-19; a decrease from last week (-5%, -20)

- Most age groups saw decreases this week, but these declines are less than the previous week and younger age groups saw increases

- The largest one-week increases were among those 20-29 (+6, +30%)

- Average daily hospital admission count (92 hospital admissions per day) are highest among those 60-69

- Average daily hospital admission rate (124.8 hospital admissions/million) are highest for those aged 80+

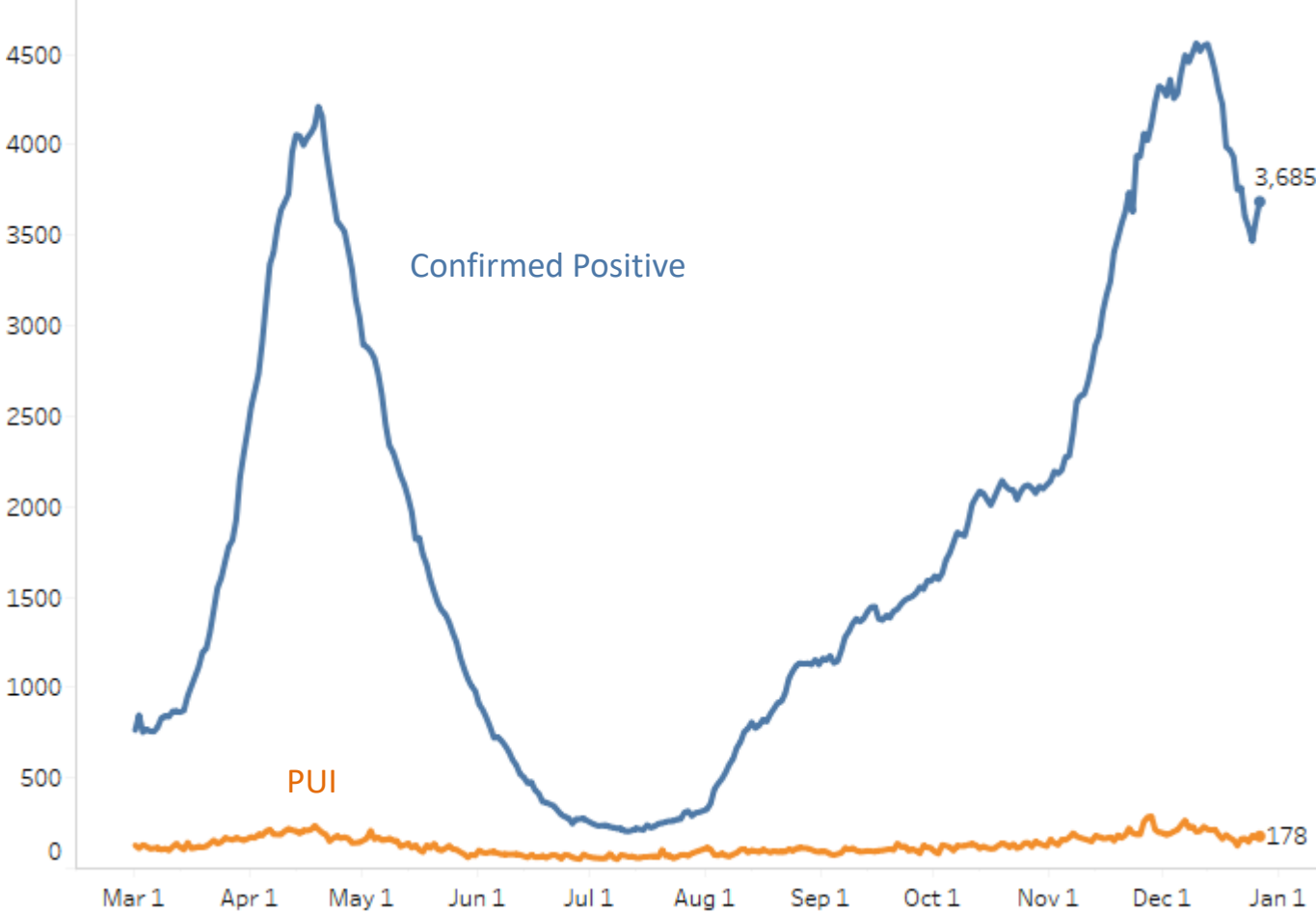- More than 50 daily hospital admissions were seen for those aged 60-69, 70-79, and 80+

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

Statewide Hospitalization Trends: Total COVID+ Census

Hospitalization Trends 3/1/2021 – 12/27/2021
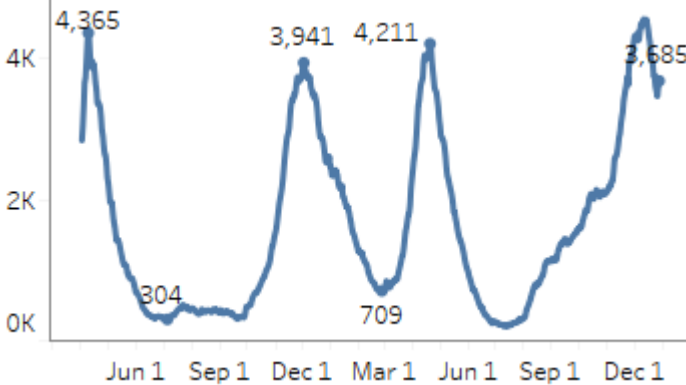Confirmed Positive & Persons Under Investigation (PUI)

