

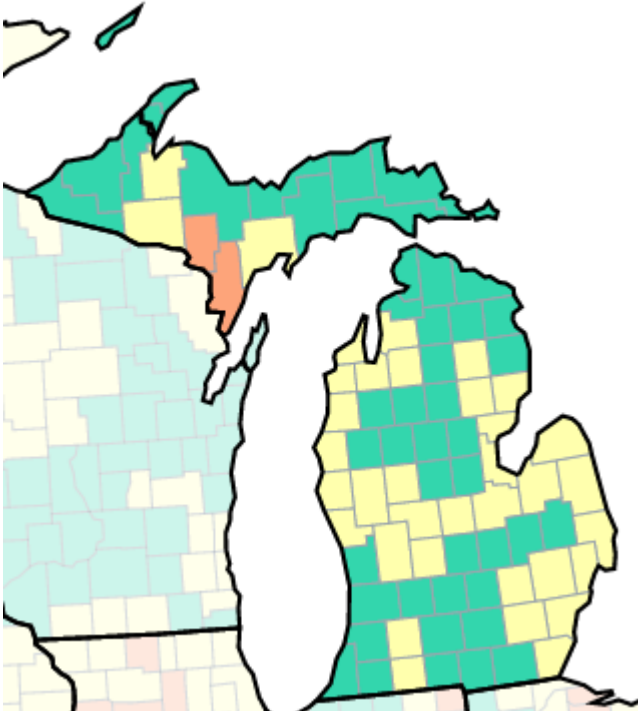
MI COVID RESPONSE DATA AND MODELING UPDATE

December 20, 2022

General Updates

- This is the final weekly report for 2022
- Starting this week, most data for Michigan specific indicators will be through the previous Tuesday as reporting cadence and requirements have changed
 - This week's data will be through Tuesday, December 13
- There will be no data and modeling report next week due (12/27) to the holiday
- The next published report will be on January 3, 2023

As of Dec 15, 2 Michigan Counties are at High COVID-19 Community Level



- In the US, 9% of counties have high risk for medically significant disease and healthcare strain
- In Michigan, 2% (2/83) of counties are at high risk. This represents less than 1% of the population
- 36 Michigan counties are currently at Medium level (43%). This represents 70% of the population
- 45 Michigan counties are currently at Low level (54%). This represents 30% of the population

Percent of Counties This Week

	United States	Michigan	Percent of MI Population
Low	56%	54%	30%
Medium	35%	43%	70%
High	9%	2%	<1%

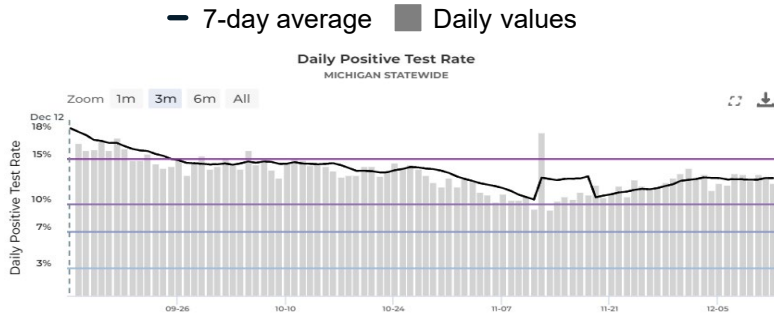
Low	Medium	High
<ul style="list-style-type: none"> • Stay up to date with COVID-19 vaccines • Get tested if you have symptoms 	<ul style="list-style-type: none"> • If you are at high risk for severe illness, talk to your healthcare provider about whether you need to wear a mask and take other precautions • Stay up to date with COVID-19 vaccines • Get tested if you have symptoms 	<ul style="list-style-type: none"> • Wear a mask indoors in public • Stay up to date with COVID-19 vaccines • Get tested if you have symptoms • Additional precautions may be needed for people at high risk for severe illness

