

MI COVID RESPONSE DATA AND MODELING UPDATE

NOTE: All data as of Jan. 30 unless otherwise noted

February 2, 2021

Executive summary

Michigan has the **22nd highest number of cases (↑1)** , **18th highest number of deaths (↓4)**, **47th highest case rate (↑2)**, and **T39th highest death rate (↓10)** in the last 7 days (source: CDC COVID Data Tracker)

Michigan has the **37th highest hospitalization rate as a percent of total beds (↓2)**, and **16th highest number of COVID patients in the ICU (↑1)** (source: Becker's Hospital Review)

Case rates (181.8, ↓21.2) and **percent positivity** (5.7%, ↓0.5%) are declining for 20 or more days

7.3% of available inpatient beds are filled with COVID patients (↓1.9%) and state trends for COVID hospitalizations are decreasing

There were **373 deaths (↓60)** between Jan 17 and Jan 23, and **death rate** is 5.4 deaths per million residents (↓0.8)

Daily diagnostic tests increased to an average of 41.2K per day (↑0.1K) over the last week and the **state testing rate** is 3,780.0 tests/million/day (↑126.6)

1,001,873 **COVID-19 vaccine** doses reported to MDHHS, 9.8% of population has had at least one dose

Science updates on COVID-19 in schools, and sporting events, as well as new B.1.1.7 findings, and mobility data in Michigan

Comparison across states: Summary 2/1/21

What we see today:

- 2 states (LA, PA) seeing increasing 1 week case trends (up vs. 1 last week)
- 43 states (down vs. 44) with significant outbreaks (high/increasing cases, increasing/high positivity increasing/high hospitalizations over 2 weeks (>100 per M))
- Arizona (504/M), Georgia, New York, Nevada, California have highest per capita hospitalized patient numbers
- Midwest:
 - Wisconsin showing slight drop in hospitalizations (117/M) and drop in cases (264/M)
 - Indiana with moderate decline in hospitalizations (235/M), and sharp drop in cases (332/M)
 - Illinois showing slow decline in hospitalizations (195/M), cases dropping (276/M)
 - Ohio with declining hospitalizations (209/M) and stable cases (385/M)
 - Michigan showing continued decline in hospitalizations (125/M) and slight decline in cases (192/M)

COVID-19 Spread

Statewide positivity has decreased to 5.7%, and is decreasing in all MERC regions

- Seven of eight MERC regions now below 7% (Risk Level A)
- One region, Upper Peninsula, is below 3% (Risk Level Low)
- Majority of counties (74) have positivity below 10%

Case rates have steadily declined to 181.8 cases per million (Risk Level E)

- 76% decrease from the mid-November peak
- Declines are seen among most age groups, races, and ethnicities
- In the past 30 days, approximately one of five cases have race and ethnicity missing
- Variant is in Michigan: increased vigilance in use of masks and social distancing and increase testing
 - 467 cases with the B.1.1.7 variant have been identified in the US, 25 in Michigan

Number of active outbreaks is up 2% from previous week

- Reported school outbreaks have increased since last week (54 to 86) with outbreaks increasing in all K-12 school settings

Confirmed and probable case indicators

Table Date: 1/30/2021 (7 days from date table was produced: 1/23/2021)

Confirmed and probable case indicators

Table Date: 1/30/2021 (7 days from date table was produced: 1/23/2021)

Low

A

B

C

D

E

% inpatient beds occupied by COVID-19 cases

Absolute deaths (per million)

Death trend

	MERC Region Number	Public Health Region	Overall Risk Level	Absolute cases (per million)	CDC Case Trend	Average percent positivity	Positivity trend	Tests per million	Weekly % CLI cases	Weekly % CLI cases trend	% inpatient beds occupied by COVID-19 cases	Absolute deaths (per million)	Death trend
Detroit	1	2N + 2S	E	166.4	decline [20 days]	5.5	Decrease - 3wk	3595.9	0.5	Increase - 1wk	7.4	5.1	Decrease - 5wk
Grand Rapids	2	6	E	187.3	decline [20 days]	5.4	Decrease - 3wk	3521.8	0.7	Decrease - 3wk	6.7	5.0	Decrease - 1wk
Kalamazoo	3	5	E	217.3	decline [19 days]	6.9	Decrease - 3wk	3583.5	0.8	Increase - 1wk	6.5	5.1	Increase - 1wk
Saginaw	4	3	E	194.6	decline [72 days]	6.1	Decrease - 3wk	3441.8	0.3	Decrease - 1wk	7.5	8.9	Decrease - 1wk
Lansing	5	1	E	223.7	decline [21 days]	6.7	Decrease - 3wk	3029.3	0.2	Decrease - 1wk	11.5	6.1	Decrease - 1wk
Traverse City	6	7	E	162.4	decline [19 days]	5.7	Decrease - 2wk	2651.2	0.8	Decrease - 1wk	4.6	5.5	<20 wkly deaths
Jackson	7	1	E	251.1	decline [19 days]	8.0	Decrease - 3wk	5423.3	0.2	Decrease - 1wk	9.5	3.8	<20 wkly deaths
Upper Peninsula	8	8	E	162.2	decline [19 days]	2.5	Decrease - 3wk	4384.9	0.4	Decrease - 1wk	5.1	4.7	<20 wkly deaths
Michigan			E	181.8	decline [20 days]	5.7	Decrease - 3wk	3780.0	0.5	Decrease - 9wk	7.3	5.4	Decrease - 6wk