The COVID+ census in hospitals has increased over the past 2 days (Dec 25 – Dec 27) after decreasing for over 2 weeks.
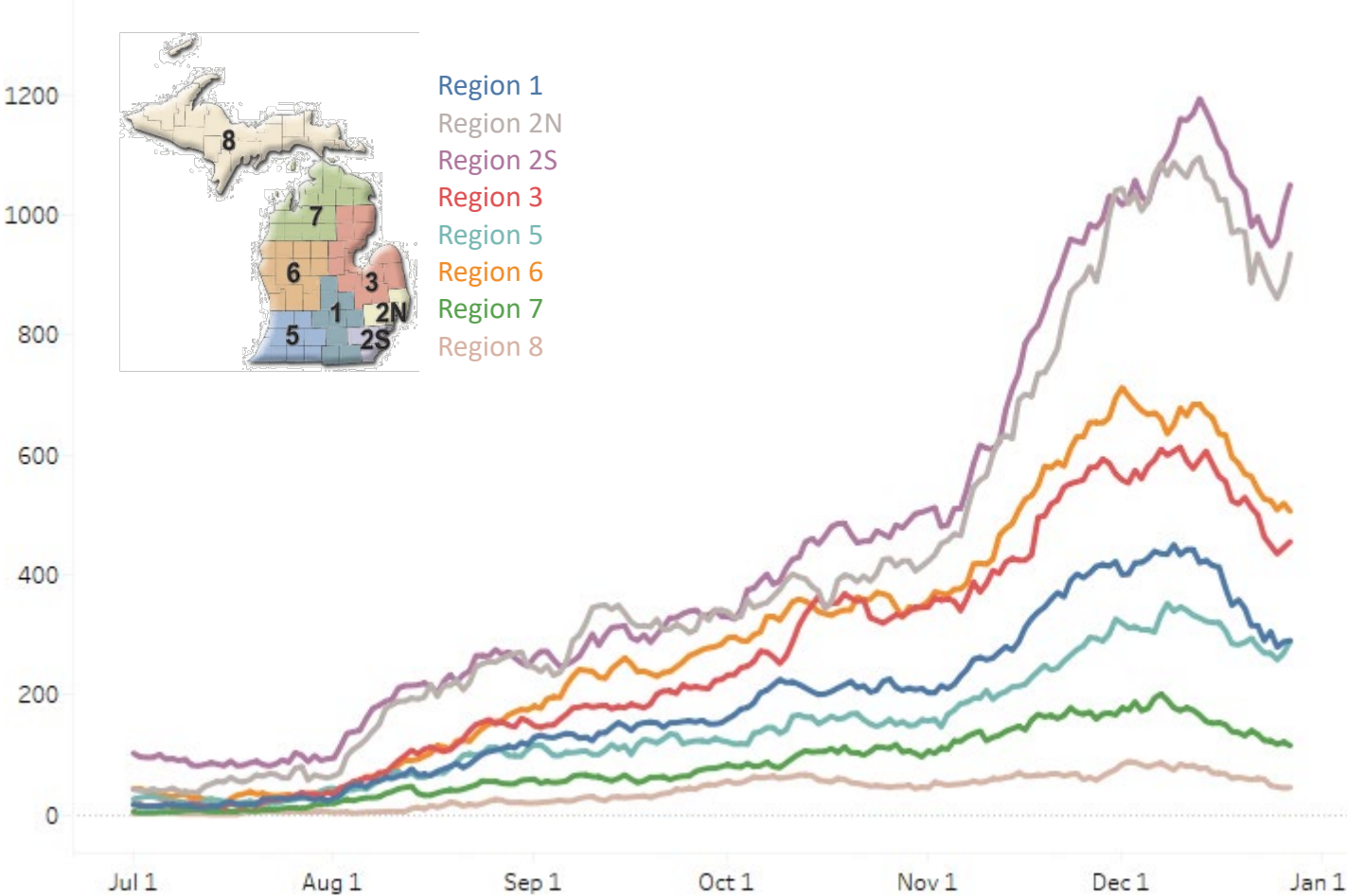
Overall, COVID+ hospital census remains lower than the previous week, having decreased by 6% from last week this same day (Monday).

