



Covid-19 and Equity Update

**Maryland Department of Health
Maryland Primary Care Program
Program Management Office**

14 April 2021

Agenda

- ❖ Update on pandemic data
- ❖ Vaccine update
- ❖ Testing
- ❖ Monoclonal antibodies
- ❖ Virus variants

Primary Care and Vaccine Equity

It has been an eventful 2 weeks

- ❖ Vaccines surged in supply and then took a step back (J and J)
- ❖ Primary Care weighed in as vaccinators, adding to equity
- ❖ Mass Vax sites opened across the state
- ❖ Equity Taskforce accomplished dozens of missions
- ❖ A new combined testing and mAb infusion site opened in Prince George's County
- ❖ Virus variants of concern increased
- ❖ The world at large saw a spike in cases
- ❖³ Maryland is experiencing a 4th wave



Daily COVID-19 Report

Data reported as of 4/14/2021 for data through 4/13/2021

430,351
cases cumulative

9,186,171
tests cumulative

23.2
7-day avg. case rate

7,402
total hospital adult census

8,307
deaths cumulative

1,552
cases reported yesterday

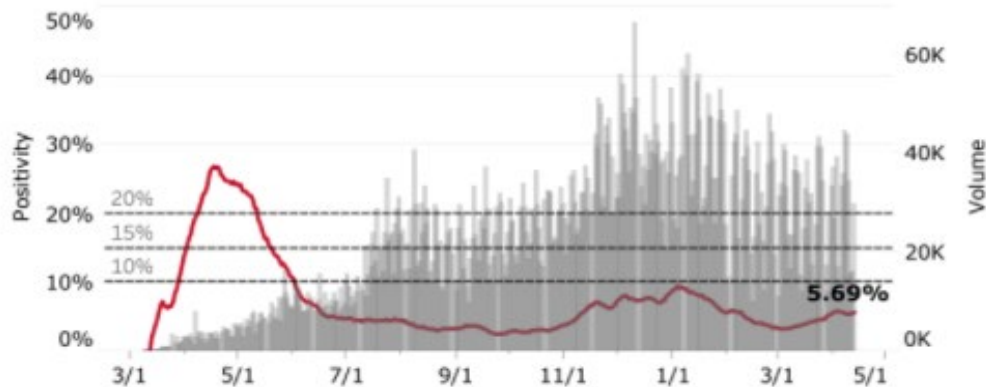
29,641
tests reported yesterday

5.69%
7-day avg. positivity

322
change in total hospital census

9
deaths reported yesterday

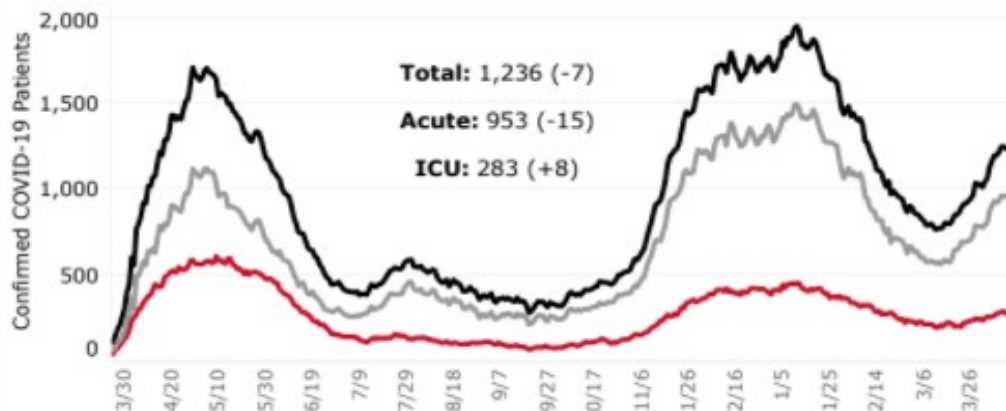
7-Day Avg. Percent Positivity and Total Testing Volume Since 3/1/20



Daily New Cases by Specimen Collection Date



Statewide Acute/ICU Beds Occupied by COVID Patients



Daily Deaths Confirmed and Probable



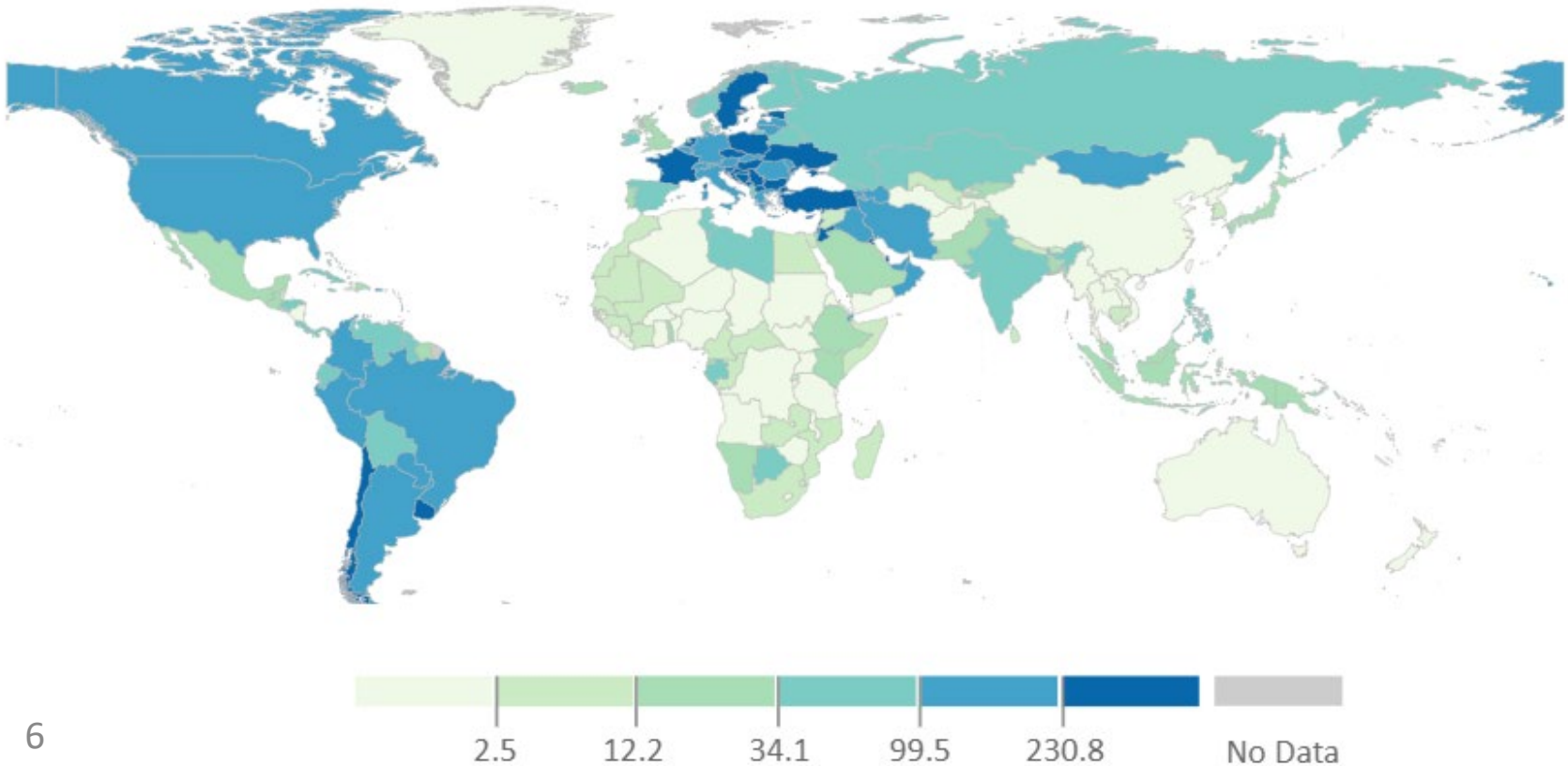
Case rate calculated as total confirmed cases per 100,000 population using the 2019 Maryland Population estimates from the Maryland Department of Planning, March 2020.