Cases

Low: <7

A: 7-20

B: 20-40

C: 40-70

D: 70-150

E: >=150

Positivity

Low: <3%

A: 3-7%

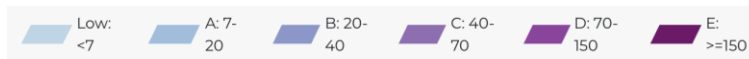
B: 7-10%

C: 10-15%

D: 15-20%

E: >=20%

Cases

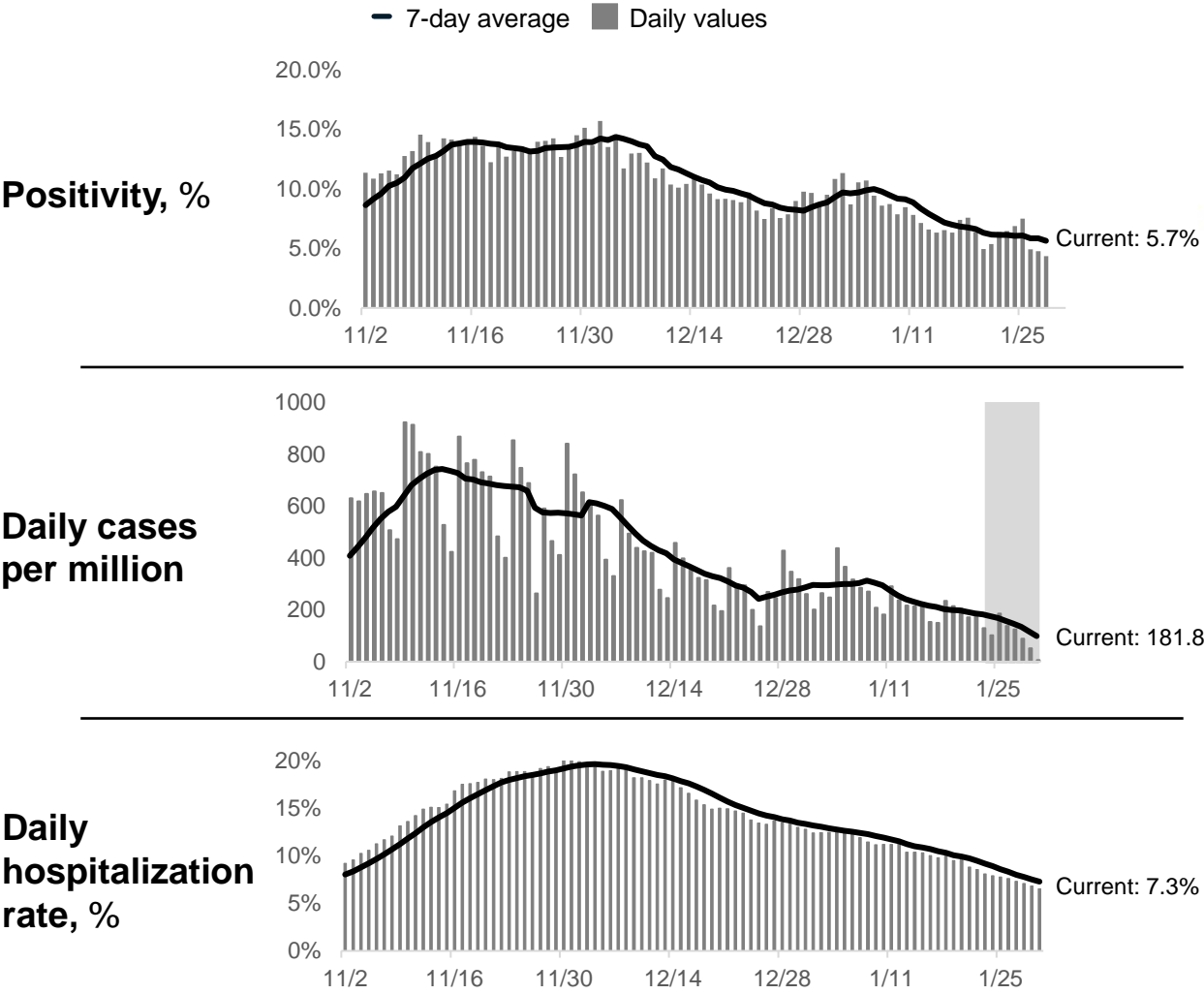


Positivity

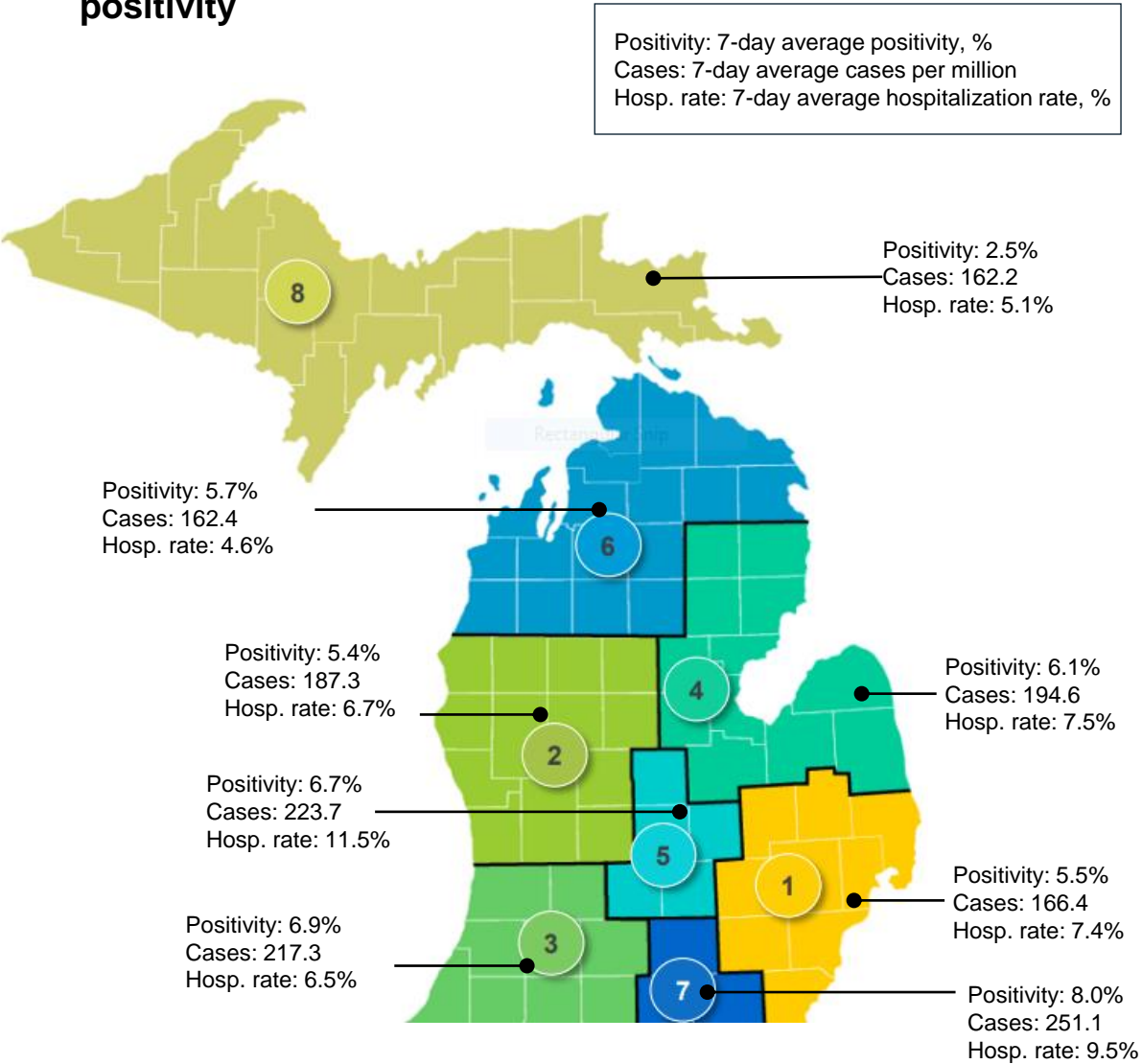


Recent statewide trends

Statewide trends

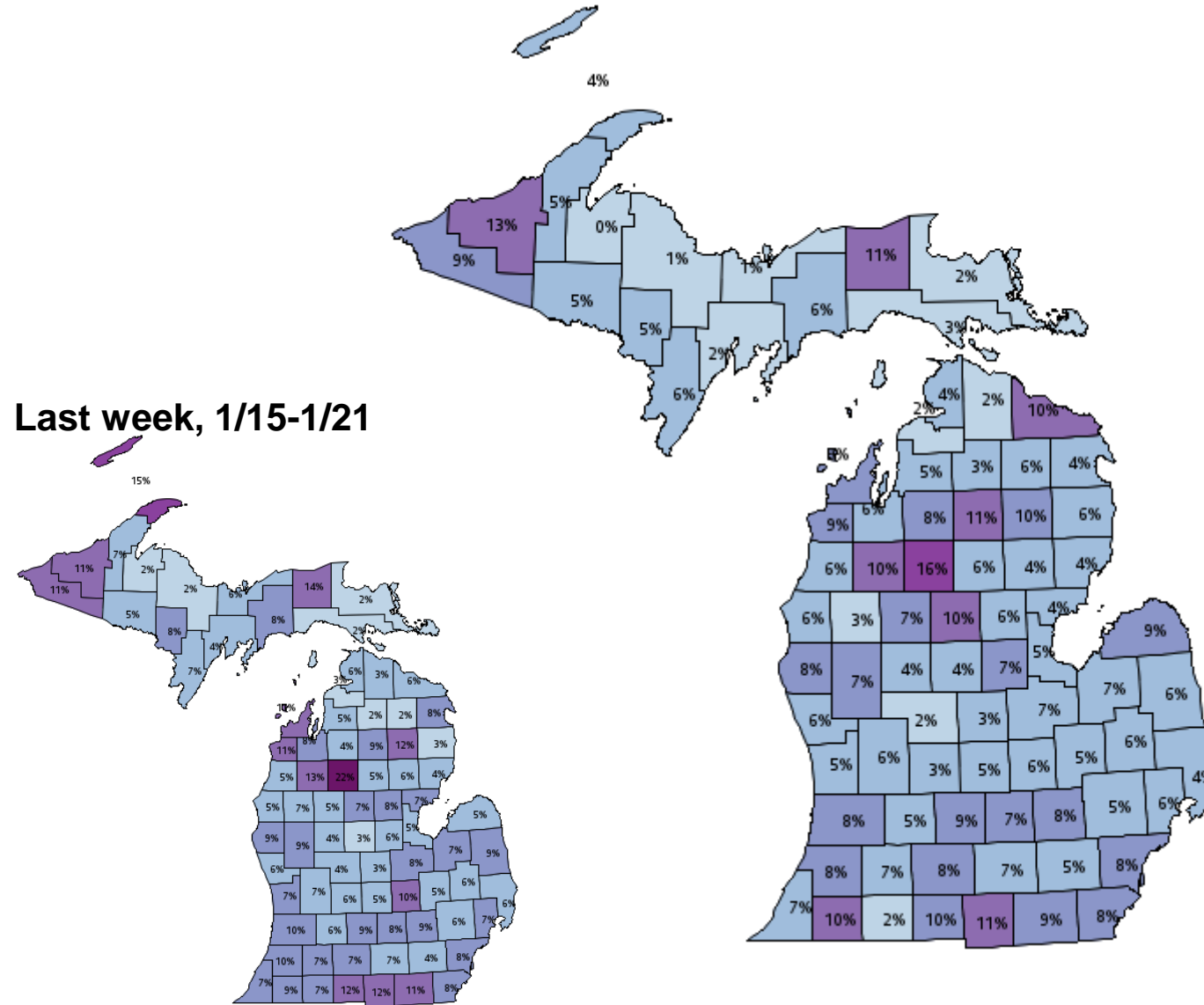


Regional breakdown: Cases, hospitalization rate, and positivity



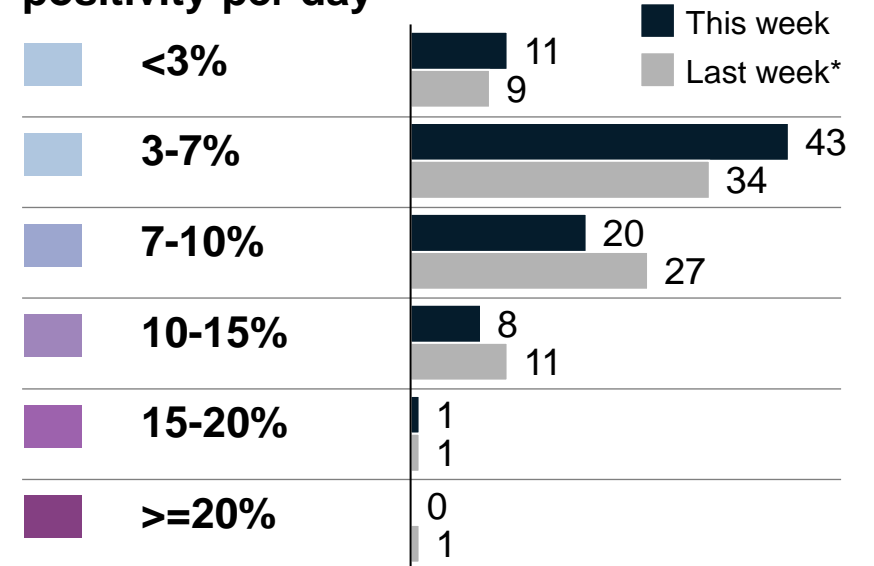
Source: <https://mistartmap.info/>

Positivity by county, 1/22-1/28



**Average
positivity per day**

of counties

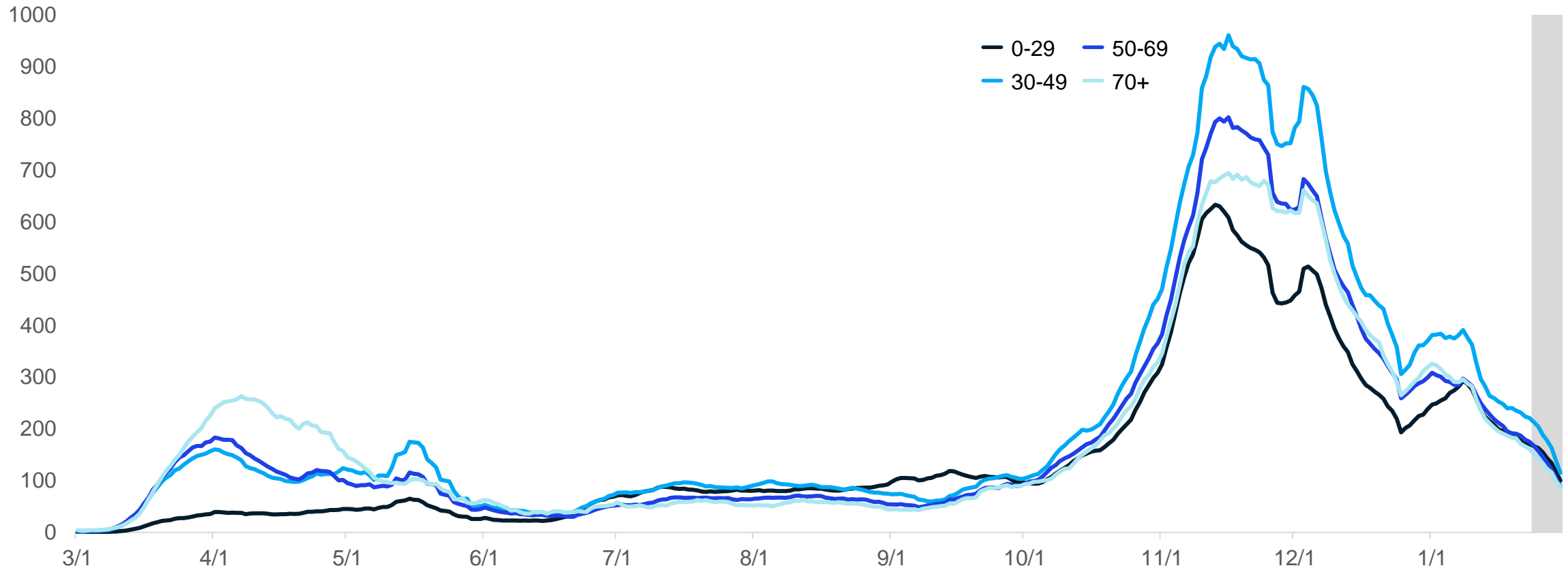


Updates since last week:

9 of 83 counties saw double digit positivity in the last week (4 county decrease)

Age group: average new daily cases

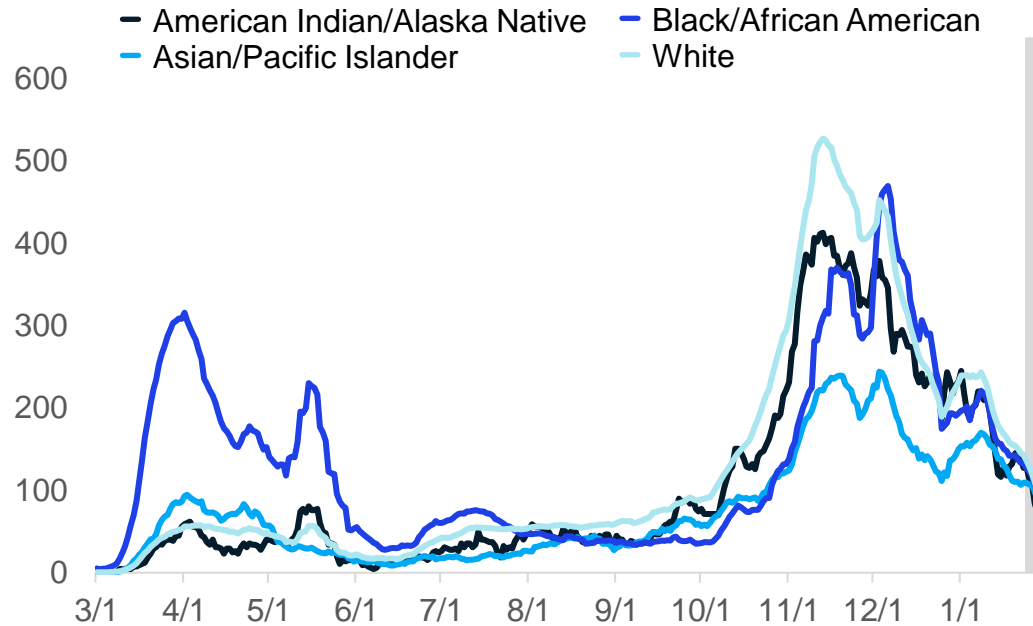
Daily new confirmed and probable cases per million by age group (7-day rolling average)



