MI COVID RESPONSE DATA AND MODELING UPDATE

April 26, 2022

Executive Summary

Situational Awareness

- Global and National Trends show continued spread of Omicron BA.2 lineage
  - Many countries in Europe showing signs of decline
  - U.S. cases increasing at a faster rate than last week
- As of April 21st, 94% of Michigan counties at Low COVID-19 Community Levels
- Michigan is seeing an increase in BA.2 with the limited number of specimens being sequenced
  - Nationally, the proportion of specimens sequenced as BA.2 is greater than 90%
- COVID+ census in hospitals, hospital admissions, and case metrics within Long Term Care Facilities are increasing at a faster rate; ICU and pediatric COVID-19 metrics are not yet increasing
- Between January and December 2021, COVID-19 was associated with approximately 460,000 deaths in the U.S. and was the third leading cause of death in the U.S. in 2021

Public Health Response

- Current case rates and hospitalizations, and increased access to mitigation, indicate Michigan continues in a post-surge recovery phase
- Vaccinations and Boosters administration remains a critical component during the recovery phase
- Model projections show that COVID-19 vaccines saved millions lives, averted tens of millions of infection, and saved billions of dollars in the U.S.
- COVID-19 vaccinations remain safe and effective to prevent spread and severe disease
  - COVID-19 can make some children very sick and COVID-19–associated hospitalization rates in children aged 5–11 years were approximately twice as high among unvaccinated as among vaccinated children

Epidemiologic Surveillance: Key Messages

Global and National Trends show continued spread of Omicron BA.2 lineage

- Many countries in Europe showing early signs of decline
- U.S. cases increasing at a faster rate than previous weeks

As of April 14th, 92% of Michigan Counties at Low COVID-19 Community Levels

- Nationally and within the state, a majority of counties are classified as low burden for severe disease and healthcare capacity
- This week no Michigan counties were classified as “high”

Case rates in Michigan are slowly increasing, with increases occurring more in the Southeast Michigan

- The proportion of BA.2 in the U.S. and Michigan continues to rise
  - Michigan R_t and cases are similar but higher than projections based on UK BA.2 R_t
- 45% of SWEEP sites saw an increase in the most recent week and another 25% of sites saw a plateau in trends
- Case trends are increasing for all MERC regions, age groups, and most reported races and ethnicities
- Cases within older school age children and LTCF are increasing at an accelerated rate

Hospitalization Metrics in Michigan showing increases

- Hospital admissions (+18%) and COVID+ hospital census (+18%) are increasing at an accelerated rate
- For now, COVID+ ICU census continues to decline (-14%)

Ongoing response to COVID-19 cycle

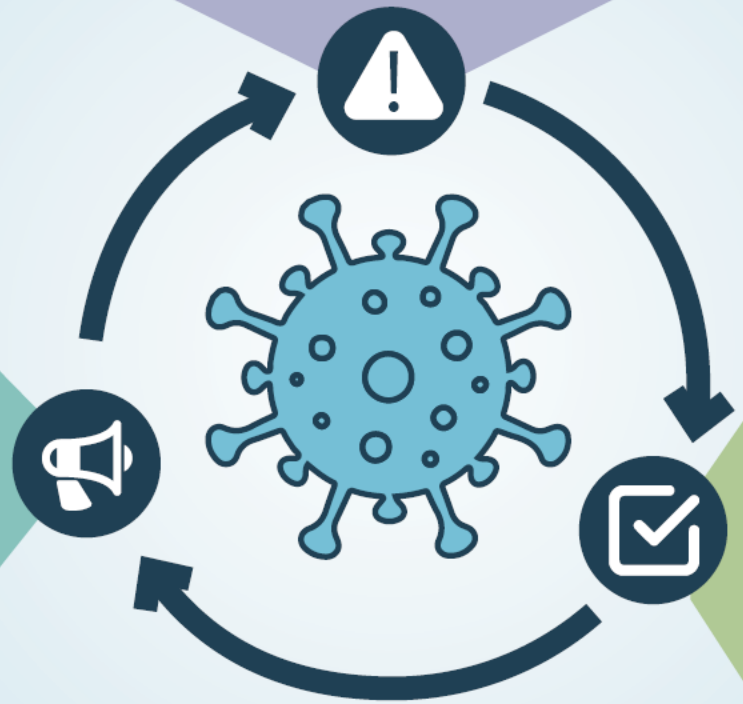
MDHHS
Michigan Department of Health & Human Services

Visit Michigan.gov/Coronavirus for current COVID-19 information.

Response (Surge)

A surge means rapid response by local and state public health.

- Increased supplies for testing, masking and medications.
- Increased masking, testing and social distancing efforts.



Readiness (Pre-Surge)

A surge is expected due to a new variant, local outbreak, seasonal changes.

Expect increased illness severity and overwhelmed hospital capacity.

- Educate public regarding new risks.
- Ensure enough supplies of tests, masks and medications.

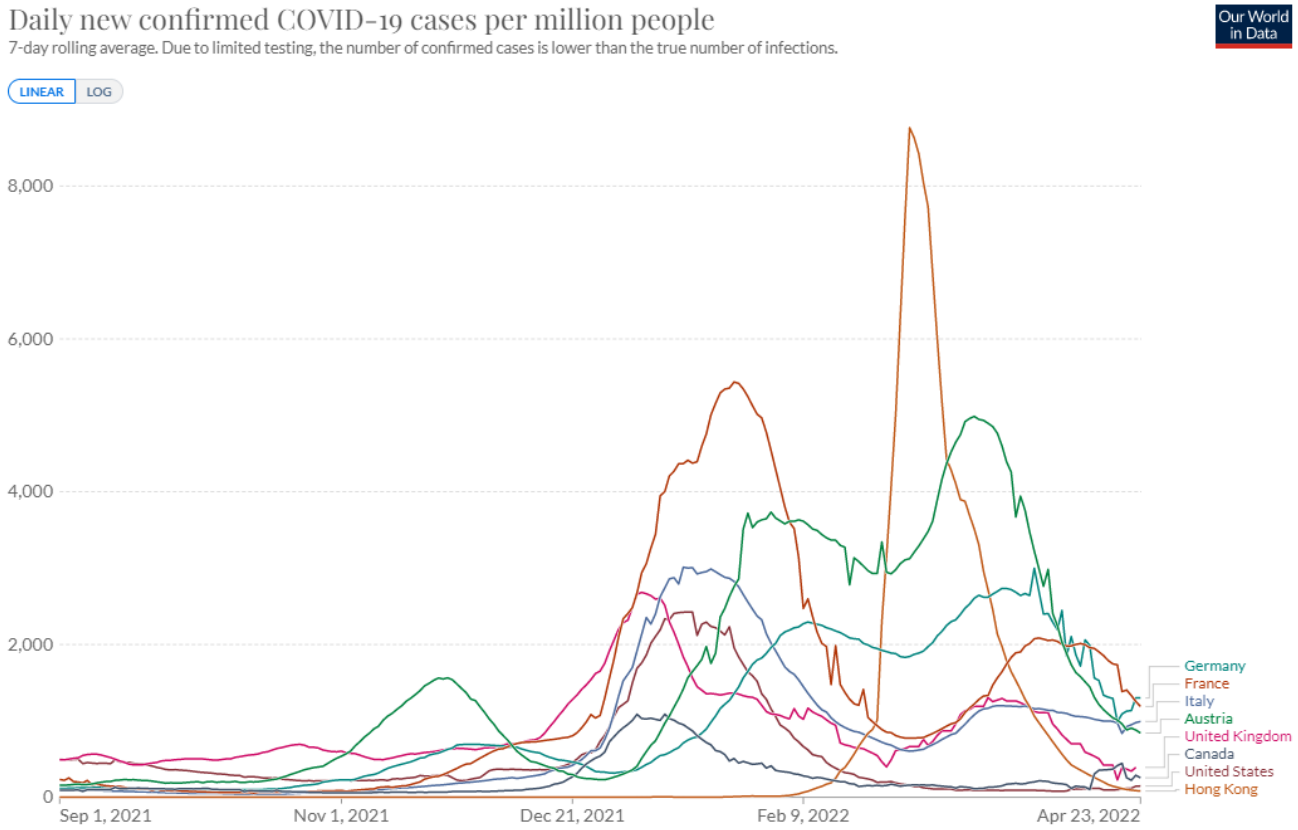
Recovery (Post-Surge)

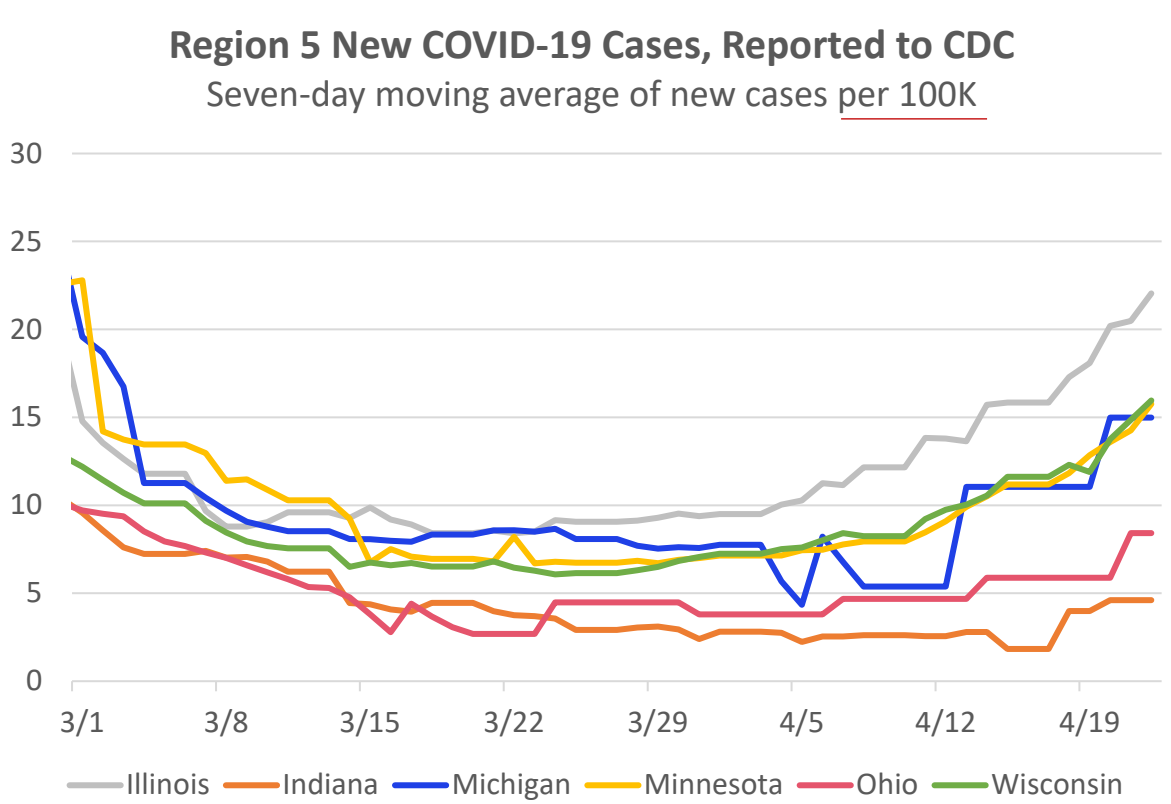
Expect to remain in this phase for longer periods as COVID-19 evolves.

Monitor conditions that may lead to surges, such as a new variant.

- Encourage vaccines to decrease COVID-19 risks.
- Strengthen community support with local stakeholders.
- Empower community members to make best choices for individual situations.

Global and National Trends





Globally, 509,451,952 cases and 6,217,710 deaths (Data* through 4/24/2022)

- Case rates appear to be declining or plateauing in many European countries following second Omicron wave

United States: Reported cases (7-day average) have increased over 27.8% since the prior week¶

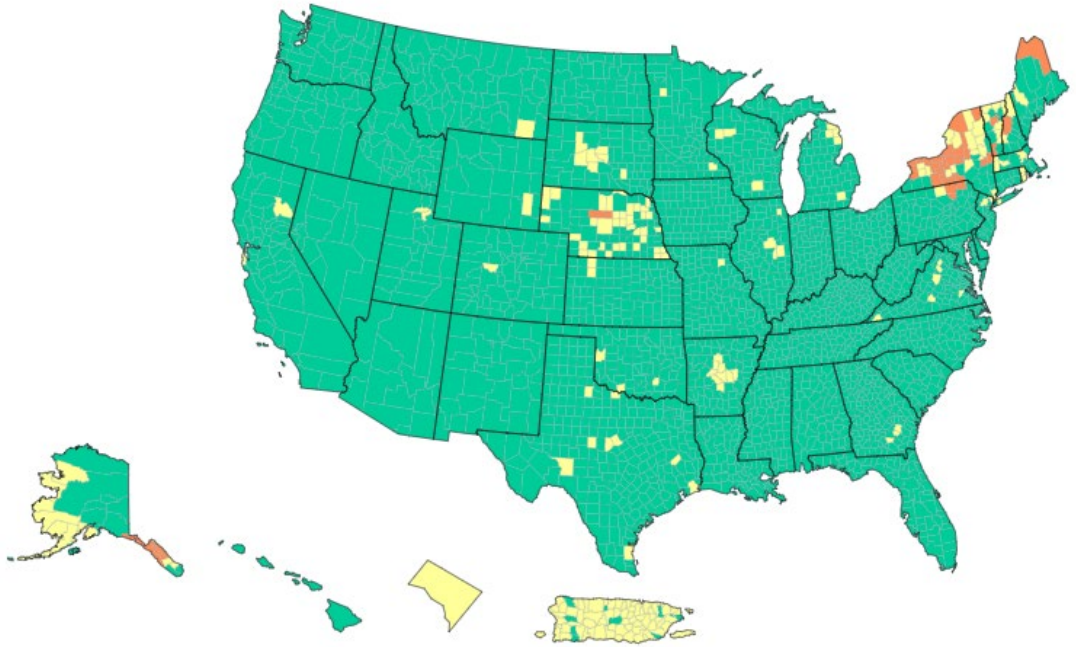
- In the U.S., the case rate is 93.7 cases/100,000 in last 7 days (last week: 73.3 cases per/100,000)

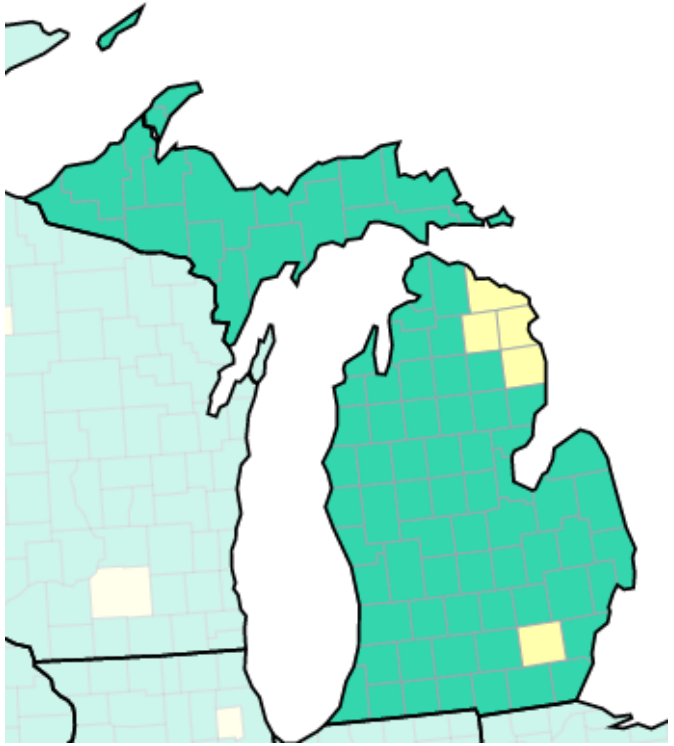
Region 5 (Midwest) states are either plateaued or increasing at the moment

- Illinois and Wisconsin have the highest case rates *in Region 5* (4/22)

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

As of April 21st, No Michigan Counties at High COVID-19 Community Levels





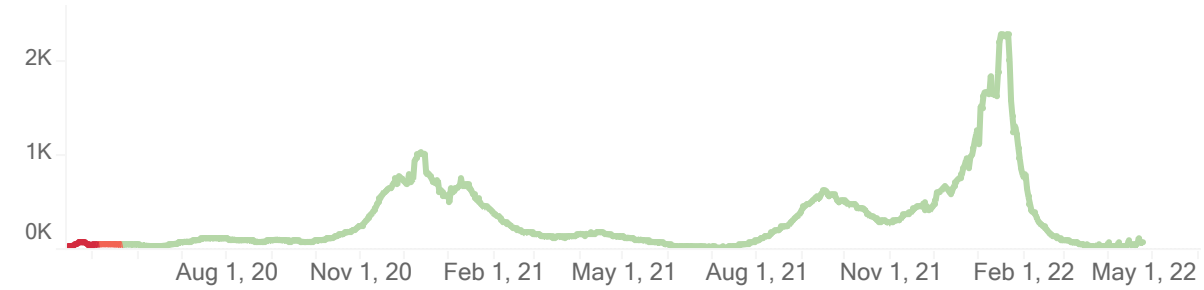
Percent of Counties	United States	Michigan
Low	92%	94%
Medium	7%	6%
High	1%	0%

- In the US, 1% of counties have high risk for medically significant disease and healthcare strain; in Michigan, 0% of counties are at high risk.
- Washtenaw county classified as medium risk due to case rates greater than 200 per 100,000 population (measured at 311.75; increase of 22%)
- The counties of Alcona, Alpena, Montmorency, and Presque Isle were all classified as medium risk because they are all part of the same HSA (Alpena-Presque Isle HSA) where the hospital admissions per 100,000 is above 10 (measured at 18.1)

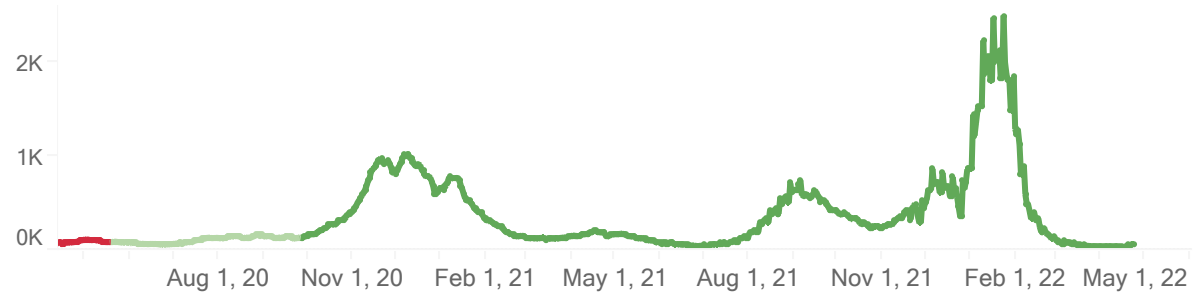
Source: CDC COVID-19 Community Levels https://covid.cdc.gov/covid-data-tracker/#county-view?list_select_state=all_states&list_select_county=all_counties&data-type=CommunityLevels

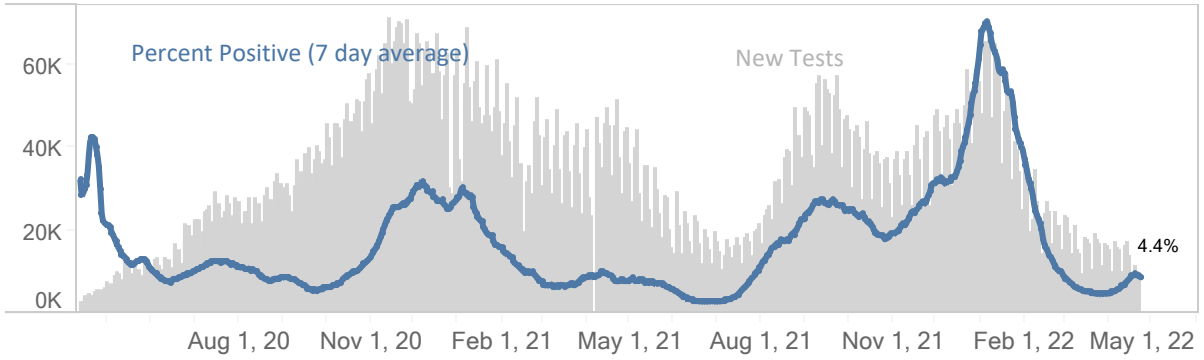
State Comparisons: Ohio and Indiana

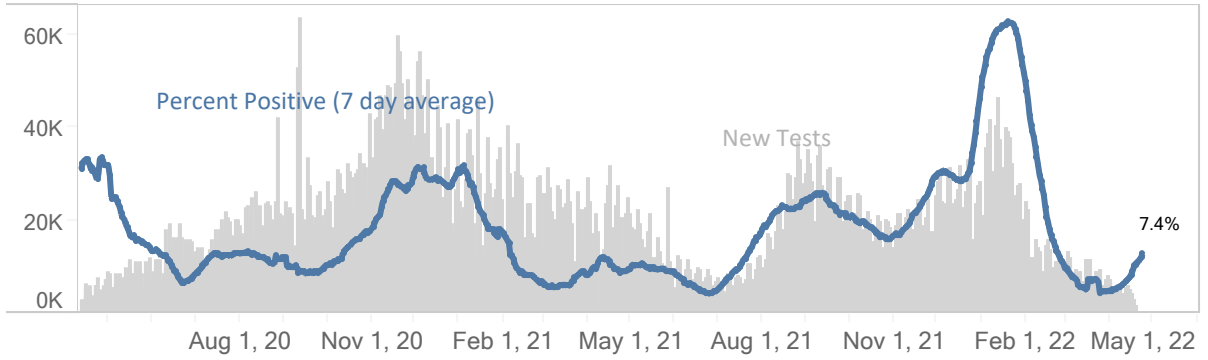
Ohio Confirmed New Cases / 1M (7 days average)

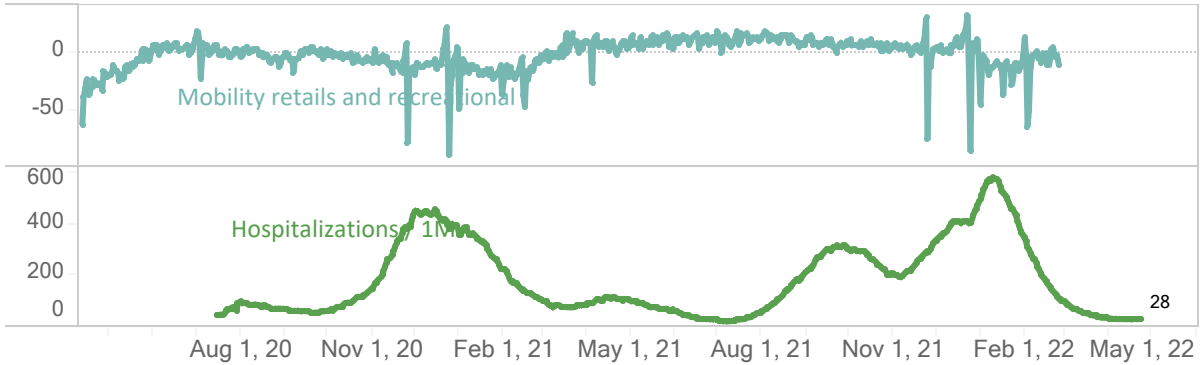


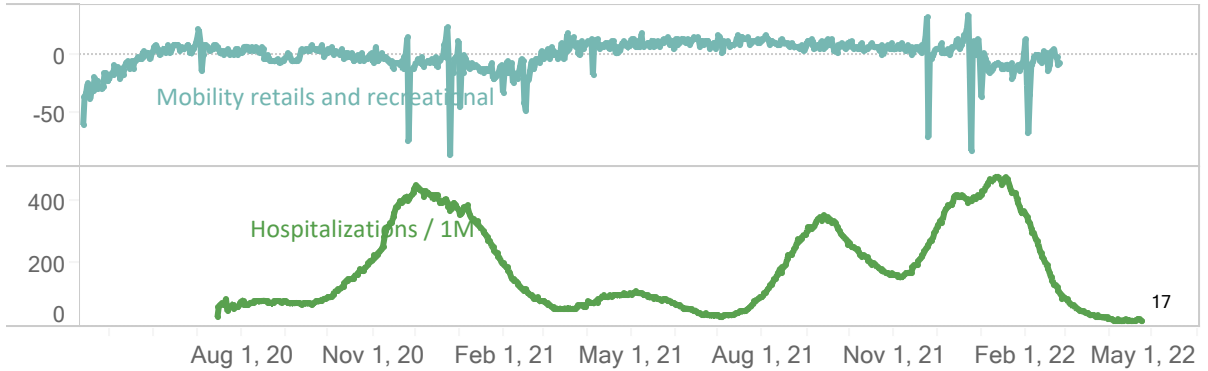
Indiana Confirmed New Cases / 1M (7 days average)