Two week interval changes between 4/1 and 4/14

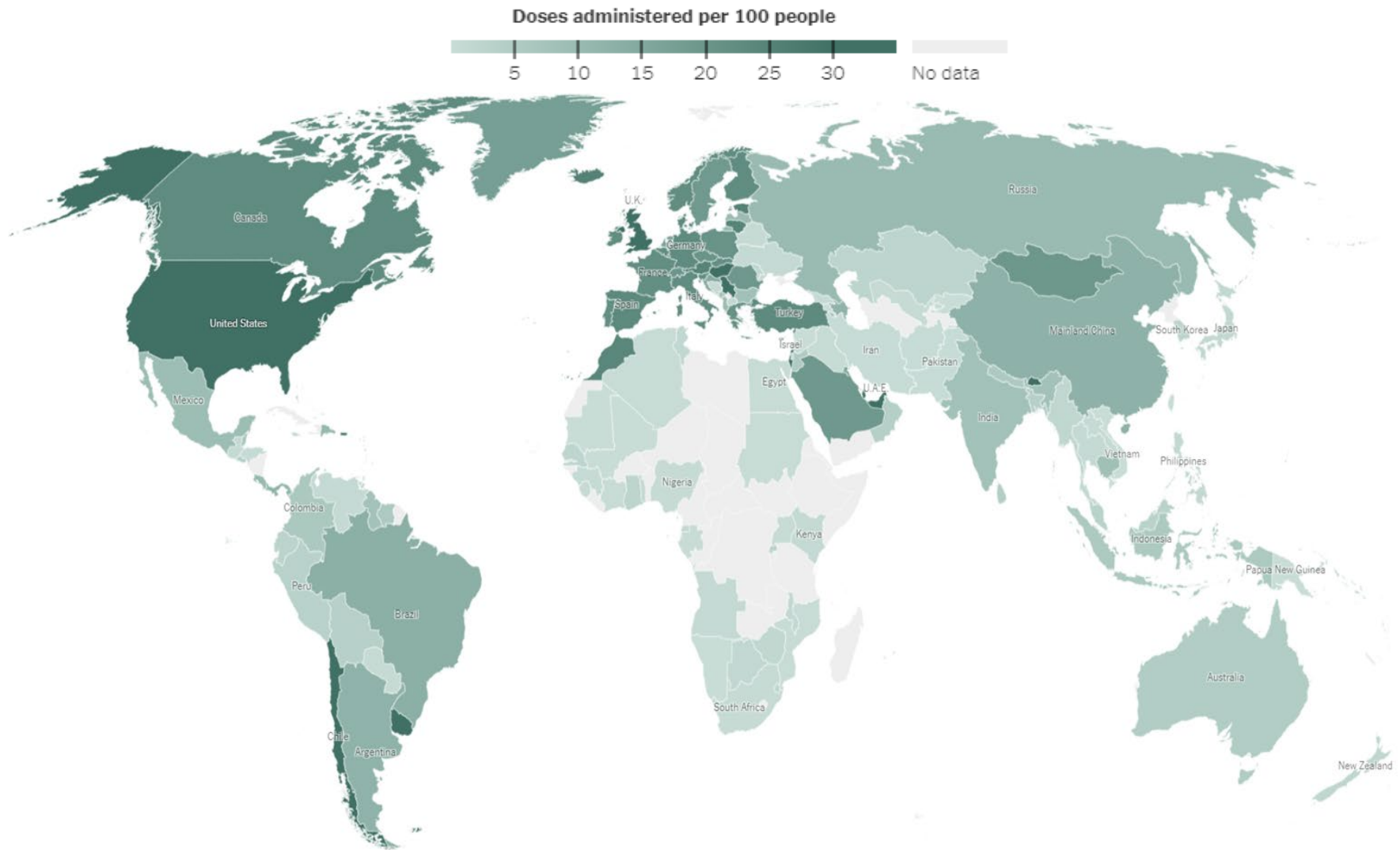
- ❖ Cumulative cases went from 412,928 to 430,351
- ❖ Cumulative deaths went from 8,118 to 8,307
- ❖ Cumulative hospitalizations from 37,886 to 39,587
- ❖ The average case rate went from 21.1 to 23.2