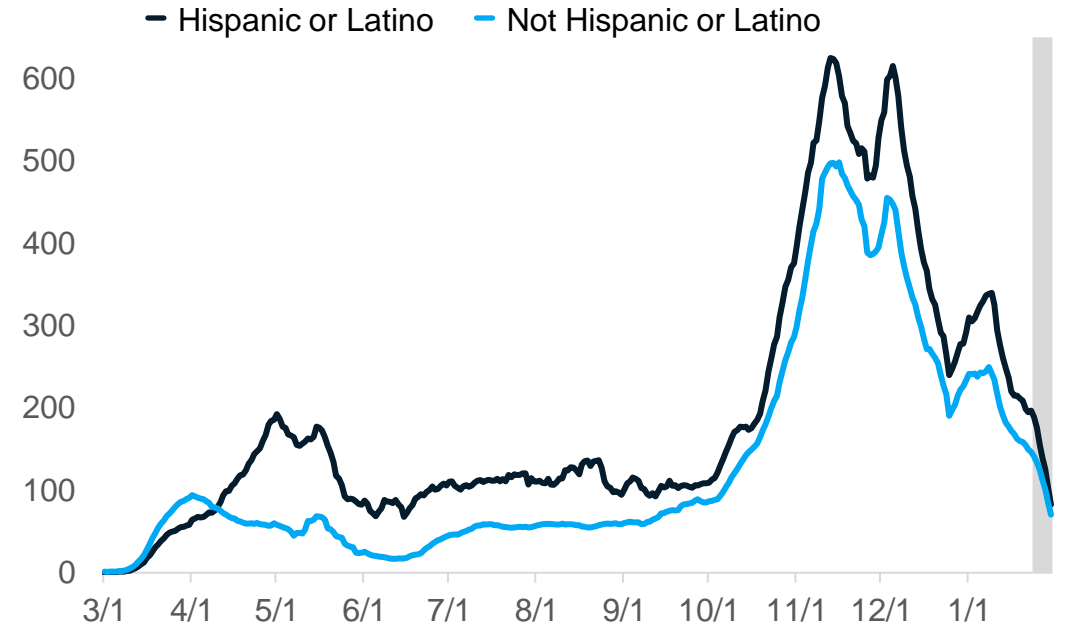
- 30-49 age group continues to have the highest cases per million
- All age groups are now decreasing

Average daily new cases per million people by race and ethnicity

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

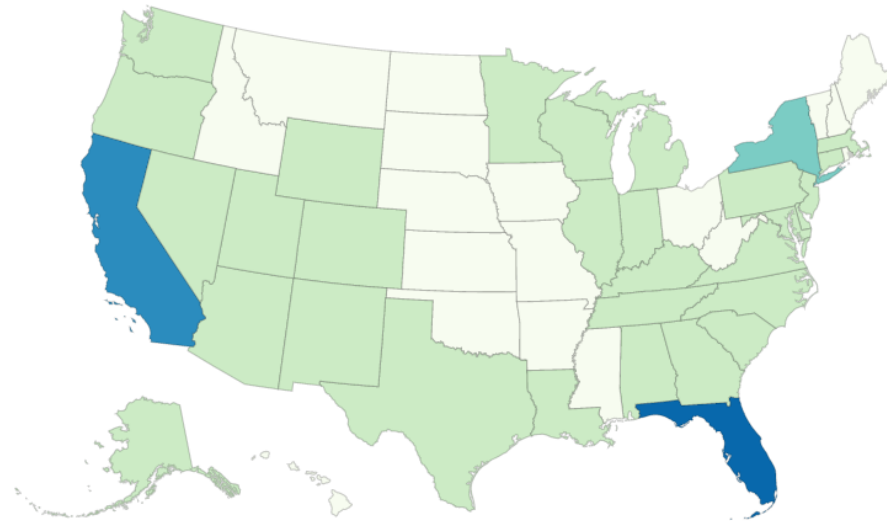


Updates since last week:

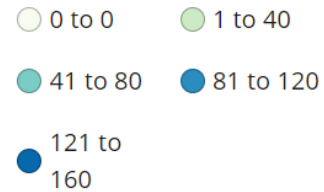
- Cases per million are now decreasing for all racial groups, as well as both Hispanic/Latinos and non-Hispanic/Latinos
- In the past 30 days, 26% of all cases represent unknown, multiple, or other races (17% of race is unknown)
- In the past 30 days, 21% of all cases have an unknown ethnicity reported

Identified US COVID-19 Cases Caused by All Variants of Concern

Emerging Variant Cases in the United States**



Emerging Variants



Territories AS GU MH FM MP PW PR VI



Top Five States	Variant Count
FL	147
CA	113
NY	42
MI	25*
GA	18

32 states and territories have B.1.1.7
1 state (MN) has P.1
2 states (MD, SC) have B.1.351

Data last updated January 31, 2021. The cases identified are based on a sampling of SARS-CoV-2-positive specimens and do not represent the total number of B.1.1.7, B.1.351, and P.1 lineage cases that may be circulating in the United States and may not match numbers reported by states, territories, tribes, and local officials.

Source: <https://www.cdc.gov/coronavirus/2019-ncov/transmission/variant-cases.html>

* Additional cases identified in MI after the CDC dashboard was published

Michigan COVID-19 Variant and Response

Situation: 25 cases and counting

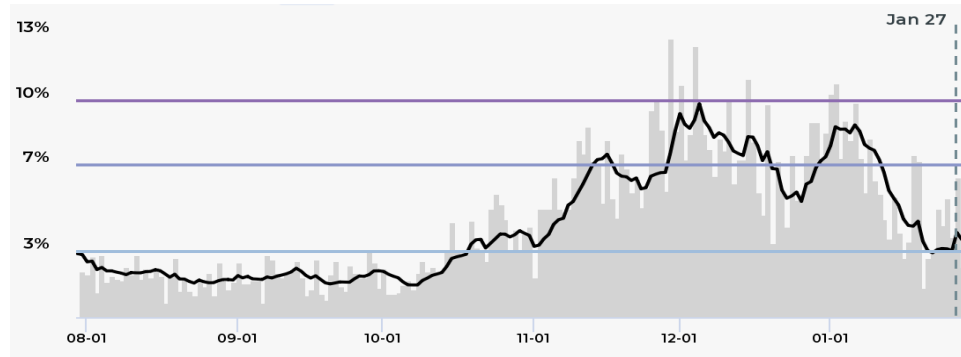
- 50% more transmissible = increased numbers of cases, hospitalizations, and deaths
- Slow spread of B.1.1.7 to allow for vaccination of vulnerable individuals
- Identified in Michigan
 - 19 individuals in Washtenaw County
 - 6 individuals in Wayne County
 - Expect there are more
- Public Action:
 - Masks (and face shields)
 - Social Distancing
 - Hand washing
 - Get tested if traveled out of MI in last 14 days

Response

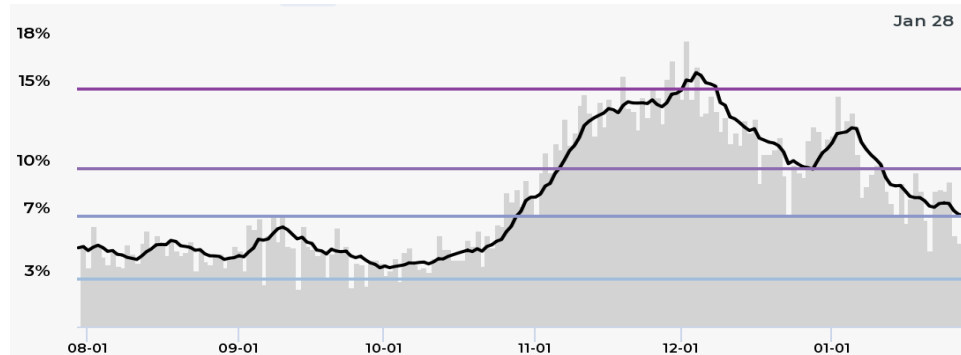
- Increase identification: samples from hospital laboratories
- Rapid case Investigation and consider inclusion of extra day before onset
- Impacted area;
 - Public notification of impacted areas
 - Strictly enforce isolation and full 14-day quarantine
 - Emphasize testing in affected areas
 - Expand testing capacity in areas where the variant has been detected.
 - Actively work to obtain testing for exposed individuals, particularly those that are known to have been exposed to the variant strain.

Recent trends: Positivity

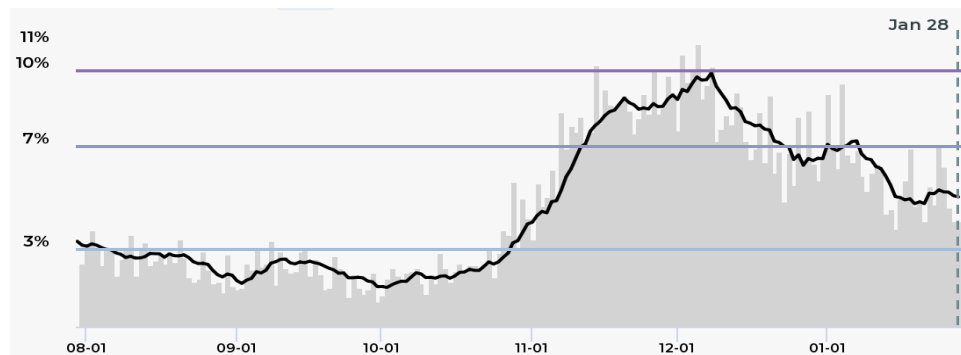
Washtenaw County



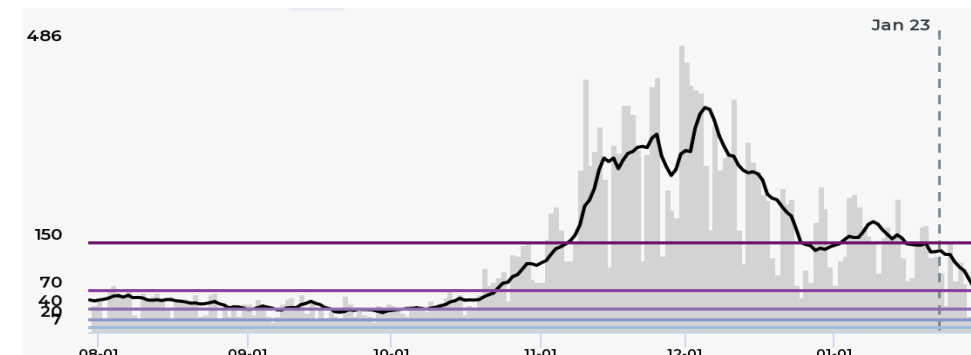
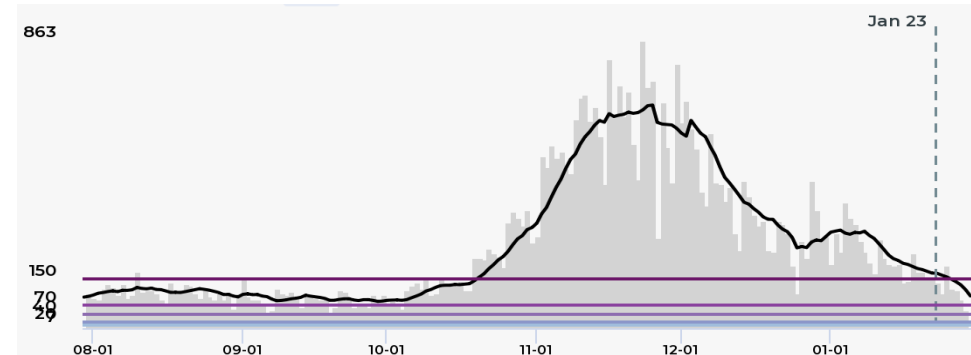
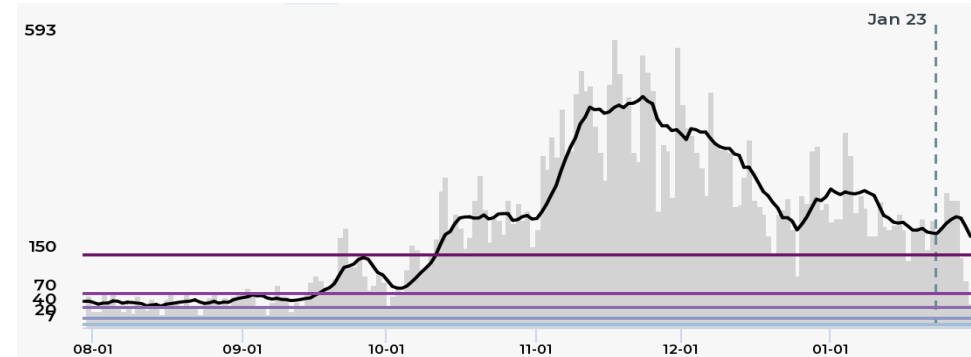
Wayne County



