# MI COVID RESPONSE DATA AND MODELING UPDATE

**NOTE:** All data as of Jan. 9 unless otherwise noted

January 12, 2021

## **Executive summary**

Michigan has the 24<sup>th</sup> highest number of cases ( $\downarrow$ 4), 8<sup>th</sup> highest number of deaths ( $\leftrightarrow$ ), 48<sup>th</sup> highest case rate ( $\downarrow$ 2), and T12<sup>th</sup> highest death rate ( $\uparrow$ 4) in the last 7 days (source: CDC COVID Data Tracker)

Michigan has the 33<sup>rd</sup> highest hospitalization rate as a percent of total beds ( $\downarrow$ 1), and 14<sup>th</sup> highest number of COVID patients in the ICU ( $\downarrow$ 2) (source: Becker's Hospital Review)

**Case rates** (265.8,  $\uparrow$ 51.3), **percent positivity** (9.8%,  $\uparrow$  1.9%) have both changed directionality and are now increasing for the first time since mid-November

**12.1% of available inpatient beds are filled with COVID patients** ( $\downarrow$ 1.0%) and state trends for COVID hospitalizations are decreasing but the rate of decrease is slowing

There were **535 deaths** (137) but these are lagging indicators of cases and hospitalizations from several weeks ago

**Daily diagnostic tests increased to an average of 34.1K per day** ( $\uparrow$ 0.7K) over the last week and the state rate is **3,548.6 tests/million/day** ( $\uparrow$ 188.3)

296,588 COVID-19 doses administered (2970 doses per 100,000 population)

Science updates on the long-term sequalae of COVID-19, herd immunity threshold and vaccination, and mobility

## Comparison across states: Summary 1/11/21

What we see today:

- 38 states seeing increasing <u>1</u> week case trends (up vs. 33 last week)
- 47 states (down vs. 47) with significant outbreaks (high/increasing cases, increasing/high positivity increasing/high hospitalizations over 2 weeks (>100 per M))
- Arizona (685/M), Alabama, Nevada, California, Georgia have highest per capita <u>hospitalized</u> patient numbers
- Most rapid <u>1</u> week <u>case</u> growth: WA, VT, MT, AR, HI
- Midwest:
  - Wisconsin showing flat hospitalizations (180/M), moderate rise in cases (580/M)
  - Indiana with slight decline in hospitalizations (385/M), and rise in cases (755/M)
  - Illinois showing continued slow decline in hospitalizations (278/M), cases rising (530/M)
  - Ohio with stable hospitalizations (362/M) and increase in cases (670/M)
  - Michigan showing continued decline in hospitalizations (220/M) and rise in cases (310/M)

## Indiana and Wisconsin: Detailed examination



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## Ohio and Michigan: Detailed Examination

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## Illinois and Texas: Detailed Examination



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### **COVID-19 Spread – Based on January 9th data unless otherwise noted**

Positivity has increased to 9.8%

- Three MERC regions remain below 10%
- All eight MERC regions are seeing an increase in positivity over the previous week

Cases are now increasing

- Increases are seen among most age groups, races, and ethnicities
- Nearly a third of cases have race and ethnicity missing
- Number of active outbreaks is down 2% from previous week
- Number of reported school outbreaks decreased again since last week (78 to 50)

## **Confirmed and probable case indicators**

HEALTH

Table Date: 1/9/2021 (7 days from date table was produced: 1/2/2021)