Global Cases

Global cases of COVID-19 reported per 100,000 population in the past 7 days



Global vaccinations



US Cases

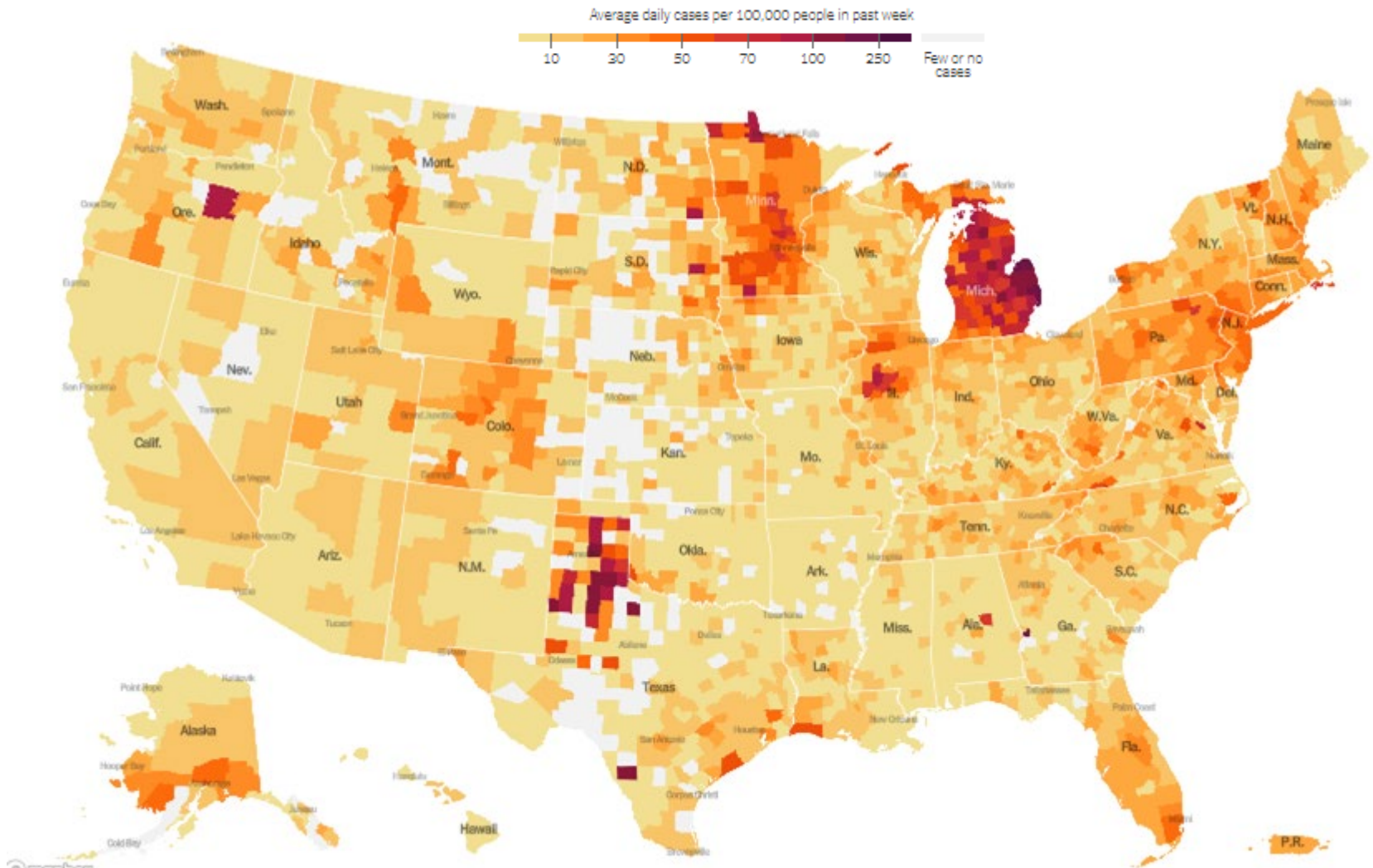
New reported cases by day

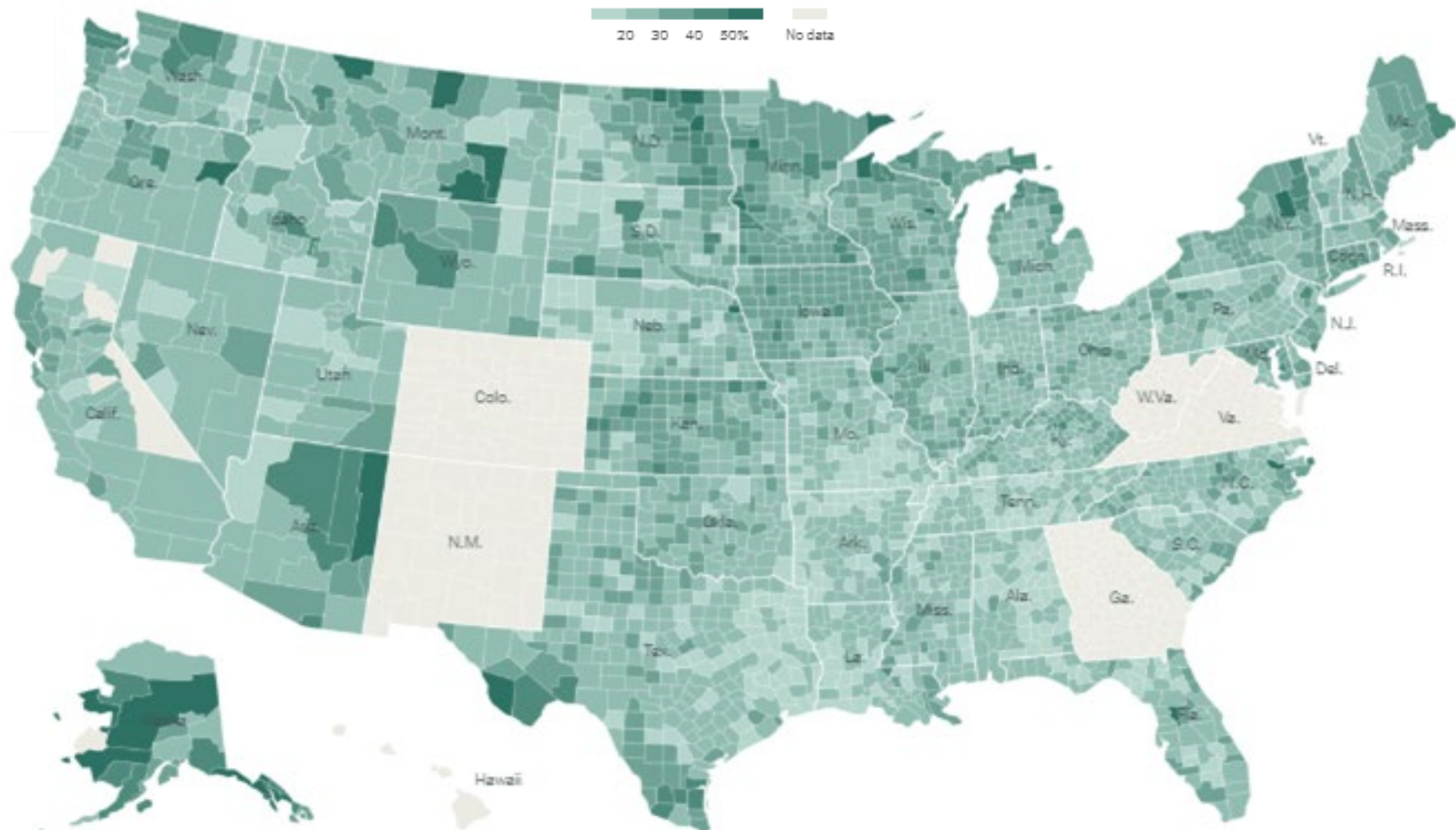


■ These are days with a reporting anomaly. Read more [here](#).

Note: The seven-day average is the average of a day and the previous six days of data.

US Hot spots





Maryland Department of Health Pauses Johnson & Johnson Vaccine Use

- ❖ On 4/13, the Maryland Department of Health directed all Covid vaccine providers to pause administration of Johnson & Johnson COVID vaccines until further federal guidance is issued
- ❖ Influenced by FDA and CDC statement that
 - As of 4/12, of 6.8 million doses of Johnson & Johnson vaccine administered in the United States, there have been six reported cases of a rare and severe type of blood clot after vaccine reception
 - Six cases occurred among women between ages of 18 and 48, with symptoms occurring 6 to 13 days after vaccination
 - CDC will convene a meeting of advisory group on 4/14 to discuss these cases and assess their potential significance. FDA will review that analysis as it also investigates these cases
 - ✓ Until this process is complete, FDA and CDC recommend a pause on use of Johnson & Johnson vaccine



Risk of Blood Clots

While we work to investigate the root cause of blood clots associated with the Johnson & Johnson and AstraZeneca vaccines, these statistics help compare our relative risks.

Johnson & Johnson/Janssen COVID Vaccine

6 reports of blood clots
in 6.8 million doses
9 people in 10 million



AstraZeneca COVID Vaccine

79 reports of blood clots
in 20.2 million doses
39 people in 10 million



Birth Control

5,000 to 12,000 people
in 10 million



Smoking

17,630 people
in 10 million



COVID-19

1,650,000 people
in 10 million

Credit: M. Fiamengo. Previous Design: Maria Leonor Ramos, MD Internal, General and Family Medicine
European Medical Agency; UK Medicines and Healthcare products Review Agency; Suh YJ, Hong H, Ohana M et al. Pulmonary Embolism and Deep Vein Thrombosis in COVID-19: A Systematic Review and Met-Analysis. Radiology 2021. Chen, Yun-Jui & Liu, Zhi-Hoo & Loo, et al. (2013). Current and Former Smoking and Risk for Venous Thromboembolism: a Systematic Review and Meta Analysis.



**Visit the COVID-19 Information Center for
vaccine resources.**

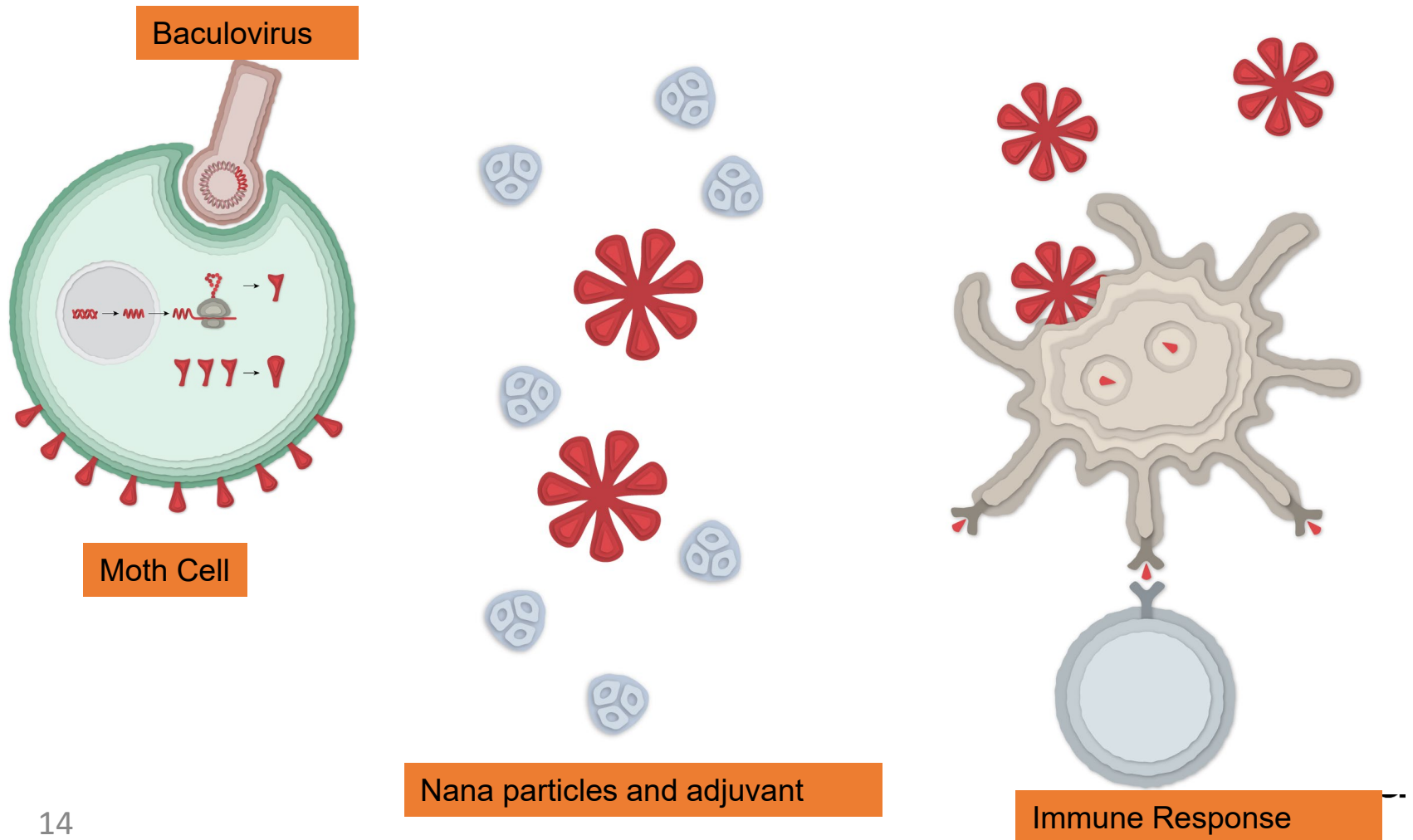


New Vaccine on the horizon

❖ Novavax

- Spike protein nanoparticle –similar to flu and HPV vaccines
- Refrigerator stable
- Two doses
- 96% effective but only 49% against B.1.351 (SA variant)- new modification in production
- 100 M doses for US this year – billions world wide
- FDA submission in May 2021
- Details to follow