Hospitalized COVID Positive Long Term Trend (beginning March 2020)

Hospitalization Trends 6/1/2021 – 12/27/2021
Confirmed Positive by Region

Region 1
Region 2N
Region 2S
Region 3
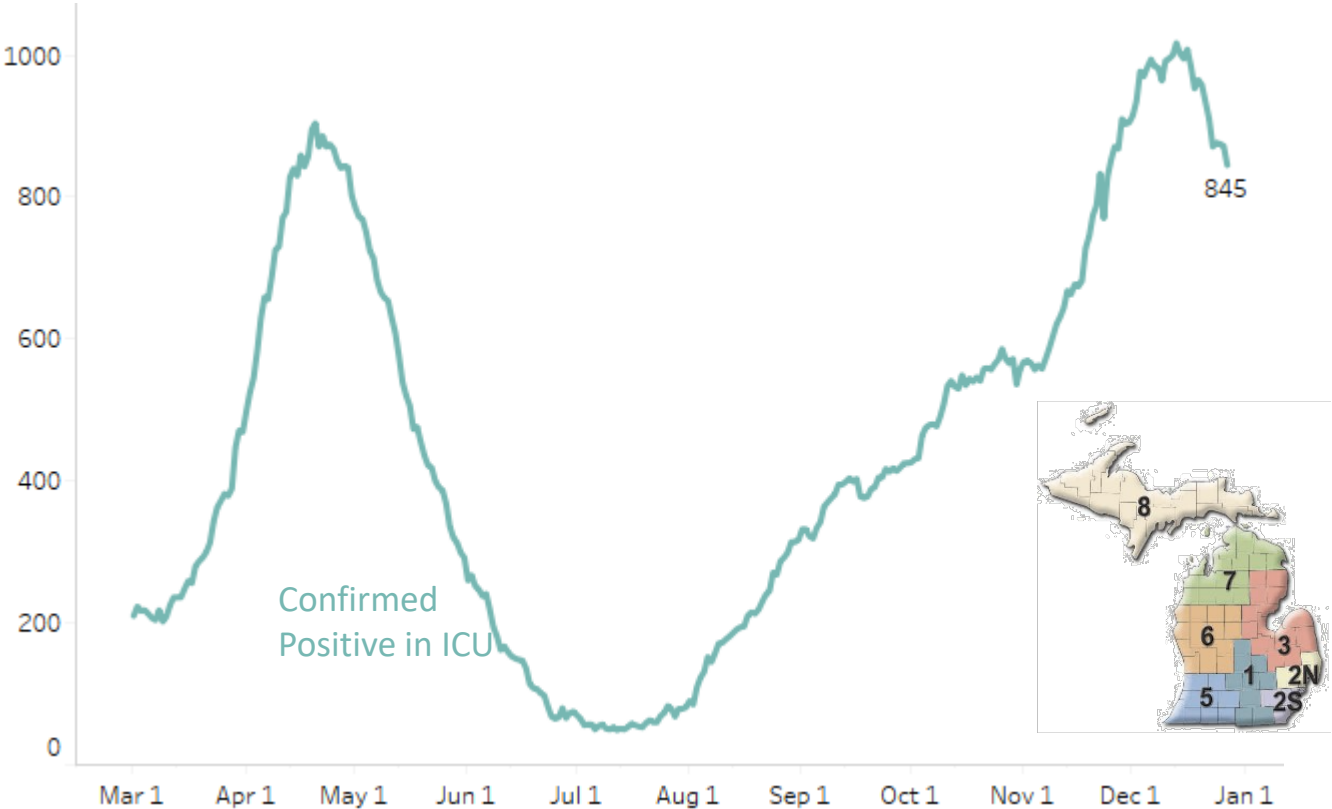Region 5
Region 6
Region 7
Region 8

While most regions remain at lower levels of COVID+ hospital census compared to last week, several regions show increasing trends over the past few days. Regions 2N and 2S show significant increasing recent trends in the last 2-3 days.

All regions except Regions 1, 7 and 8 continue to have greater than 300 hospitalizations/M. Regions 2N, 2S, and 3 have greater than 400 hospitalizations/M.

Region	COVID+ Hospitalizations (% Δ from last week)	COVID+ Hospitalizations / MM
Region 1	290 (-16%)	268/M
Region 2N	935 (-4%)	422/M
Region 2S	1050 (1%)	471/M
Region 3	455 (-14%)	401/M
Region 5	289 (1%)	303/M
Region 6	506 (-11%)	345/M
Region 7	115 (-12%)	230/M
Region 8	45 (-25%)	145/M

Statewide Hospitalization Trends: ICU COVID+ Census

Hospitalization Trends 3/1/2021 – 12/27/2021
Confirmed Positive in ICUs

Overall, the census of COVID+ patients in ICUs has decreased 12% from last week. Census in ICUs has decreased in all regions except for Region 3.

All regions except for Regions 1, 2N, and 8 have overall adult ICU occupancy greater than or equal to 85%, with Regions 3 and 6 at or above 90% occupancy. Regions 1, 2S, 3, 6, and 7 have at least 30% of 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	62 (-34%)	80%	30%
Region 2N	158 (-16%)	77%	27%
Region 2S	232 (-3%)	87%	33%
Region 3	142 (2%)	93%	41%
Region 5	41 (-21%)	87%	28%
Region 6	137 (-17%)	90%	49%
Region 7	58 (-3%)	88%	41%
Region 8	15 (-25%)	68%	24%