											% inpatient beds occupied		
	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	by COVID-19 cases	Absolute deaths (per million)	Death trend
Detroit	1	2N + 2S	E	235.0	decline [46 days]	9.9	Increase - 1wk	3320.8	0.6	Decrease - 1wk	11.7	7.0	Decrease - 3wk
Grand Rapids	2	6	E	293.2	elevated incidence plateau	10.2	Increase - 1wk	3535.3	0.8	Increase - 1wk	11.3	6.6	Decrease - 3wk
Kalamazoo	3	5	E	319.5	elevated incidence growth	11.8	Increase - 1wk	3214.3	0.9	Decrease - 1wk	14.0	9.4	Decrease - 2wk
Saginaw	4	3	E	309.6	decline [51 days]	11.8	Increase - 1wk	3404.9	0.4	Increase - 2wk	15.1	14.0	Decrease - 3wk
Lansing	5	1	E	305.9	elevated incidence plateau	9.2	Increase - 1wk	3145.6	0.2	Decrease - 4wk	17.1	8.5	Increase - 1wk
Traverse City	6	7	E	243.3	elevated incidence growth	10.2	Increase - 1wk	2597.2	1.5	Increase - 1wk	6.2	7.4	Decrease - 1wk
Jackson	7	1	E	360.9	elevated incidence growth	11.8	Increase - 1wk	4563.4	0.7	Increase - 1wk	16.7	9.4	<20 wkly deaths
Upper Peninsula	8	8	E	263.8	elevated incidence plateau	5.1	Increase - 2wk	3730.3	0.9	Increase - 3wk	7.4	3.8	<20 wkly deaths
Michigan			E	265.8	elevated incidence	9.8	Increase	3548.6	0.7	Decrease - 6wk	12.1	7.7	Decrease - 3wk
Cases	Low: <7	A: 7- 20	B: 20- 40	C: 40- 70 D: 7 150	E: >=150		Positivit	Low <3%	A: 3- 7%	B: 7- 10%	C: 10- 15% D: 15- 20%	E: >=20%	8

**Risk levels** 

C

D

B

Low

Α

#### **Recent statewide trends**



#### Positivity by county, 1/1-1/7





#### Updates since last week:

46 of 83 counties saw double digit positivity in the last week (19 county increase)

### Confirmed COVID-19 cases by report date: State of Michigan

#### Confirmed cases reported on prior day (7-day rolling average)



#### **COVID-19 cases by onset date: State of Michigan**



#### Updates since last week:

- · Cases have increased for the first time in seven weeks
- Current statewide daily case rate remains more than 1.5x the highest risk level (risk level E is 150 cases/million)
- Several regional case rates are 2x the risk level E threshold

Note: Cases information sourced from MDHHS and reflects date of onset of symptoms (refers to lab-confirmed cases). Case spike on 5/12 is a result of batch of test results, not all of which have onset date of symptoms completed Source: MDHHS – Michigan Disease Surveillance System

#### 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
- Last week's case increases were seen across all age groups

## Average daily new cases per million people by race

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



- Cases per million experienced a one week increase among racial groups
- Last week's increase was greatest among Whites and American Indian/ Alaskan Native
- 31% of all cases represent unknown, multiple, or other races

Note: Cases information sourced from MDHHS and reflects date of onset of symptoms; note that Multiple Races, Other, and Unknown race/ethnicity are not included in calculations

### Average daily new cases per million people by ethnicity

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



- Cases per million experienced a one week increase for among both Hispanic/Latinos and non-Hispanic/Latinos
- 27% of all cases have an unknown ethnicity reported

Note: Cases information sourced from MDHHS and reflects date of onset of symptoms; note that Multiple Races, Other, and Unknown race/ethnicity are not included in calculations



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 7

Number of reported outbreaks decreased since last week (78 to 50) including reductions in High School (15 to 10), Middle/Jr High (17 to 12), Pre K-Elementary (36 to 22), and Administrative (10 to 6)

Region	Number of reported cases, #	# Ongoing - Excluding New 📃 # New	Number of outbreaks	Range of cases per outbreak
Region 1	37 10		6	3-12
Region 2n	20 0		7	2-4
Region 2s	8 0		1	8-8
Region 3	130 2		18	2-19
Region 5	8 <mark>-</mark> <del>0</del>		2	2-6
Region 6	109 4		12	2-16
Region 7	6 0		3	2-2
Region 8	5 0		1	5-5
Total	323 16		50	2-19