Detroit City



Recent trends: Case Rates

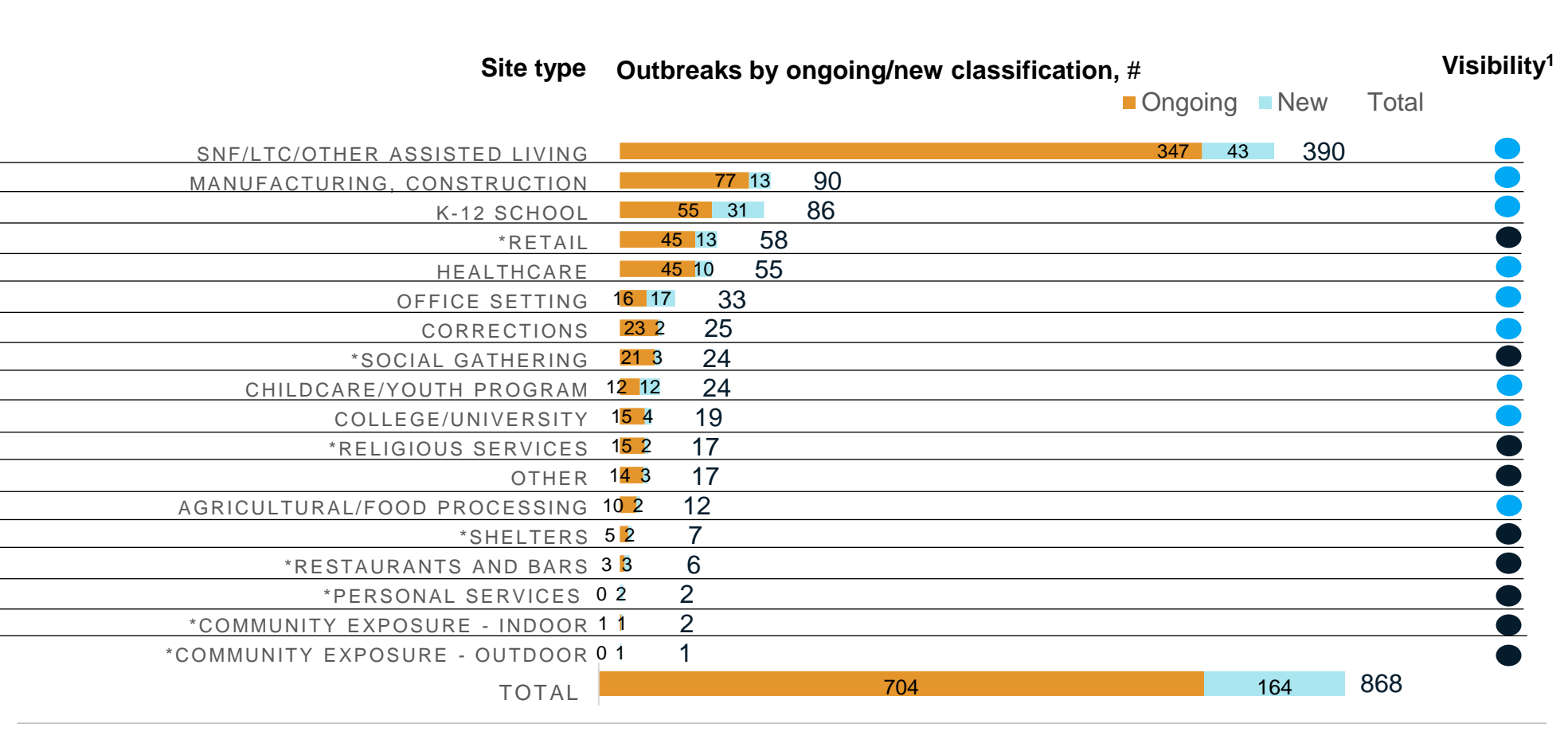


All charts represent data from 07/30/20 – 01/28/21

Number of outbreak investigations by site type, week ending Jan 28

Pre-decisional, for discussion only Draft

- Easier to identify outbreak
- Harder to identify outbreak



Total number of active outbreaks is up 2% from previous week

Following LTCs, the greatest number of new outbreaks were reported in K-12 schools (31), office setting (17), manufacturing/construction (13), retail (13), childcare (12), and healthcare (10).

LHDs reported new outbreaks in all settings

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

NOTE: Many factors, including the lack of ability to conduct effective contact tracing in certain settings, may result in significant underreporting of outbreaks. This chart does not provide a complete picture of outbreaks in Michigan and the absence of identified outbreaks in a particular setting in no way provides evidence that, in fact, that setting is not having outbreaks.
Source: LHD Weekly Sitreps

K-12 school outbreaks, recent and ongoing, week ending Jan 28

Number of reported outbreaks increased since last week (54 to 86) including increases in High Schools (21 to 28), Middle/Jr High (8 to 14), Pre K-Elementary (22 to 39), and Administrative (3 to 4).

Region	Number of reported cases, #	# Ongoing - Excluding New	# New	Number of outbreaks	Range of cases per outbreak
Region 1	5822			20	2-13
Region 2n	140			4	2-7
Region 2s	2410			6	2-16
Region 3	13327			17	3-21
Region 5	1914			8	2-13
Region 6	7418			16	2-17
Region 7	1317			11	2-11
Region 8	820			4	2-20
Total	343128			86	2-21

Grade level	Number of reported cases, #	# Ongoing - Excluding New	# New	Number of outbreaks	Range of cases per outbreak
Pre-school - elem.	13046			39	2-20
Jr. high/middle school	7740			14	2-20
High school	12837			29	2-21
Administrative	85			4	2-5
Total	343128			86	2-21

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.
Source: LHD Weekly Sitreps

COVID-19 and Healthcare Capacity and COVID Severity

Hospitalizations and ICU utilization are decreasing

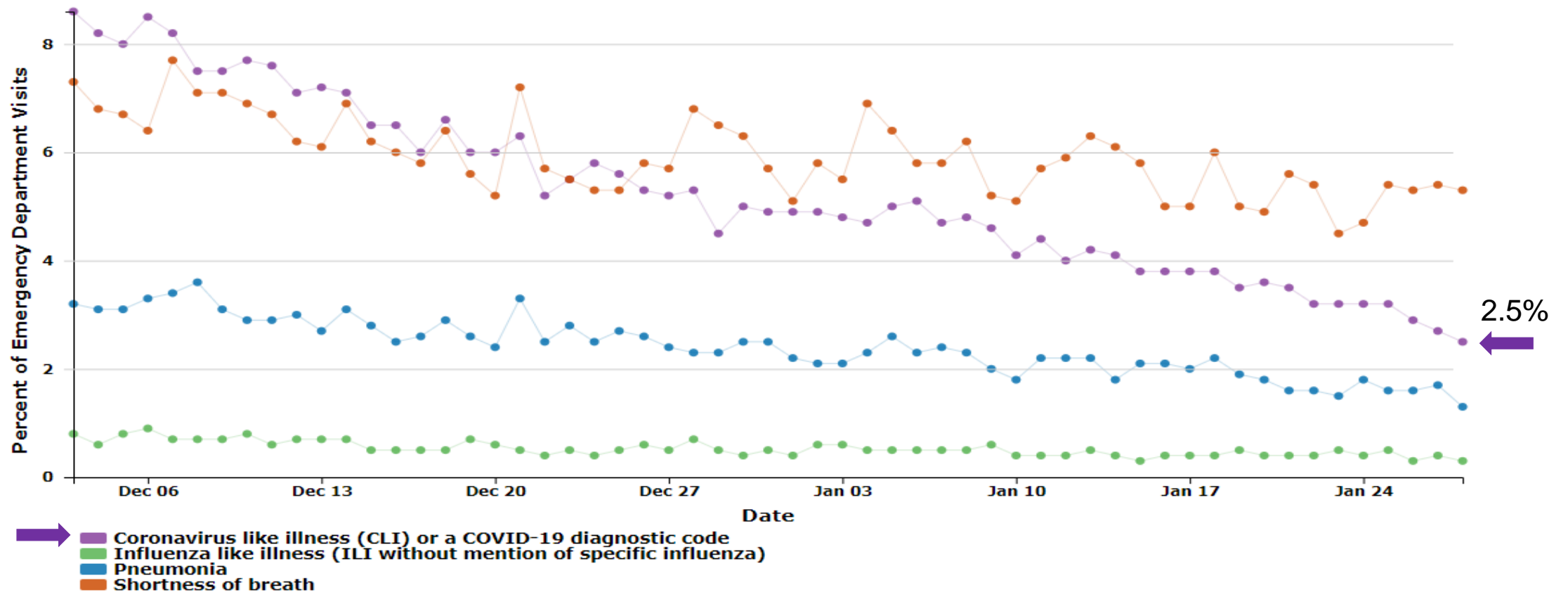
- COVID-like illness (CLI) continues with downward trend and is below 3%
- Hospitalizations down 68% since December 1st peak
- ICU occupancy declined 15% over last week
- All regions at or below 15% of Adult ICU beds with patients positive for COVID

Current deaths are a lagging indicator of cases, but the number of deaths have declined for six weeks

- 61% decrease from the peak on December 10
- Decreases in deaths seen among most ages, races, and ethnicities

Michigan Trends in Emergency Department Visits for COVID-19-Like Illness (CLI)

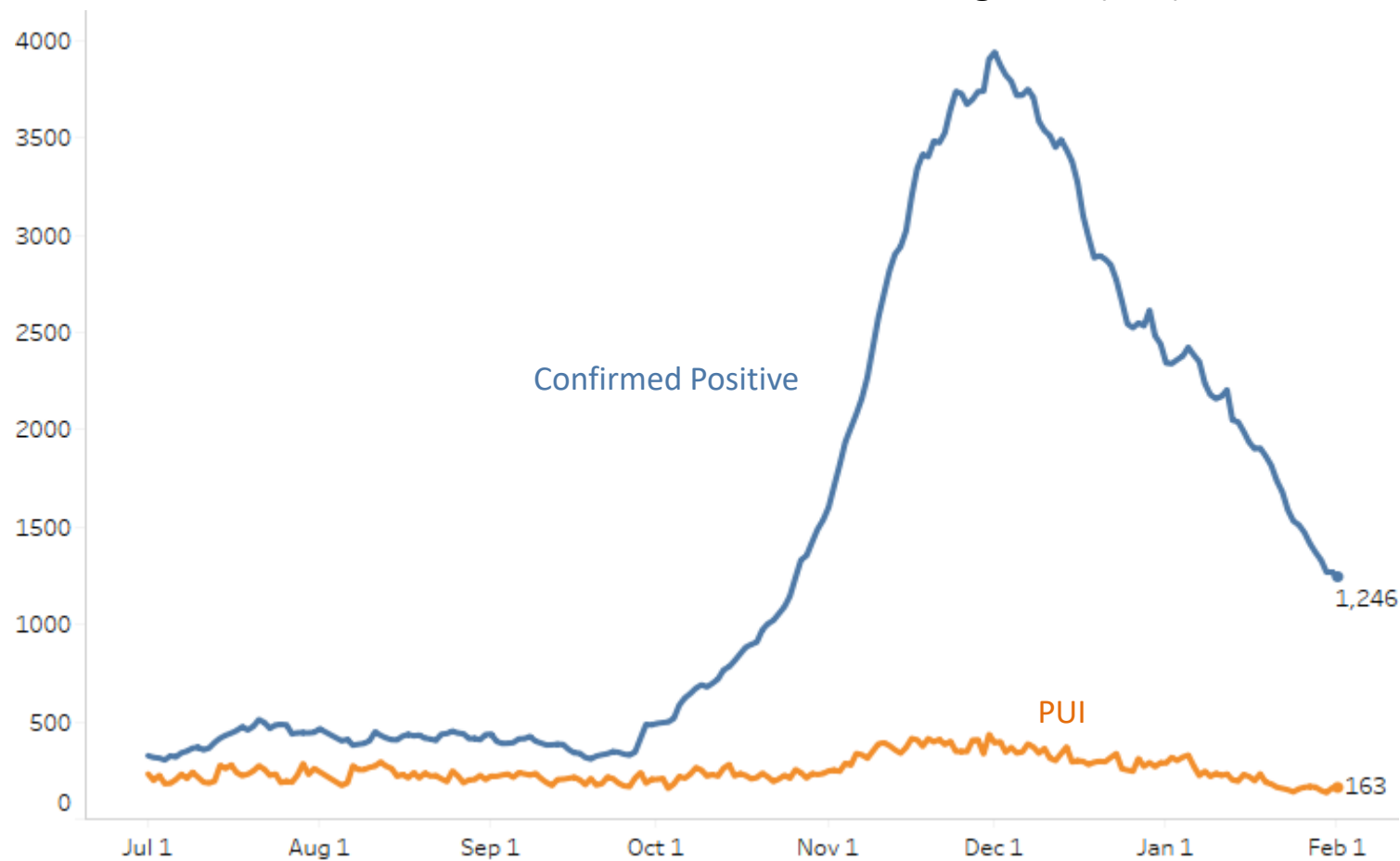
Percentage of ED visits by syndrome in Michigan: COVID-19-Like Illness, Shortness of Breath, Pneumonia, and Influenza-Like Illness