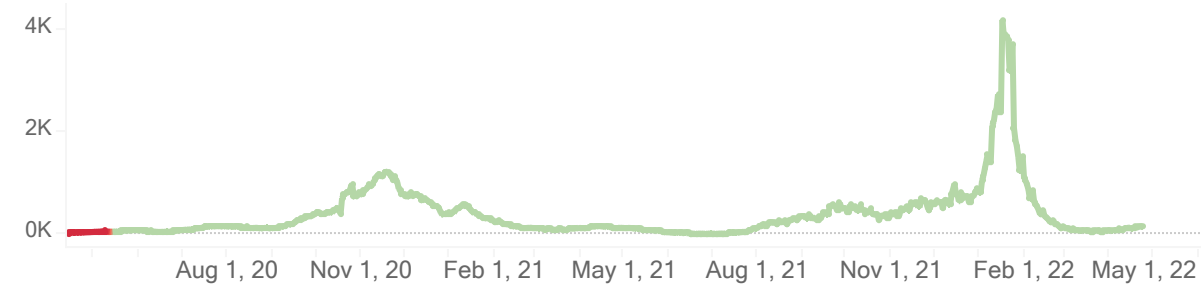




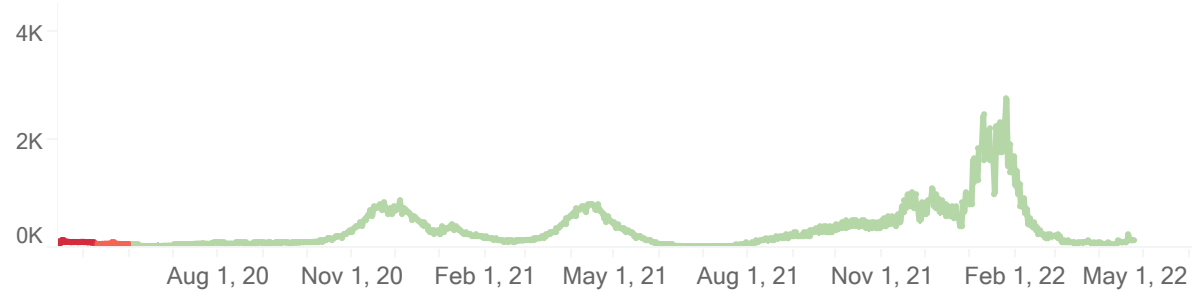


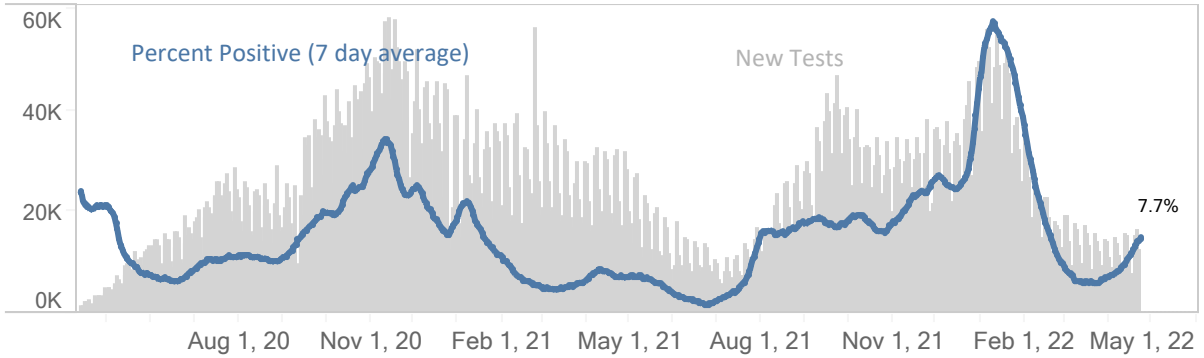
State Comparisons: Wisconsin and Michigan

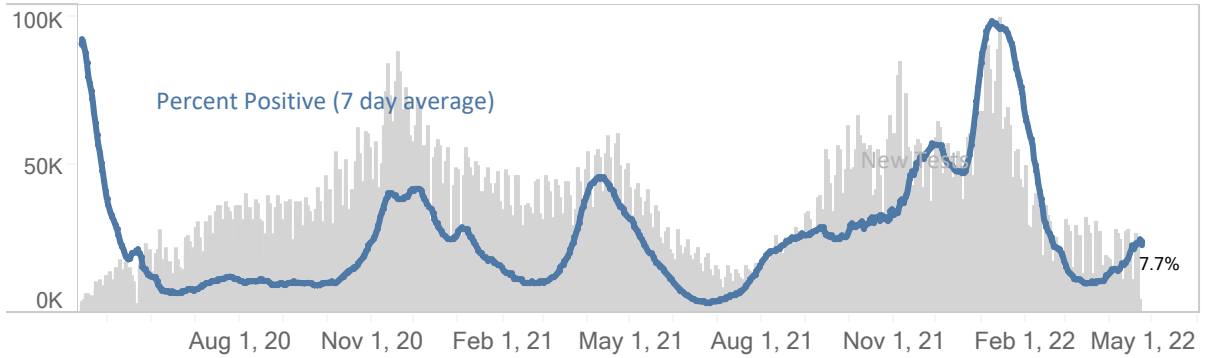
Wisconsin Confirmed New Cases / 1M (7 days average)

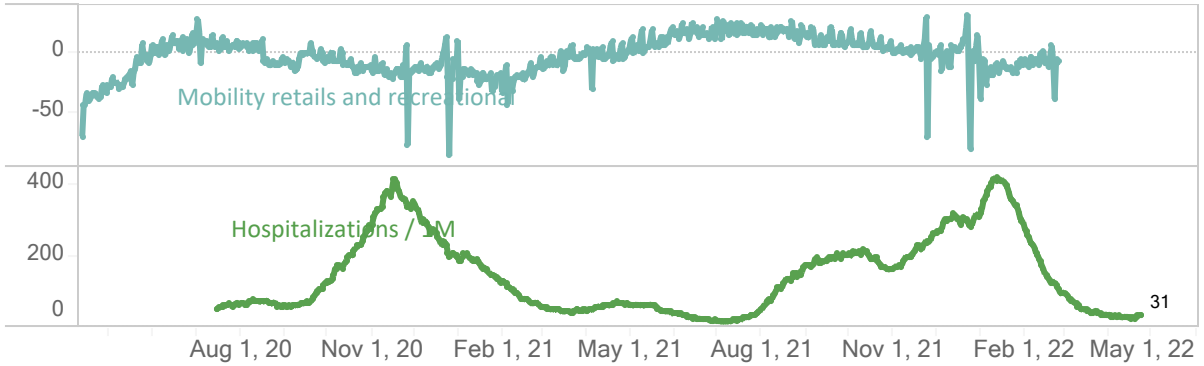


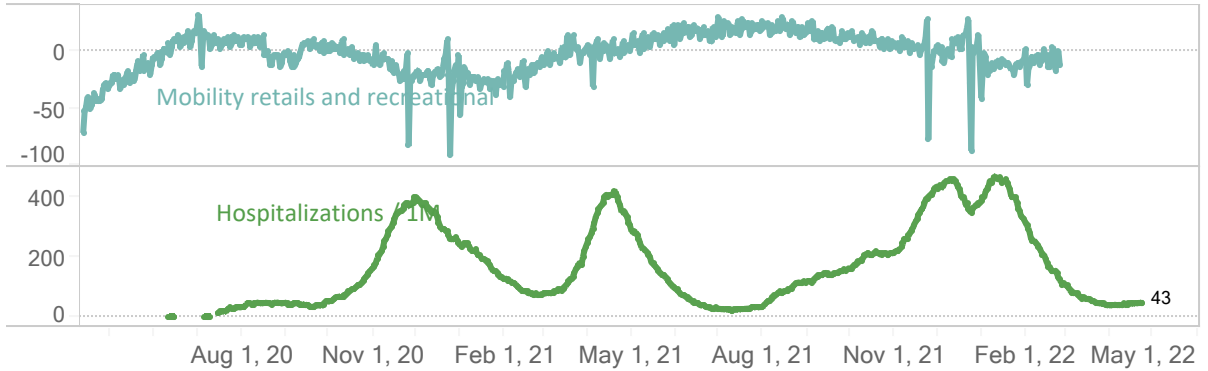
Michigan Confirmed New Cases / 1M (7 days average)



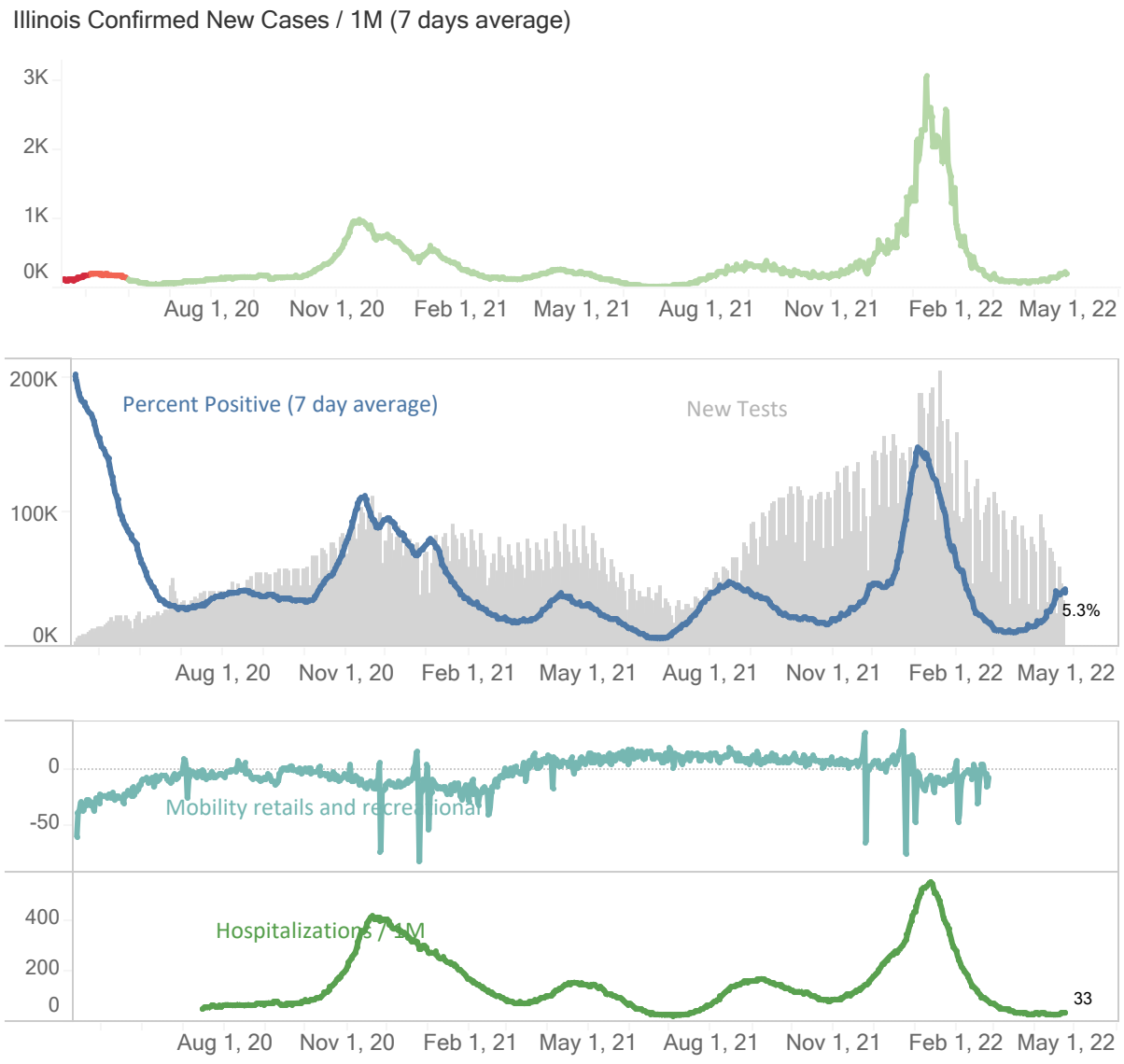


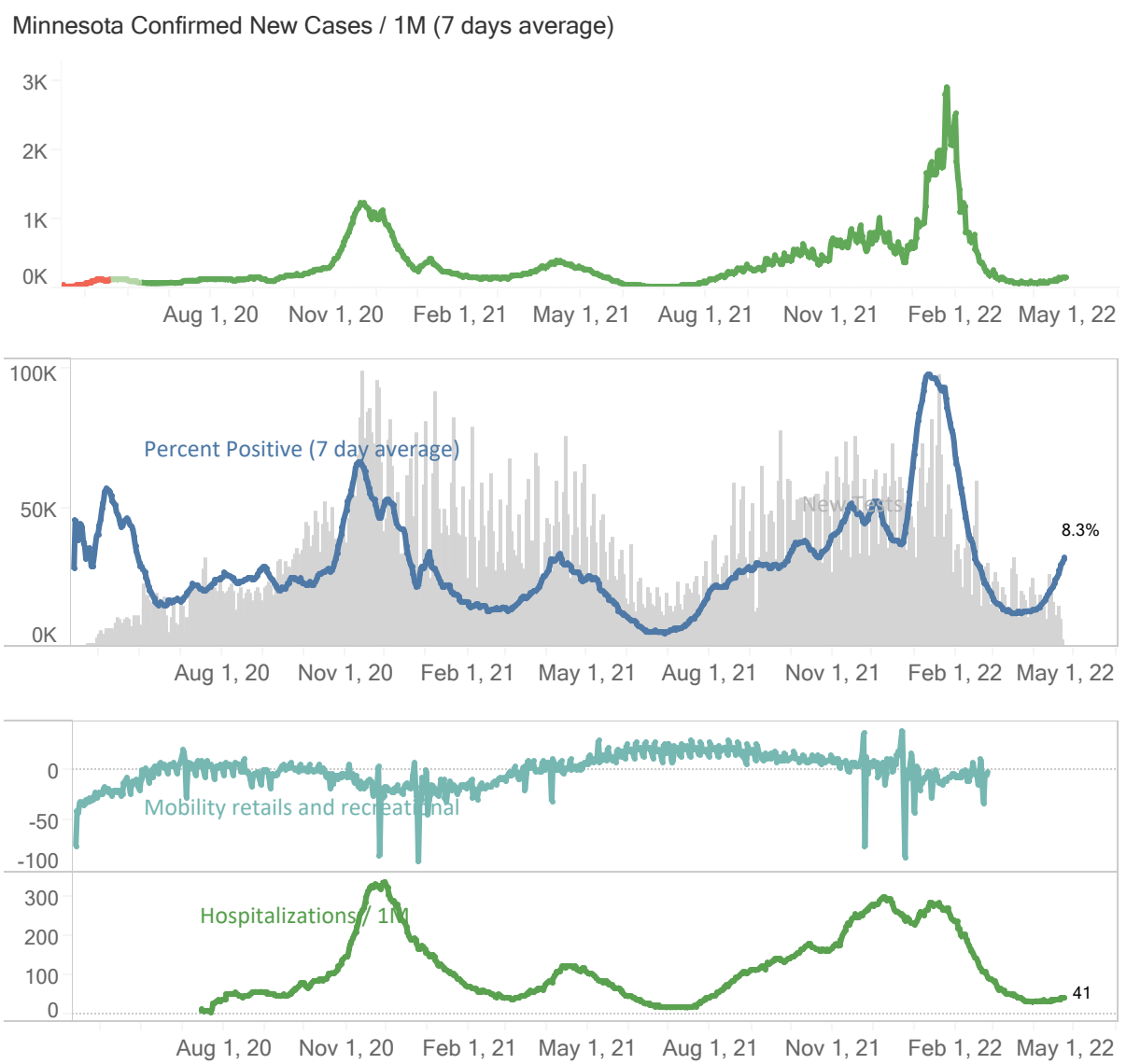






State Comparisons: Illinois and Minnesota



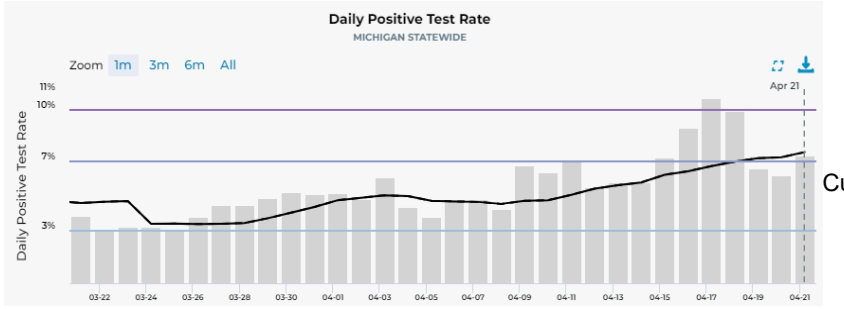


Recent statewide trends

Statewide trends

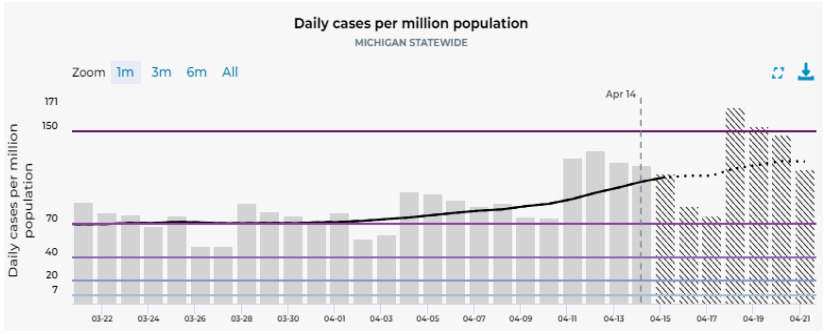
7-day average Daily values

Positivity, %



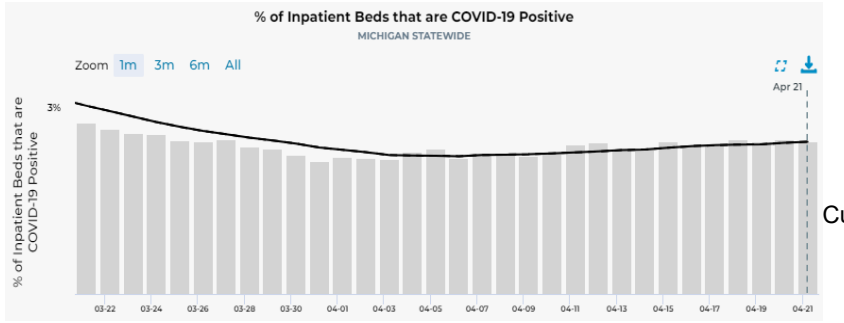
Current: 7.6%

Daily cases per million



Current: 106.5

Daily hospitalization rate, %

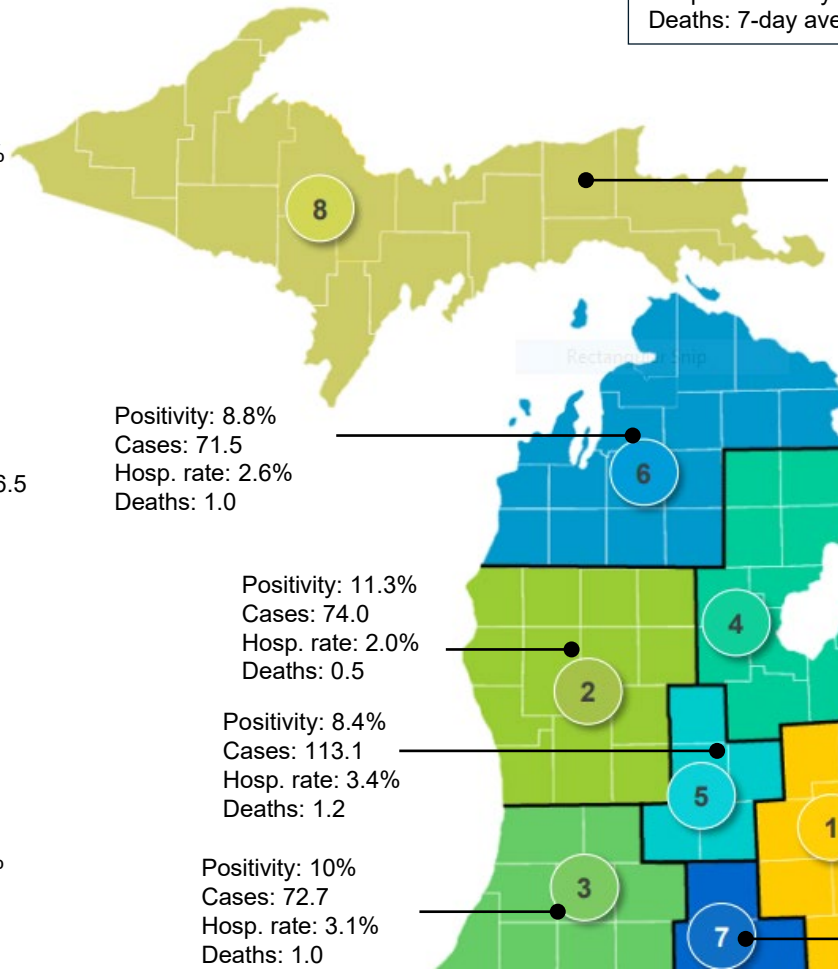


Current: 2.5%

Source: https://mistartmap.info/

MERC Regional breakdown: Positivity, cases, hospitalization rate, and deaths

Positivity: 7-day average positivity, %
Cases: 7-day average cases per million
Hosp. rate: 7-day average hospitalization rate, %
Deaths: 7-day average deaths per million