Grade level	Number of reported cases, #	📕 # Ongoing - Excluding New 📃 # New	Number of outbreaks	Range of cases per outbreak
Pre-school - elem.	136 5		22	2-19
Jr. high/middle school	90 2		12	2-16
High school	70 9		10	2-17
Administrative	27 -0		6	2-7
Total	323 16		50	2-19

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
- Hospitalizations down 45% since December 1<sup>st</sup> peak
- ICU occupancy declined 9% over last week
- All regions now below 25% of Adult ICU beds with patients positive for COVID but two regions remain > 20% (regions 1, 3)

Current deaths are a lagging indicator of cases, but the number of deaths have declined for third consecutive week

• Decreases in deaths seen among most ages and races

# 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



## Statewide Hospitalization Trends: Total COVID+ Census





## Statewide Hospitalization Trends: Regional COVID+ Census

Hospitalization Trends 8/1/2020 – 1/11/2021 Confirmed Positive by Region



All regions are showing decreasing or flat trends in COVID+ census.

Region 1, 5 and 7 had the largest percentage declines.

Region	Trend from Last Week	COVID+ Hospitalizations / MM
Region 1	-15%	186/M
Region 2N	-3%	252/M
Region 2S	-9%	242/M
Region 3	-5%	325/M
Region 5	-16%	170/M
Region 6	-12%	181/M
Region 7	-25%	90/M
Region 8	0%	116/M



## Statewide Hospitalization Trends: ICU COVID+ Census



The census of COVID+ patients in ICUs have declined over the past week by about 9%, with all regions except 2S and 5 showing a decline.

All regions have below 90% overall ICU occupancy. Only Region 1 and 3 have >20% 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	46 (-2%)	83%	24%
Region 2N	77 (-23%)	81%	14%
Region 2S	144 (+10%)	82%	19%
Region 3	75 (-24%)	88%	21%
Region 5	22 (+10%)	77%	15%
Region 6	67 (-7%)	67%	19%
Region 7	27 (-25%)	68%	15%
Region 8	7 (-22%)	64%	12%

Hospital bed capacity updated as of 1/8

#### **COVID-19 deaths by date of death: State of Michigan**



#### Updates since last week:

Although deaths are a lagging indicator of cases, the number of deaths have declined for three weeks

The current number of deaths is more than 6x the number of deaths in early October

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

#### Average and total new deaths, by age group



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

Source: MDHHS – Michigan Disease Surveillance System

## Average daily new deaths per million people by race



- Deaths per million continue to decrease among racial groups, but this is a lagging indicator of cases
- Whites have the most reported deaths per capita
- The large fluctuation seen among American Indian/Alaskan Native is due to small population size

## Average daily new deaths per million people by ethnicity



• Deaths per million continue to decrease for non-Hispanic/Latino, but this is a lagging indicator of cases

• Hispanic and Latino deaths per million are less than non-Hispanic but are somewhat plateaued since mid-November

Note: Multiple Races, Other, and Unknown race/ethnicity are not included in calculations Source: MDHHS – Michigan Disease Surveillance System

### How is public health capacity?

Testing volume has increased slightly from last week to 37,591

- 13.8% are antigen tests
- Testing by county ranges from 2,000 to 7,000 daily tests per million residents

Compared to other states, SARS-CoV-2 testing in Michigan has increased

- Number of daily molecular tests remains one of the best in the country
- Over the last week, Michigan performed more testing per capita than approximately two-thirds of all other states

Case investigations improving after the holiday dip

- Proportion of cases interviewed continue to show lower source of known infection indicating community spread
- Among those cases interviewed, there continues to be a low proportion of those quarantining when their symptoms begin

COVID-19 Vaccination increasing

• 296,588 doses administered (2970 doses per 100,000 population)