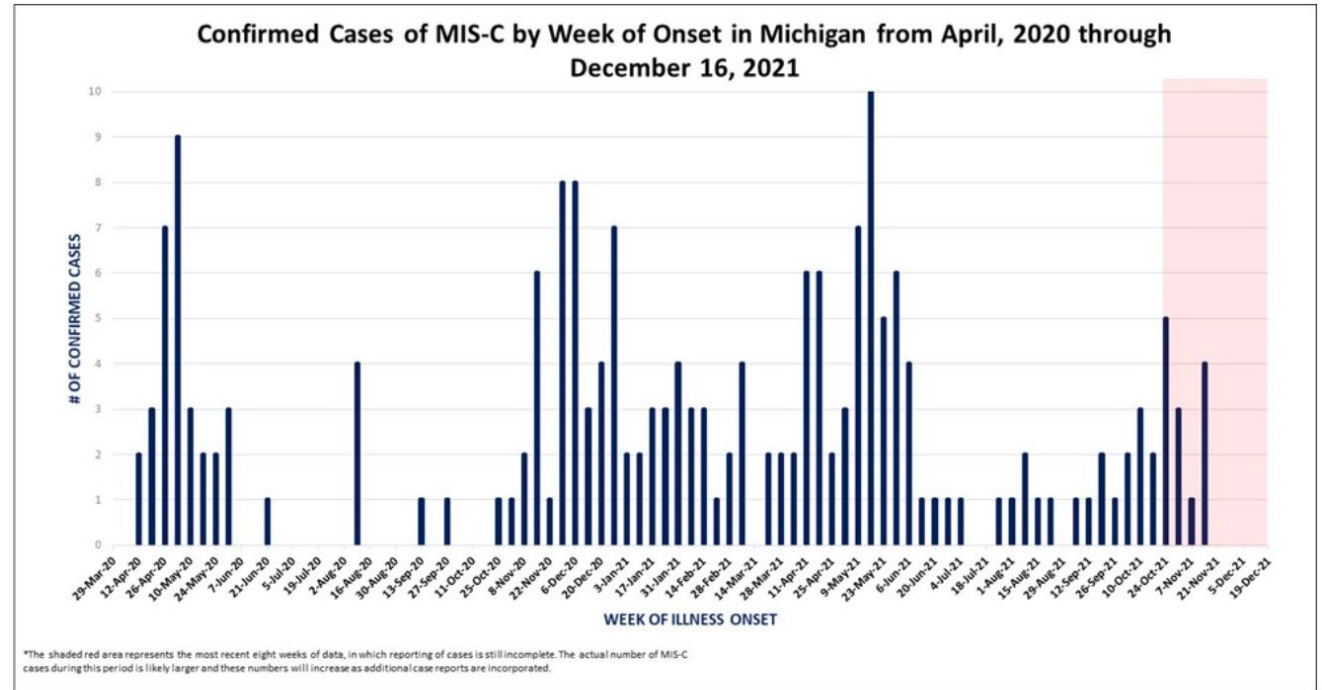# Statewide Hospitalization Trends: Pediatric COVID+ Census

Hospitalization Trends 1/1/2021 – 12/27/2021
Pediatric Hospitalizations, Confirmed + PUI
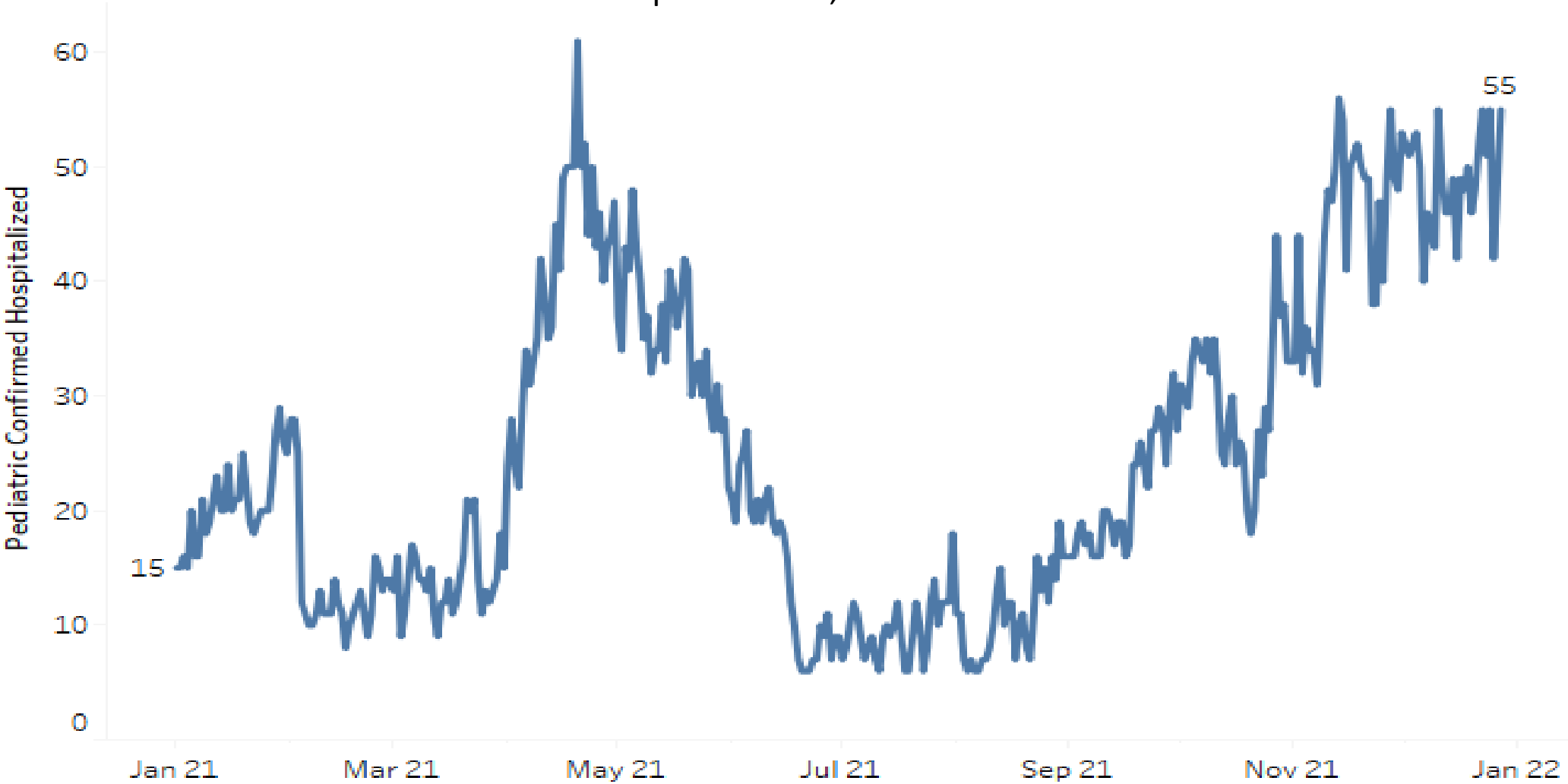
Multisystem Inflammatory Syndrome in Children (MIS-C)
Michigan Surveillance