Positivity: 6.4%
Cases: 52.2
Hosp. rate: 1.6%
Deaths 0.5

Positivity: 8.8%
Cases: 71.5
Hosp. rate: 2.6%
Deaths: 1.0

Positivity: 11.3%
Cases: 74.0
Hosp. rate: 2.0%
Deaths: 0.5

Positivity: 8.1%
Cases: 49.5
Hosp. rate: 2.2%
Deaths: 0.5

Positivity: 8.4%
Cases: 113.1
Hosp. rate: 3.4%
Deaths: 1.2

Positivity: 7.2%
Cases: 147
Hosp. rate: 2.6%
Deaths: 0.6

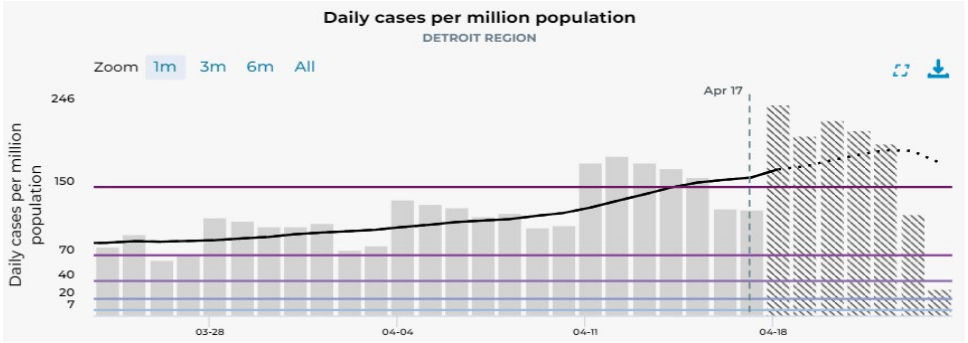
Positivity: 10%
Cases: 72.7
Hosp. rate: 3.1%
Deaths: 1.0

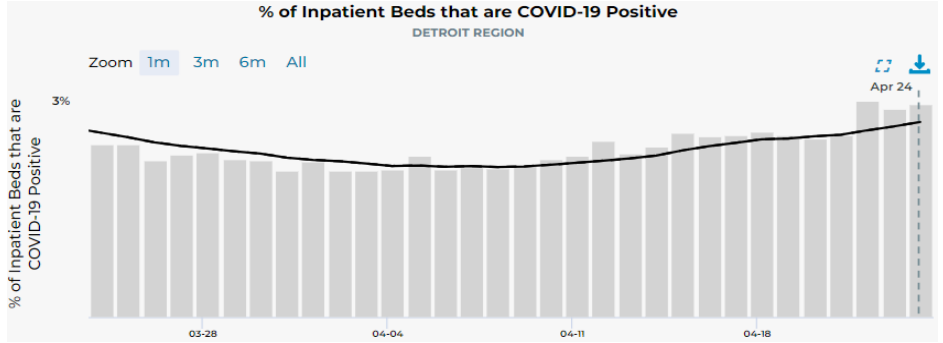
Positivity: 7.2%
Cases: 170.7
Hosp. rate: 2.9%
Deaths: 0.5

Recent trends: Case Rates*

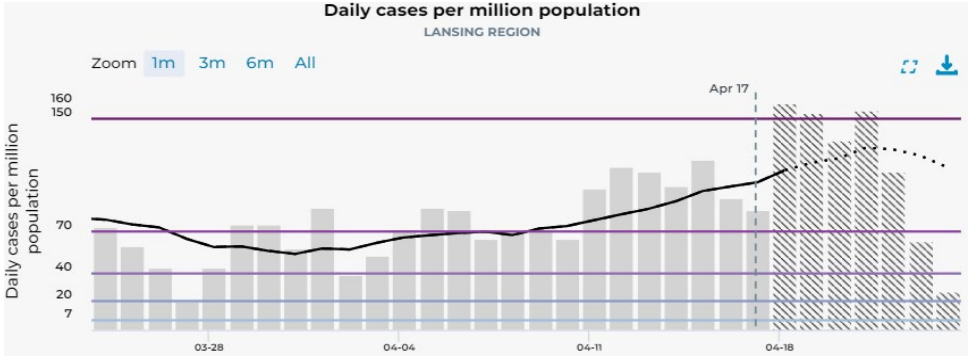
Recent trends: Hospital Capacity

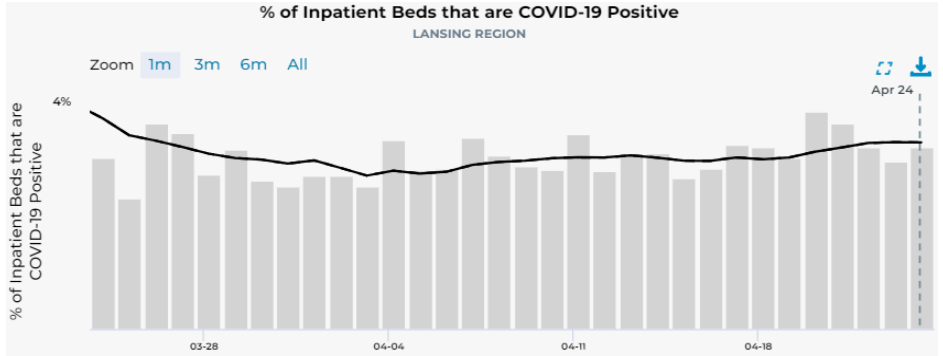
Detroit MERC Region



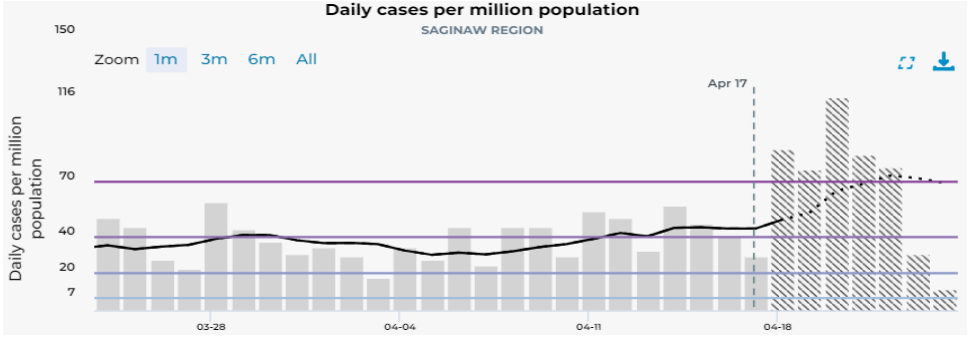


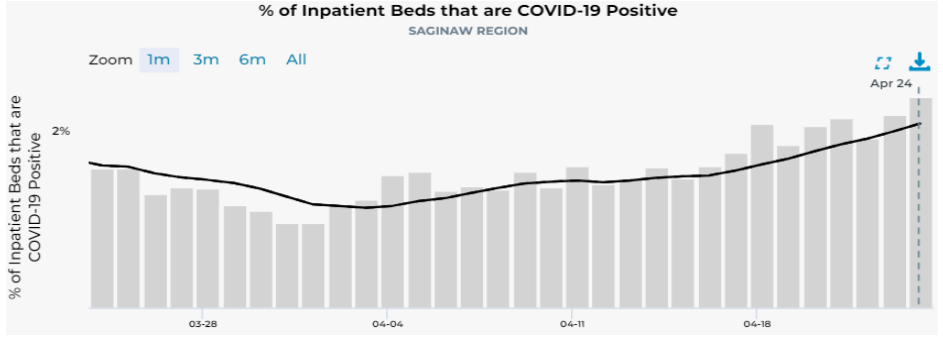
Lansing MERC Region





Saginaw MERC Region





All charts represent data from 03/24/22 – 04/24/22

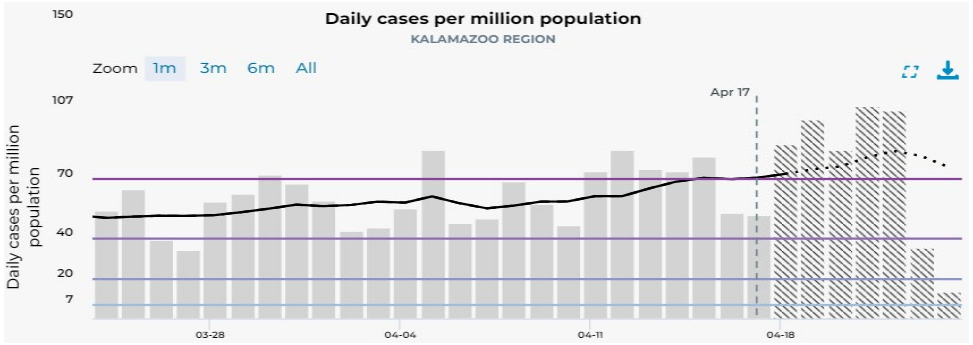
*Case rates reported by onset date are subject to backfill

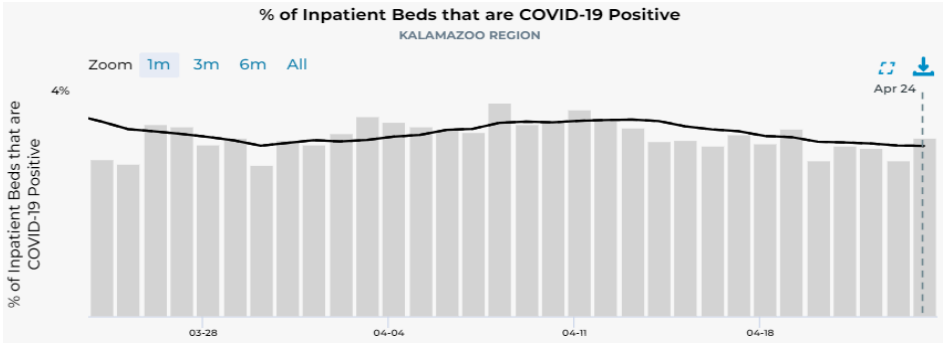
Source: MI Start Map; MDOC excluded

Recent trends: Case Rates*

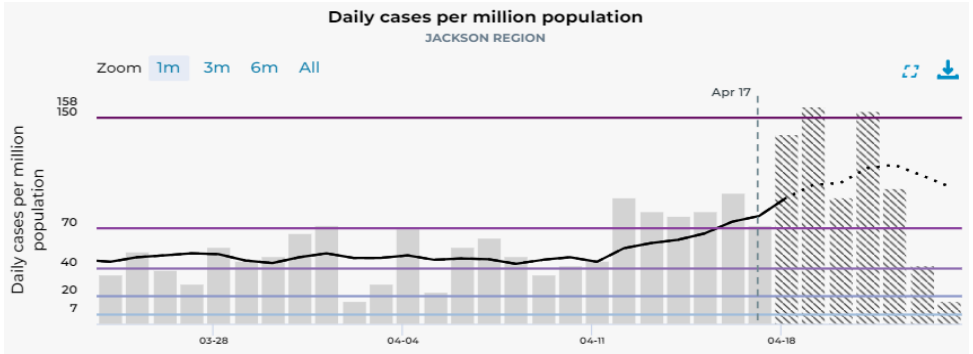
Recent trends: Hospital Capacity

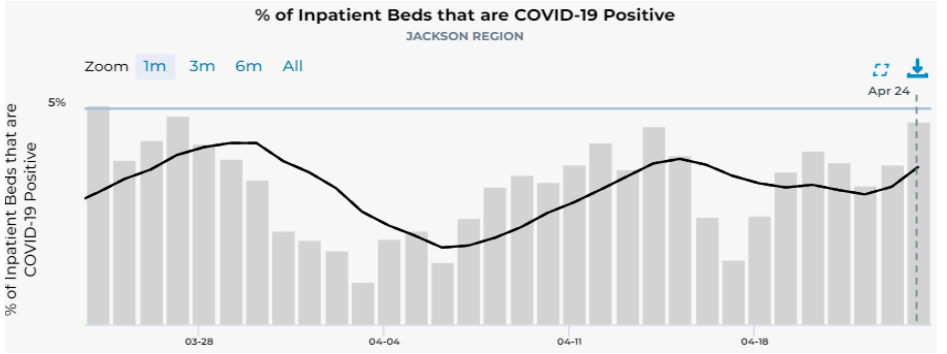
Kalamazoo MERC Region



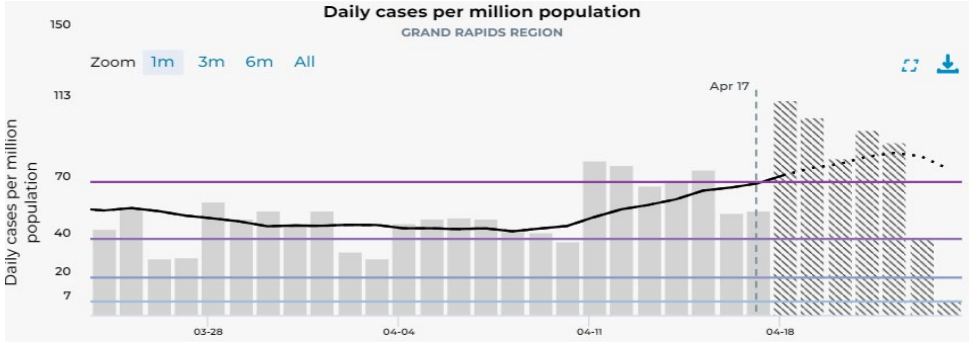


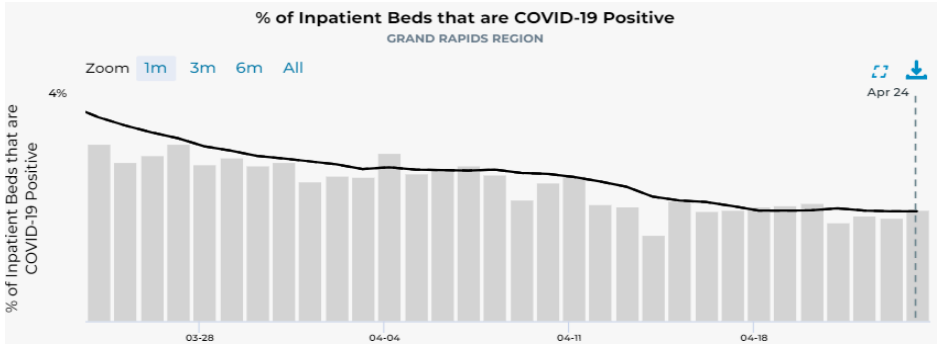
Jackson MERC Region





Grand Rapids MERC Region





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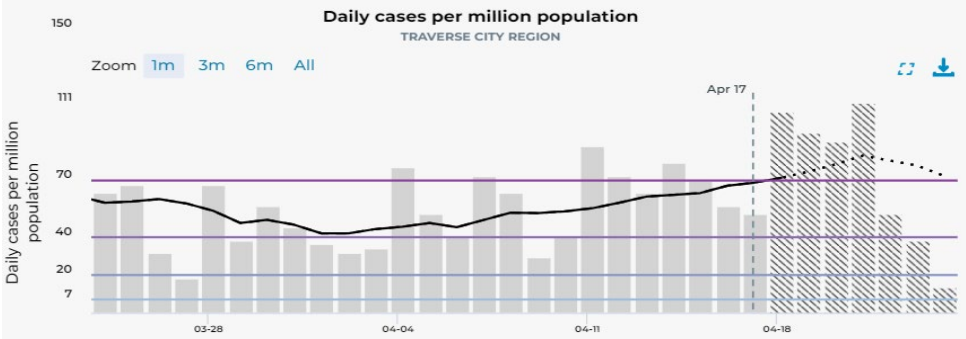
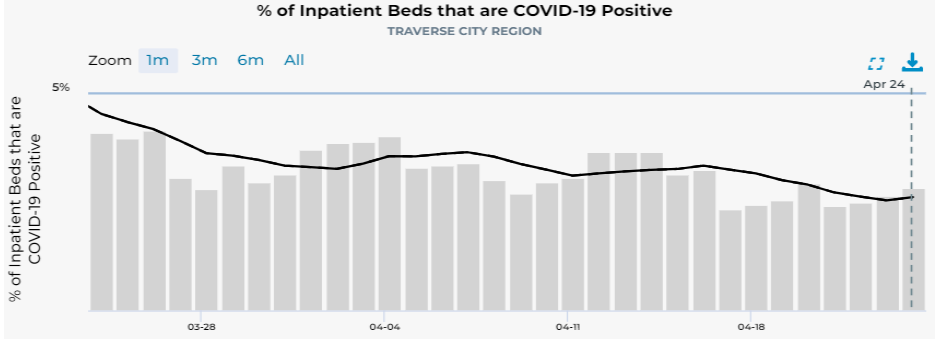
Source: MI Start Map; MDOC excluded

Recent trends: Case Rates*

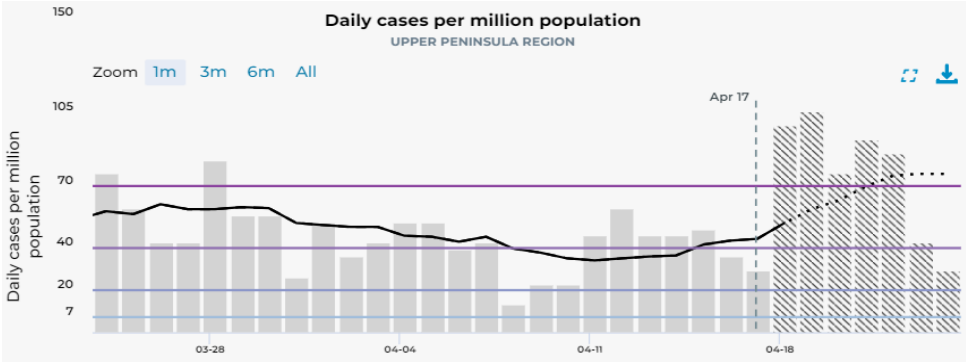
Recent trends: Hospital Capacity

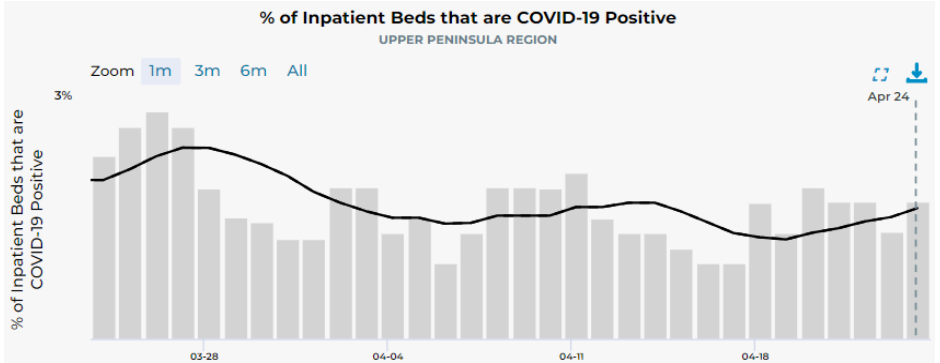
Traverse City MERC Region





Upper Peninsula MERC Region





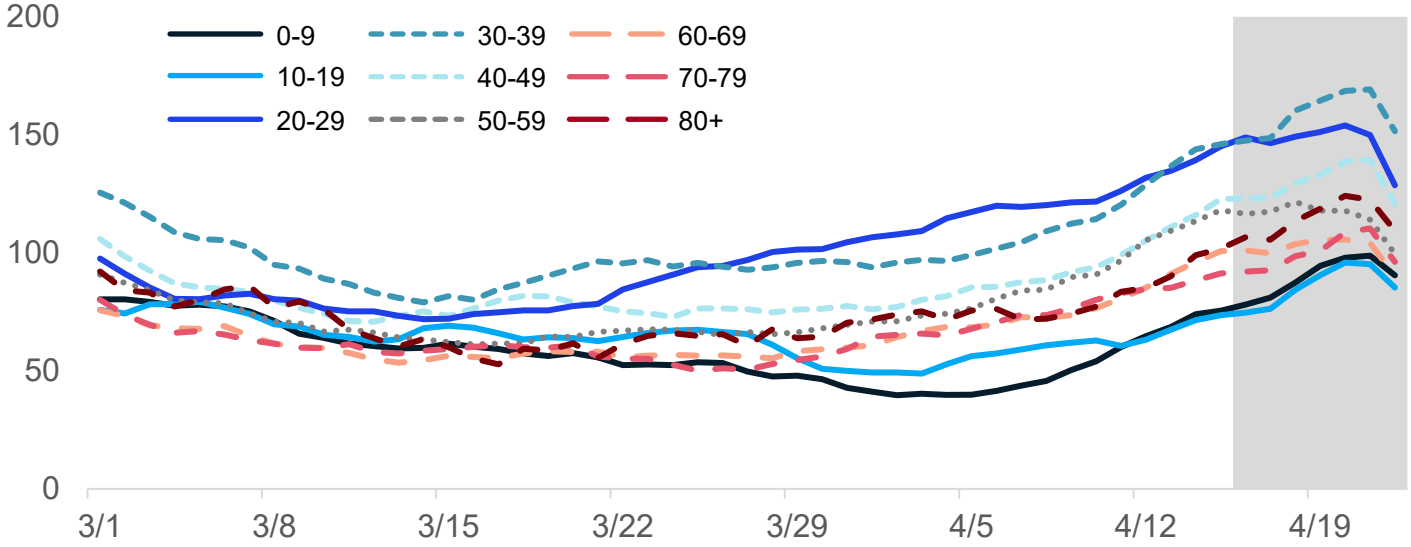
All charts represent data from 03/24/22 – 04/24/22

*Case rates reported by onset date are subject to backfill

Source: MI Start Map; MDOC excluded

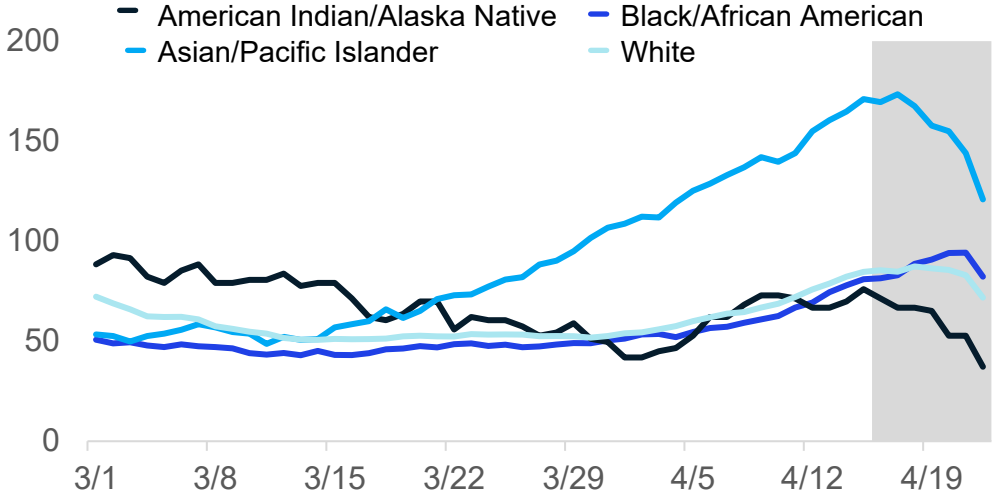
Case rate are plateaued or increasing for stratified groups

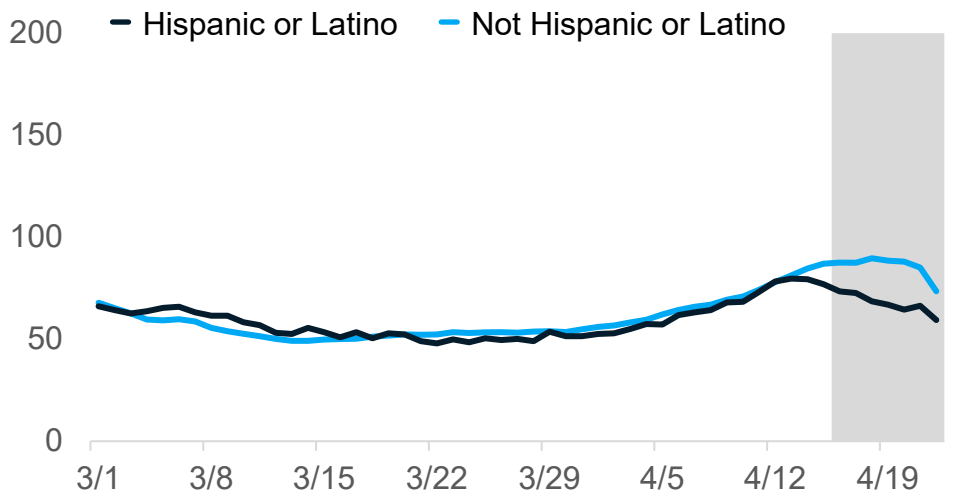
Daily new confirmed and probable cases per million by age group (7-day rolling average)