## **Testing Overview**

		A	ntigen	(rapid) Te	sts									
<u>Metric</u>	<u>Scope</u>	<u>Target</u>	<u>CURRENT</u>	<u>Previous</u>	Trend	<u>Status</u>	<u>Metric</u>	<u>Scope</u>	<u>Target</u>	<u>CURRENT</u>	<u>Previous</u>	<u>Trend</u>	<u>Status</u>	
Daily Average Tests last 7 days	Overall w/MDOC	58,000	40,971	35,786	Increasing	over 20% away	Daily Average Tests last 7 days	Overall w/MDOC	TBD	6,546	5,706	Increasing		
<b>Daily AVG per Mil.</b> last 7 days	Overall w/MDOC	4,000	4,099	3,580	Increasing	within 5%	<b>Daily AVG per Mil.</b> last 7 days	Overall w/MDOC		655	571	Increasing		2-
Daily Average Tests last 7 days	MDOC ONLY	464	2,447	2,338	Increasing	over 20% away	Daily Average Tests last 7 days	MDOC ONLY		64	69	Decreasing ▼		37 Av
% Counties Test 4,000/Mil./day	Overall <u>No</u> MDOC	100%	17.9%	7.1%	Increasing	over 20% away	% Counties Test 400/Mil./day	Overall <u>No M</u> DOC		86.9%	76.6%	Increasing		dia we
Daily % Positive last 7 days	Overall <u>No</u> MDOC	3.0%	9.5%	9.3%	-Stable-	over 20% away	Daily % Positive last 7 days	Overall <u>No</u> MDOC		3.4%	3.6%	Decreasing T		13 tes
% Counties <u>≥</u> 15% Positivity	Overall <u>No</u> MDOC	0.0%	8.3%	3.6%	Increasing	over20% away	% Counties <u>≥</u> 15% Positivity	Overall <u>No</u> MDOC		3.6%	3.9%	Decreasing		we
% Counties <b>≥10% Positivity</b>	Overall <u>No</u> MDOC	0.0%	52.4%	38.1%	Increasing	over 20% away	% Counties <b>≥10% Positivity</b>	Overall <u>No</u> MDOC		4.8%	7.8%	Decreasing <b>V</b>		Ū
% Counties > <b>5% Positivity</b>	Overall <u>No</u> MDOC	10.0%	88.1%	81.0%	Increasing	over 20% away	% Counties <b>≥5% Positivity</b>	Overall <u>No</u> MDOC		15.5%	23.4%	Decreasing		

#### 91

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are antigen over the past

positivity

## Daily diagnostic tests, by message date



#### Daily molecular tests

State Tests (K		Tests (K)
1	California	287.7
2	Illinois	88.7
3	North Carolina	60.4
4	Michigan ( <b>↑</b> 1)	57.5
5	New Jersey	56.3
6	Florida	51.0
7	Connecticut	33.8
8	Georgia	30.0
9	Louisiana	27.1
10	Arizona	22.6
11	Massachusetts	21.8
12	Arkansas	15.6
13	Kentucky	15.2
14	Maryland	14.1
15	New Mexico	12.5
16	Indiana	12.2
17	Colorado	11.8
18	Alabama	10.7
19	Mississippi	10.4
20	Minnesota	9.6
21	Maine	8.7
22	Alaska	8.4
23	Missouri	7.1
24	Montana	6.6
25	District of Columbia	5.6
26	Kansas	5.5
27	lowa	2.9
28	Delaware	2.7

## Weekly % of pop. tested

State		Weekly % tested				
1 Alaska		8.0%				
2 New Yor	k	7.6%				
3 Connect	icut	6.6%				
4 West Vir	ginia	5.7%				
5 District of	of Columbia	5.6%				
6 Californi	а	5.1%				
7 Illinois		4.9%				
8 Maine		4.5%				
9 New Jer	sey	4.4%				
10 Montana	a	4.3%				
11 New Me	xico	4.2%				
12 Louisian	а	4.1%				
13 North Ca	arolina	4.0%				
14 Michiga	n ( <b></b> 16)	4.0%				
15 South C	arolina	4.0%				
16 Arkansa	S	3.6%				
17 Oklahon	na	3.4%				
18 Oregon		3.2%				
19 Tenness	ee	3.1%				
20 Ohio		2.9%				
21 Virginia		2.7%				
22 Texas		2.6%				
23 Washing	gton	2.6%				
24 Mississi	ррі	2.5%				
25 Kentuck	у	2.4%				
26 Massacl	nusetts	2.2%				
27 Arizona		2.2%				
28 Georgia		2.0%				