How the Novavax vaccine works



Vaccine news

- ❖ J and J-Supply interrupted 80,000 fewer doses in Maryland- Emergent Biotech quality control issues- 15million doses
- ❖ Pfizer and BioNTech requested the Food and Drug Administration's approval to use their vaccine [in 12- to 15-year-olds](#)
- ❖ Covax, a global initiative dedicated to distributing coronavirus vaccines to low- and middle-income countries, [has delivered just 38 million doses so far](#), falling short of the 100 million doses it had expected to distribute by now.
- ❖ In **Mississippi**, there is a growing availability of vaccine appointments, which public health experts say shows the [large number of people who are reluctant to be inoculated](#).

MDPCP Covid Vaccine Program

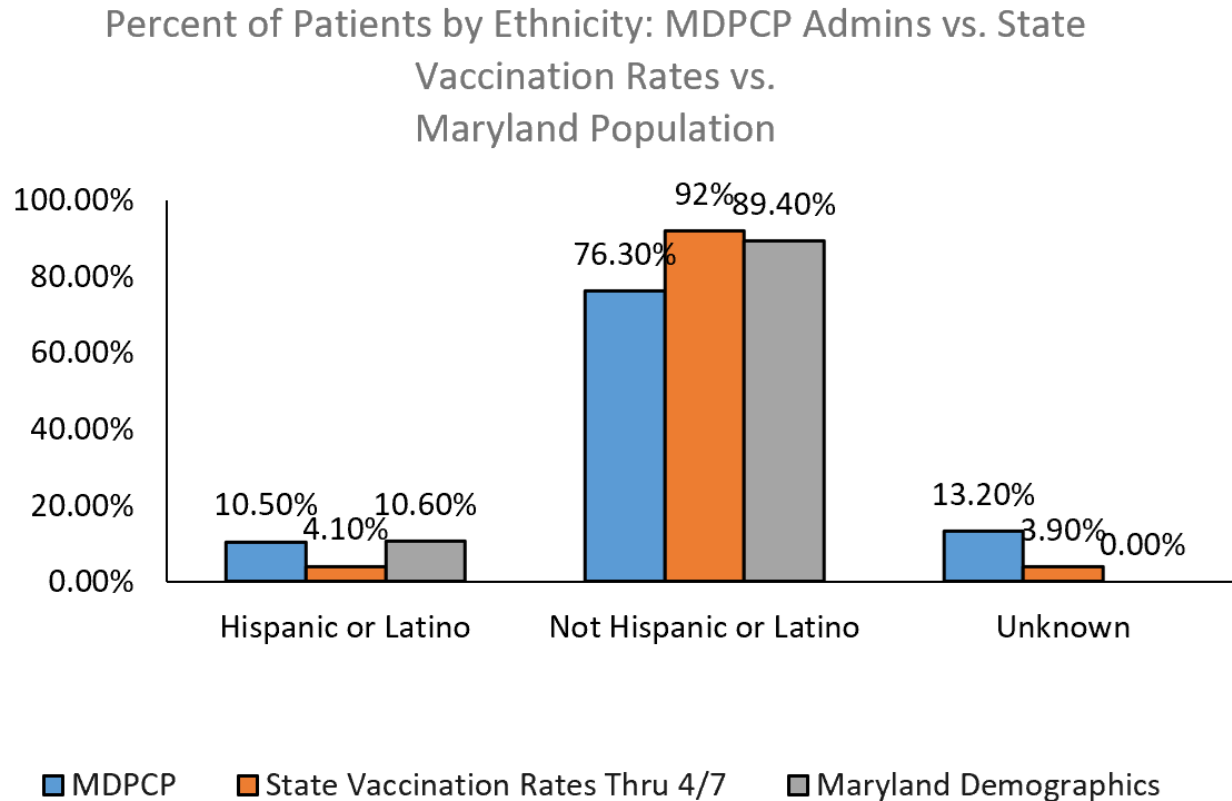
1. Nationally and in Maryland there has been little emphasis on engaging primary care in the Covid vaccine campaign- Attention by White House Vaccine leadership
2. Serve as proof of concept for successful Covid vaccination at primary care practices
3. Achieve more equitable vaccine distribution through targeted outreach to African American and Hispanic populations

Primary Care takes center stage in Vaccine Administration

- ❖ Pilot with 37 practices successful in producing equitable, efficient vaccination of patients
- ❖ Currently 149 practices enrolled
- ❖ White House Vaccine leadership takes note
- ❖ Bipartisan Policy Group takes note
- ❖ Strong support from Governor Hogan



Weeks 1-3 Cumulative: MDPCP Vaccinations by Ethnicity

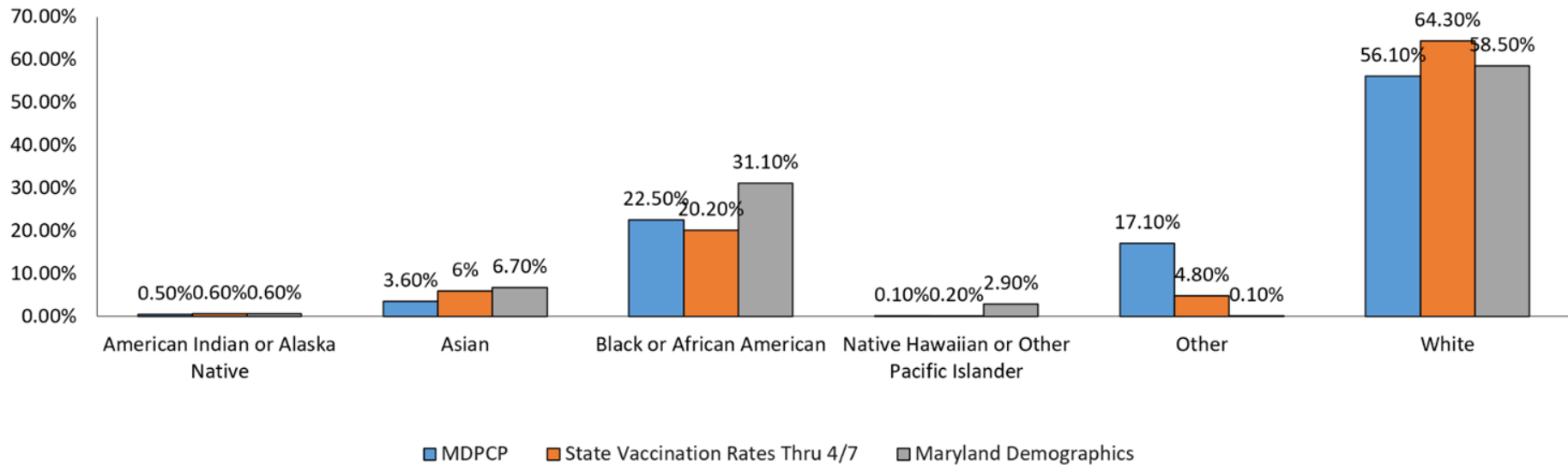


18

NOTE: percentage vaccinated by ethnicity is compared to both State vaccination rates and total Maryland population ethnicity percentages.

Weeks 1-3 Cumulative: MDPCP Vaccinations by Race

Percent of Patients by Race: MDPCP Admins vs. State Vaccination Rates vs. Maryland Population



19

NOTE: percentage vaccinated by race is compared to both State vaccination rates and total Maryland population by race percentages.