- Case rates by onset date for all age groups are between 73.5 and 146.0 cases per million (through 4/15)
- Case counts and case rates are highest for 20-29-year-olds this week, followed by 30–39-year-olds and the 40–49-year age groups

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



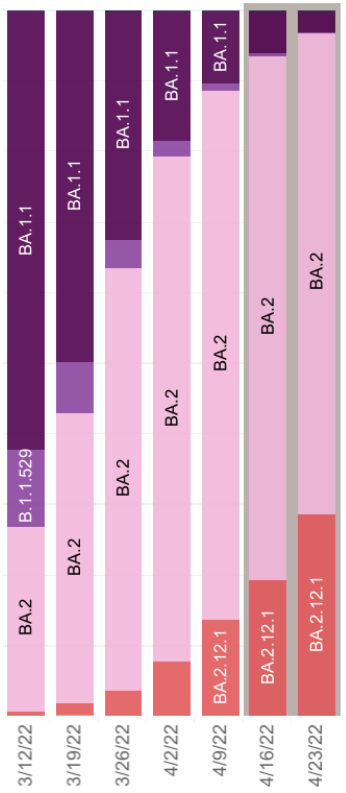


- Case rates are highest for Asian/Pacific Islander populations (171.1 cases/million)
- 17% of cases missing race in last 30 days

Note: Case information sourced from MDHHS and reflects date of onset of symptoms
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, Mar 6 – Apr 23 (NOWCAST)



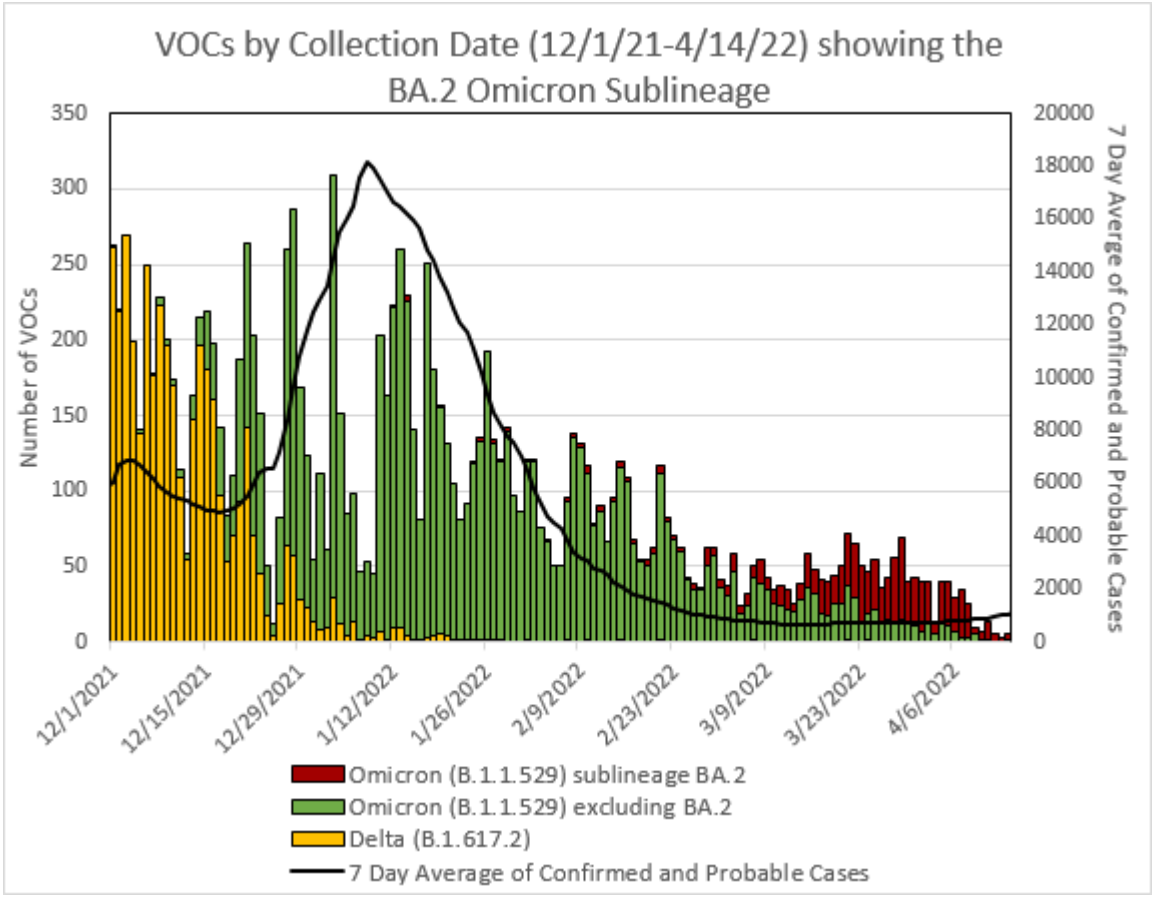
USA

WHO label	Lineage #	US Class	%Total	95%PI
Omicron	BA.2	VOC	68.1%	61.3-74.2%
	BA.2.12.1	VOC	28.7%	22.3-36.0%
	BA.1.1	VOC	2.8%	2.3-3.3%
	B.1.1.529	VOC	0.2%	0.1-0.3%
Delta	B.1.617.2	VBM	0.0%	0.0-0.0%
Other	Other*		0.2%	0.1-0.6%

* 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.133 and their sublineages are aggregated with B.1.617.2. BA.1, BA.3, BA.4, BA.5 and their sublineages (except BA.1.1 and its sublineages) are aggregated with B.1.1.529. For regional data, BA.1.1 and its sublineages are also aggregated with B.1.1.529, as they currently cannot be reliably called in each region. Except BA.2.12.1, BA.2 sublineages are aggreagated with BA.2.

Data last updated April 26, 2022
Source: MDSS
¶ Sequence specimens are from the most recent week by onset date which may change as more specimens are sent in

VOC Distribution in Michigan



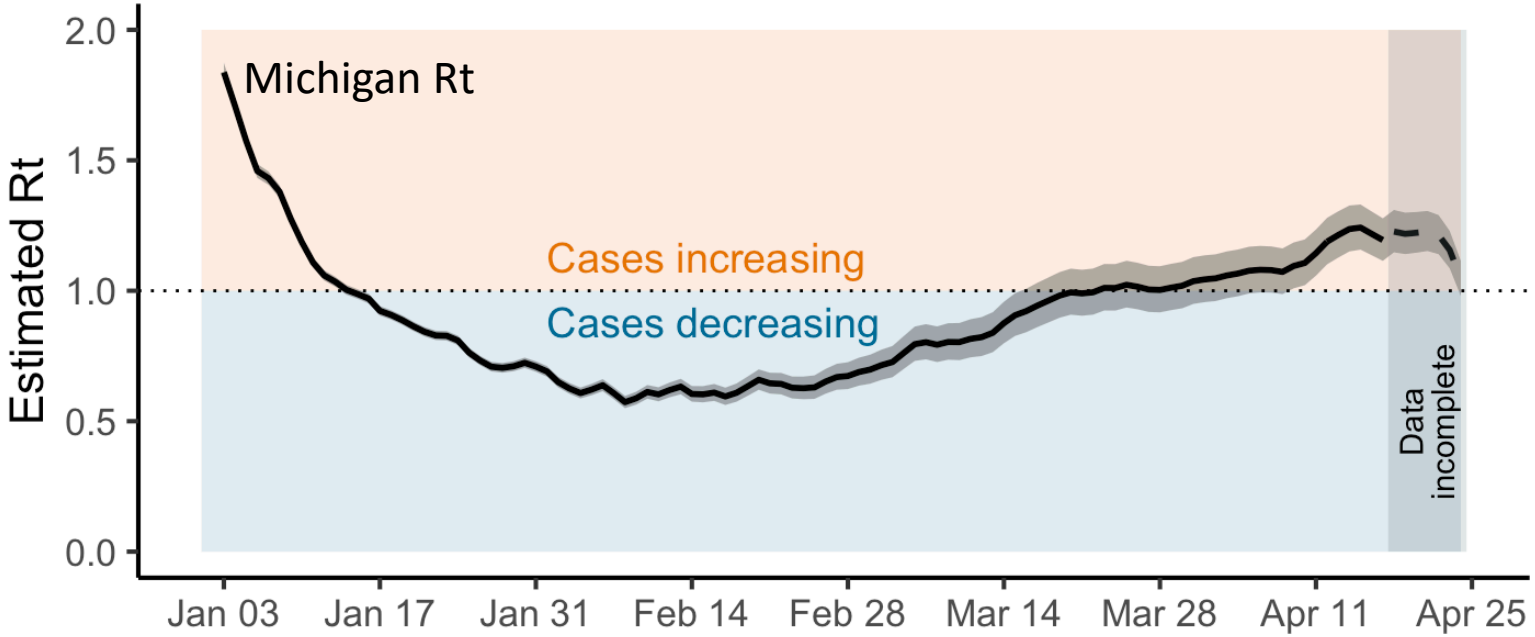
- Since March 15, there have 1,163 VOC specimens sequenced
- Cumulatively, 947 Omicron BA.2 specimens identified from 57 counties and City of Detroit

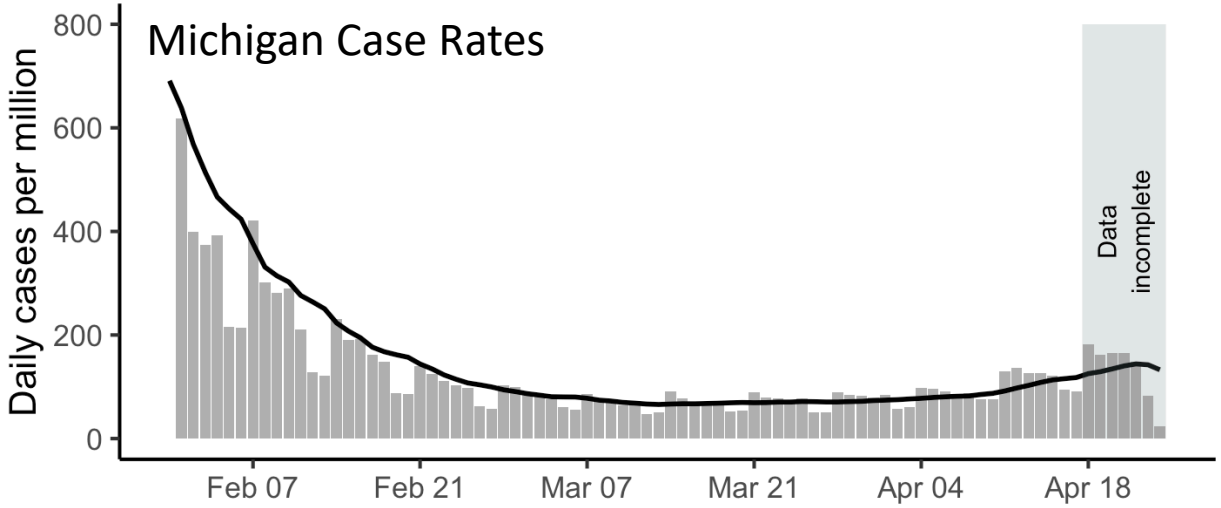
Emerging Variant Update

- Omicron continues to be the predominant variant of concern, including all its sublineages
  - There are several sublineages of this variant, including BA.4, BA.5, BA.2.12.1, and several recombinants of BA.1 and BA.2, most notable the XE recombinant
- Most of these sublineages are just a small fraction of specimens sequenced internationally and nationally
  - Here in the U.S., BA.2 remains the most predominant but the proportion of BA.2.12.1 is increasing faster than other lineages
- In the UK, XE appears to have a slight growth advantage over BA.2 in the UK but is still less than 1% of cases
- BA.2.12.1 is the most common circulating strain in Northeastern U.S., where cases are on the rise
- Globally, BA.4 and BA.5 have only been identified in a handful of countries with around 200 specimens sequenced
  - To date, there does not appear to be an increase in transmissibility, change in hospital epidemiology, or additional evasion of current counter measures compared to predominant Omicron variant

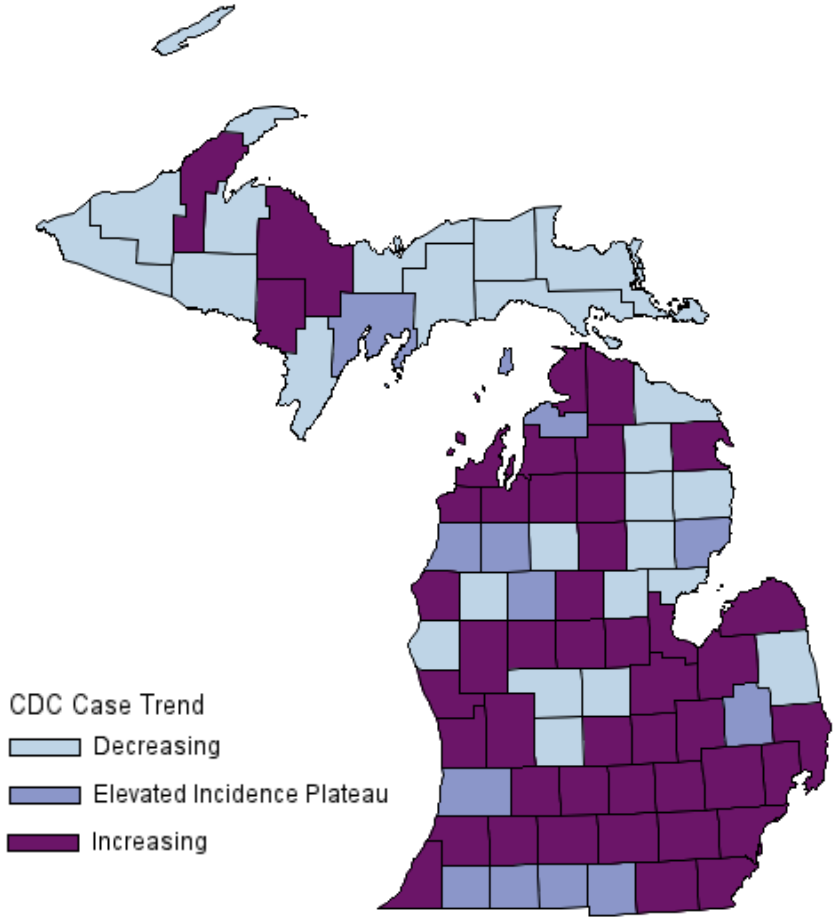
Sources: UKHSA technical briefings, WHO science briefing , GSAID – COVID sequencing

Case rates in Michigan are increasing



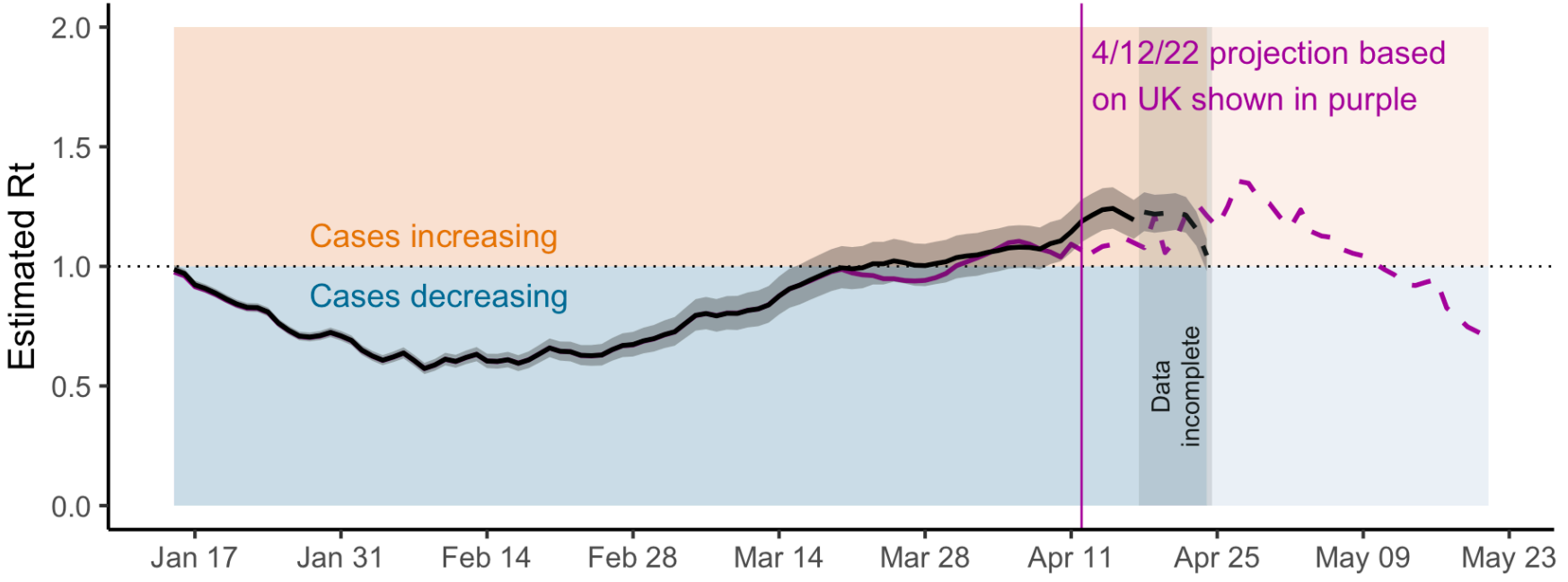


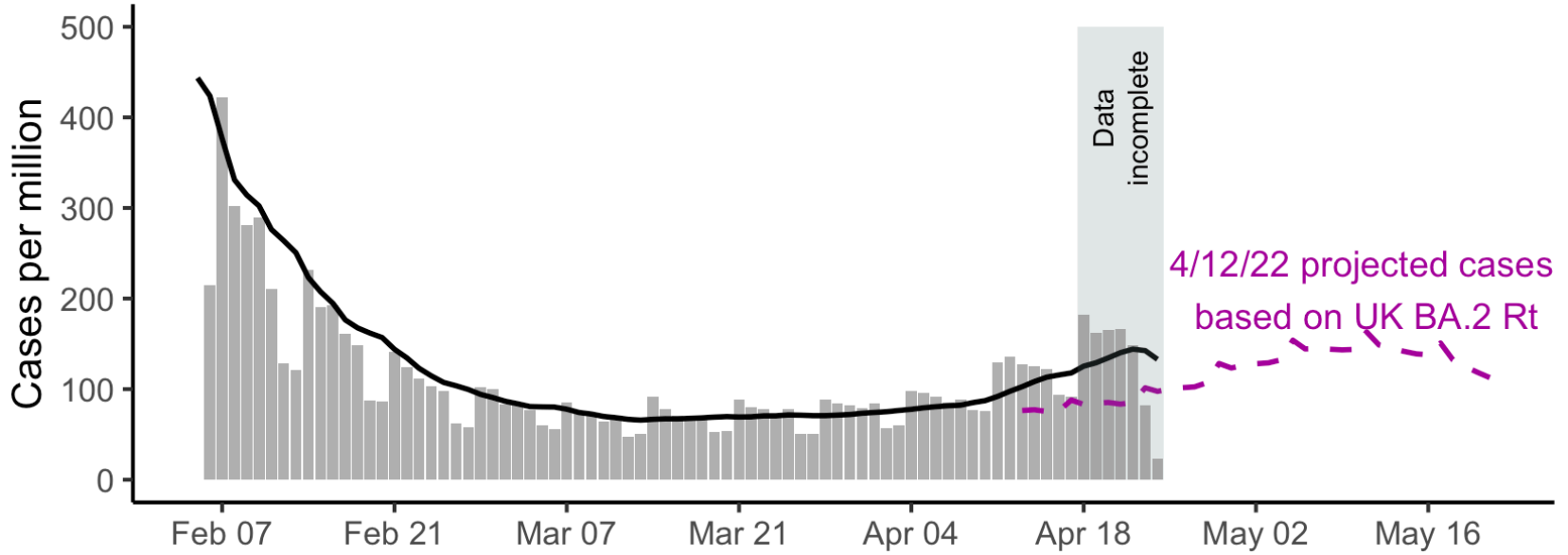
46 counties currently showing increases and 12 in elevated incidence plateaus (via mistartmap.info as of 4/25/22, data through 4/17/22).



Sources: MDSS cases plotted by onset date as of 4/25/22.

Michigan R_t and cases are similar but higher than projections based on UK BA.2 R_t



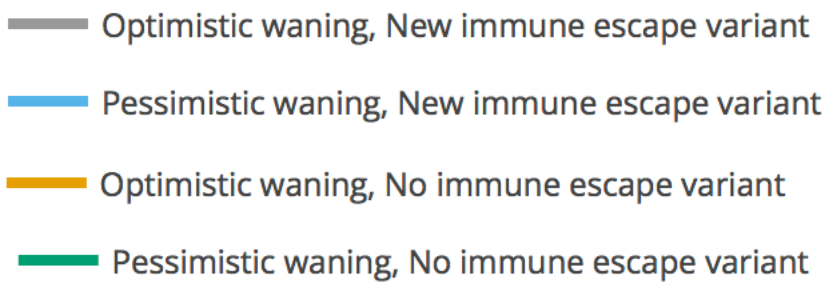


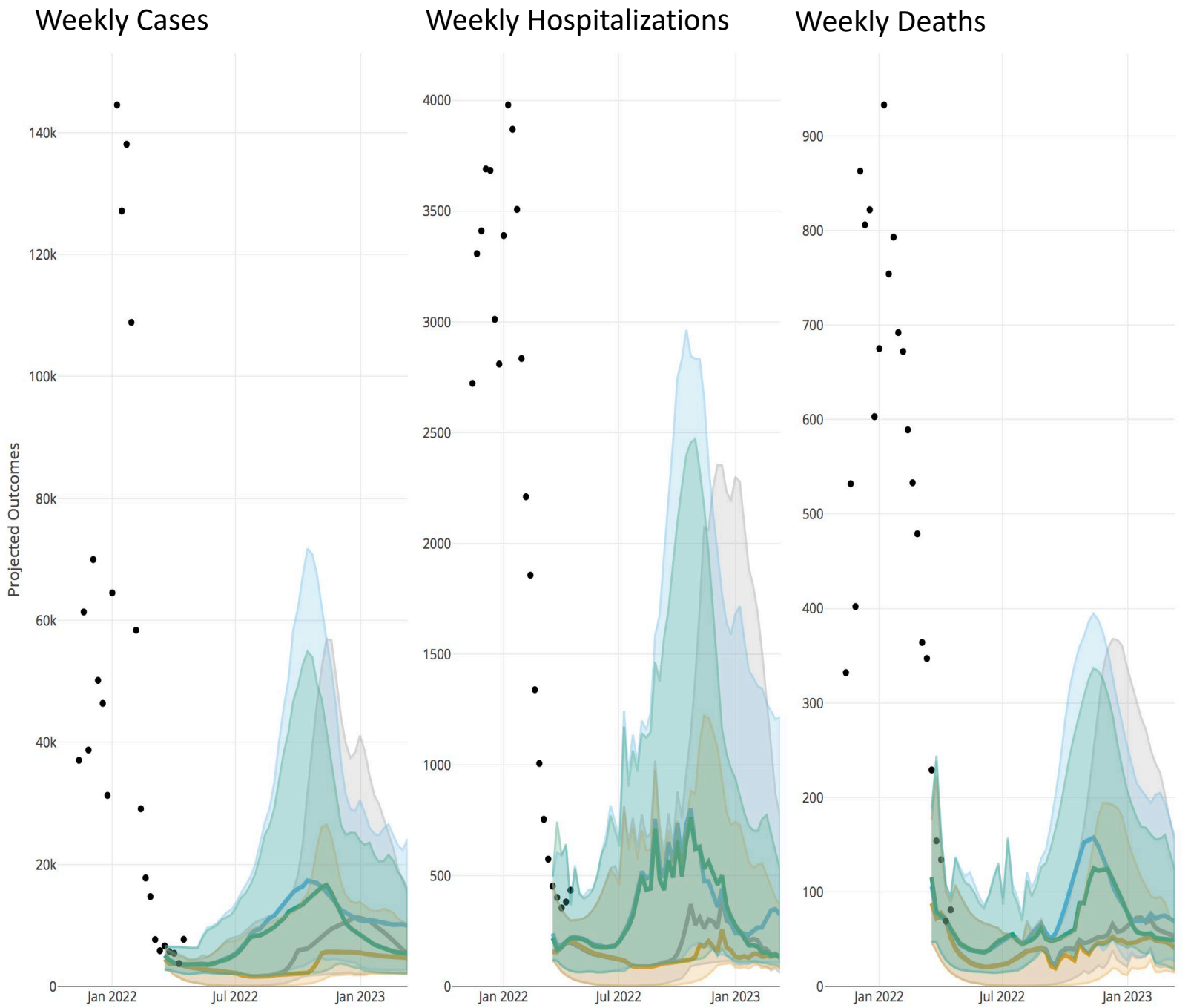
- 4/12/22 Michigan R_t/cases and projections based on UK R_t shown in purple; Current Michigan R_t/cases shown in black
- Note Michigan may have different contact patterns than the UK (e.g. due to policy differences, summer/school patterns, etc.), and the UK projections don't account for effects of newer subvariants (e.g. BA.2.12.1)

Sources: MDSS cases plotted by onset date as of 4/25/22, UK case data from Our World In Data as of 4/10/22.