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

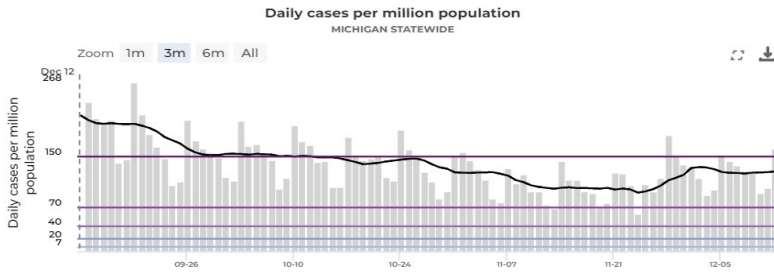
Recent statewide COVID trends are starting to increase

Statewide trends

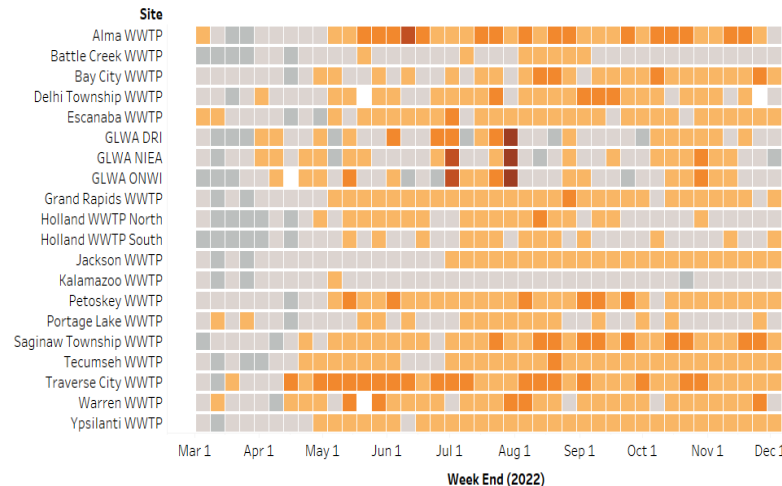
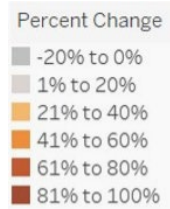
Positivity, %



Daily cases per million



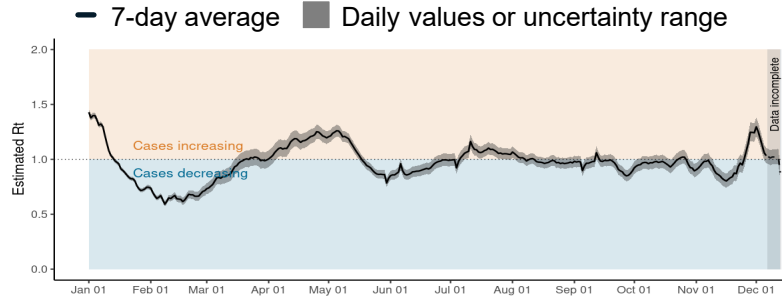
Wastewater



- Test percent positivity, is slightly up compared to last week
- Case rates have leveled off but remain higher than 6-month lows seen in November
- 29 counties are currently showing increases in cases and an additional 23 reported an elevated incidence plateau in case rates (via mistartmap.info as of 12/19/22, data through 12/5/22)
- 50% (10/19) of wastewater sentinel sites have reported levels that are 20% or higher than baseline threshold levels this week

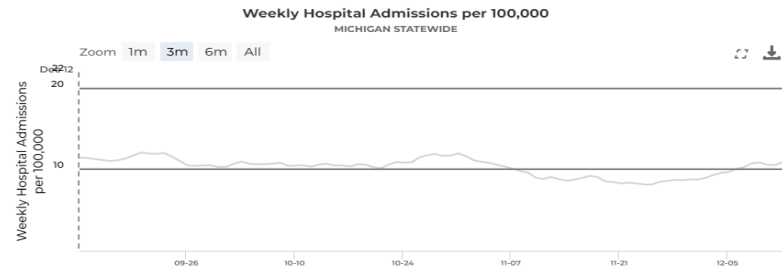
Recent statewide COVID trends are starting to increase