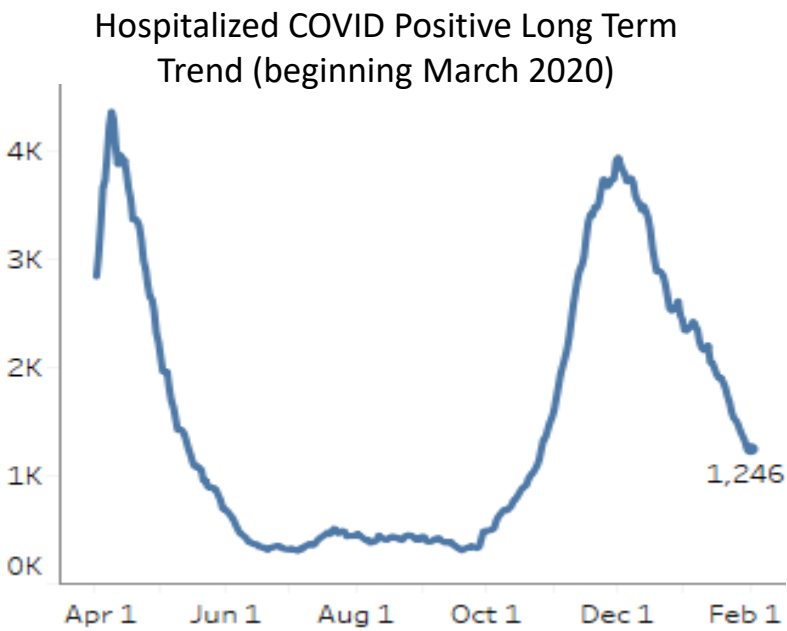
Source: <https://covid.cdc.gov/covid-data-tracker/#ed-visits>

Statewide Hospitalization Trends: Total COVID+ Census

Hospitalization Trends 7/1/2020 – 2/1/2021
Confirmed Positive & Persons Under Investigation (PUI)

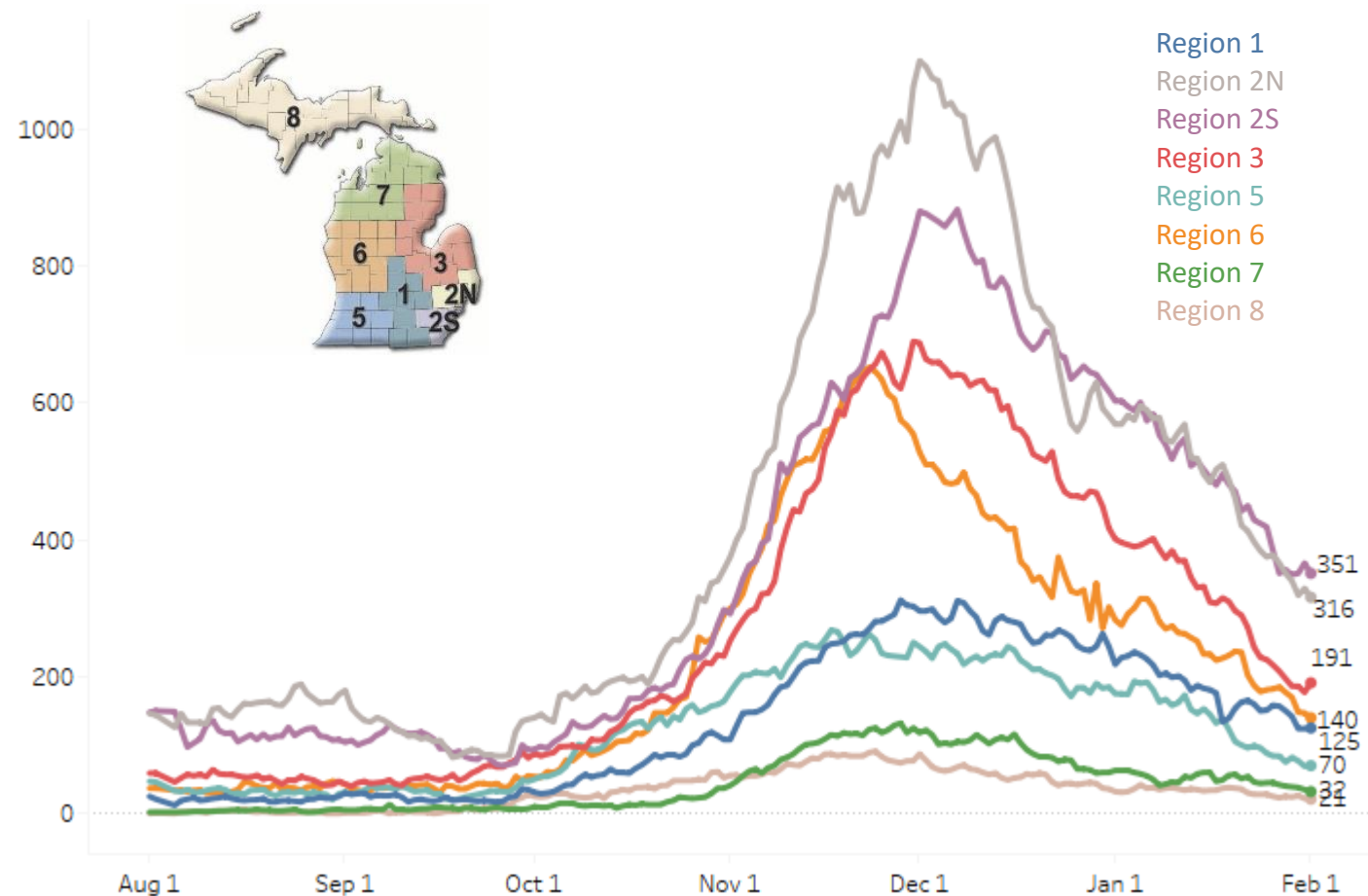


This week, COVID+ census in hospitals is down 18% from the previous week and down 68% from the December 1 peak.



Statewide Hospitalization Trends: Regional COVID+ Census

Hospitalization Trends 8/1/2020 – 2/1/2021
Confirmed Positive by Region



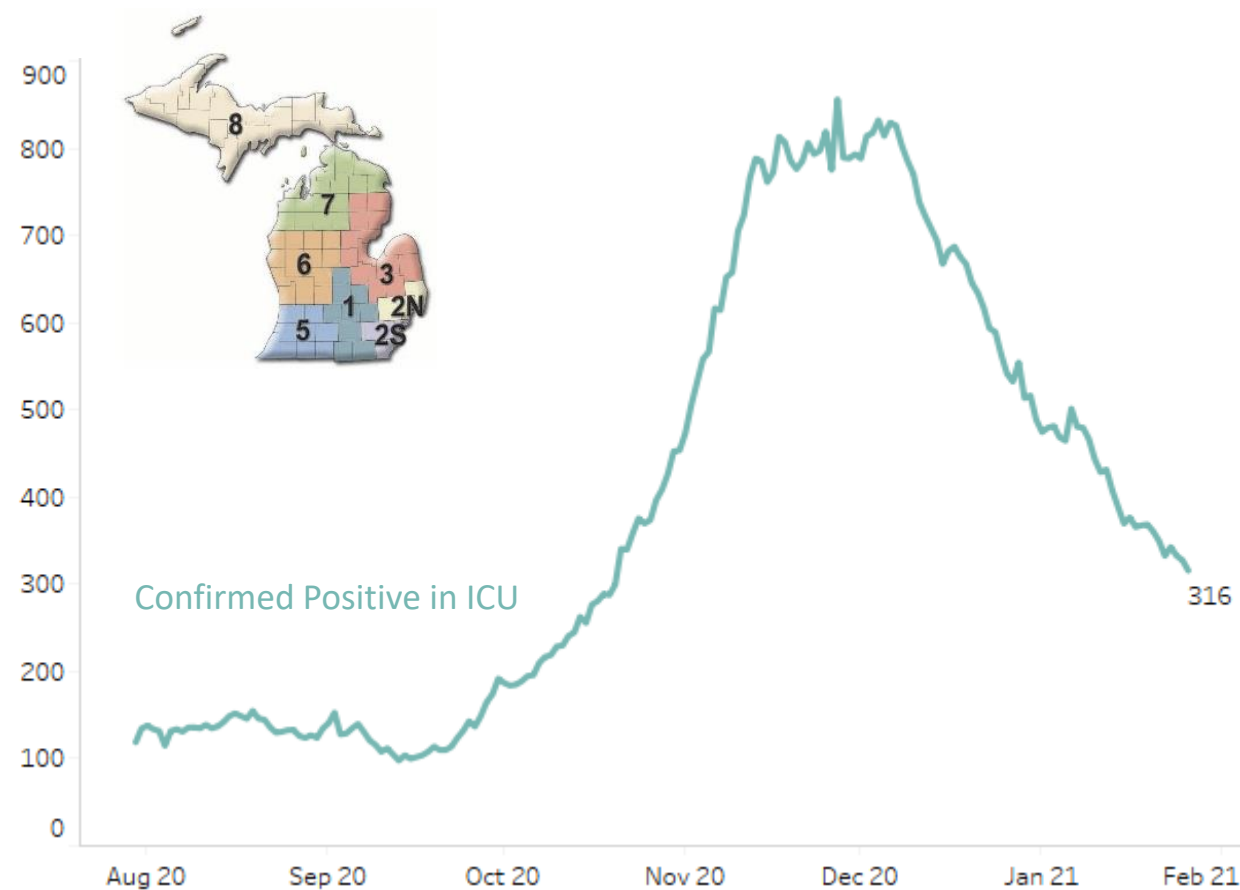
All regions are showing significant decreasing trends in COVID+ hospitalizations.

All regions are below 200 hospitalized per million of the population and 4/8 are below 100 per million.

Region	COVID+ Hospitalizations (% Δ from last week)	COVID+ Hospitalizations / MM
Region 1	125 (-17%)	116/M
Region 2N	316 (-16%)	143/M
Region 2S	351 (-16%)	158/M
Region 3	191 (-15%)	168/M
Region 5	70 (-20%)	73/M
Region 6	140 (-23%)	95/M
Region 7	32 (-30%)	64/M
Region 8	21 (-22%)	67/M

Statewide Hospitalization Trends: ICU+ COVID Census

Hospitalization Trends 8/1/2020 – 2/1/2021
Confirmed Positive in ICUs



The census of COVID+ patients in ICUs have declined 15% over the past week overall with nearly all regions showing declining trend.

Region 5 showed a substantial increase percentage wise but the absolute increase was 9 patients.

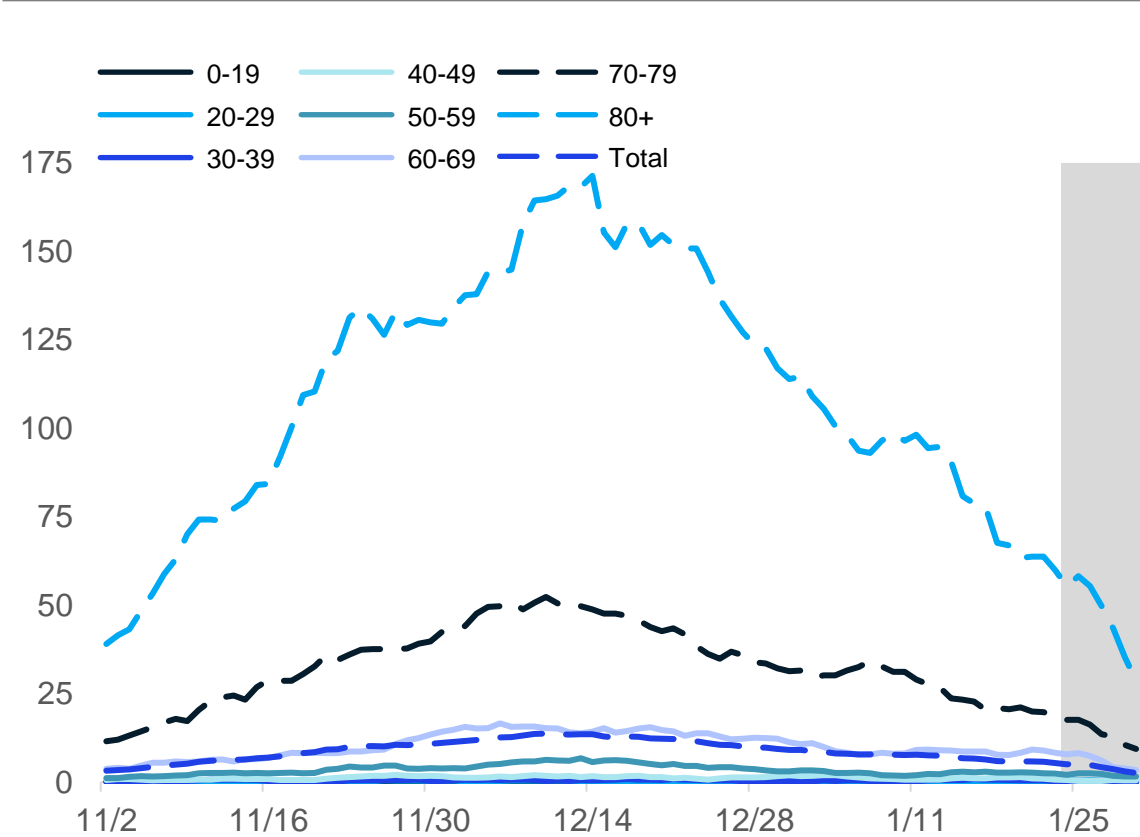
No regions have >15% of ICU beds occupied by COVID+ patients.