Scenario Hub Projections: looking ahead to the next surge in Michigan

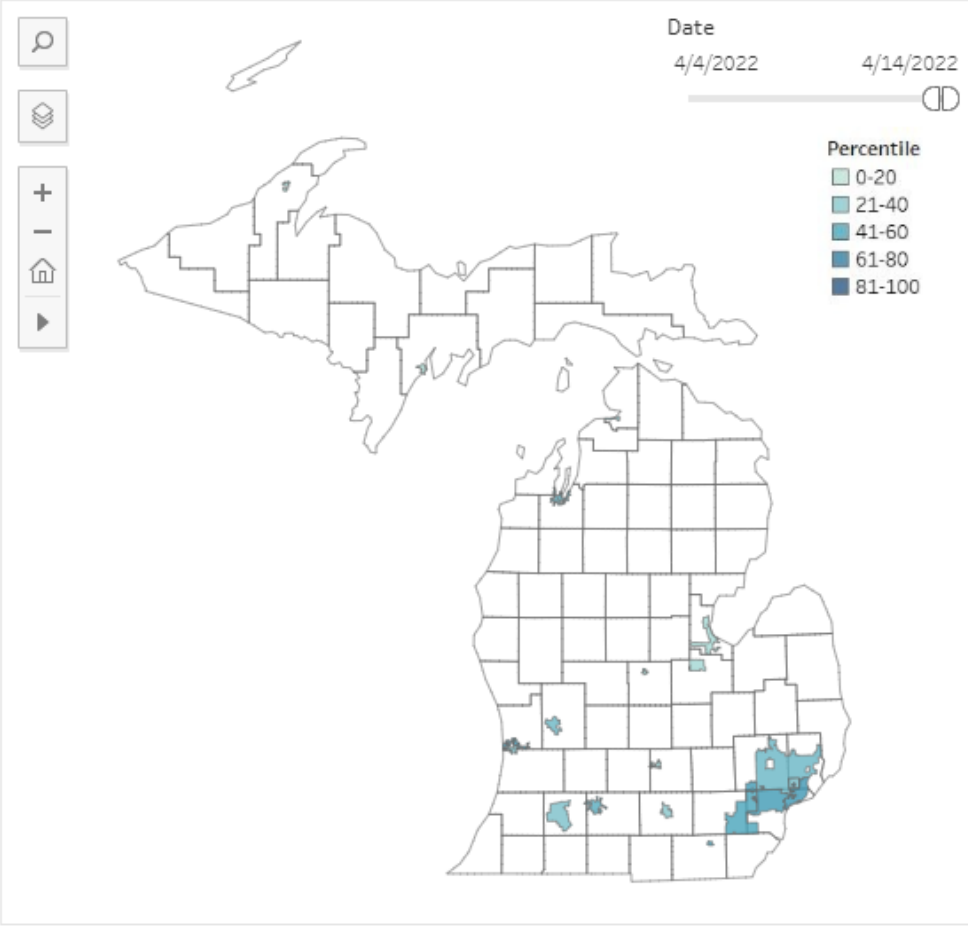
- Updated Model Scenarios (Round 13)
- Suggest slower plateau currently, followed by a surge in Fall
- Source: COVID Modeling Scenario Hub. Uncertainty levels: 50%





Michigan COVID-19 SWEEP Sentinel Wastewater Dashboard

The map below shows 20 sewershed sites in Michigan where wastewater is being monitored for the presence of SARS-CoV-2, the virus that causes COVID-19. These sentinel sites serve as a subset of wastewater surveillance in Michigan distributed across the Michigan Economic Recovery Council (MERC) Regions. Click on each site on the map to see wastewater and clinical case data over time. In the top right corner of the map, slide the white buttons to select the time period for which the site-specific percentile is calculated.



Site	Sewershed Population	Consecutive Weeks of Virus Detection	Trend As Of	15-Day Trend
Alma WWTP	8976	0	4/11/2022	
Battle Creek WWTP	51093	2	4/4/2022	
Bay City WWTP	34000	0	4/14/2022	
Delhi Township WWTP	22500	4	4/14/2022	
Escanaba WWTP	12600	0	4/13/2022	
GLWA Detroit River Interce..	492000	78	4/13/2022	
GLWA North Interceptor-	1482000	55	4/13/2022	
GLWA Oakwood-	840600	78	4/6/2022	
Grand Rapids WWTP	265000	36	4/14/2022	
Holland WWTP North	45606	1	4/6/2022	
Holland WWTP South	36912	1	4/6/2022	
Jackson WWTP	90000	39	4/14/2022	
Kalamazoo WWTP	150000	2	4/7/2022	
Petoskey WWTP	7900	0	4/14/2022	
Portage Lake WWTP	14000	31	4/13/2022	
Saginaw Township WWTP	40000	1	4/14/2022	
Tecumseh WWTP	8680	14	4/15/2022	
Traverse City WWTP	45000	6	4/18/2022	
Warren WWTP	135000	1	4/14/2022	
Ypsilanti WWTP	330000	39	4/13/2022	

Abbreviations: GLWA - Great Lakes Water Authority; WWTP - Waste Water Treatment Plant

Definitions and descriptions of data calculations can be found in the "About" tab.

Current results reflect data that were uploaded to MDHHS as of 4/21/2022. Labs are required to report test results to local partners within 24 hours. Data is subject to change as additional wastewater data and case data are received.

15-Day Trends
- 1000% or more
- 100% to 999%
- 10% to 99%
- 1% to 9%
- -9% to 0%
- -99% to -10%
- -100% to -999%
- -1000% or less

Sentinel Summary

- 45% (9/20) of sentinel sites are showing increasing trends over last 15-days
- 25% of sites have plateaued over the last 15 days
- 30% (6/20) of sentinel sites are showing declines in the previous 15-days

Source: MDHHS – Sentinel Wastewater Epidemiology Evaluation Project - https://www.michigan.gov/coronavirus/0,9753,7-406-98163_98173-573480--,00.html

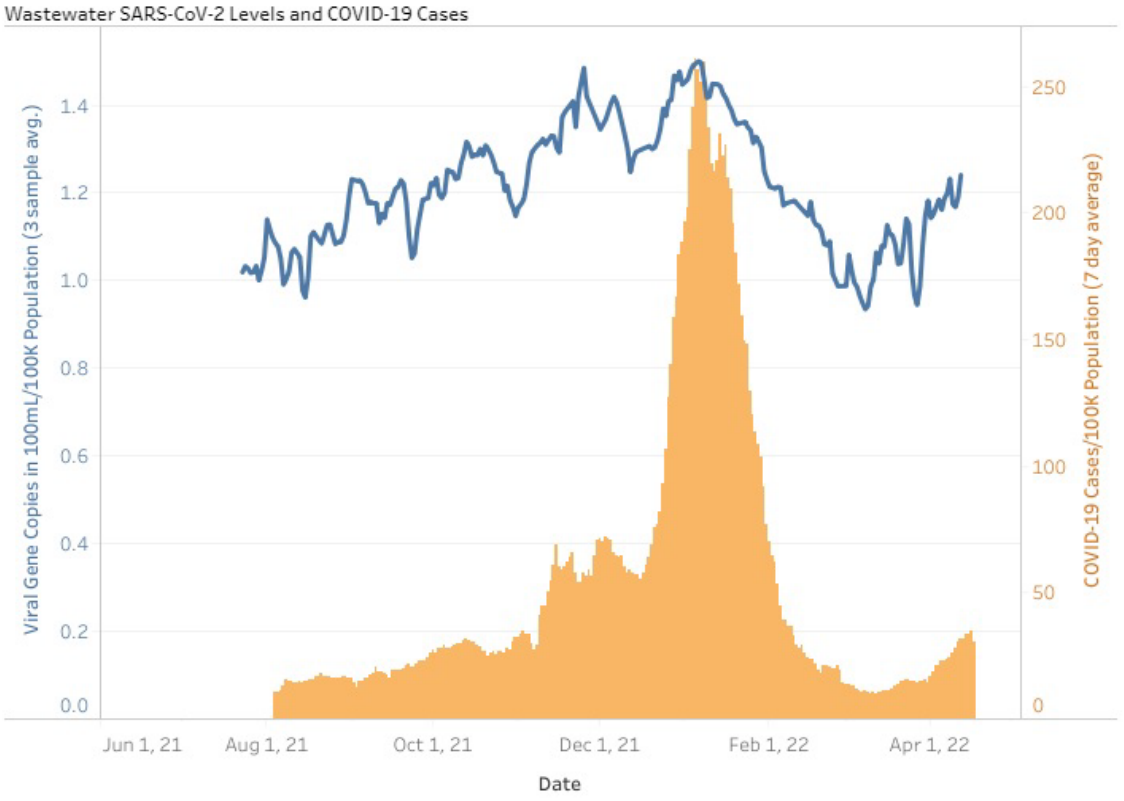
Interpreting Wastewater Should Be In Context with Other Indicators

- When levels of virus in wastewater are low, a modest increase overall in virus level can appear much larger as numbers are translated into percentages
  - This does not necessarily mean we will see major increases in transmission in the community

- When increases are seen within one wastewater site, public health officials compare with neighboring communities and other data sources to understand potential of surges
  - For example, the Ypsilanti WWTP saw increases in SARS-CoV-2 levels which correlated with increasing presence of Omicron BA.2 lineage and then followed by an increase in cases

Ypsilanti WWTP

The most recent sample concentration is higher than 59% of samples collected at this site, which puts it in the 41-60 percentile category. As of 4/13/2022, the change in viral concentration over the past 15 days is increasing.

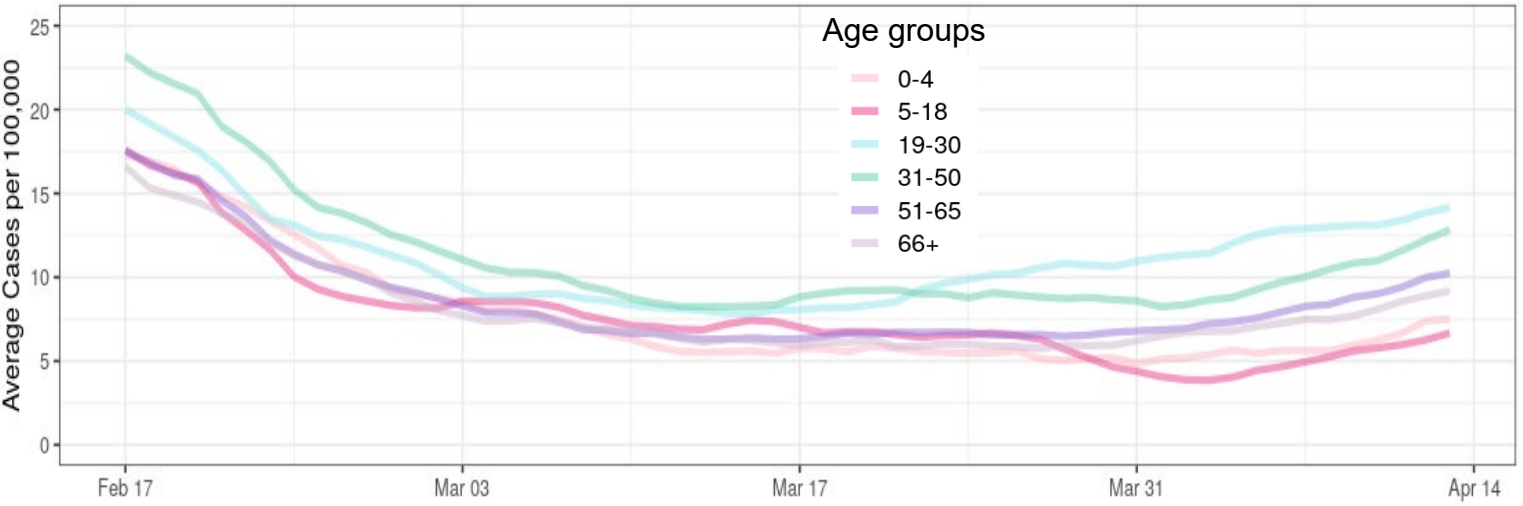


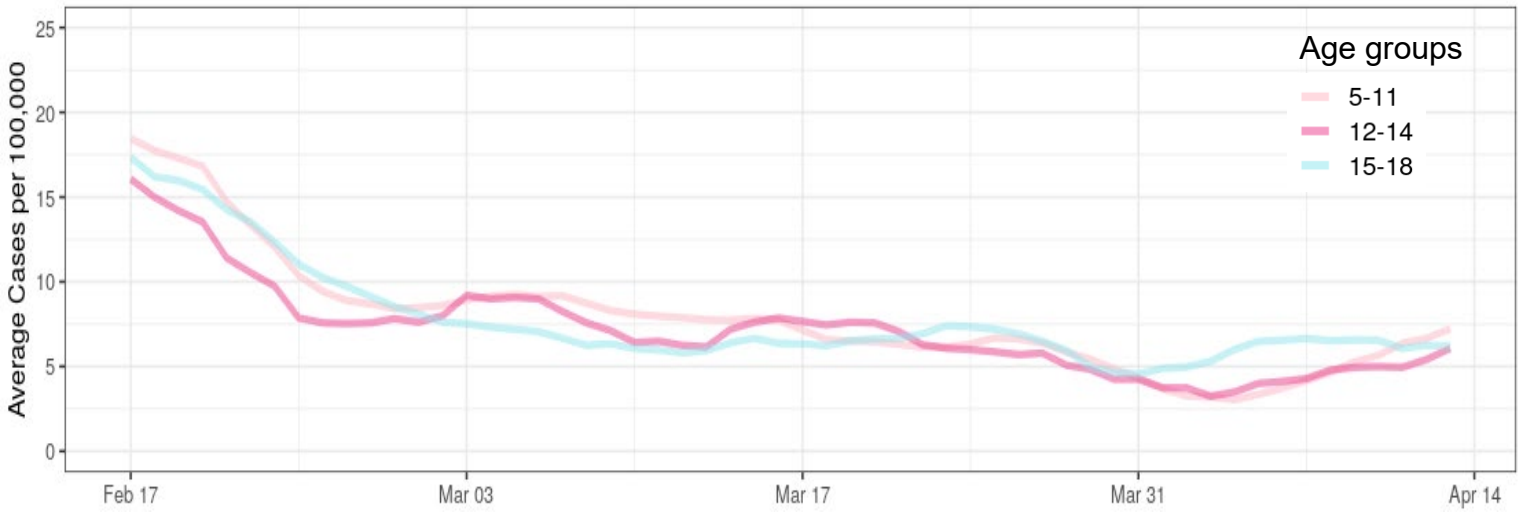
The blue line on the graph shows the levels of SARS-CoV-2, the virus that causes COVID-19, in the wastewater samples collected from Ypsilanti WWTP. Each data point is calculated by averaging the number of viral gene copies detected per 100mL of wastewater in the 3 most recent samples. The orange bars on the graph show the COVID-19 cases reported to MDHHS from the zip codes that the wastewater treatment plant serves (7-day average). Both the virus levels and COVID-19 cases are calculated per 100,000 people. Case data will not be shown on the graph when the average number of cases per 100,000 people is fewer than 10 to protect the confidentiality of individuals with infections.

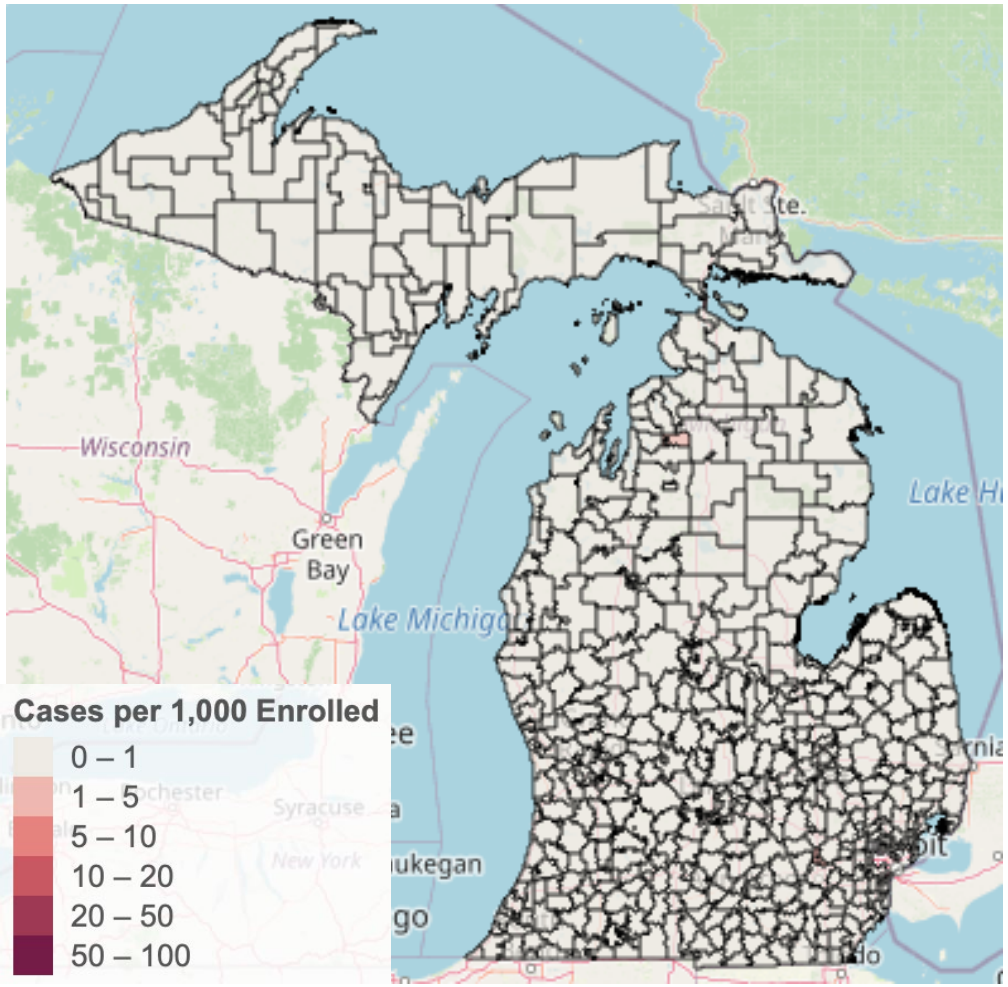
Source: MDHHS – Sentinel Wastewater Epidemiology Evaluation Project - https://www.michigan.gov/coronavirus/0,9753,7-406-98163_98173-573480--,00.html

Slow case rate increase in the school-aged population statewide

- Case rates in 5–18-year-olds are lower than rates in 19–50-year-olds
- Case rates among school-aged populations are no longer declining