Statewide trends



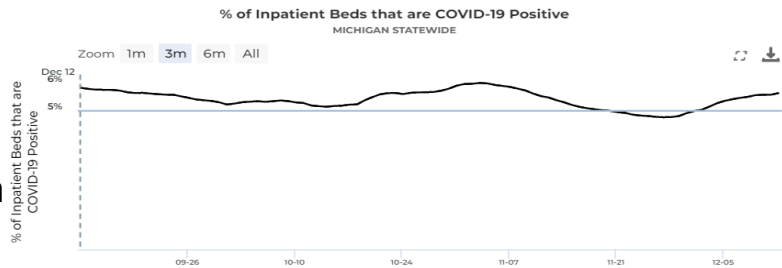
Reproductive Number, R_t

- The reproductive number (R_t) in Michigan is around 1 indicating plateau



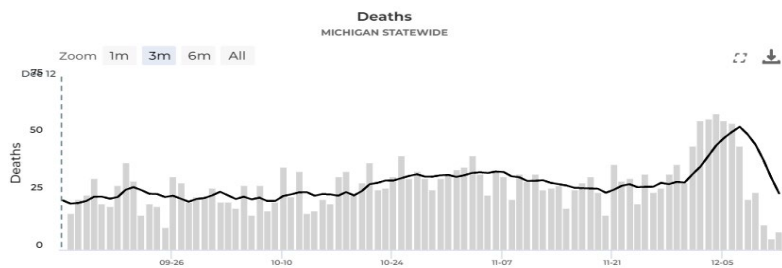
Hospital Admissions

- There are an average of 10.9 hospital admissions per 100,000 Michiganders day which is an increase from last week



Daily hospitalization rate, %

- The percent of inpatient beds that have patients diagnosed with COVID-19 have seen a slight increase from the past week