Region	Adult COVID+ in ICU (% Δ from last week)	Adult ICU Occupancy	% of Adult ICU beds COVID+
Region 1	28 (-20%)	87%	15%
Region 2N	58 (-28%)	79%	10%
Region 2S	83 (-17%)	75%	11%
Region 3	53 (-5%)	82%	15%
Region 5	22 (+69%)	86%	14%
Region 6	38 (-19%)	71%	11%
Region 7	27 (-16%)	67%	15%
Region 8	7 (-13%)	64%	12%

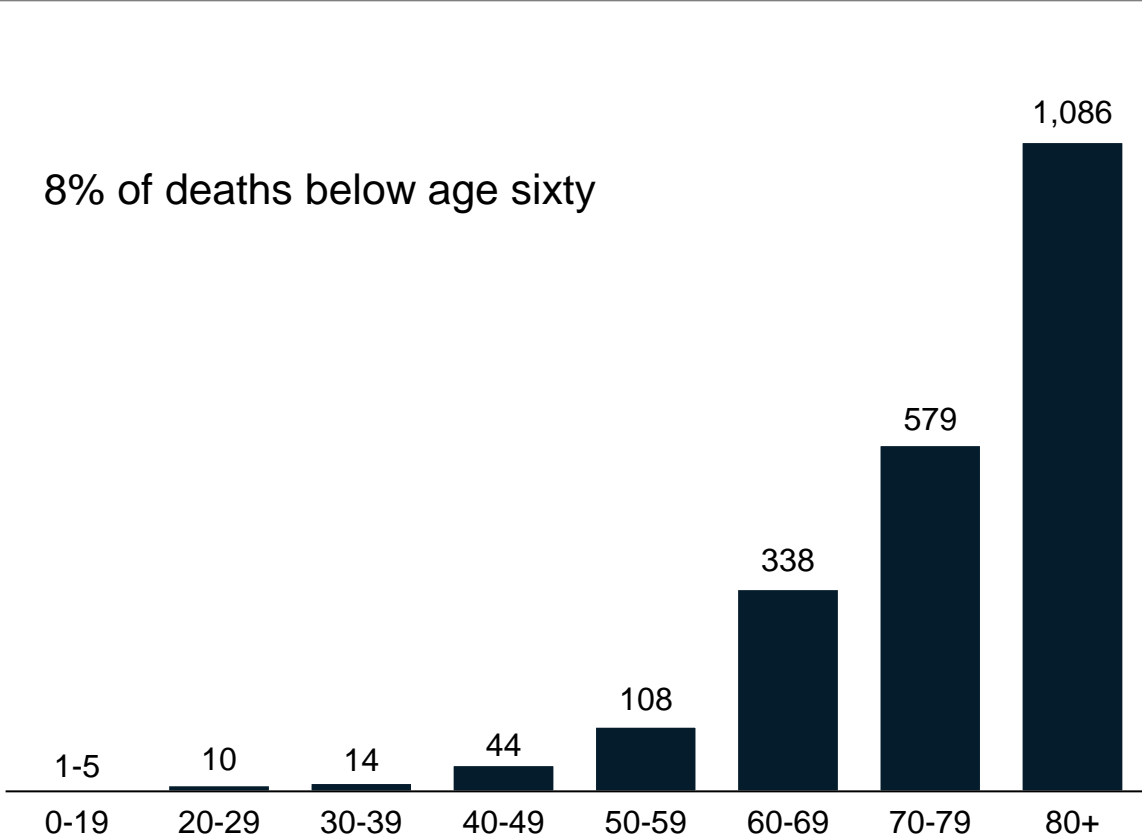
Hospital bed capacity updated as of 1/29

Average and total new deaths, by age group

Daily confirmed and probable deaths per million by age group (7 day rolling average)



Total confirmed and probable deaths by age group (past 30 days, ending 1/23/2021)

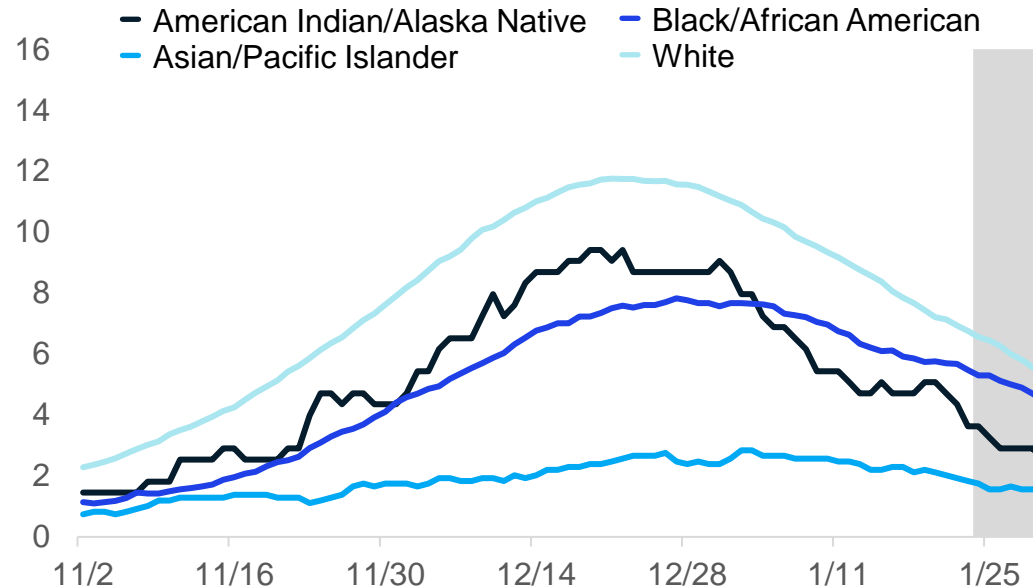


Note: Death information sourced from MDHHS and reflects date of death of confirmed and probable cases.

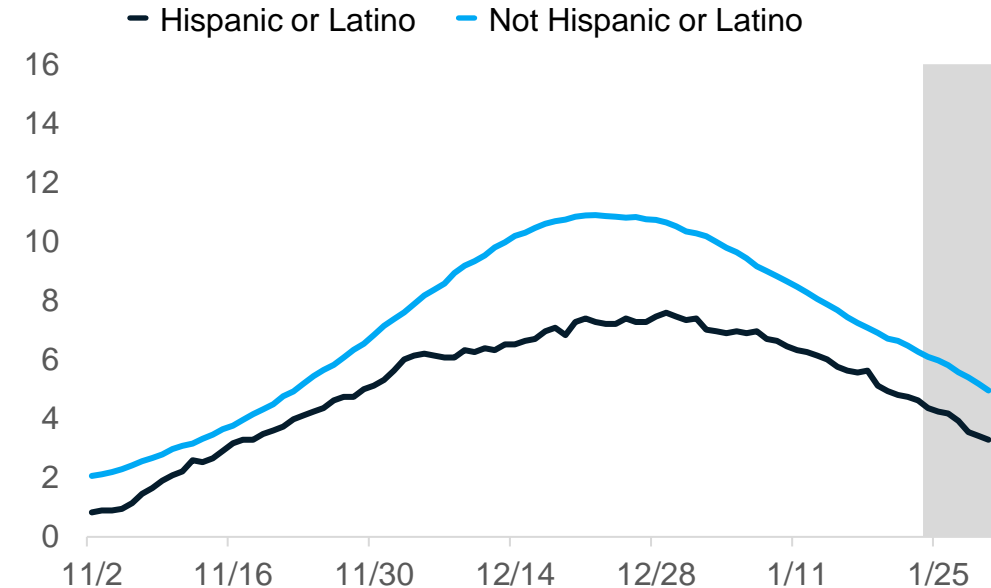
Source: MDHHS – Michigan Disease Surveillance System

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



Updates since last week:

- Deaths are a lagging indicator of cases, and death rates are decreasing among racial and ethnic groups
- Whites and Non-Hispanic/Latino have the most reported deaths per capita
- Deaths are not adjusted for confounders (e.g., age, sex, comorbidities)

How is public health capacity?

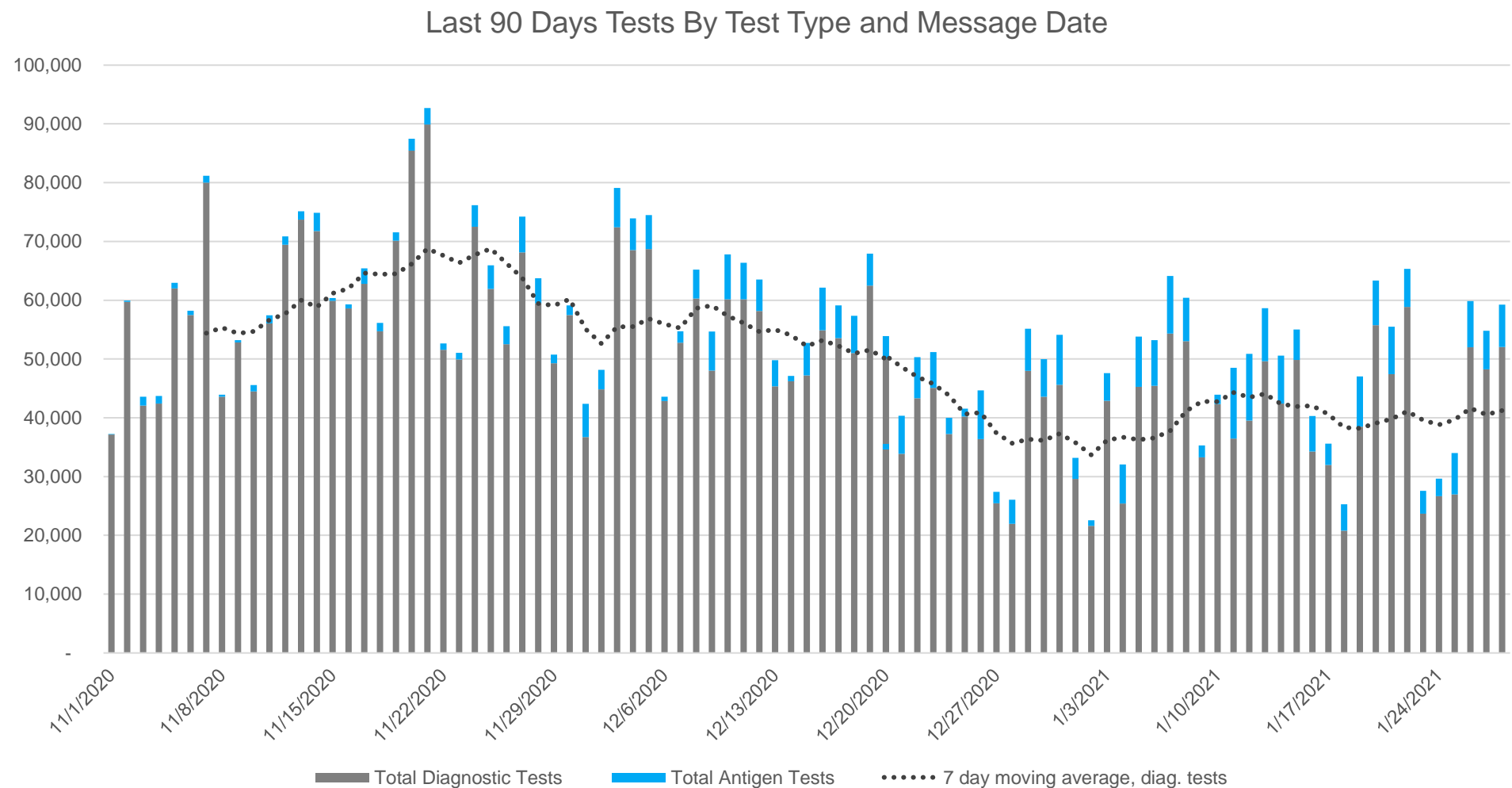
Testing volume is 47,200 tests (↑)