- 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

Confirmed Cases of MIS-C by Week of Onset in Michigan from April, 2020 through December 16, 2021

*The shaded red area represents the most recent eight weeks of data, in which reporting of cases is still incomplete. The actual number of MIS-C cases during this period is likely larger and these numbers will increase as additional case reports are incorporated.

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)
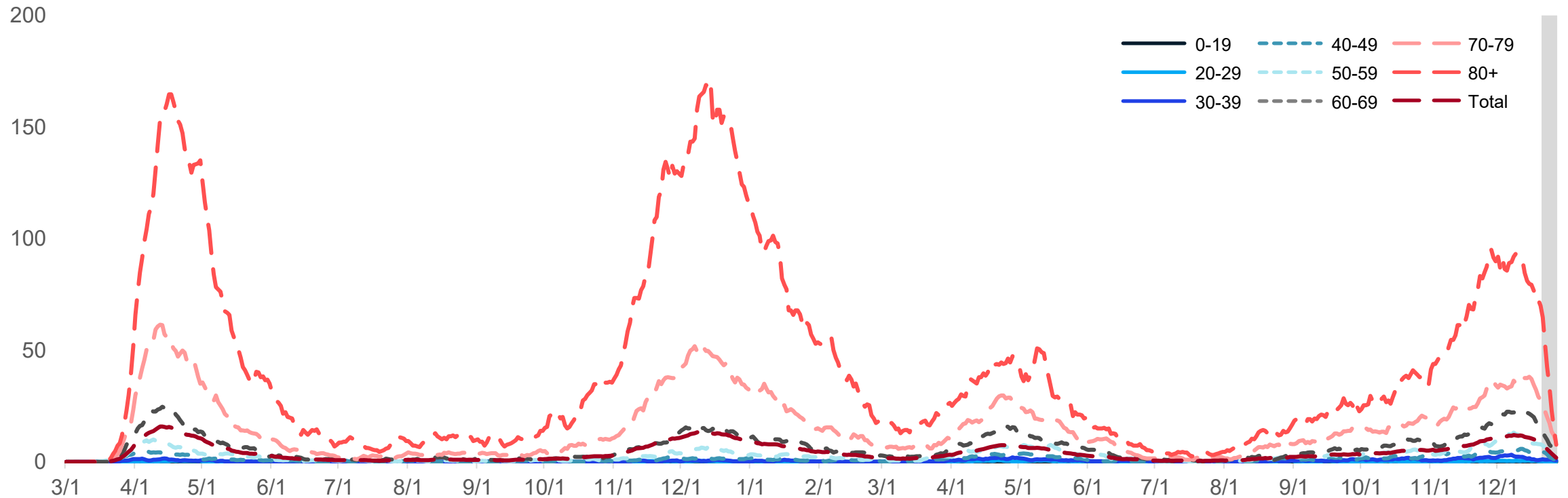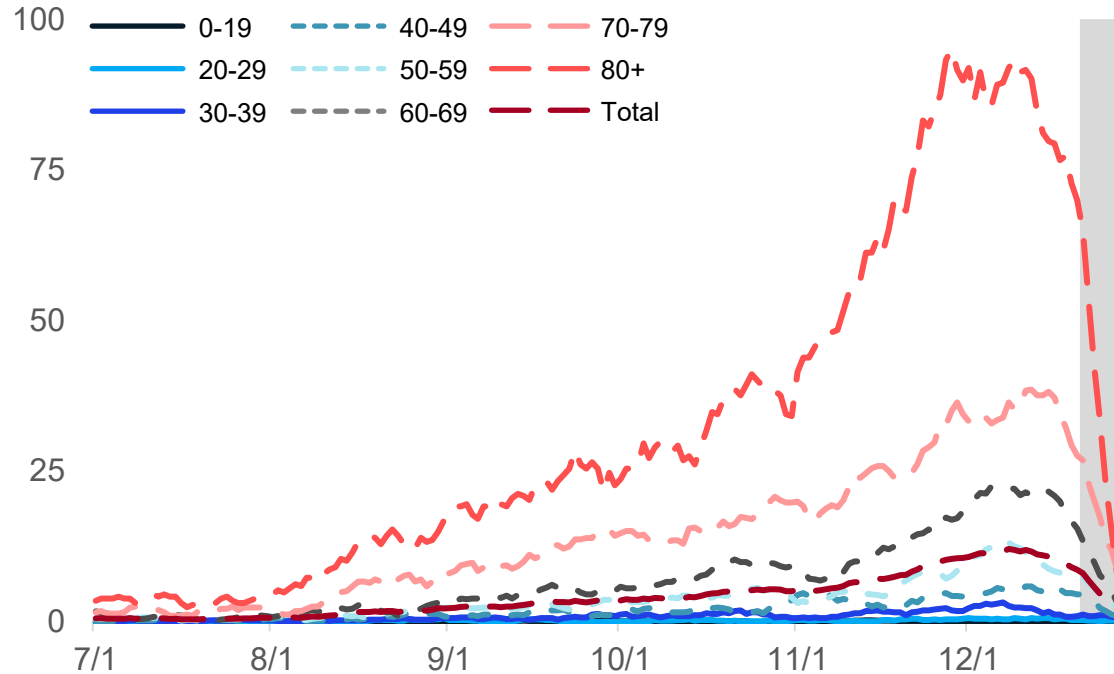