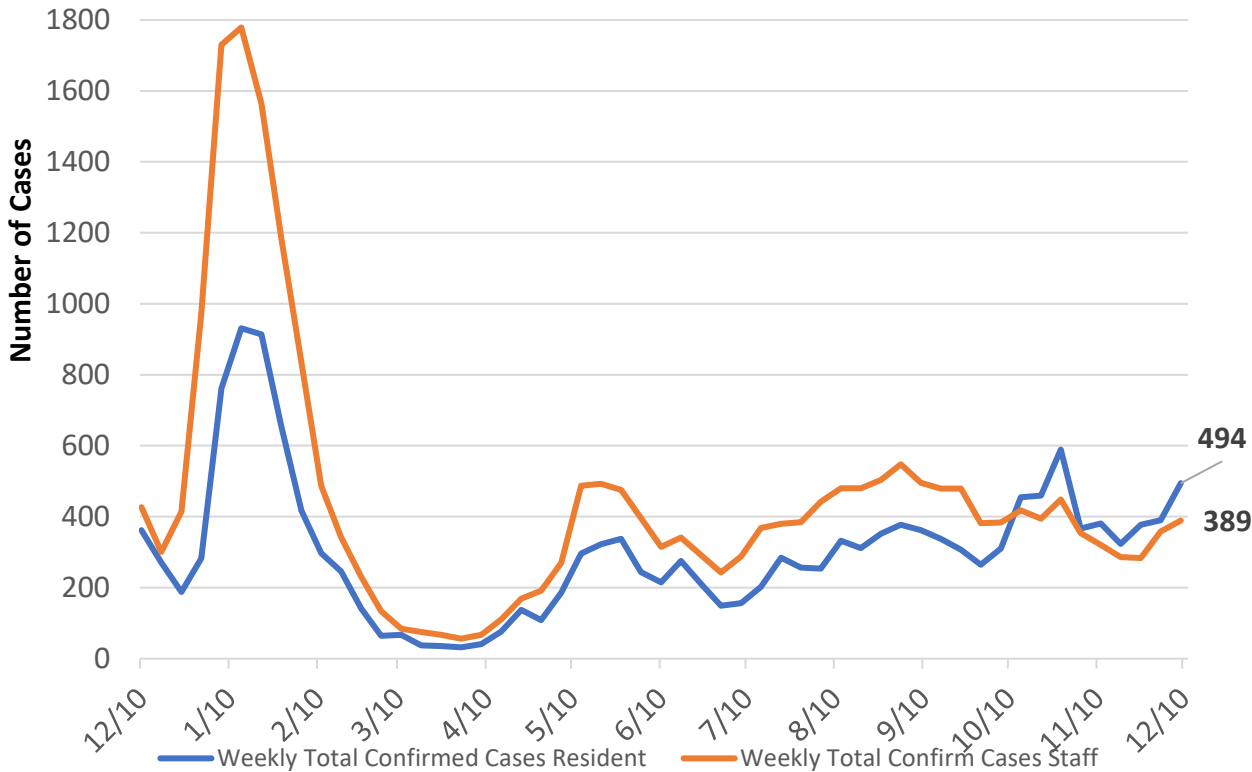


Deaths

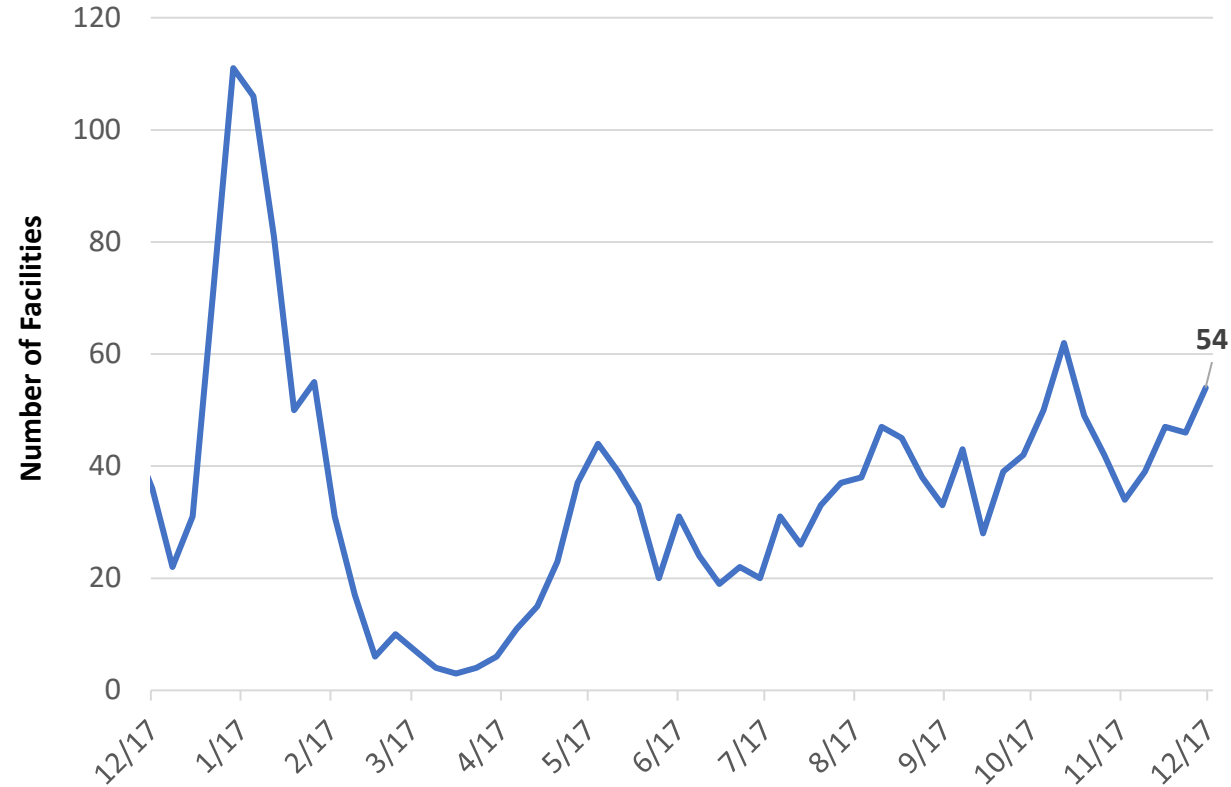
- Deaths are a lagging indicator but are showing increases

COVID-19 Cases Among Staff and Residents in Skilled Nursing Facilities

STATE OF MICHIGAN WEEKLY TOTAL CONFIRMED COVID-19 CASES IN SNF
RESIDENTS AND STAFF
12/10/2021 TO 12/09/2022



Number of SNFs with 3 or more Confirmed Cases Among Residents



- In SNFs, case counts are increasing in residents (389 to 494) and staff (358 to 389) since last week [left figure]
- The number of SNFs reporting 3 or more cases within a single reporting period increased from 46 to 54 in most recent data [right figure]
- **28%** of SNFs are reporting **nursing shortages** and **29%** of SNFs are reporting **aide shortages**, which is plateaued since end of July