- 12.2% are antigen tests
- Testing by county ranges from 1,100 to 8,900 daily tests per million residents

Case investigations progress has plateaued

- Consistent number of cases interviewed, however, proportion completed has increased
- Consistent low proportion of cases interviewed with a source of known infection (indicating community acquisition)
- Consistent low proportion of those quarantining when their symptoms begin (indicating no effective halt in community transmission)

Daily diagnostic tests, by message date



Weekly Update

- 47,200 (↑) rolling 7-day average daily diagnostic tests reported to MDHHS (PCR + Ag)
- 41,212 average daily PCR tests (16,788 short of 58,000 goal)
- 16.7% of counties meeting testing capacity threshold (goal 100%)
- 12.2% are antigen tests over the past week (↓1.5%)
- 4.0% positivity in antigen tests (↓0.2%)

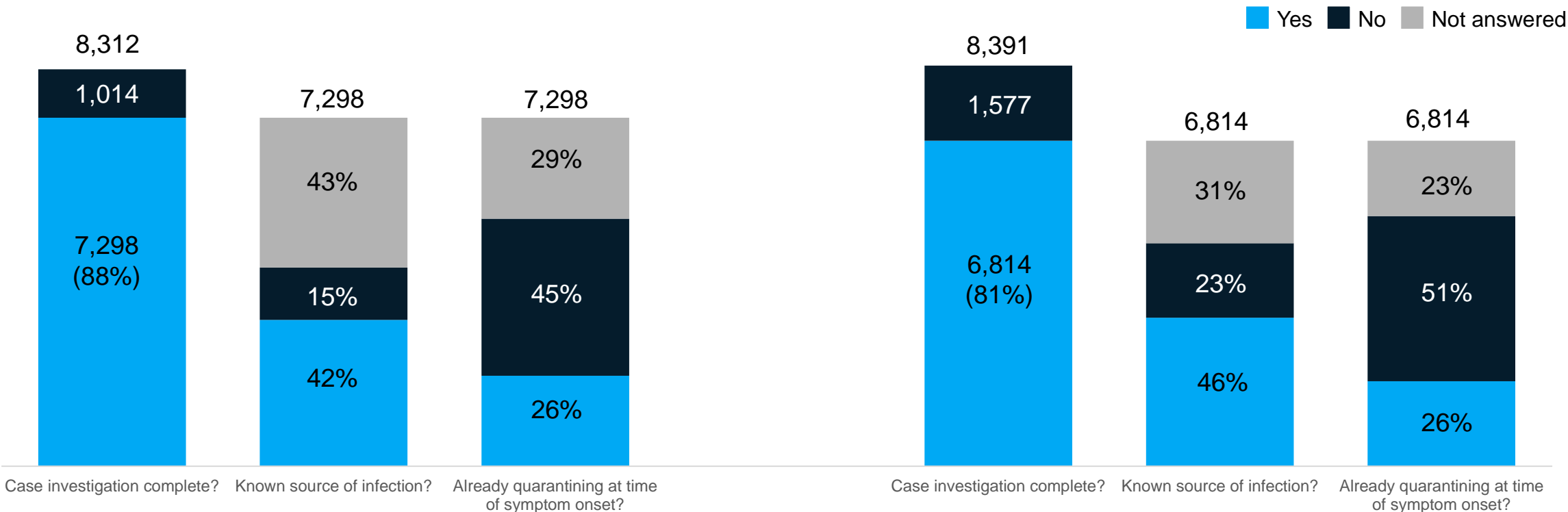
New Case Investigation Metrics (Statewide)

New Communicable Disease metrics slightly increased since last week:

- 46% of investigated cases having a known source (42% last week, 43% week prior)
- 26% of investigated cases noting that they were quarantining before symptoms (26% last week)

01/16-01/22 Case report form information

01/23-01/29 Case report form information

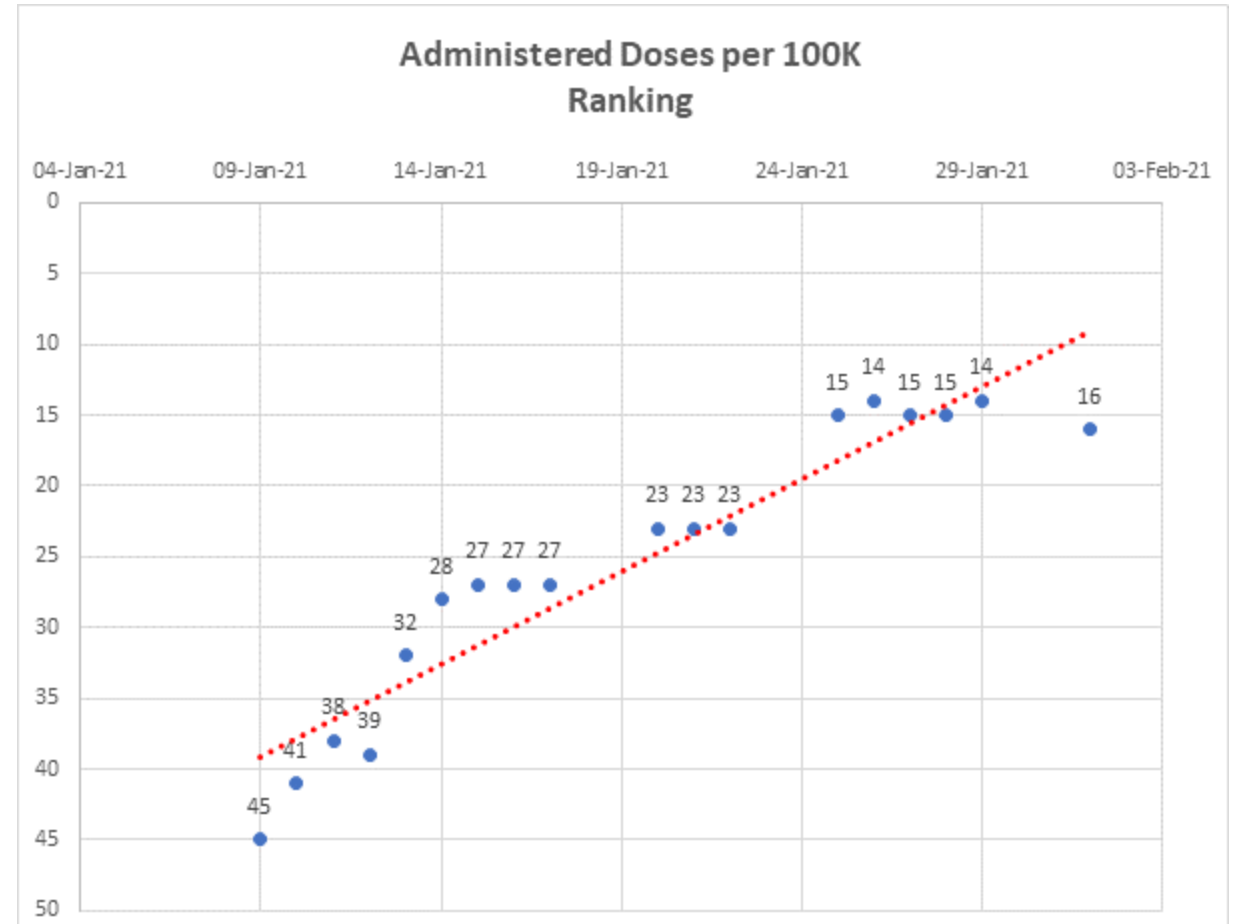


COVID-19 Vaccination

- MI 16th in nation for doses administered per 100,000 people
- 9.8% of Michiganders have first dose of vaccine (up from 7.8% last week and 5.4 two weeks ago)
- More than 1 million doses reported to MDHHS
- More than 200,000 people fully vaccinated
- Of doses reported in the last week, 44% of all first doses have been administered to people aged 65 and older
- LTC Federal Pharmacy Partnership:
 - 100% of skilled nursing facilities have had first 1st dose clinic
 - 81,336 residents and staff vaccinated
 - Added another partner to effort (Managed Care Health Associates)
 - Active recruiting of facilities who had been listed as opted out of the program underway.

Michigan COVID Vaccine Distribution & Administration as of 02/02/2021

	State Rank
Total Distributed (Number)	10
Distributed per 100K	37
Total Administered (Number)	7
Administered per 100K*	16
People with One+ Doses (Number)	9
People with One+ Doses per 100k	16
People with Two Doses (Number)	7
People with Two Doses per 100k	17



Doses Shipped and Administered

	Enrolled Providers	Doses Shipped	Total Doses Administered			1 st Dose Coverage, 16+
Data as of	1/31/21	2/1/21	2/1/21	1 st Dose	2 nd Dose	2/1/21
Michigan Distributed	2,047	1,305,325	1,001,873	801,691	200,182	9.8%
Federal LTC Program		430,200				
Total Distribution		1,737,325				

Vaccination by Age Group

More than 363,000 people aged 65 years or older have received one or more doses of vaccine.

36% of all first doses have been administered to people aged 65 and older

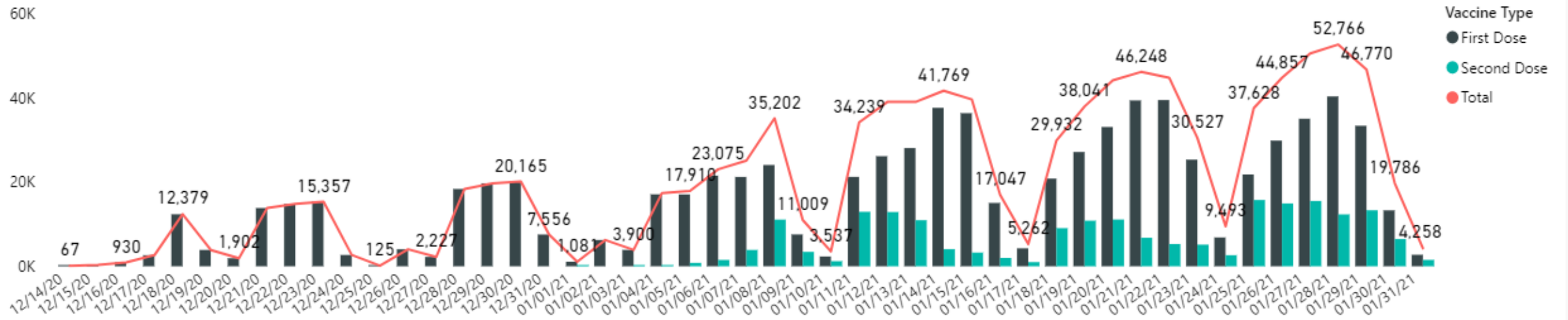
Of doses reported in the last week, 44% of all first doses have been administered to people aged 65 and older.

Age Category	People with One or More Doses	People with Two Doses	% of first dose vaccine by Age Group
16-19 years	4,033	1,059	0.4%
20-29 years	70,313	30,830	6.9%
30-39 years	99,086	46,426	9.8%
40-49 years	105,205	42,974	10.4%
50-64 years	171,769	66,678	16.9%
65-74 years	190,968	17,475	18.6%
75+ years	172,861	8,609	16.9%

Doses Administered Per Day (2/1/21)

2 days administering more than 50,000 doses/day administered

COVID Vaccine Doses Administered by Vaccine Type (units in K = 1000)



Federal Long-Term Care Facility (LTCF) Pharmacy Partnership Program

Data as of 1/24/21

- MHA added to partnership
- Added more LTC to this federal program.
- Active recruiting of facilities who had been listed as opted out of the program underway.