- Through 12/20, the 7-day avg. death rate is 70 daily deaths per million people for those over the age of 80
- COVID-19 death rates for all age groups, except 20–29-year-olds, are now higher than the death rates during the Alpha (B.1.1.7) wave and nearly all younger age groups (<60) are experiencing pandemic high death rates

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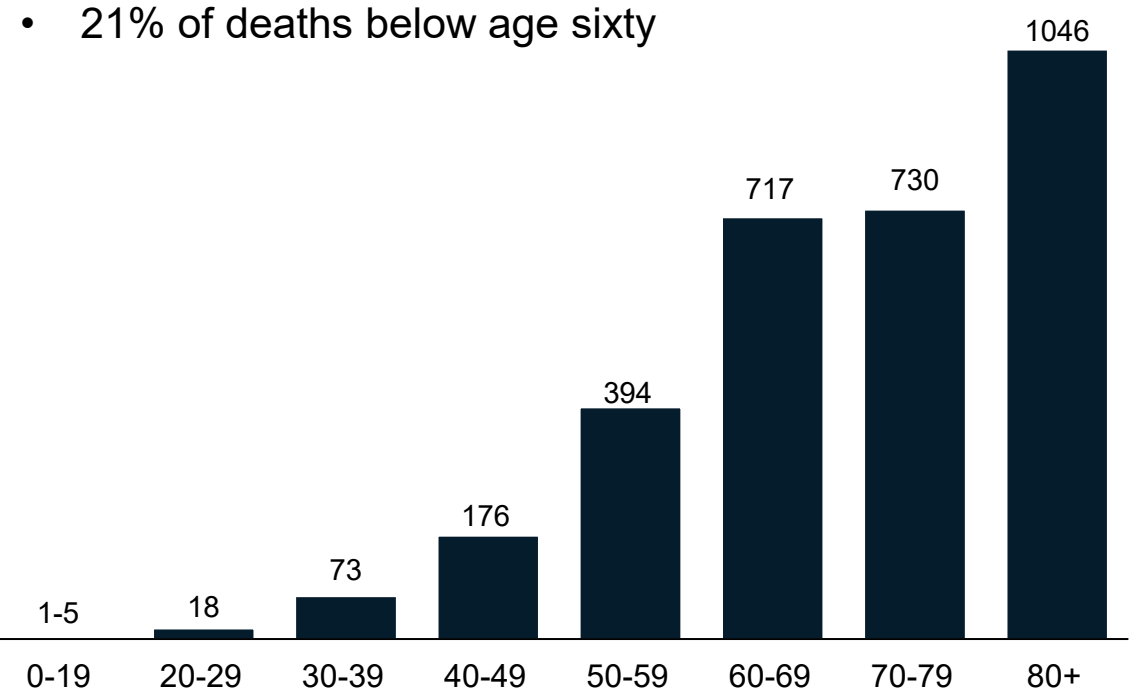Source: MDHHS – Michigan Disease Surveillance System (MDSS)