MDPCP Covid Vaccine Allocation Process

- ❖ If your practice is fully onboarded with ImmuNet and registered as a Covid vaccinator, you are eligible for vaccine allocation through MDPCP
- ❖ As vaccine supply is still limited, not all eligible practices will receive vaccine immediately
- ❖ If your practice is chosen for vaccine allocation, you will receive a survey on Monday asking if you are ready and willing to administer 100 doses the following week. The survey will come with additional information for your practice
- ❖ After the initial week, you will receive a survey every Monday asking your ideal capacity for doses for the following week

MDPCP Practices - Current Status

Group	# of MDPCP Practices
Current participants	148
Completed all ImmuNet requirements, next on the list for expansion	63
Enrolled and have a COVID PIN, need to set up EHR reporting	34
Enrolled and reporting to ImmuNet, need to register to get a PIN	147
Need to set up EHR reporting and register to get a PIN	69

Vaccine Toolkit

- ❖ Workflows
- ❖ Access
- ❖ Immunet registration
- ❖ Vaccine Storage and handling
- ❖ Billing and coding

Toolkit link
[here!](#)

Primary Care Practice Preparation for

COVID-19 Vaccinations

- Wearing masks and social distancing help reduce your chance of being exposed to the virus or spreading it to others, but these measures are not enough. Vaccines boost your immune system so it will be ready to fight the virus if you are exposed.
- Getting a COVID-19 vaccine will keep you and your patients from getting seriously ill even if you do get COVID-19.



STEPS

- 1 Complete ImmuNet requirements AND**
including site onboarding AND vaccinator registration (vaccination ordering not available currently)
Complete MDH "New Entity COVID VAX Clinic Info" form
- 2 Educate and encourage your team to get vaccinated**
as part of the Maryland Vaccination Priority Phase 1A
- 3 Share with your patients how to locate a vaccination site**
and identify patients for each vaccination priority phase
- 4 Prepare for vaccine* administration**
 - *by developing workflows for storage, handling and administration*
 - *identifying patients to outreach based on risk and equity using CRISP*

Current Phase:
1C
as of 2/17/21

*NOTE: Due to the ultra cold storage and allocation size requirements for the Pfizer vaccine, it is unlikely this vaccine will be used in many primary care offices.

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Page 1

Refrigeration

Acceptable storage unit(s)

- ❖ Refrigerator (Stand Alone and/or Pharmaceutical grade)
- ❖ Freezer (Stand Alone and/or Pharmaceutical grade)
- ❖ Combination household unit (refrigerator and freezer in one unit with one compressor) using refrigerator or freezer compartment only for vaccines



Unacceptable storage unit(s)

- ❖ Dorm style refrigerator
- ❖ Mini refrigerator
- ❖ Small under the counter refrigerator with a freezer/refrigerator combination

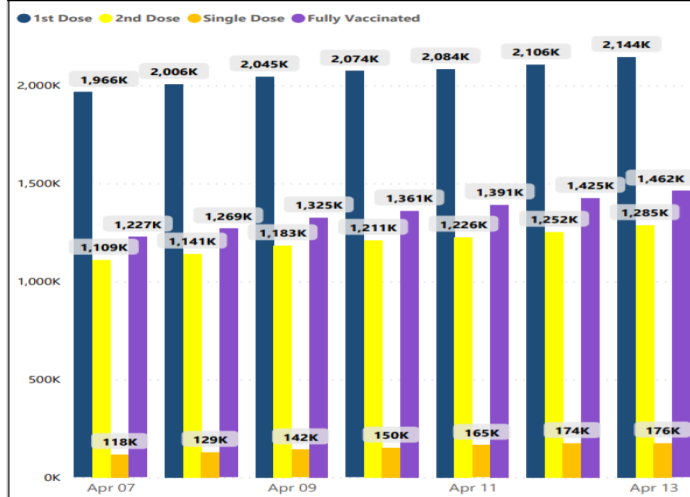


Lack of equity during Covid-19

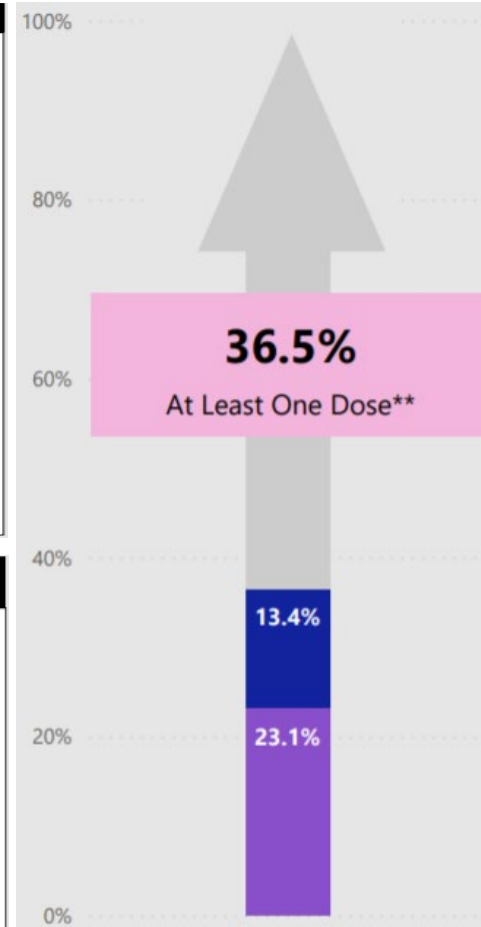
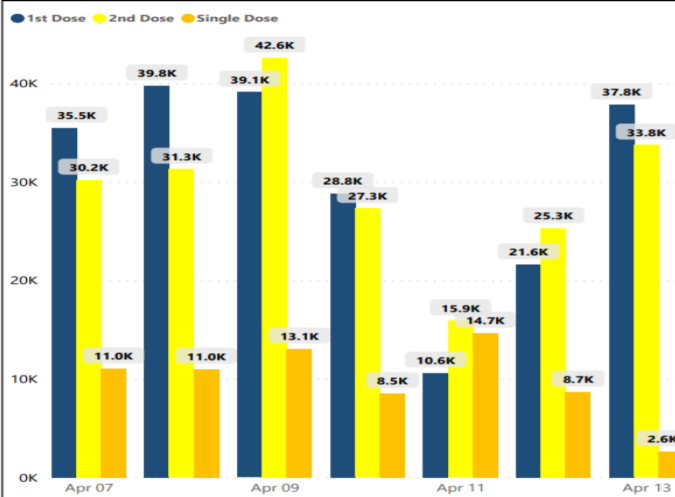
- ❖ Testing - less
- ❖ Cases - more
- ❖ Hospitalization - more
- ❖ Deaths - higher rates
- ❖ Monoclonal antibody therapy - less
- ❖ Vaccination - lower rates - *this is where primary care will make a big difference*

Statewide Vaccine Administration

Cumulative Vaccines Administered



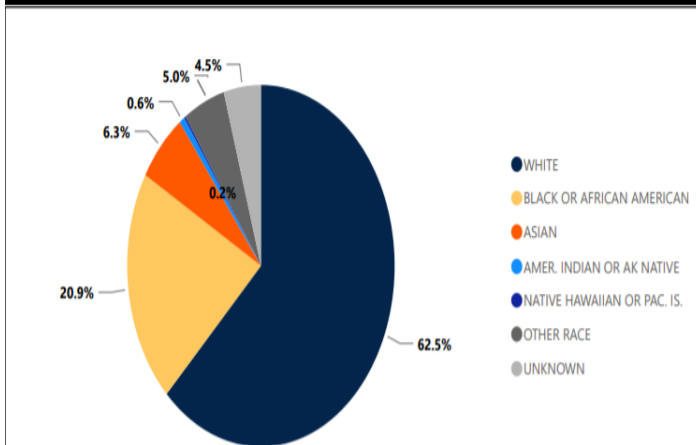
Daily Vaccines Administered



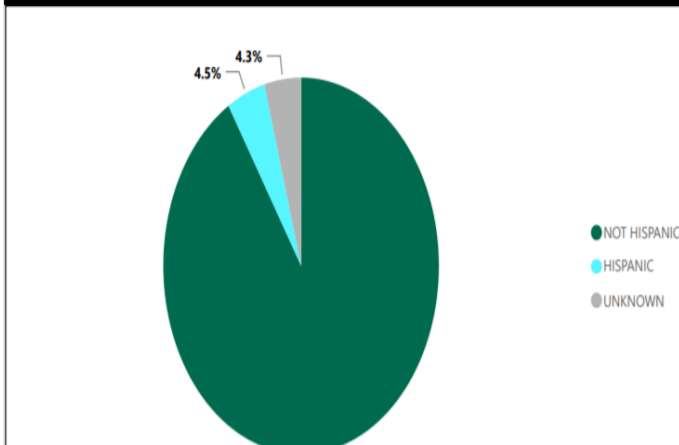
- Not Vaccinated
- 1st Dose Only
- Fully Vaccinated