Abbreviations: SNF: Skilled Nursing Facilities

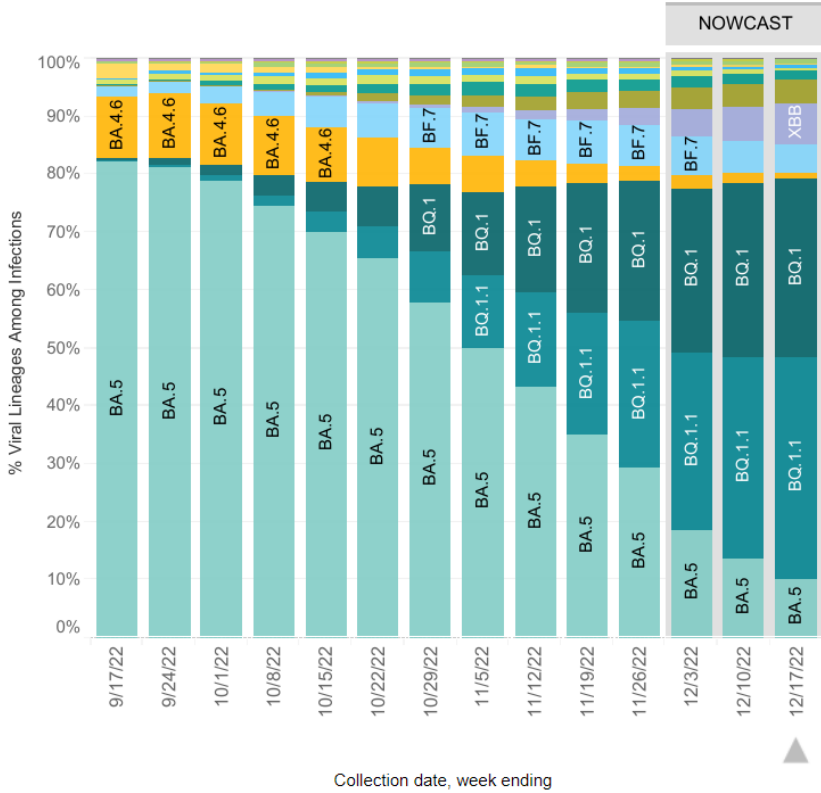
Identified COVID-19 Cases Caused by Variants of Concern (VOC) in US and Michigan: Predominately BA.5 and BA.4 sublineages

SARS-CoV-2 Variants Circulating in the United States, Sep 4 – Dec 10 (NOWCAST)

United States: 12/11/2022 – 12/17/2022 NOWCAST

United States: 9/11/2022 – 12/17/2022

USA				
WHO label	Lineage #	US Class	%Total	95%PI
Omicron	BQ.1.1	VOC	38.4%	35.7-41.3%
	BQ.1	VOC	30.7%	28.7-32.8%
	BA.5	VOC	10.0%	9.1-10.9%
	XBB	VOC	7.2%	4.2-11.9%
	BF.7	VOC	4.9%	4.2-5.6%
	BN.1	VOC	4.1%	3.5-4.7%
	BA.5.2.6	VOC	1.6%	1.3-1.8%
	BA.4.6	VOC	1.1%	1.0-1.3%
	BF.11	VOC	0.7%	0.5-0.9%
	BA.2	VOC	0.6%	0.3-1.1%
	BA.2.75	VOC	0.5%	0.4-0.6%
	BA.2.75.2	VOC	0.3%	0.2-0.4%
	BA.4	VOC	0.0%	0.0-0.0%
	BA.1.1	VOC	0.0%	0.0-0.0%
	B.1.1.529	VOC	0.0%	0.0-0.0%
	BA.2.12.1	VOC	0.0%	0.0-0.0%
Delta	B.1.617.2	VBM	0.0%	0.0-0.0%
Other	Other*		0.0%	0.0-0.0%



National Distribution

- 100% of the VOC currently circulating in the U.S. are Omicron
- Nowcast estimates project that BA.5 sublineages of BQ.1.1 (38.4%, 95% P.I. 35.7-41.3%) and BQ.1 (30.7%, 95% P.I. 28.7-32.8%) are most prevalent during the week ending on December 17