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 12/20/2021)

Legend:
- 0-19
- 20-29
- 30-39
- 40-49
- 50-59
- 60-69
- 70-79
- 80+
- Total

- 21% of deaths below age sixty

Bar chart values:
| Age group	Deaths
0-19	1-5
20-29	18
30-39	73
40-49	176
50-59	394
60-69	717
70-79	730
80+	1046

- Through 12/20, the 7-day avg. death rate is more than 70 daily deaths per million people for those over the age of 80

- In the past 30 days, the proportion of deaths among those over 60 is steady

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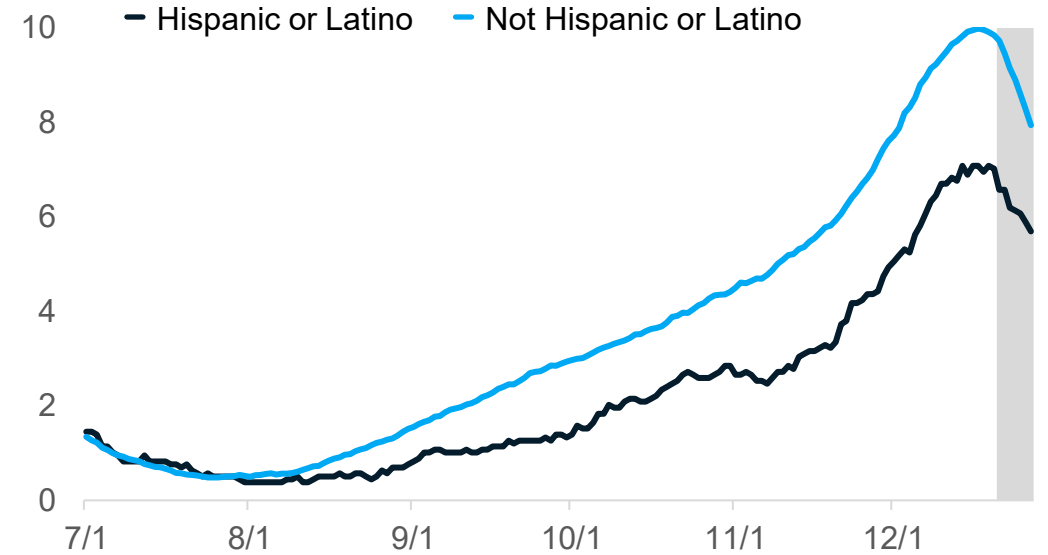Source: MDHHS – Michigan Disease Surveillance System (MDSS)

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

Average daily deaths per million people by race

- American Indian/Alaska Native
- Black/African American
- Asian/Pacific Islander
- White
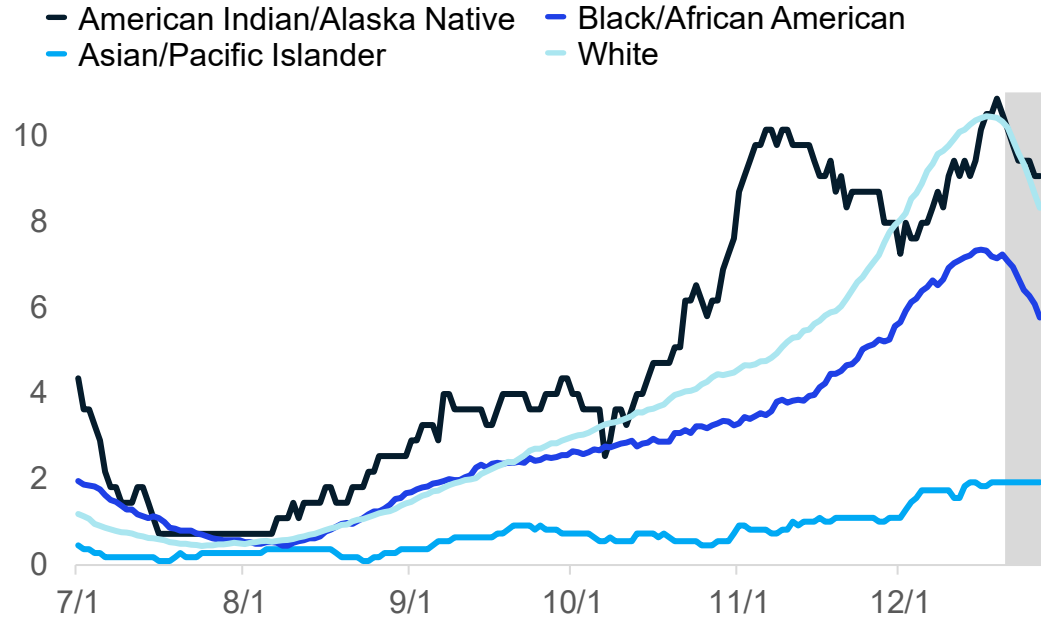
Average daily deaths per million people by ethnicity