## **Percent positive**

State		% Positive
1	Alaska	3.5%
2	District of Columbia	5.2%
3	Oregon	6.0%
4	Maine	6.1%
5	Connecticut	6.7%
6	New York	7.4%
7	Illinois	7.9%
8	Montana	8.5%
9	Vermont	9.5%
10	West Virginia	9.9%
11	New Jersey	10.7%
12	New Mexico	11.2%
13	Washington	12.4%
14	Michigan (↓4)	12.5%
15	Louisiana	13.6%
16	North Carolina	13.8%
17	California	13.9%
18	Virginia	15.1%
19	South Carolina	16.0%
20	Ohio	16.7%
21	Arkansas	19.8%
22	Oklahoma	20.4%
23	Texas	21.1%
24	Tennessee	21.4%
25	Maryland	21.6%
26	Mississippi	23.3%
27	Georgia	23.5%
28	Minnesota	23.8%

Michigan average uses most recent MAG data and includes all tests, including MDOC and "Region Unknown" SOURCE: Numerical Data – MDSS, COVID Tracking Project, U.S. Census Bureau.

#### **Cases vs. Attempted Case Investigations**



- Number of cases investigated remains steady around 1,300 per day
- · Certain demographics prioritized in some jurisdictions since not everyone can be reached

### **New Case Investigation Metrics**

New Communicable Disease metrics slightly increased since last week:

- 42% of investigated cases having a known source (46% last week, 44% week prior)
- 28% of investigated cases noting that they were quarantining before symptoms (28% last week)



12/26-01/01 Case report form information

#### 01/02-01/08 Case report form information

Case investigation complete? Known source of infection? Already quarantining at time of symptom onset?

Case investigation complete? Known source of infection? Already quarantining at time of symptom onset?

#### **COVID-19 VACCINATION UPDATE**

- 296,588 doses administered
- 2,970 doses per 100,000 pop
- 3.3% has had first shot (16 and older)
- 831,150 doses shipped to provider locations
- 1,218 providers enrolled

Doses									
Data as	Enrolled	Doses Shipped	Administered			% 16 and older			
of 1/11/21	Providers	(Provider Loc)	(Patient Loc)	1st dose	2nd dose	1st dose			
1	131	54 950	30 444	28 361	2 083	3.2%			
2N	222	100.075	66,477	57,470	2,000	2.40/			
	223	123,375	66,477	57,478	8,999	3.1%			
25	243	119,475	57,572	52,203	5,369	2.9%			
3	142	67,075	28,367	24,353	4,014	2.7%			
5	95	49,475	24,946	22,759	2,187	2.9%			
6	200	08.250	F2 726	40 242	4 404	2.00/			
	200	98,250	52,730	48,242	4,494	3.9%			
7	117	42,375	16,283	14,276	2,007	3.8%			
8	67	31,075	11,937	10,330	1,607	4.1%			
Missing			7,826	7,355	471				
Federal LTC Program		245.100	(Above)						
		210,200	(/.0010)						
Total	1218	831,150	296,588	265,357	31,231	3.3%			

## Mobility update

## How many people are staying at home in Michigan?



- Stay-at-home levels increased in November
- Overall increase compared to 2019
- Stay-home levels have largely remained high (most recent data is 1/3/21)

Data Sources: <u>Bureau of</u> <u>Transportation Statistics</u>, MDHHS

# Unacast mobility patterns in MI

Most recent data shows some return toward baseline mobility patterns, particularly for non-essential visits (data through 1/7/21)



unacast social distancing scoreboard https://www.unacast.com/co vid19/social-distancingscoreboard