Distribution in Michigan

- Since November 1, there have 2,638 VOC specimens sequenced
- 100% of specimens sequenced are Omicron
 - Since November 1, 90% of specimens sequenced and reported (n=2,369) have been identified as BA.5; of which 10.9% of those specimens are BF.7 (n=258), 16.3% have been identified as BQ.1 (n=386), and 22.4% as BQ.1.1 (n=531)

* 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
 # BA.1, BA.3 and their sublineages (except BA.1.1 and its sublineages) are aggregated with B.1.1.529. Except BA.2.12.1, BA.2.75, BA.2.75.2, BN.1, XBB and their sublineages, BA.2 sublineages are aggregated with BA.2. Except BA.4.6, sublineages of BA.4 are aggregated to BA.4. Except BF.7, BF.11, BA.5.2.6, BQ.1 and BQ.1.1, sublineages of BA.5 are aggregated to BA.5. For all the lineages listed in the above table, their sublineages are aggregated to the listed parental lineages respectively. Previously, XBB was aggregated with other. Lineages BA.2.75.2, XBB, BN.1, BA.4.6, BF.7, BF.11, BA.5.2.6 and BQ.1.1 contain the spike substitution R346T.

Over 6.2 Million Michiganders have completed the primary series – 62.1% of the total population

Vaccination Coverage

Over 6.2 million people in MI have completed the primary series*

91.1% of people aged 65 and older in MI have completed the primary series*

69.2% of the total MI population have initiated the primary series*

Race/Ethnicity† for those 6 months and older:

- Up-to-date coverage is highest among those of Non-Hispanic (NH) White (13.7%), then NH Asian, Native Hawaiian or Pacific Islander Race (11.5%), then NH American Indian (10.1%), NH Black or African American Races (6.8%).
- Initiation is at 8.0% for those of Hispanic ethnicity

Updated Booster Coverage

The percentage of Michiganders who have received the updated (bivalent) booster is higher than national percentages for all reported age groups

39.9% of the population 65 years of age or older has received an updated (bivalent) booster

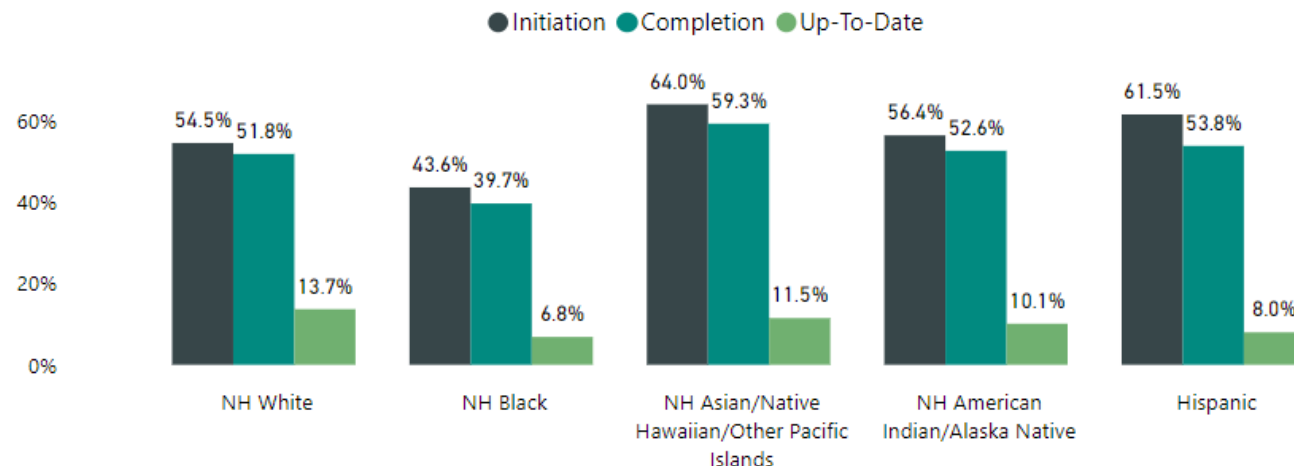
15.5% of Michiganders ages 5 years and older have received their updated (bivalent) booster dose