Pharmacy and Phase	Facilities	1st Clinic Complete	%	Residents & Staff Vaccinated	Clinics Next 7 Days
CVS Part A (SNF)	269	269	100%	36,989	0
CVS Part B (Other LTCF)	717	699	97%	25,524	5
Walgreens Part A (SNF)	145	145	100%	16,383	71
Walgreens Part B (Other LTCF)	2,065	1,284	62%	32,023	487
Managed Health Care Assoc (Other LTCF)	1,192	85	7%	432	124
Totals	4,388	1,753	51%	81,336	687





Science Round Up

- K-12 schools can have in-person learning with limited in-school COVID-19 spread
- Large COVID-19 outbreak reported in high school wrestling tournament
- NFL revised COVID-19 protocols after initial outbreaks

- New studies of B.1.1.7 severity
- Most recent data shows some return toward baseline mobility patterns, particularly for non-essential visits (data through 1/26/21)

K-12 schools can have in-person learning with limited in-school COVID-19 spread

17 K-12 schools in rural Wisconsin opened and implemented measures to limit spread:

-  Used masks
-  Established groups of 11-20 students
-  Staff maintained 6 feet of distance, if possible
-  Quarantined after exposures

* Weekly incidence of 34 to 1,189 per 100,000 persons in the community; 7-40% positive COVID-19 tests

Teachers reported more than 92% of students used masks



During 13 weeks of in-person learning

7 of 4,876 students and

0 of 654 staff

are known to have gotten COVID-19 at school

No spread is known to have occurred to or from staff in school despite some times with high community spread*

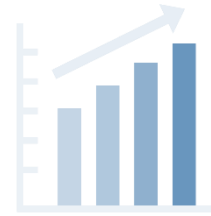
Study on School Re-opening – Wisconsin

- 17 participating schools (8 K-6; 9 7th-12th)
- 2-3 layer masks purchased for all students
- Exclusion of symptomatic children and siblings
- Strict cohorting and keeping students next to a buddy.

CDC Report: High School Wrestling Tournament



38 infections in 130 attendees,
10 high schools



Local community rates were
259 new cases / million / day.



30% of household members
infected.

One death in a contact >50
years old.



384 in-school close contacts
quarantined. 1,700 total
school days lost.

20% of non-household
members infected.

NFL Revised Protocols after initial outbreaks




NFL enhanced safety protocols included:

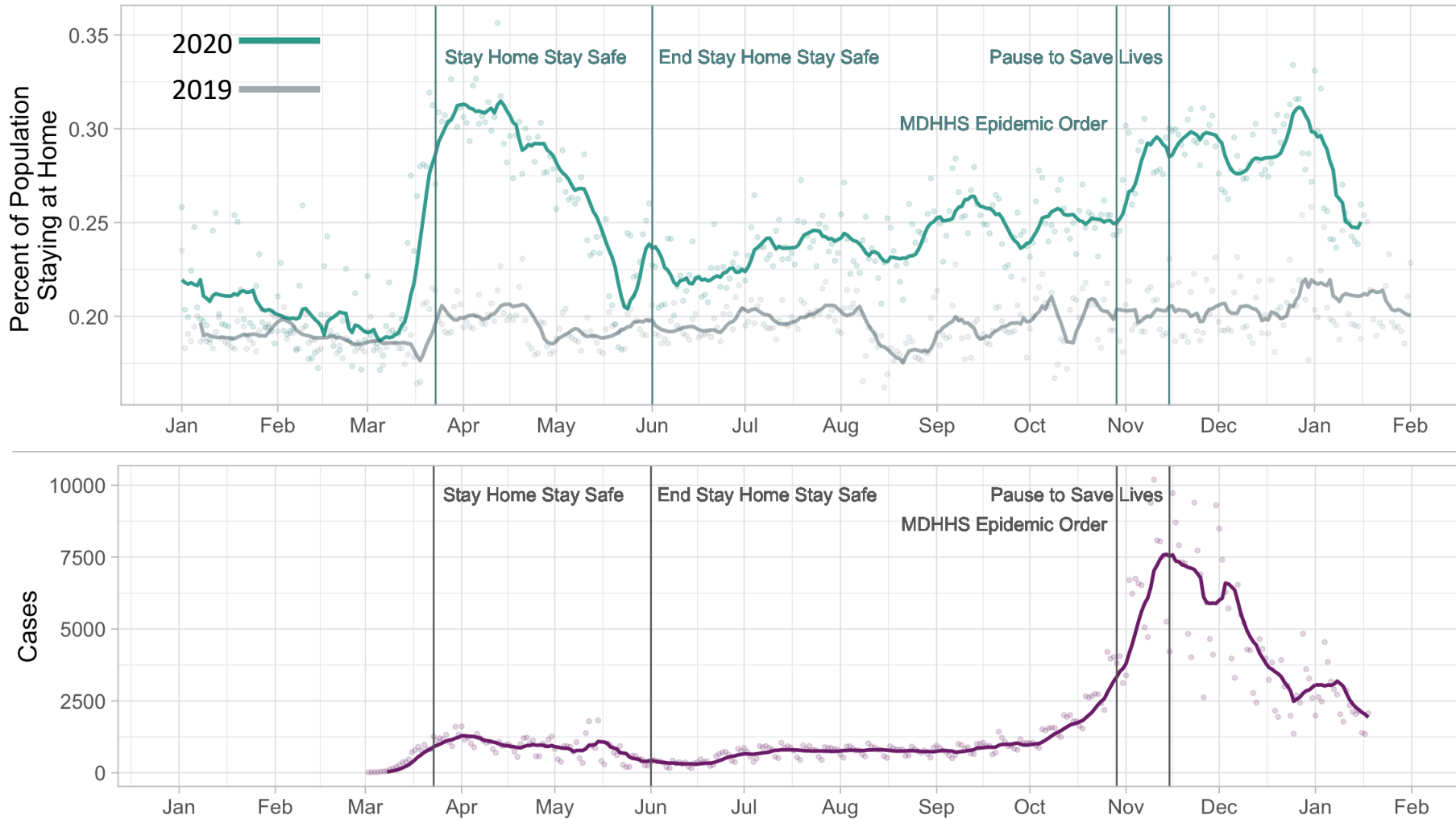
- No indoor meetings
- Proximity monitors to identify high risk contacts
- Masks required during practice and in weight room
- No seating for meals
- Locker room limited to <15 minutes & strongly discouraged
- No in-person contacts outside of facility or team travel

New studies of B.1.1.7 severity (UK)

- 4 analyses comparing risk of death in variant infections vs non-variant infection.
- Adjusted for age, location, time
- Estimated risk increase of 35-90%
- Increase seen across age groups.
- No effect on hospitalizations found yet.
- *Limitations* – Impact of B.1.1.7 outbreaks in nursing homes unclear

Example CFR Change: 1.7%  2.3% - 3.2%

How many people are staying at home in Michigan?



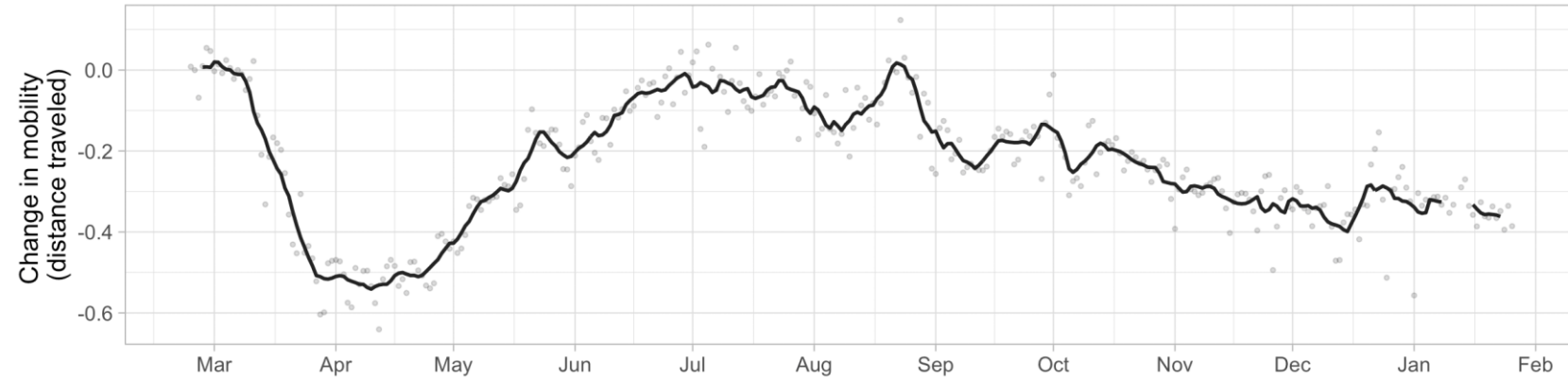
- Stay-at-home levels increased in November
- Recently declined back to pre-November levels
- Overall increase compared to 2019
- Most recent data is 1/16/21

Data Sources: [Bureau of Transportation Statistics](#),
MDHHS

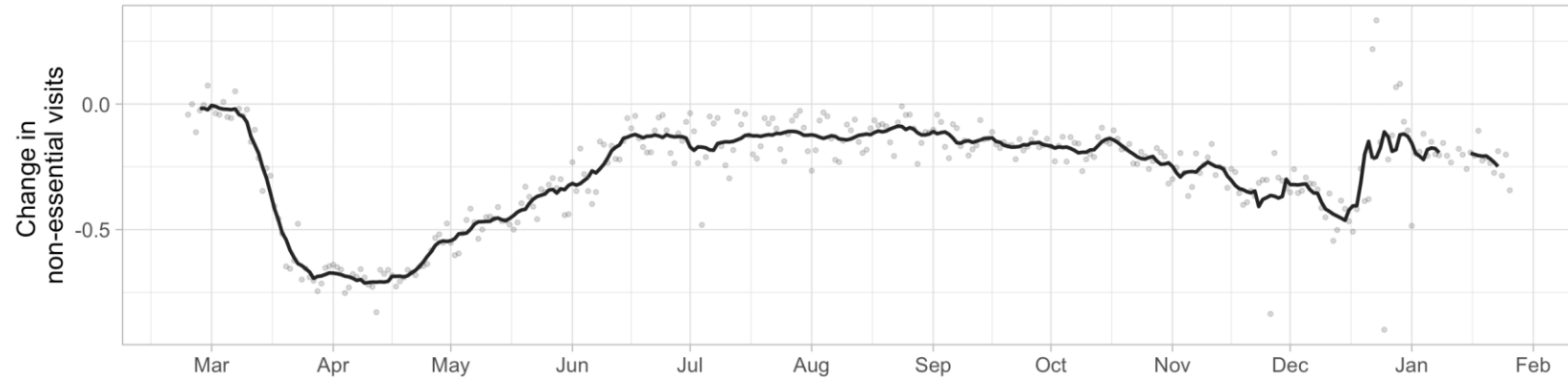
Unacast mobility patterns in MI

Most recent data shows some return toward baseline mobility patterns, particularly for non-essential visits (data through 1/26/21)

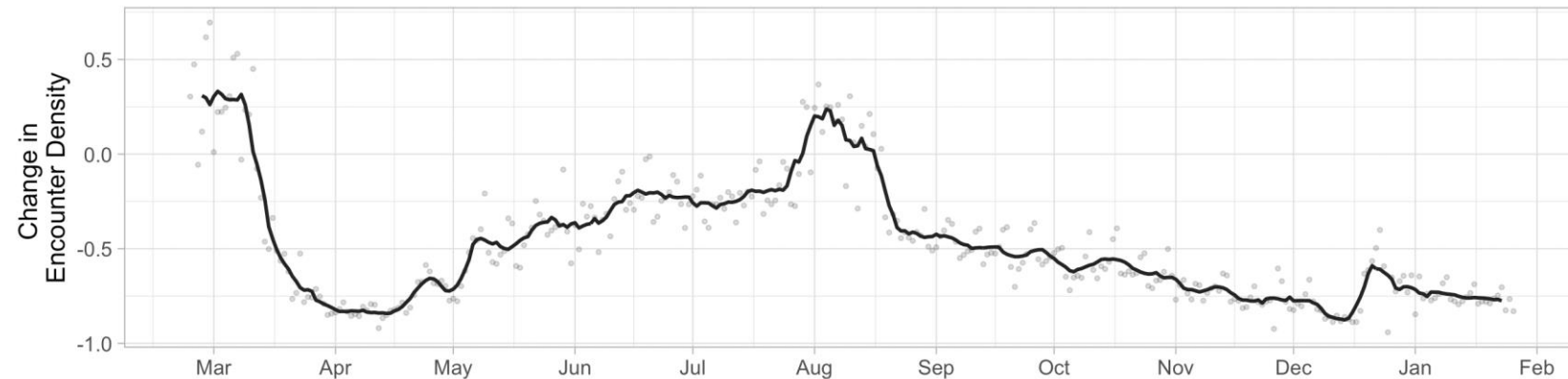
Change in average mobility



Change in non-essential visits



Difference in encounter density



unacast social distancing scoreboard

<https://www.unacast.com/covid19/social-distancing-scoreboard>