- Hispanic or Latino
- Not Hispanic or Latino

- Deaths are lagging indicator of other metrics
- Overall trends for daily average deaths are increasing for most reported races and ethnicities
- Currently, Whites have the highest death rate (10.3 deaths/million)

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

Key Messages: Public Health Response

COVID-19 Vaccination

- 5,852 first doses administered each day (7-day rolling average)

- Over 5.6 million people (56.6% of the population) in the state are fully vaccinated

COVID-19 Boosters

- Over 2.2 million people have received an additional/booster dose in Michigan

- More than 65.8% 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)

- 172,749 initial dose and 119,513 second dose administrations in 5- to 11-year-olds as of 12/27
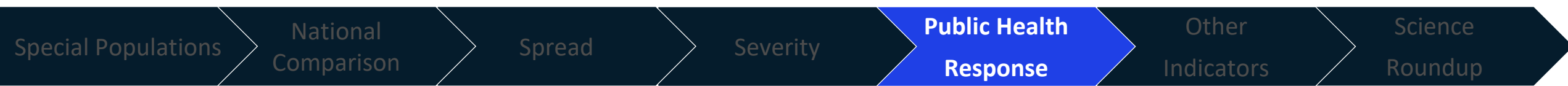
5.6 Million Michiganders fully vaccinated and 56.6% of total population fully vaccinated

Vaccination Coverage

Over 5.6 million people in the state are fully vaccinated*

86.3% of people aged 65 and older have completed the series*

63.2% of total population initiated*

Booster Coverage

65.8% of fully vaccinated people aged 65 and older have received a booster dose

40.0% of Michiganders in the state who are fully vaccinated have received their booster dose

Vaccination Coverage in Michigan as of 12/28/21

Age Group	% At Least One Dose	% Fully Vaccinated	% Boosted**	Number Fully Vaccinated
Total Population	63.2%	**56.6%**	**40.0%**	5,651,307
≥ 5 years	67.0%	60.0%	N/A	5,651,257
≥ 12 years	71.4%	64.4%	N/A	5,536,171
≥ 18 years	73.6%	66.5%	43.2%	5,212,857
≥ 65 years	94.4%	86.3%	65.8%	1,523,273

**Percentage of the fully vaccinated population
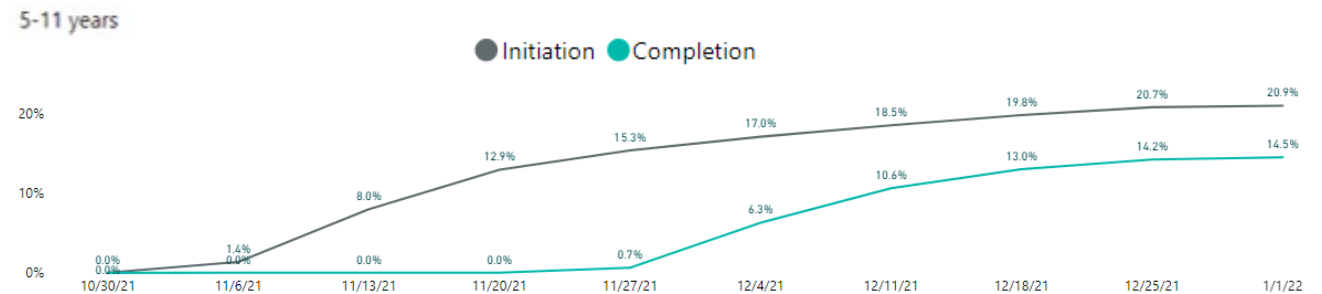

5-11 years

Initiation   Completion

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 administrated
- 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
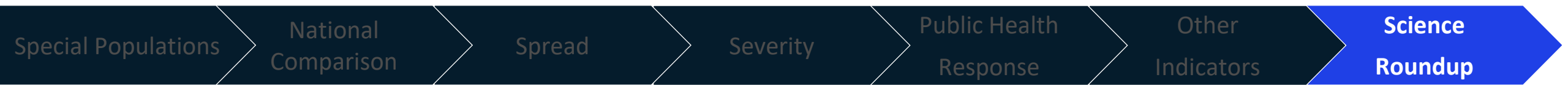
Year in Review – Pandemic in Numbers

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

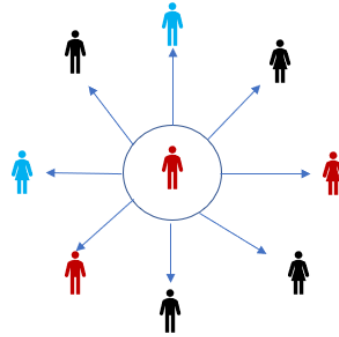# Year in Review – Public Health Response in Numbers

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
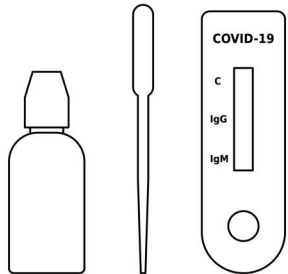- 351,000 contacts successfully reached

Vaccination

- Over 13.6 million COVID vaccines administrated
- 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