Updated 4/14

Share of Vaccines Administered (2nd and Single Dose) by Race



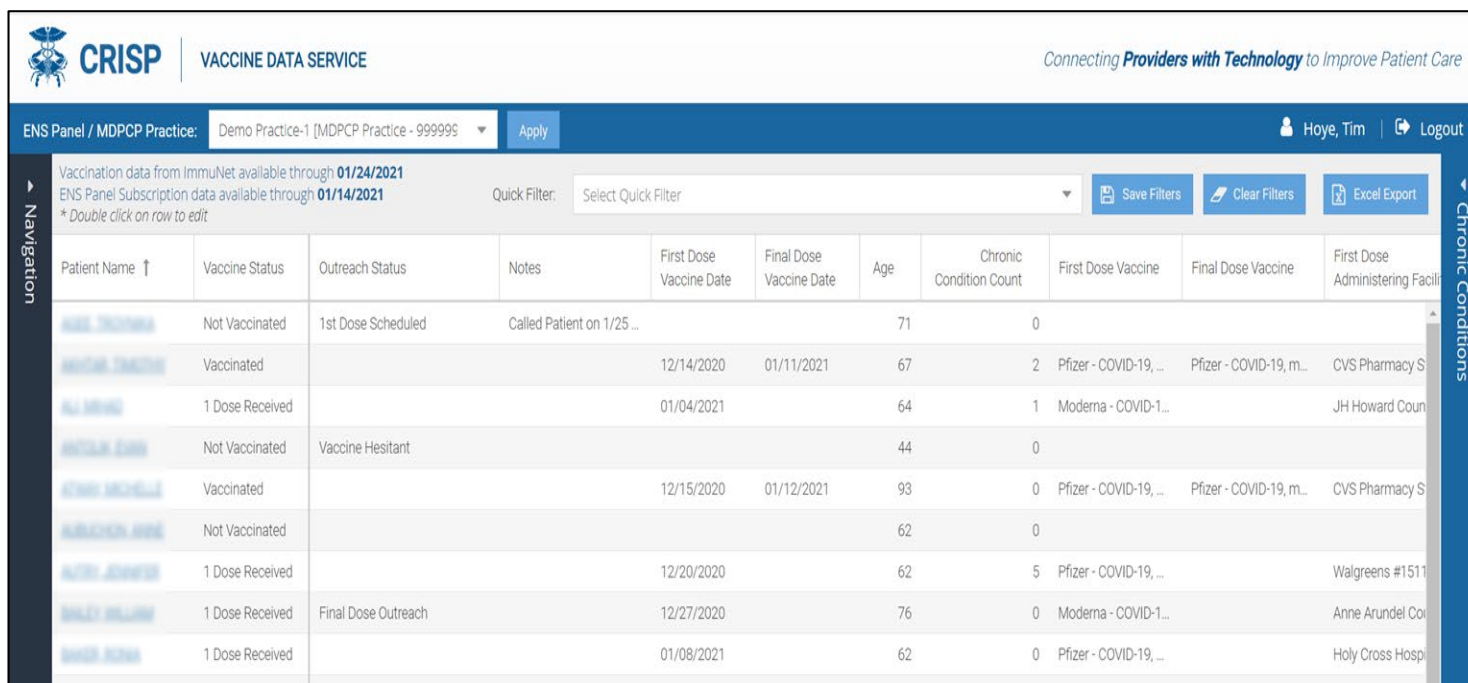
Share of Vaccines Administered (2nd and Single Dose) by Ethnicity



CRISP Vaccine Tracker Tool

- ❖ Powerful tool unique to Maryland providers
- ❖ Visibility on patients vaccine status
- ❖ Ability to sort by age, race, ethnicity, medical conditions to facilitate process and equitable outreach
- ❖ Crisp Reporting Services (CRS) tool
- ❖ Uses Medicare attribution

CRISP Vaccine Tracking Tool



CRISP VACCINE DATA SERVICE

Connecting Providers with Technology to Improve Patient Care

ENS Panel / MDCPC Practice: Demo Practice-1 [MDCPC Practice - 999995] Apply

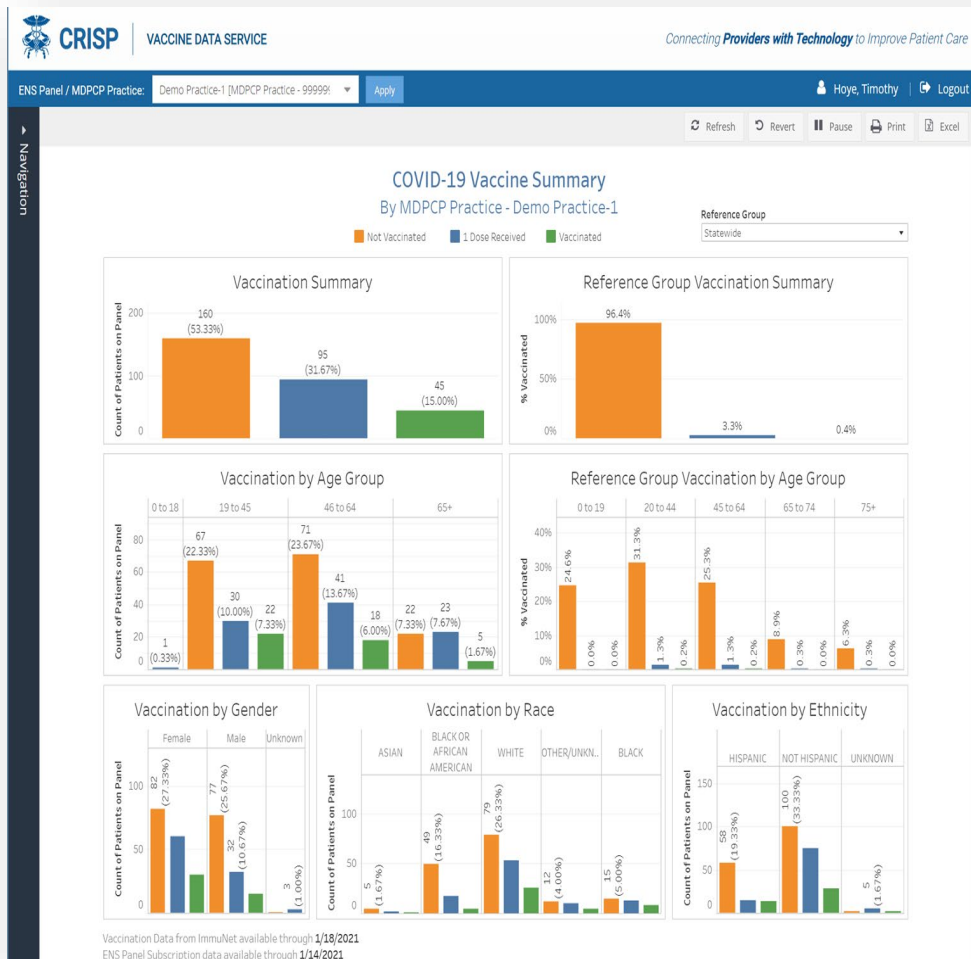
Vaccination data from ImmuNet available through 01/24/2021
 ENS Panel Subscription data available through 01/14/2021
 * Double click on row to edit

Quick Filter: Select Quick Filter Save Filters Clear Filters Excel Export

Patient Name ↑	Vaccine Status	Outreach Status	Notes	First Dose Vaccine Date	Final Dose Vaccine Date	Age	Chronic Condition Count	First Dose Vaccine	Final Dose Vaccine	First Dose Administering Facility
ALICE THOMAS	Not Vaccinated	1st Dose Scheduled	Called Patient on 1/25 ...			71	0			
AMANDA THOMAS	Vaccinated			12/14/2020	01/11/2021	67	2	Pfizer - COVID-19, ...	Pfizer - COVID-19, m...	CVS Pharmacy S...
AL ARNE	1 Dose Received			01/04/2021		64	1	Moderna - COVID-1...		JH Howard Coun...
AMANDA JUNE	Not Vaccinated	Vaccine Hesitant				44	0			
ETHEL MICHELLE	Vaccinated			12/15/2020	01/12/2021	93	0	Pfizer - COVID-19, ...	Pfizer - COVID-19, m...	CVS Pharmacy S...
AMANDA JUNE	Not Vaccinated					62	0			
AMANDA JUNE	1 Dose Received			12/20/2020		62	5	Pfizer - COVID-19, ...		Walgreens #1511
AMANDA JUNE	1 Dose Received	Final Dose Outreach		12/27/2020		76	0	Moderna - COVID-1...		Anne Arundel Co...
AMANDA JUNE	1 Dose Received			01/08/2021		62	0	Pfizer - COVID-19, ...		Holy Cross Hosp...