Vaccination Coverage in Michigan as of 12/14/2022

Age Group	% At Least One Dose	% Completed Primary Series	% Updated Booster**	U.S. % Boosted**	Primary Series Total
Total Population	69.2%	62.1%	NA	NA	6,202,248
≥ 5 years	73.1%	65.7%	15.5%	14.1%	6,189,674
≥ 12 years	77.0%	69.3%	16.7%	15.3%	5,956,605
≥ 18 years	79.2%	71.3%	17.8%	16.3%	5,589,813
≥ 65 years	95.0%	91.2%	39.9%	35.7%	1,609,330

**This shows the percentage of all residents ages 5 years and older in a jurisdiction (state, territory, national) with an updated (bivalent) booster dose. Non-residents who received vaccine are attributed to their jurisdiction of residence.

Coverage by Race*

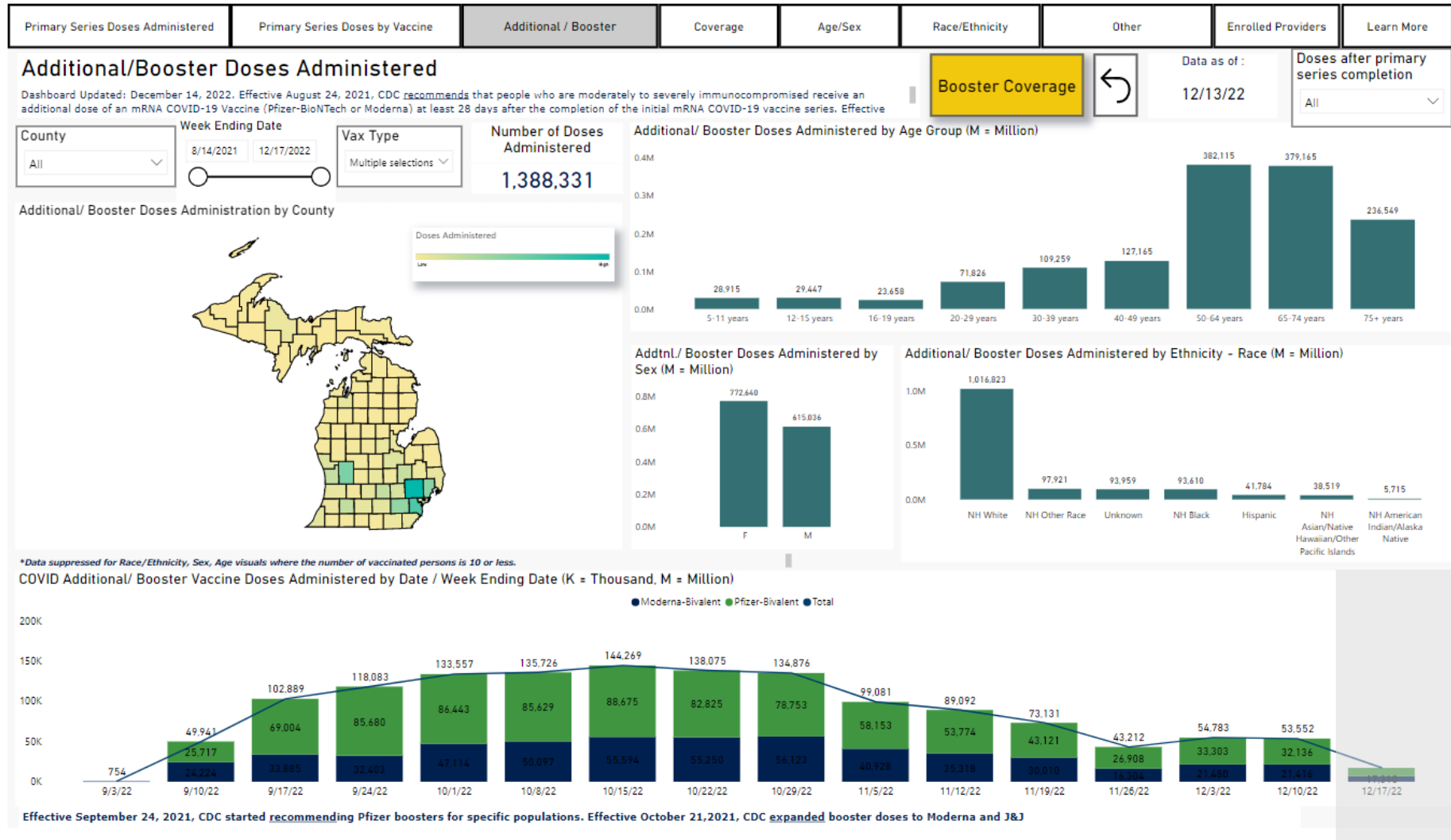


Bivalent Administration

- FDA has authorized and CDC now recommends expanding the use of the updated bivalent COVID-19 vaccines to everyone over the age of 6 months.*