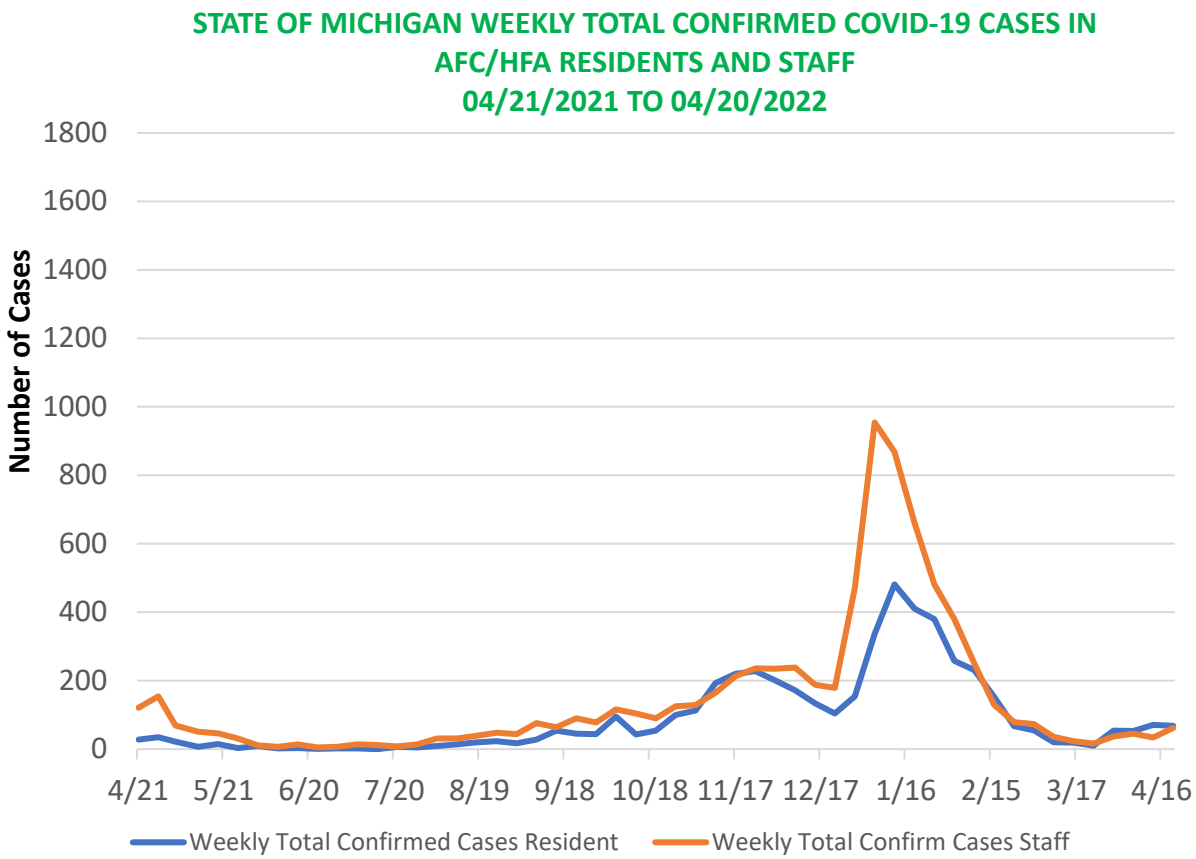


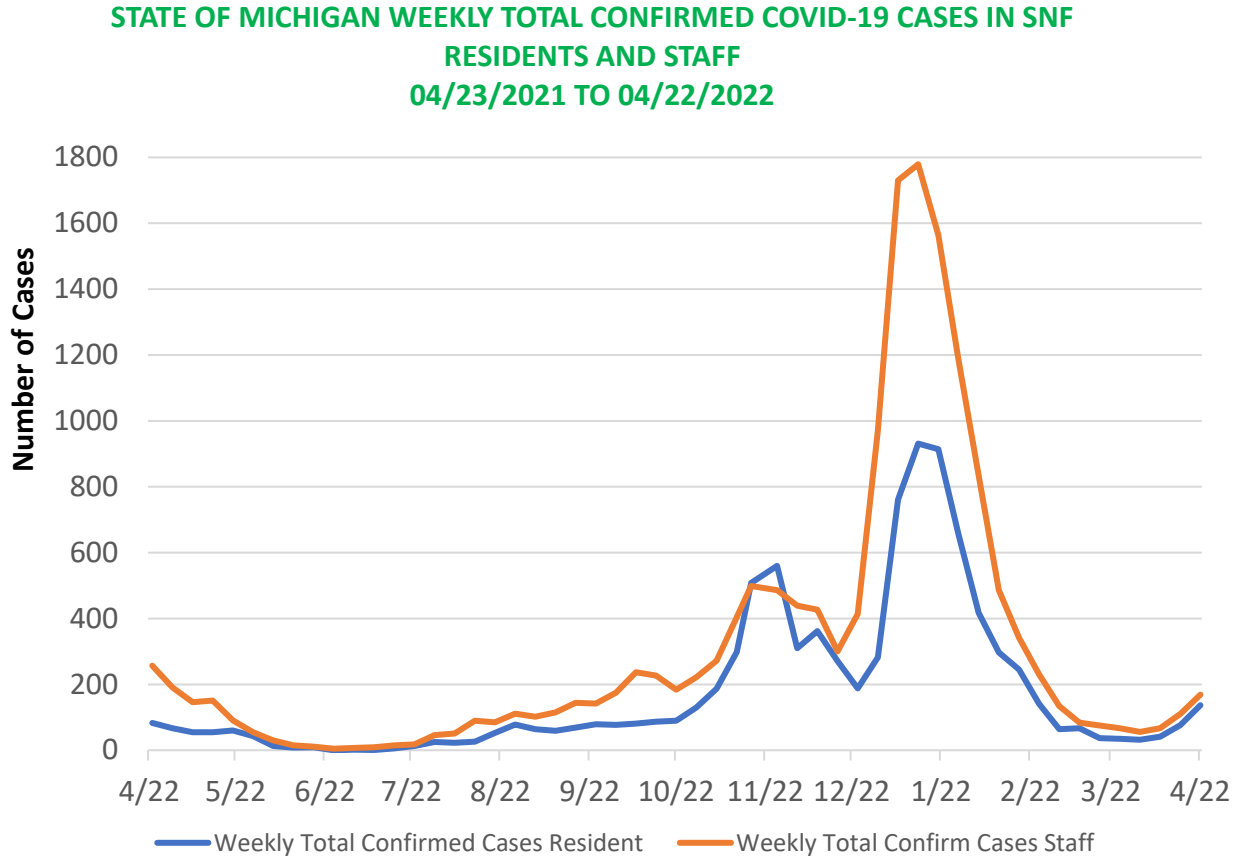




Sources: MDSS case data as of 4/25/2022 (data through 4/13/22), line charts use statewide age group population, map uses ISD enrolled populations from EOG mask tracker data.

Cases continue are plateaued or increasing in staff and residents in Long Term Care Facilities



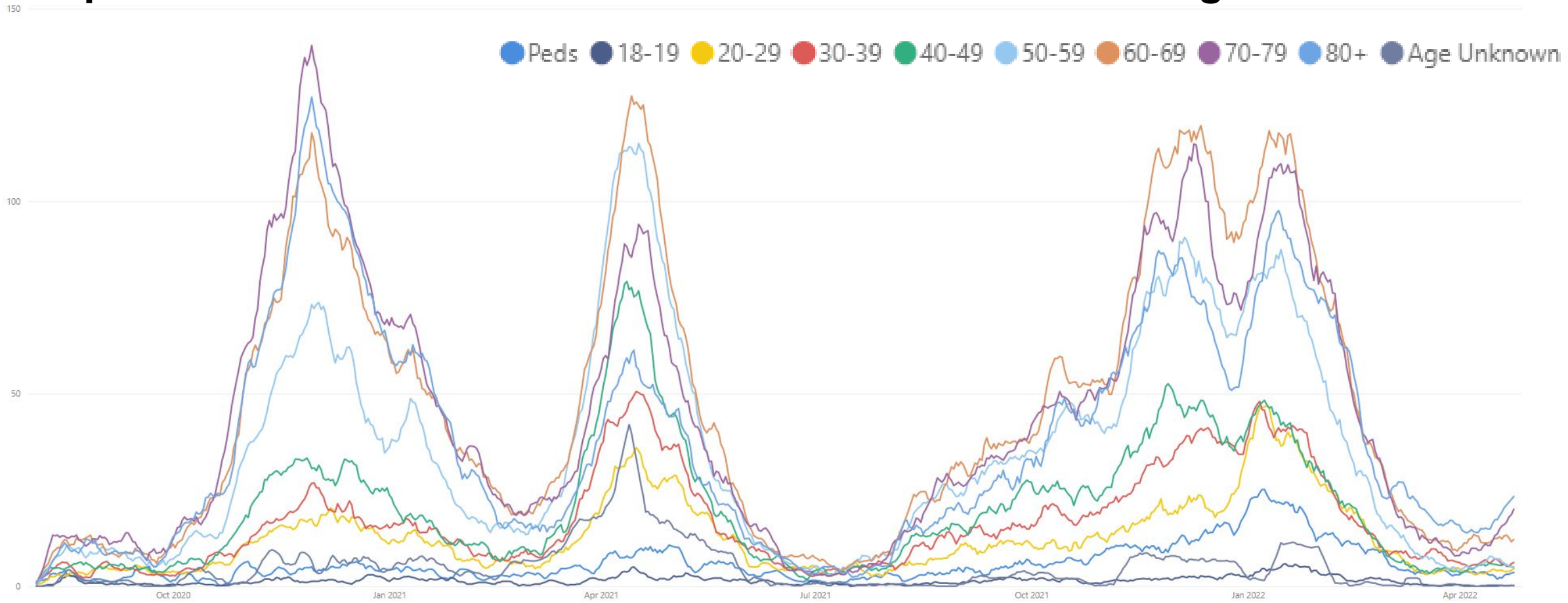


- Case counts in residents are increasing in AFC/HFA (68) and in SNFs (137)
- Case counts in staff increased in both AFC/HFA (62) and SNF (169)
- As cases continue to rise, **35%** of SNFs are reporting **nursing shortages** and **38%** of SNFs are reporting **aide shortages**

Abbreviations: AFC: Adult Foster Care; HFAs: Homes for the Aged; and SNF: Skilled Nursing Facilities

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

Hospital admissions due to COVID-19 are Low but Increasing



- Trends for daily average hospital admissions increased (+18%) since last week (vs. +16% prior week)
- Half of the age groups saw increases this week
- Those 70-79 and 80+ are now seeing between 20-25 daily hospital admissions

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	2.7	2.0	+46% (+1)
12-17	0.9	1.1	+20% (+<1)
18-19	0.1	0.5	0% (+0)
20-29	4.9	3.5	+31% (+1)
30-39	6.4	5.3	+5% (+<1)
40-49	5.3	4.5	-5% (-<1)
50-59	4.9	3.6	-32% (-2)
60-69	**12.4**	**9.7**	-3% (-<1)
70-79	**21.1**	**27.6**	+45% (+7)
80+	**25.0**	**60.4**	+40% (+7)
Total¶	**83.9**	**7.4**	**+18% (+13)**

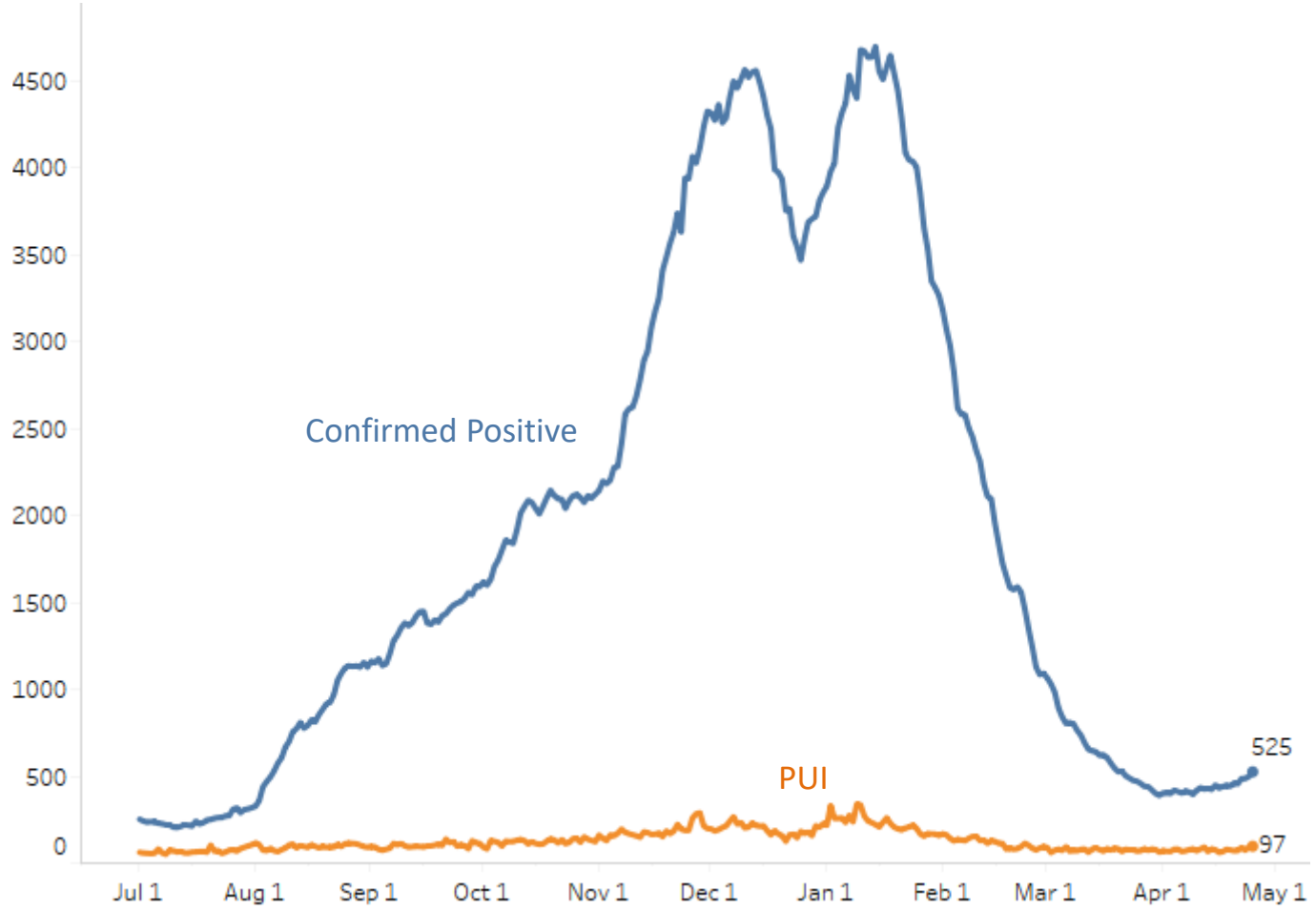
* Rate per 1 million residents; † Rolling 7-day average; ¶ Total may not reflect state due to missing age data
Note: Hospital Admission data reflects date data was submitted
Source: CHECC and EM Resource

- Through April 25, there were an average of 83.9 hospital admissions per day due to COVID-19; an increase from last week (+18%, +13)
- Half of the age groups saw increases this week
- The largest one-week percent increase was among those 70-79 years (+45%,+7)
- Average daily hospital admission count (25.0 hospital admissions per day) and average daily hospital admission rate (60.4 hospital admissions/million) were highest among those aged 80+
- Those 70-79 and 80+ are now seeing between 20-25 daily hospital admissions

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

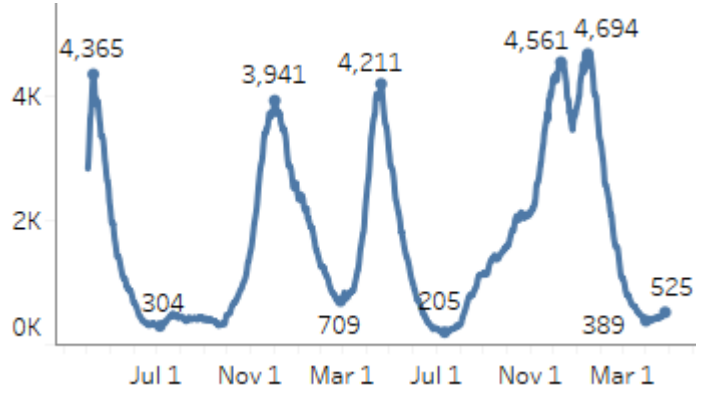
Statewide Hospitalization Trends: Total COVID+ Census

Hospitalization Trends 7/1/2021 – 4/25/2022
Confirmed Positive & Persons Under Investigation (PUI)



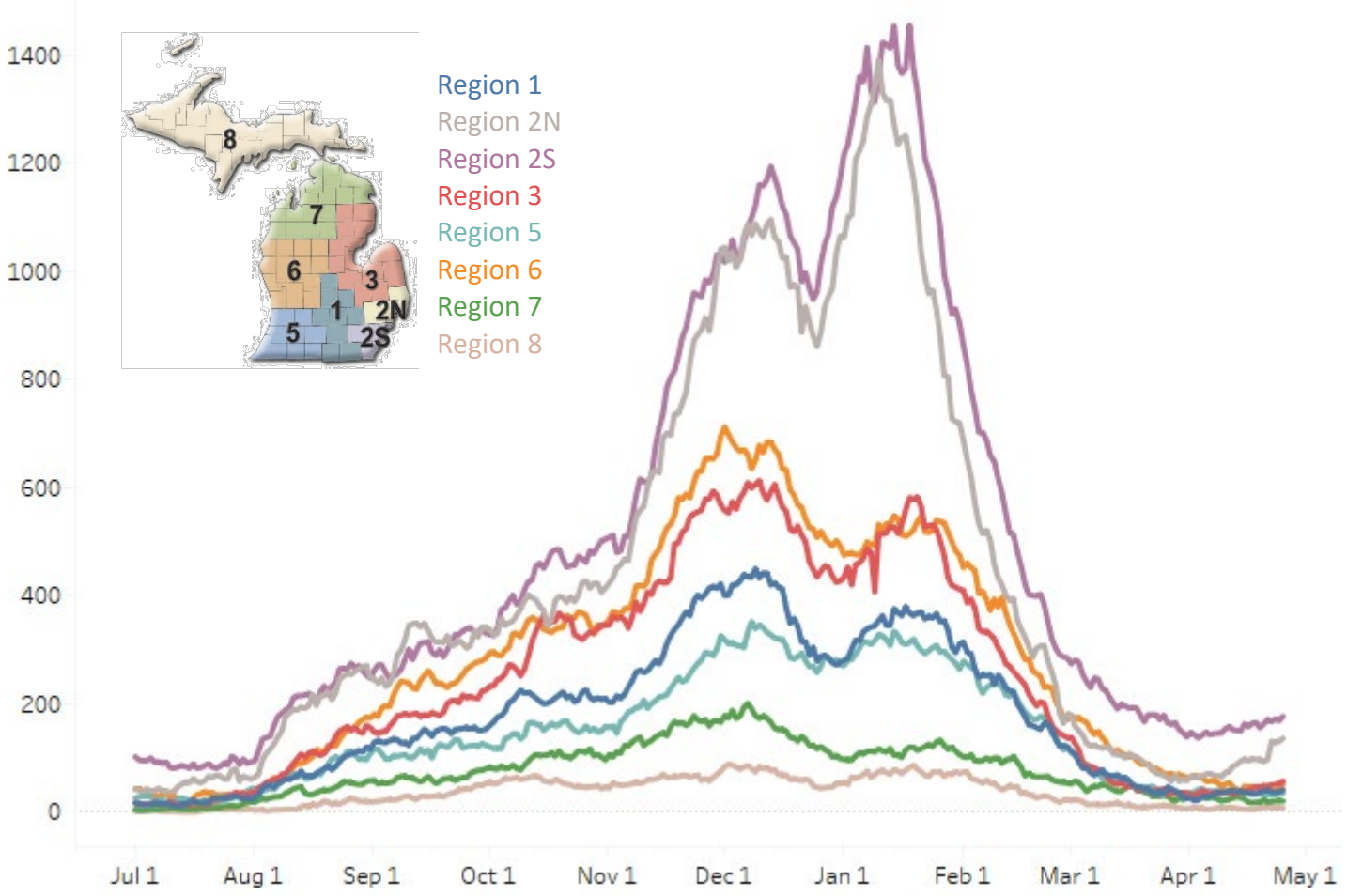
The COVID+ census in hospitals has increased 18% since last week. This growth rate is substantially higher than the 2-3% per week growth we have seen in the prior 2 weeks.

Hospitalized COVID Positive Long Term Trend (beginning March 2020)



Statewide Hospitalization Trends: Regional COVID+ Census

Hospitalization Trends 7/1/2021 – 4/25/2022
Confirmed Positive by Region



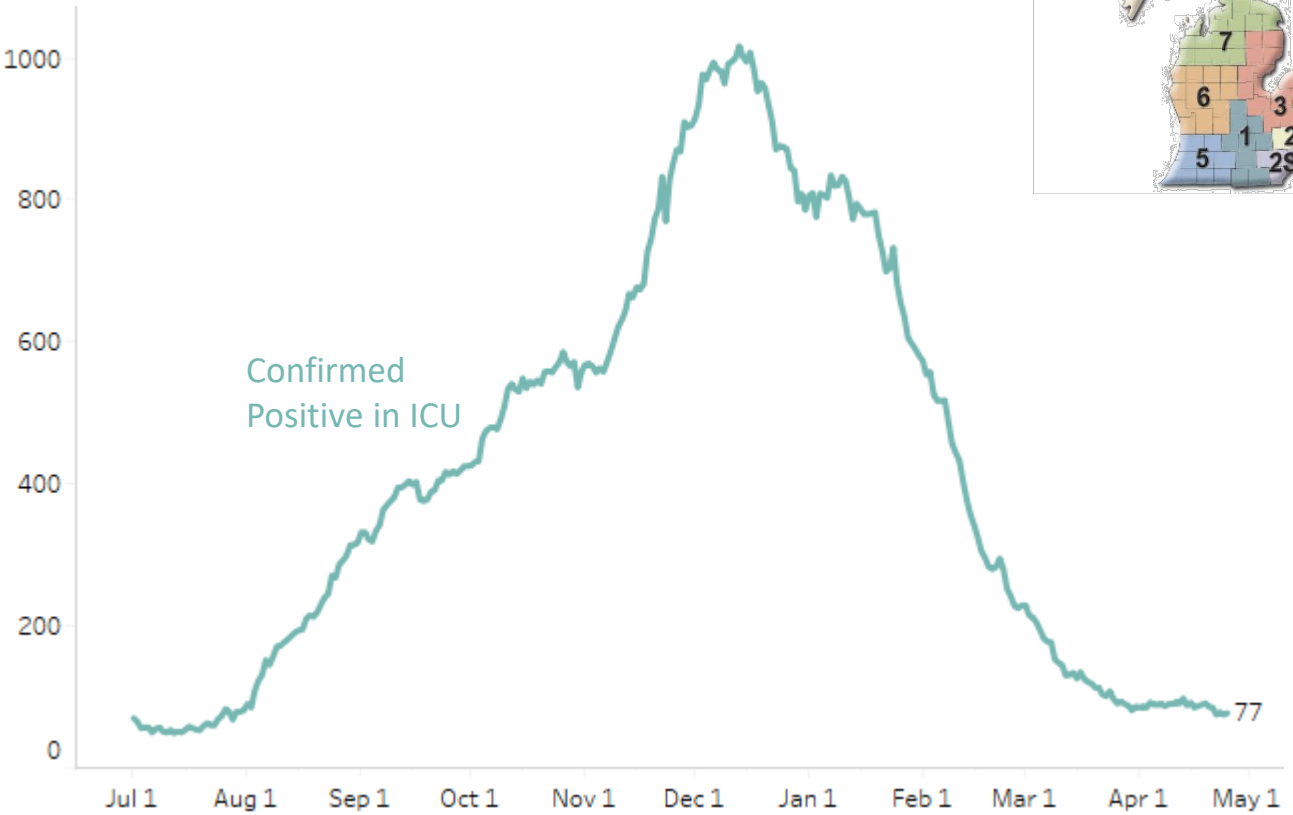
This week the COVD+ census has increased across all regions except Region 5, which is flat from last week.

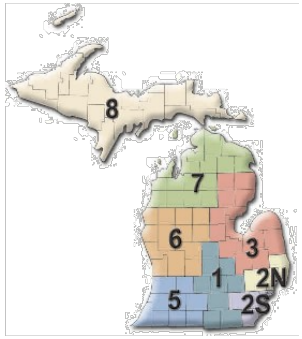
The highest growth rates are in Regions 1, 2N, 3 and 8.