- ❖ User Guide Link: <https://vacctrac.crisphealth.org/#help/User%20Guide>
- ❖ Vaccination data updated daily from ImmuNet (IIS)
- ❖ User editable status to track outreach efforts

CRISP Vaccine Tracking Tool



Summary Reports

- ❖ Compare your Practice to MD Statewide population or relevant Peer Groups
- ❖ Compare by demographic fields
- ❖ Track a practice's patient vaccination status over time

Increase in Vaccine Payments

- ❖ Medicare reimbursement for Covid vaccine administration has increased as of 3/15:

Single Dose	Two Dose Regimen
\$40	\$80 (\$40 for each dose)

- ❖ [CMS website link](#)
- ❖ [Overview of other payers](#)

Covid Testing

- ❖ Volumes declining but remains important
- ❖ Primary Care role in testing critical, including Point of Care tests
- ❖ Testing
 - Point of Care Testing in office - interested practices should fill out this [Google Form](#) as soon as possible

Covid Testing

❖ Testing is

- The only way we can identify who has an active Covid infection
- The only way we can inform active patients and their close contacts to self isolate to avoid spreading to others
- The only way we can identify patients who will benefit from mAb therapy
- Safe, simple, accurate, and no cost to patients – this is a rarity among tests

❖ Point of care tests are accurate in symptomatic patients, and the results are quickly available

Monoclonal Antibody Therapy

- ❖ Only therapy for ambulatory Covid-19 patients
- ❖ Target high risk, as early as possible in course
- ❖ 37% of eligible received therapy last week
- ❖ Opportunity to avoid worsening and hospitalization



Weekly Summary: Monoclonal Antibody Allocation and Distribution

6,454

Monoclonal Antibody Infusions Administered: Nov - April 04 2021

Key Facts

1. A reported total of 6,454 patient infusions reported since November 2020, equaling 447 patient infusions for week 21.
2. Maryland has avoided approximately **303** hospitalizations and **124** deaths due to monoclonal antibody infusions.
3. Post-infusion, patients who went to the ED was 9% (n=461), hospitalized was 5% (n=270), and expired was 1% (n=46)
4. MDH is closely monitoring the impact of variants on the effectiveness of monoclonal antibody treatment (slide 2).

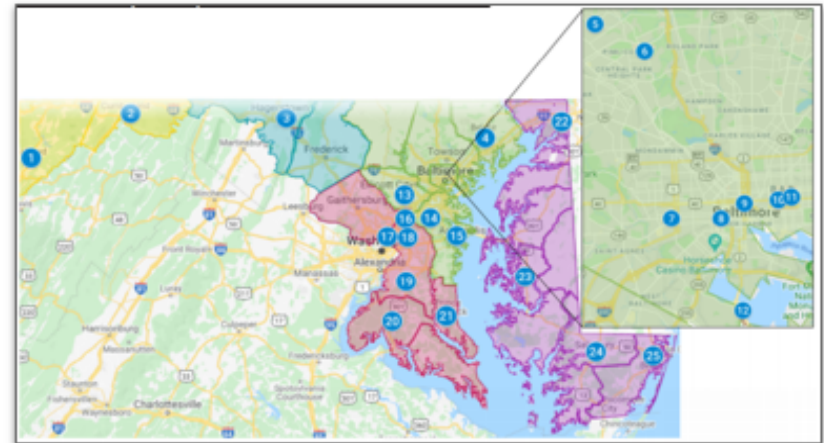


Figure 1. Summary Distribution of Infusion Sites across Maryland

Monoclonal Antibody Patient Demographic Summary in Maryland by Race, Patient Residence, and Age (next slide)

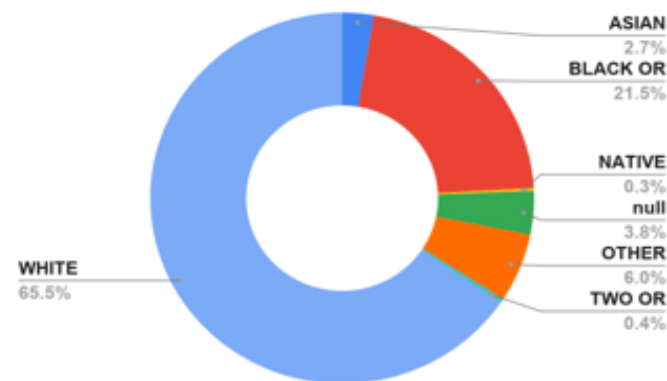
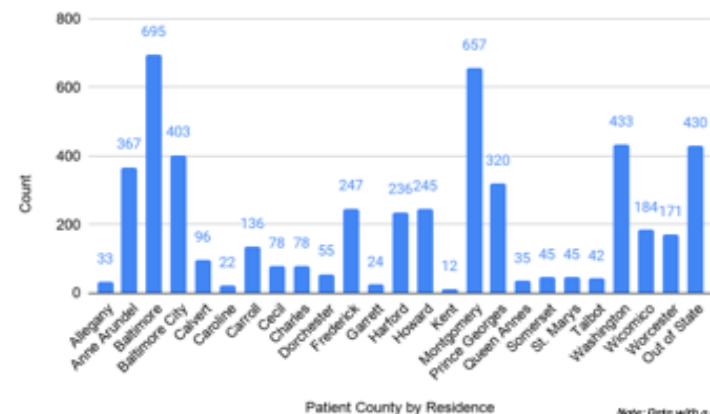


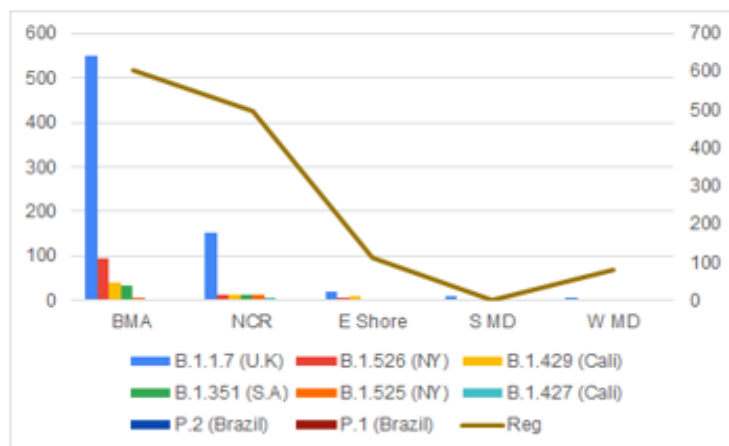
Figure 2. Summary of Patient Characteristics by Race, Nov - April 11, 2021



Note: Data with a count less than 30 are suppressed.

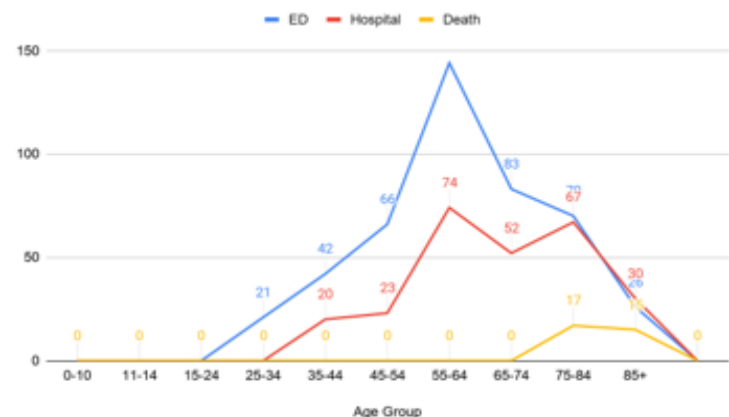
Figure 3. Summary of Infusions by Patient Residence, Nov - April 11, 2021

Figure 4. SARS-CoV-2 Variants in Maryland as Compared to Regeneron Availability, Nov 2020 - April 02, 2021



Note: FDA reports "no change" for mAbs against B.1.17. MDH is monitoring Regeneron availability statewide should susceptibility reports change over time.