- As of 12/13[†], 1,388,331 Michiganders had received their bivalent booster

- Note: the data for the week ending 12/17 would have been incomplete on the date the dashboard was last refreshed (12/13)



● Moderna Bivalent

● Pfizer Bivalent

* [CDC Expands Updated COVID-19 Vaccines to Include Children Ages 6 Months through 5 Years](#)

[†] These data are updated every Wednesday on our COVID-19 vaccination Dashboard under Additional/Booster Administration Trends and then restricting the view to just Moderna and Pfizer bivalent doses

Sources: [Michigan Coronavirus Vaccine Dashboard](#)

Two Years of U.S. COVID-19 Vaccines Have Prevented Millions of Infections, Hospitalizations, and Deaths; Bivalent Booster Provide Additional Protection Especially for Vulnerable Populations

- COVID-19 vaccines have been available since December 2020 with 660 million doses administered in the U.S. (source: CDC COVID Data Tracker)
- Nearly 81% has received at least 1 dose, 69% has completed the primary series, and 14% have received the updated bivalent booster
- The Commonwealth fund estimates that vaccination has had the cumulative effect of preventing an additional 119 million infections, 18 million hospitalizations and 3 million deaths
- Bivalent booster doses provided additional protection against COVID-19–associated emergency department/urgent care encounters and hospitalizations in persons who previously received 2, 3, or 4 monovalent vaccine doses
- Among immunocompetent adults aged ≥ 65 years hospitalized in one study, a bivalent booster dose provided 73% additional protection against COVID-19 hospitalization compared with past monovalent mRNA vaccination only
- **Key Message:** All persons should stay up to date with recommended COVID-19 vaccinations, including receiving a bivalent booster dose if eligible
 - To maximize protection against severe COVID-19 this winter season, vulnerable populations should receive a bivalent booster dose
 - Vaccination, along with additional prevention strategies including masking in indoor public settings, can further prevent spread of SARS-CoV-2 and other respiratory illnesses

Most U.S. adults have not yet received an updated (bivalent) COVID-19 booster

An **updated booster** may reduce your risk of severe COVID-19 by 50% or more*

For the best protection, get an updated booster

*Vaccine effectiveness varied based on previous vaccination status of the control group and outcome studied

bit.ly/MMWR_COVIDVaccination

DECEMBER 16, 2022

CDC **MMWR**

Sources:

- Surie D, DeCuir J, Zhu Y, et al. Early Estimates of Bivalent mRNA Vaccine Effectiveness in Preventing COVID-19–Associated Hospitalization Among Immunocompetent Adults Aged ≥ 65 Years — IVY Network, 18 States, September 8–November 30, 2022. MMWR Morb Mortal Wkly Rep. ePub: 16 December 2022. DOI: <http://dx.doi.org/10.15585/mmwr.mm715152e2>
- Tenforde MW, Weber ZA, Natarajan K, et al. Early Estimates of Bivalent mRNA Vaccine Effectiveness in Preventing COVID-19–Associated Emergency Department or Urgent Care Encounters and Hospitalizations Among Immunocompetent Adults — VISION Network, Nine States, September–November 2022. MMWR Morb Mortal Wkly Rep. ePub: 16 December 2022. DOI: <http://dx.doi.org/10.15585/mmwr.mm715152e1>
- Fitzpatrick MC, Moghadas SM, Abhishek A, Galvani AP. Two Years of U.S. COVID-19 Vaccines Have Prevented Millions of Hospitalizations and Deaths. The Commonwealth Fund. December 13, 2022. <https://www.commonwealthfund.org/blog/2022/two-years-covid-vaccines-prevented-millions-deaths-hospitalizations>. Accessed December 19, 2022.