Region	COVID+ Hospitalizations (% Δ from last week)	COVID+ Hospitalizations / MM
Region 1	41 (21%)	38/M
Region 2N	136 (40%)	61/M
Region 2S	177 (7%)	79/M
Region 3	57 (24%)	50/M
Region 5	35 (0%)	37/M
Region 6	51 (16%)	35/M
Region 7	20 (11%)	40/M
Region 8	8 (33%)	26/M

Statewide Hospitalization Trends: ICU COVID+ Census

Hospitalization Trends 7/1/2021 – 4/25/2022
Confirmed Positive in ICUs



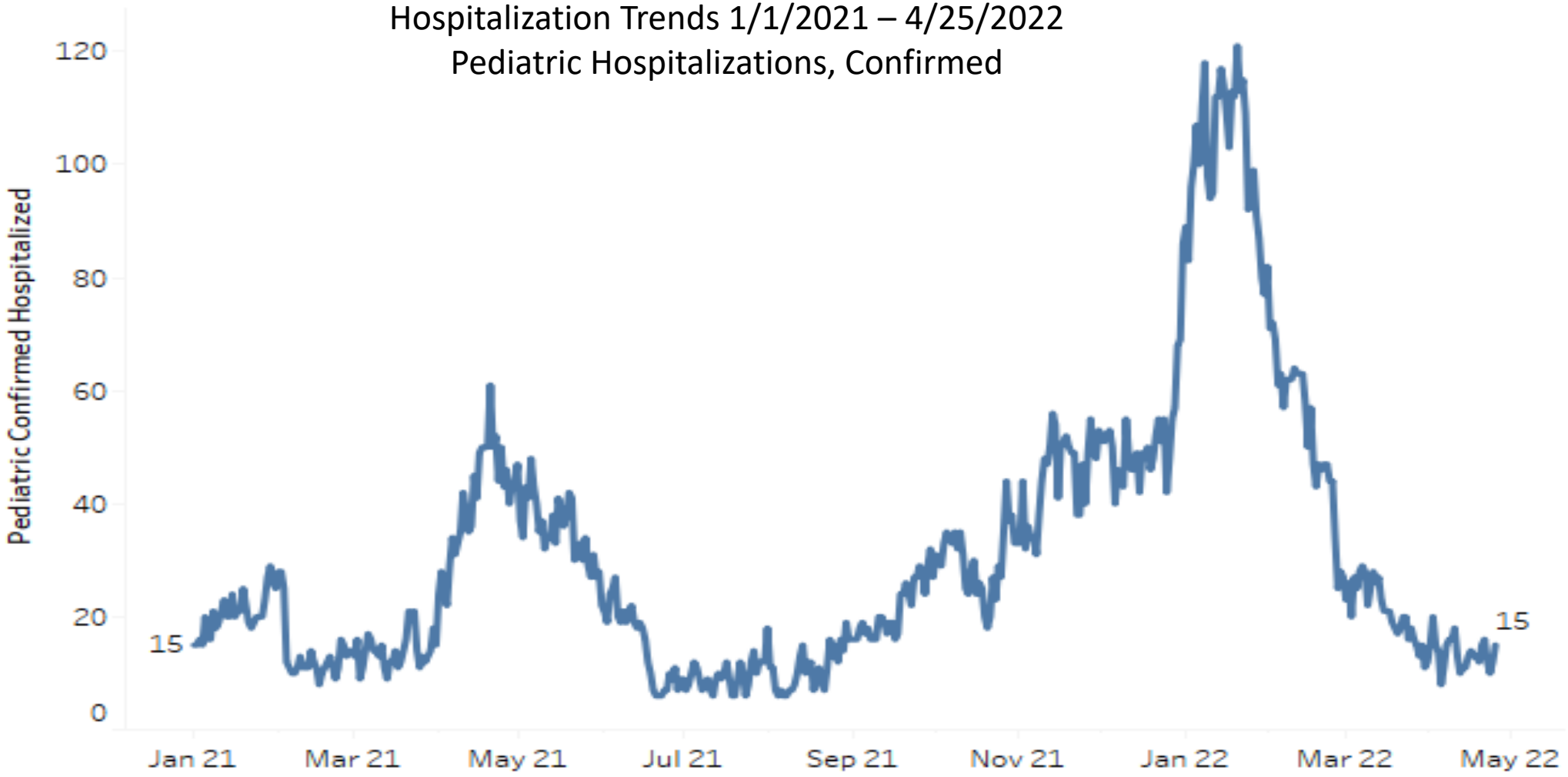


Overall, the census of COVID+ patients in ICUs has decreased by 14% from last week. There are 77 COVID+ patients in ICU beds across the state. Region 2N has an increasing trend, all other regions have decreased or remained flat.

All regions have 5% or fewer ICU beds filled with COVID+ patients.

Region	Adult COVID+ in ICU (% Δ from last week)	ICU Occupancy	% of ICU beds COVID+
Region 1	5 (-38%)	81%	3%
Region 2N	20 (25%)	70%	4%
Region 2S	31 (-16%)	79%	5%
Region 3	7 (-13%)	80%	2%
Region 5	4 (-50%)	69%	2%
Region 6	6 (0%)	72%	3%
Region 7	3 (-40%)	72%	2%
Region 8	1 (0%)	54%	2%

Statewide Hospitalization Trends: Pediatric COVID+ Census



Harm Reduction: Key Messages

Currently in Recovery Phase of Michigan COVID-19 response cycle and most counties are at the low CDC Covid Community Level

- Stay up to date on vaccine and get tested if feeling ill
- Empowering community members to make best choices for their individual circumstances

Vaccinations and Boosters administration remains a critical component during the recovery phase

- Model projections show that COVID-19 vaccines saved millions lives, averted tens of millions of infection, and saved billions of dollars
- Vaccination coverage has increased modestly with greatest increases in the percent who have received a booster dose
- MDHHS now has an additional tab for booster coverage data on the vaccine dashboard
- CDC Authorizes 2nd Booster for those moderately to severely immunocompromised or those 50 years of age and above
- COVID-19 vaccinations remain safe and effective to prevent spread and severe disease
  - COVID-19 can make some children very sick and COVID-19–associated hospitalization rates in children aged 5–11 years were approximately twice as high among unvaccinated as among vaccinated children

Other Notable Messages

- Between January and December 2021, COVID-19 was associated with approximately 460,000 deaths in the U.S. and was the third leading cause of death in the U.S. in 2021
- Childhood routine immunization rates (non-COVID vaccinations) have been negatively impacted by the pandemic – especially among the Medicaid population

Protect Yourself, Protect Your Community

Vaccines

Protect against severe outcomes

Vaccines are available for ages 5 and up. Boosters are available for ages 12 and up.

Masks, Distancing & Ventilation

Prevent spread

People with symptoms, a positive test, or exposure to someone with COVID-19 should wear a mask. Masking may also be based on personal preference and informed by personal level of risk.

Tests

Prevent spread

Over-the-counter tests allow for testing at home; an important addition to on-site antigen and PCR testing.

Treatment

Protect against severe outcomes

Oral antivirals and monoclonal antibodies can reduce the risk of hospitalization and death from COVID-19.

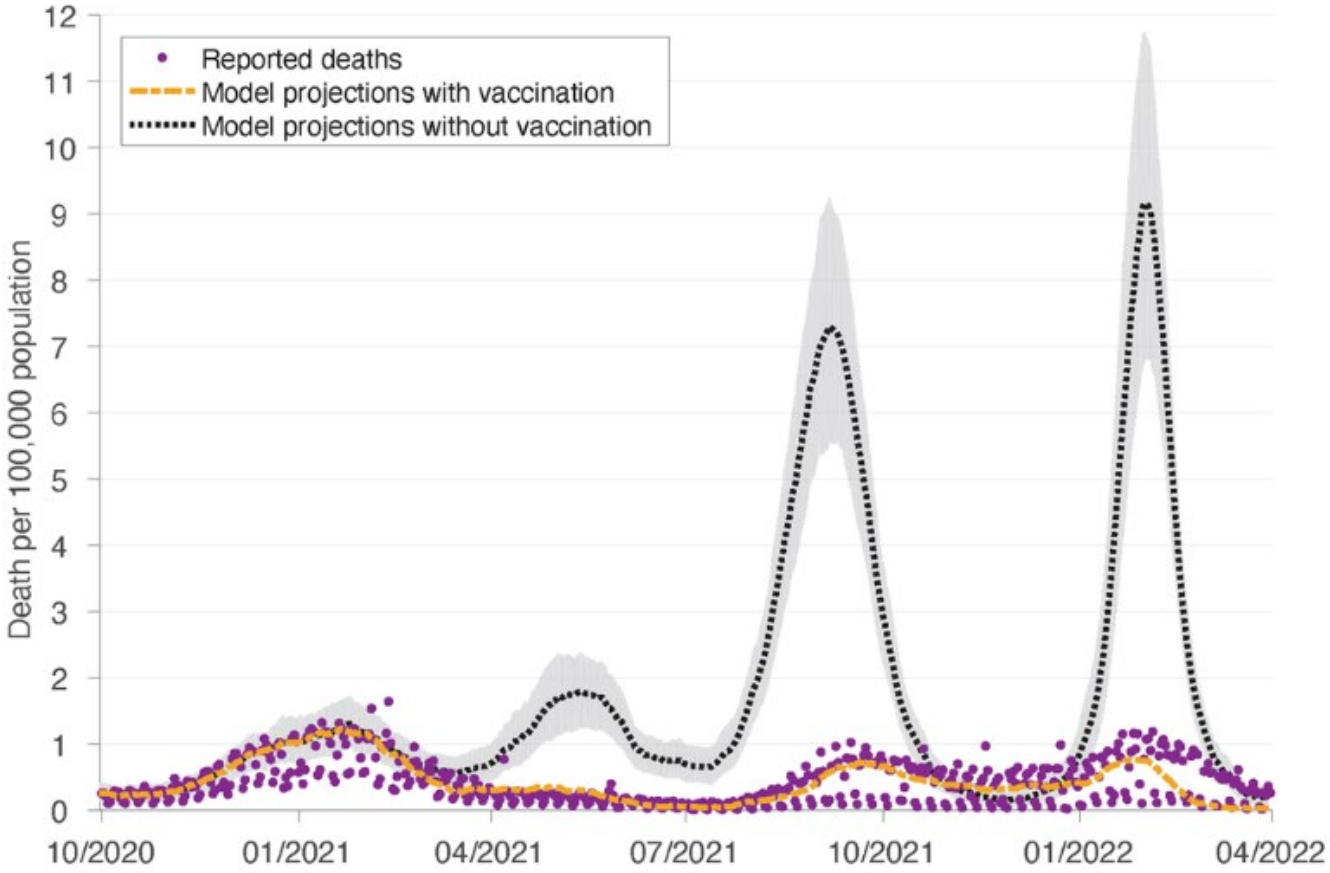
Commonwealth Fund: COVID-19 vaccines saved millions lives, averted tens of millions of infection, and saved billions of dollars

Latest model estimates the impact of vaccine through the Omicron wave and demonstrates the impact of boosters

Modeling estimates from the Commonwealth Fund estimated that COVID-19 vaccine prevented:

- Over 2 million deaths
- 17 million hospitalizations
- 66 million infections
- almost $900 billion in health care costs

Projected U.S. Seven-Day Rolling Average of Daily Deaths per 100,000 Population, With and Without Vaccination



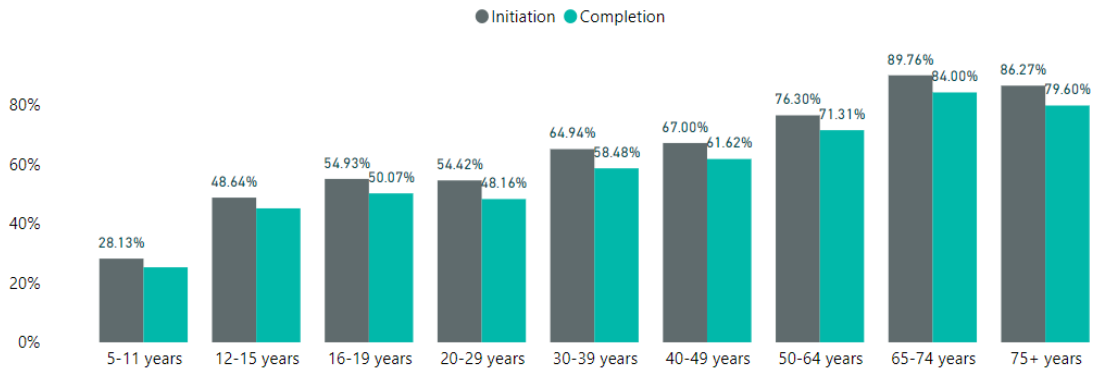
Estimates of COVID-19-Attributable Deaths, Hospitalizations, Infections, and Health Care Costs Averted by the U.S. Vaccination Program Between December 12, 2020, and March 31, 2022

Deaths	2,265,222	2,051,041 to 2,467,683
Hospitalizations	17,003,960	15,680,556 to 18,250,413
Infections	66,159,093	58,774,953 to 73,787,291
Health care costs	$899.4 billion	$825.3 billion to $978.5 billion

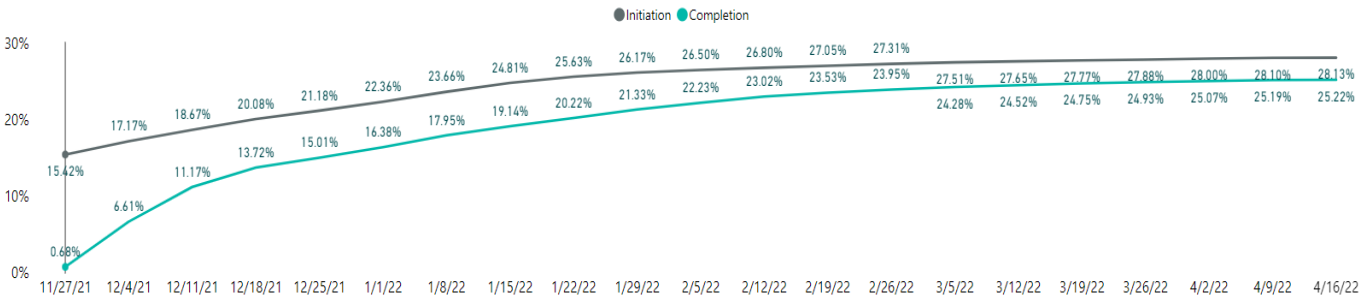
Vaccinations and Boosters

- Over 15.8 million COVID-19 vaccine doses have been administered in Michigan
  - Over 6.6 million Michiganders have received at least one dose (66.9%)
  - Nearly 6 million Michiganders have completed a primary series (60.1%)
  - Over 3.24 million additional/booster doses have been administered in Michigan
    - 54.1% of the fully vaccinated population has received a booster
    - 76.3% of the fully vaccinated population 65 years of age or older has received a booster

COVID-19 Vaccine Coverage by Age Group



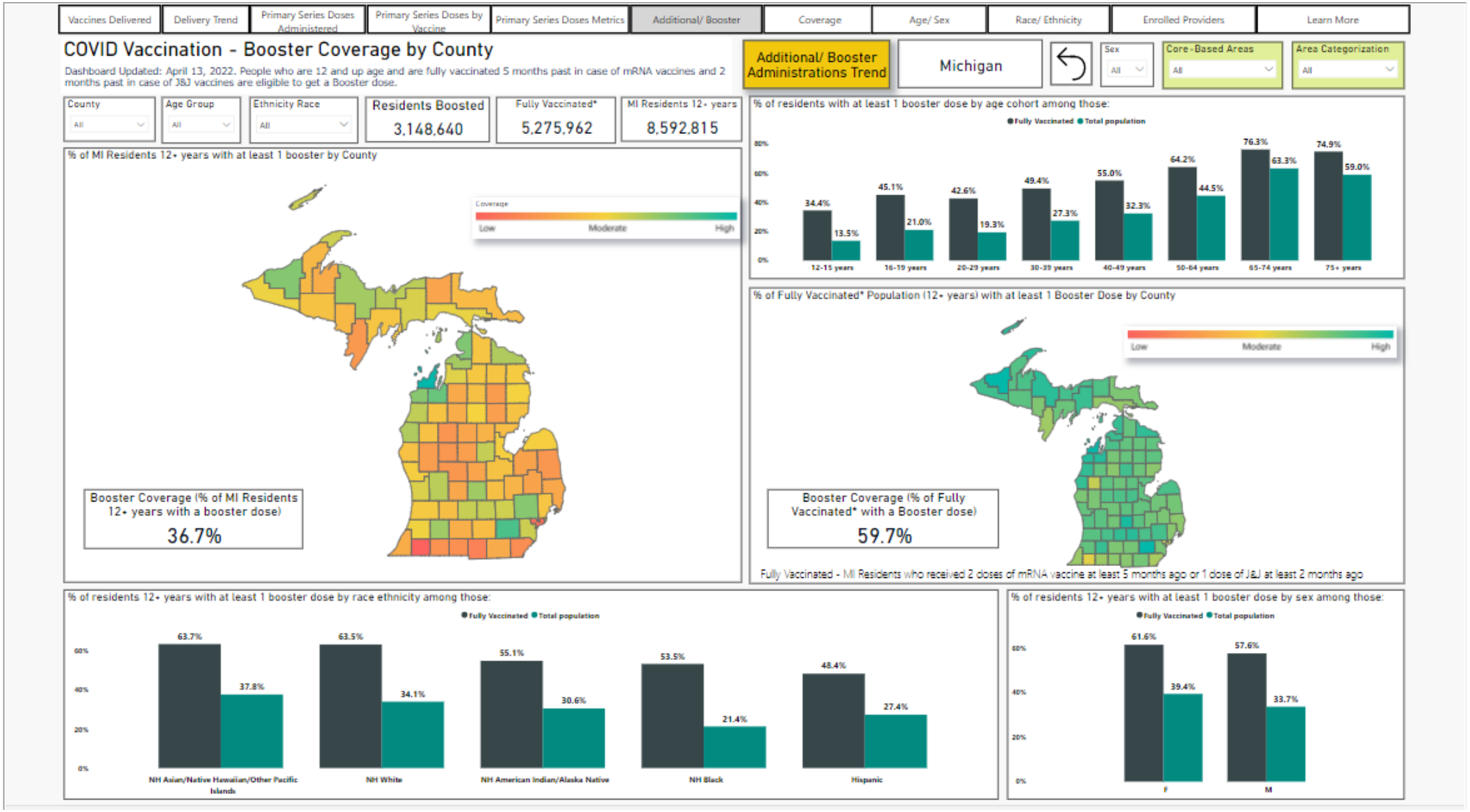
Initiation and Completion Trends in 5–11-year-olds



https://www.michigan.gov/coronavirus/0,9753,7-406-98178_103214_103272-547150--,00.html

https://covid.cdc.gov/covid-data-tracker/#vaccinations

Additional Doses and Booster Coverage



https://www.michigan.gov/coronavirus/0,9753,7-406-98178_103214_103272-547150--,00.html

CDC Authorizes 2nd Booster for those moderately to severely immunocompromised or those 50 years of age and above

Four months after receipt of a first booster dose of Pfizer BioNTech, Moderna or Janssen (Johnson & Johnson), the following are now authorized and individuals may choose to receive:

- A second booster dose of the Pfizer-BioNTech COVID-19 vaccine or Moderna COVID-19 vaccine may be administered to individuals 50 years of age and older.
- A second booster dose of the Pfizer-BioNTech COVID-19 vaccine may be administered to moderately or severely immunocompromised individuals 12 years of age and older.
- A second booster dose of the Moderna COVID-19 vaccine may be administered to moderately or severely immunocompromised individuals 18 years of age and older.

The CDC definition for Up to Date on COVID-19 Vaccine is not changed:

- A person is up to date with their COVID-19 vaccination if they have received **all recommended doses in the primary series and one booster when eligible**. Getting a second booster is not necessary to be considered up to date at this time.

Michigan currently has over **2.5 million** adult COVID vaccine doses:

- 1.03 million Pfizer
- 1.2 million Moderna
- 0.27 million J&J

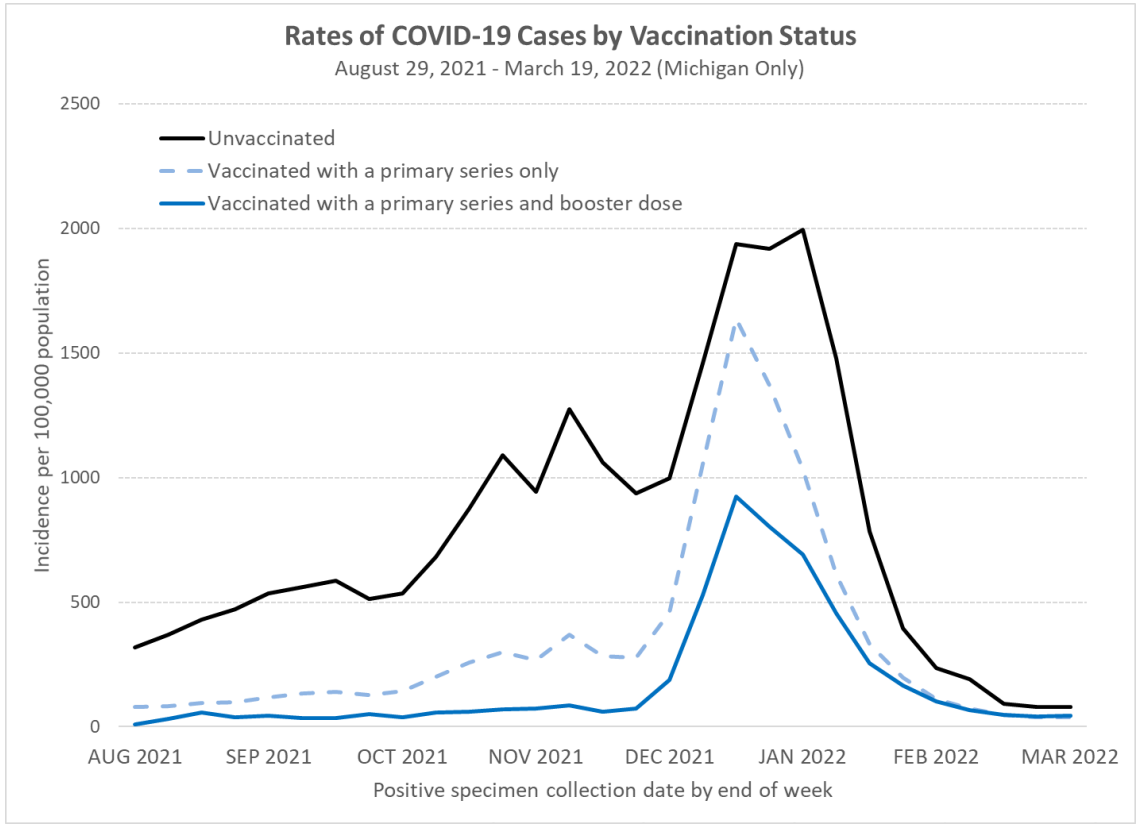
If you are interested in an additional/booster dose, you should not feel the need to wait.

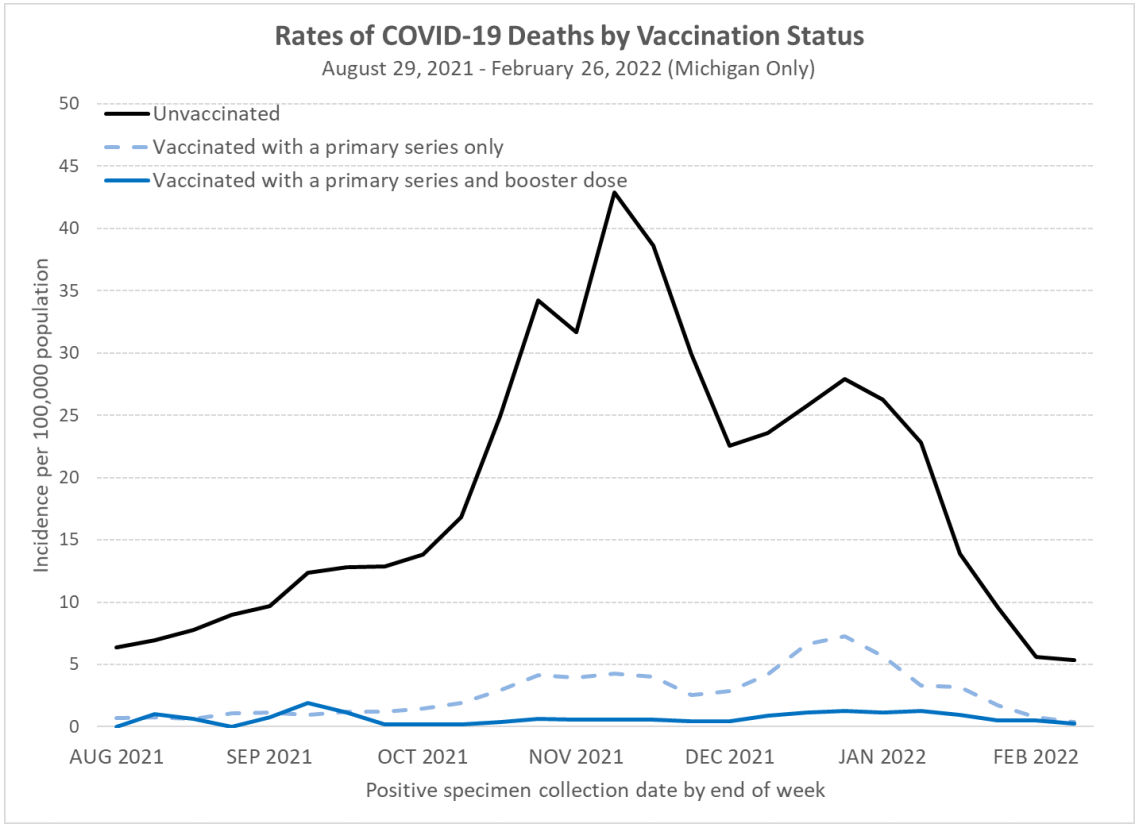
December 2021 through February 2022 saw COVID-19-associated hospitalization rates in children 5-11 that were twice as high among unvaccinated than in vaccinated children

- COVID-19 can cause severe illness in children
- During the period of Omicron predominance (Dec 19, 2021–Feb 28, 2022), COVID-19–associated hospitalization rates in children aged 5–11 years were approximately 2X as high among unvaccinated as among vaccinated children
  - Non-Hispanic Black children represented the largest group of unvaccinated children
  - Thirty percent of hospitalized children had no underlying medical conditions, and 19% were admitted to an intensive care unit
  - Children with diabetes and obesity were more likely to experience severe COVID-19
- **Increasing COVID-19 vaccination coverage among children aged 5–11 years, particularly among racial and ethnic minority groups disproportionately affected by COVID-19, can prevent COVID-19–associated hospitalization and severe outcomes**

Source: Shi DS, Whitaker M, Marks KJ, et al. Hospitalizations of Children Aged 5–11 Years with Laboratory-Confirmed COVID-19 — COVID-NET, 14 States, March 2020–February 2022. MMWR Morb Mortal Wkly Rep 2022;71:574-581. DOI: http://dx.doi.org/10.15585/mmwr.mm7116e1

Unvaccinated people in Michigan had 1.8 times the risk of testing positive for COVID-19 in March compared to people up to date on their vaccination





Unvaccinated people aged 12 years and older had:

2.8 X
Risk of Testing Positive for COVID-19

AND

16 X
Risk of Dying from COVID-19

in February, and

1.8 X
Risk of Testing Positive for COVID-19

in March,* compared to people vaccinated with a primary series and a booster dose.**

*These data reflect cases among persons with a positive specimen collection date through March 19, 2022, and deaths among persons with a positive specimen collection date through February 26, 2022. Please note that these provisional data are subject to change. **Data on immune status are unavailable, thus an additional dose in an immunocompromised person cannot be distinguished from a booster dose.

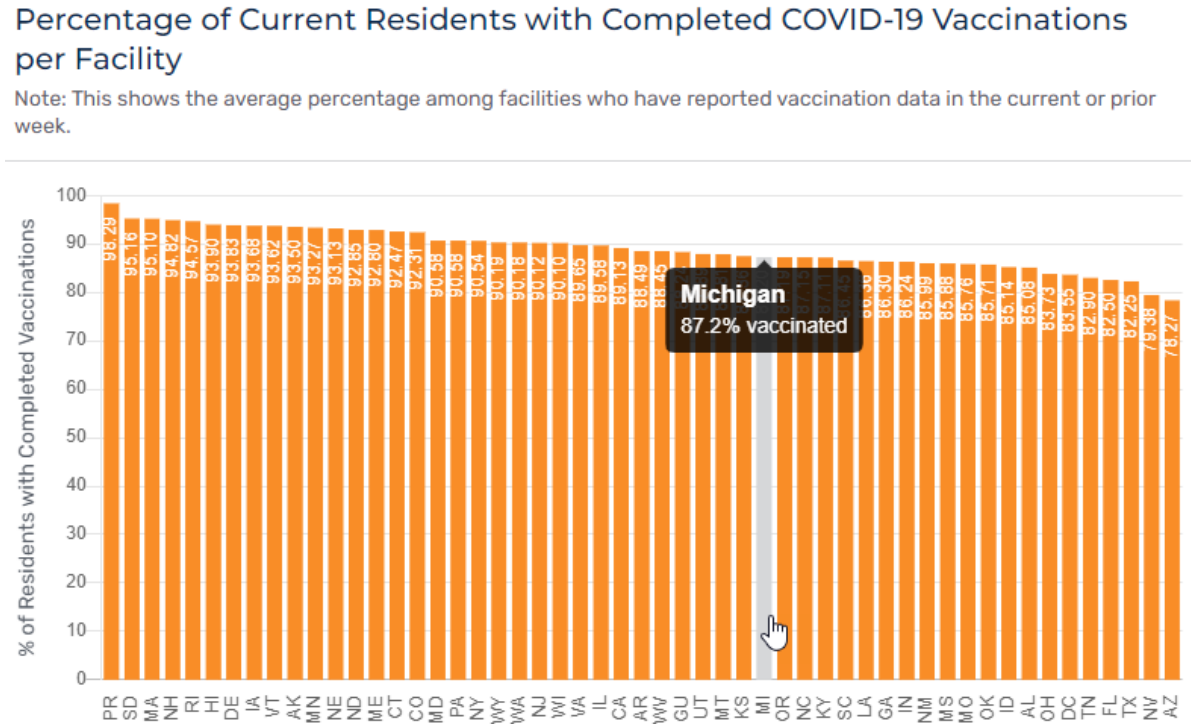
Completed vaccination among Skilled Nursing Residents and Staff is plateauing

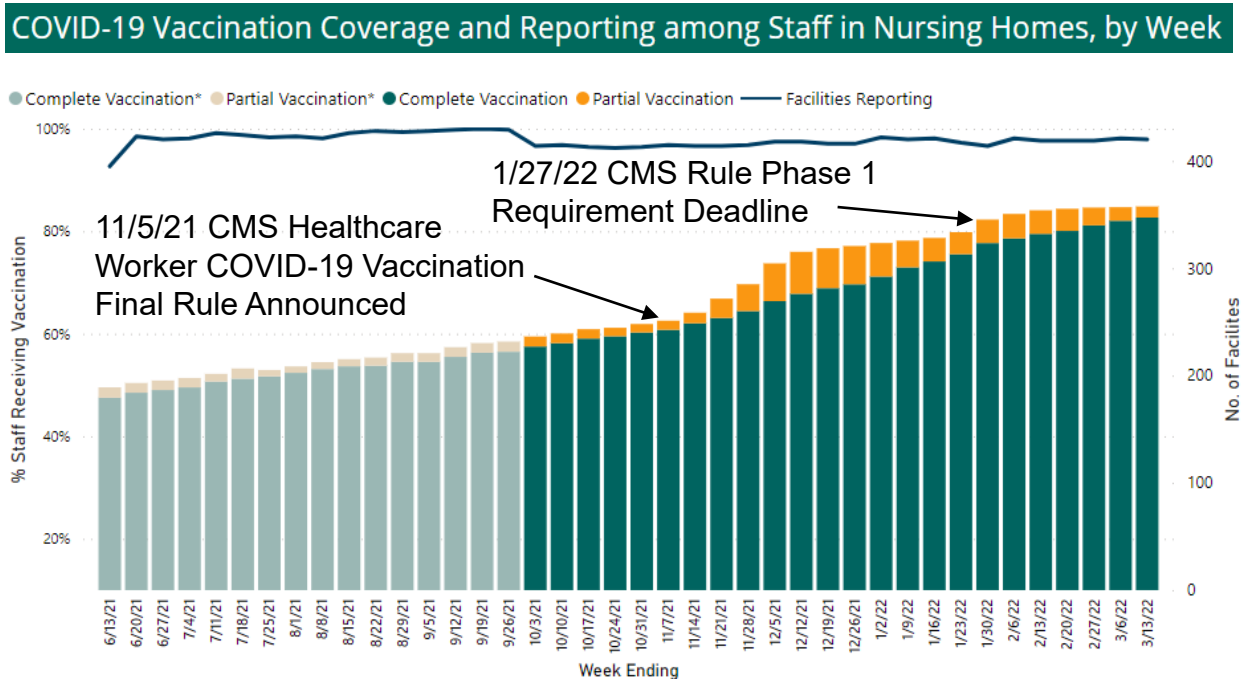
87.2% of SNF residents are fully vaccinated; 33 of 53 states/territories

83.6% of SNF staff are fully vaccinated, 44 of 53 states/territories

1.4% of SNF staff are partially vaccinated

Week ending 11/7, 63.6% of staff initiated COVID-19 vaccine, compared to 82.4% the week ending 1/30 (nearly a 30% increase)





https://data.cms.gov/covid-19/covid-19-nursing-home-data

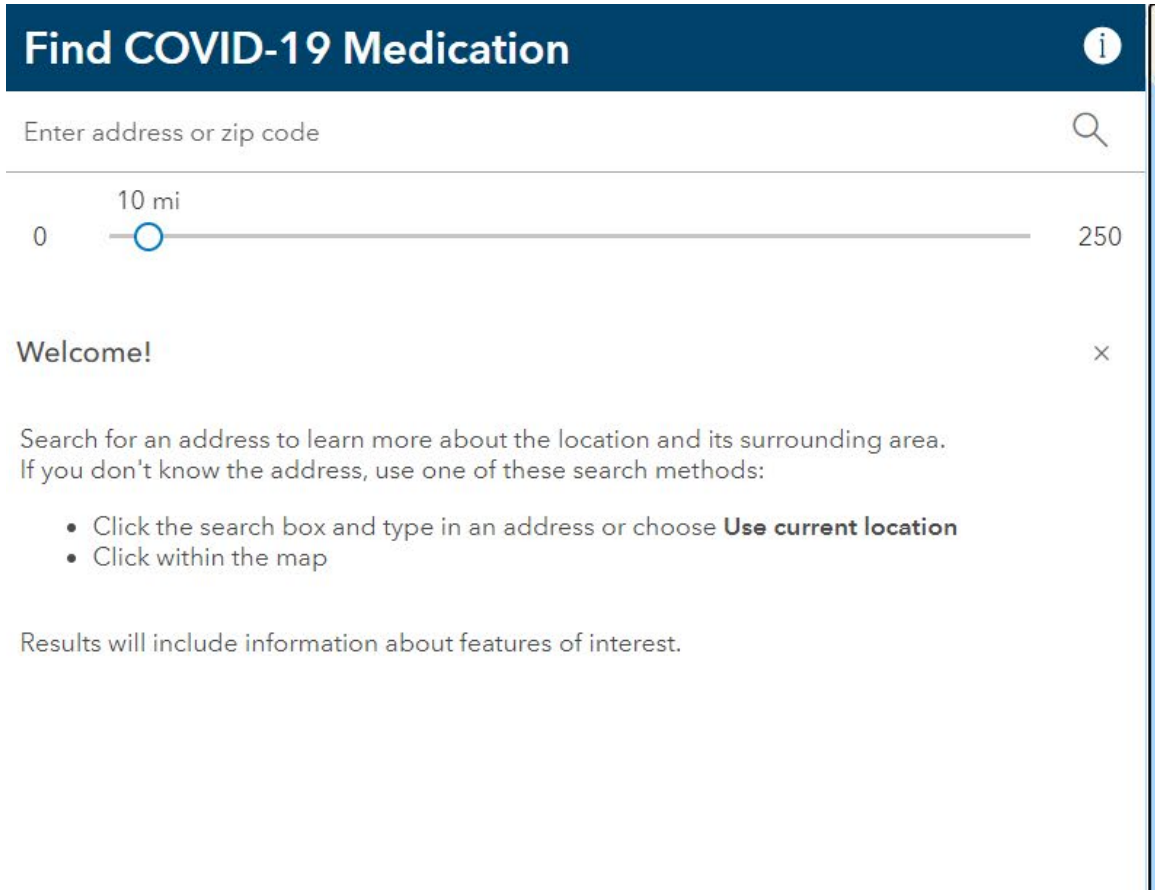
https://www.cdc.gov/nhsn/covid19/ltc-vaccination-dashboard.html

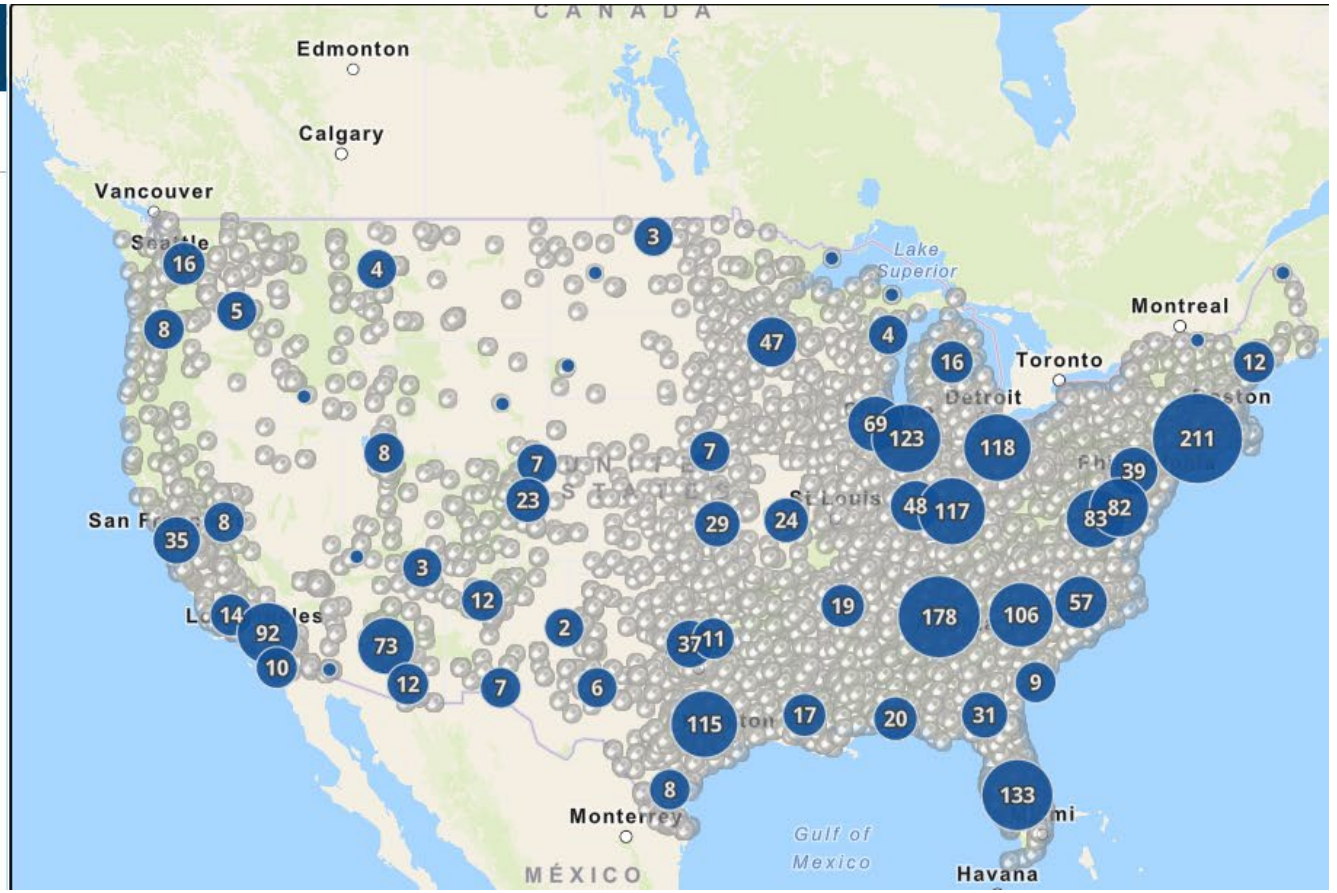
Federal website assists COVID positive residents find treatment

COVID-19 resources available on federal website: [COVID.gov]

Test-to-Treat program simplifies access to COVID treatment: [Find a Test-to-Treat location near you]

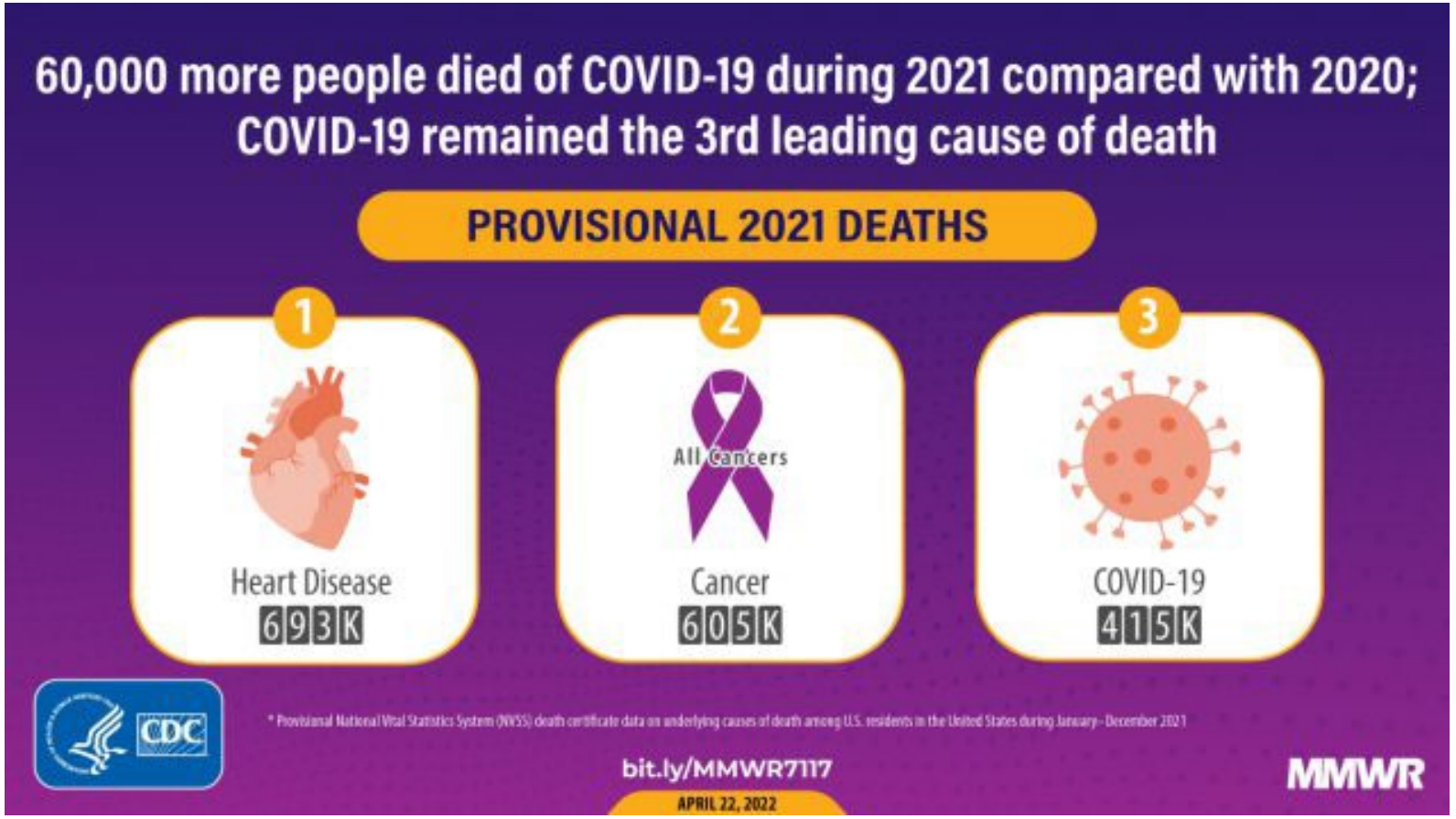
- If you have COVID-19 symptoms, do not wait to get treated
- You must take oral COVID-19 medication within 5 days of your first COVID-19 symptoms
- Use the tool to find a location that is right for you





COVID-19 was the 3rd leading cause of death in 2021

- Between January and December 2021, COVID-19 was associated with approximately 460,000 deaths in the U.S.
- The overall age-adjusted death rate increased by 0.7% in 2021 from 2020
- Overall death rates were highest among non-Hispanic American Indian or Alaskan Native and non-Hispanic Black or African American populations
- For a second year, COVID-19 was the third leading cause of death after heart disease and cancer

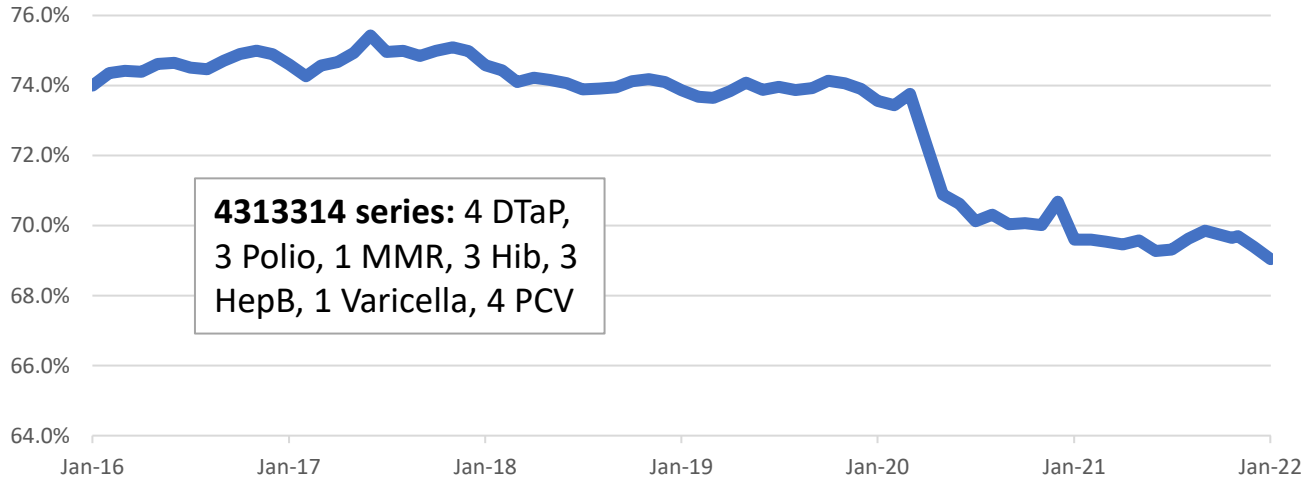


Source: Ahmad FB, Cisewski JA, Anderson RN. Provisional Mortality Data — United States, 2021. MMWR Morb Mortal Wkly Rep. ePub: 22 April 2022. DOI: http://dx.doi.org/10.15585/mmwr.mm7117e1

Vaccines save lives: unfortunately, childhood immunization rates have been negatively impacted by the pandemic – especially among the Medicaid population

- Childhood vaccination coverage decreased from 74% to less than 70% since the start of the COVID pandemic
- Childhood vaccination rates have not returned to pre-pandemic levels
- Childhood vaccine coverage in the Medicaid population has been decreasing compared to the non-Medicaid population; this decrease accelerated during the pandemic
- A childhood vaccine for COVID-19 may not be far around the corner
- Pediatric providers are going to be critically important for administering vaccine in this age cohort
- This offers an opportunity to get kids up to date on core childhood vaccines

4313314 Vaccine Coverage for children 19-35 months, January 2016 - January 2022



4313314 Vaccine Coverage for children, 19-35 months, January 2011 - January 2022
By Medicaid status