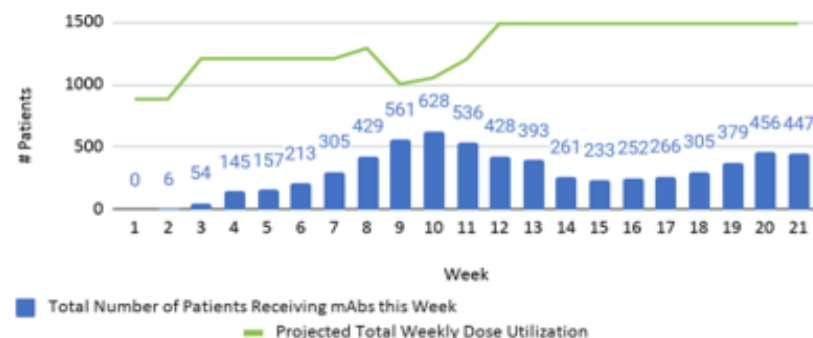
Figure 5. Summary of Patient Health Outcome by Age Groupings, Nov 2020 - April 11, 2021



Note: Median age equals 64 years; At day 29, the percentage of patients who went to the ED was 9% (461), hospitalized was 5% (270), and expired was 1% (46). Data with a count less than 10 are suppressed.

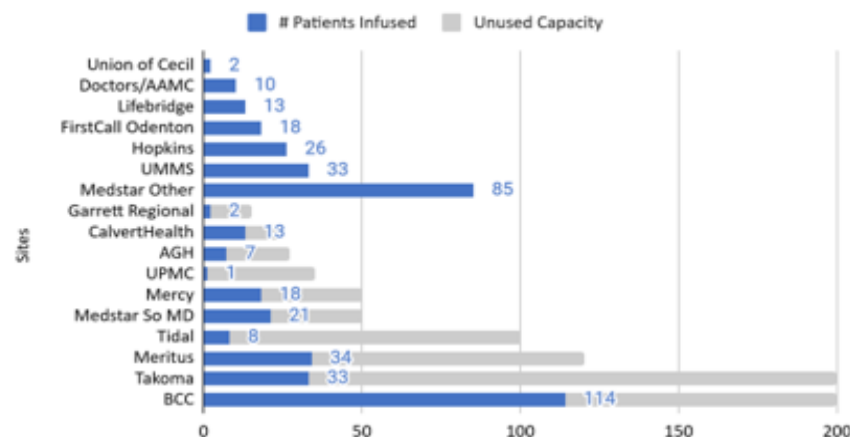
Updated as of 4/13/2021 for previous weeks (11/23 – 4/04/2021)

Figure 6. Summary of Monoclonal Antibody Usage by Capacity and Week among All Sites, November 2020 - April 04, 2021



Note: Totals are updated for previous weeks. These totals are preliminary for two sites.

Figure 7. Summary of Capacity and Number of Patients Infused among Hospital-based sites, Week 21



Note: MedStar Other: Franklin Square, Good Samaritan, Harbor, St. Mary's, Montgomery, and Union; UMMS: Upper Chesapeake, Charles Regional, and Laurel. Hopkins: Howard, Bayview, Weinberg Oncology.

FDA Summary of mAb Antiviral Resistance

COVID-19 Therapeutics

Table 1. Combined Summary of Pseudovirus Neutralization Data for SARS-CoV-2 Variant Substitutions with Regeneron, Bamlanivimab + Etesevimab Together, and Bamlanivimab Alone (1,2,3)

Lineage with Spike Protein Substitution	Fold Reduction in Susceptibility		
	REG	Bam + Etes	Bam
B.1.1.7 (UK origin)	no change(c)	no change(b)	no change(b)
B.1.351 (South Africa origin)	no change(c)	>45(c)	>2,360(c)
P.1 (Brazil origin)	no change(c)	>511(c)	>2,360(c)
B.1.427/B.1.429 (California origin)	no change(c)	7.4	>1,020(c)
B.1.526 (New York origin)d	no change(c)	17	>2,360(c)

C: No change: <2-fold reduction in susceptibility.

B: No change: <5-fold reduction in susceptibility.

C: No activity observed at the highest concentration tested. Bamlanivimab alone, and Bam+Etes together are unlikely to be active against variants from this lineage.

FDA Fact sheets recently updated antiviral resistance **section 15**:

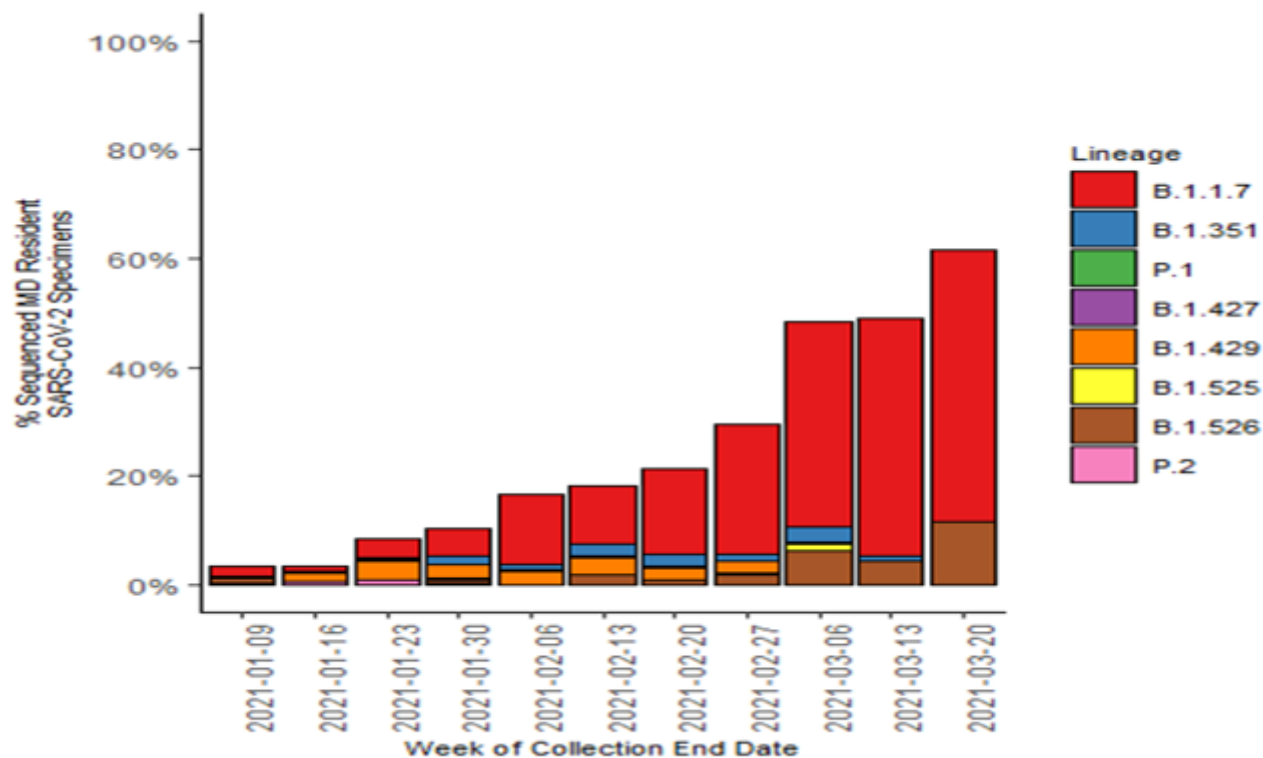
1. [Fact Sheet For Health Care Providers Emergency Use Authorization \(Eua\) Of Bamlanivimab \(fda.gov\)](#)
2. [Fact Sheet For Health Care Providers Emergency Use Authorization \(Eua\) Of Bamlanivimab And Etesevimab \(fda.gov\)](#)
3. [Fact Sheet For Health Care Providers Emergency Use Authorization \(Eua\) Of Regeneron \(Casirivimab With Imdevimab\) \(fda.gov\)](#)

Virus Variant

- ❖ This is expected for the natural course of viruses
- ❖ Common in coronaviruses, more likely with greater volumes of virus
- ❖ Sequencing increased dramatically
- ❖ Over 1,000 mutations, most clinically not relevant

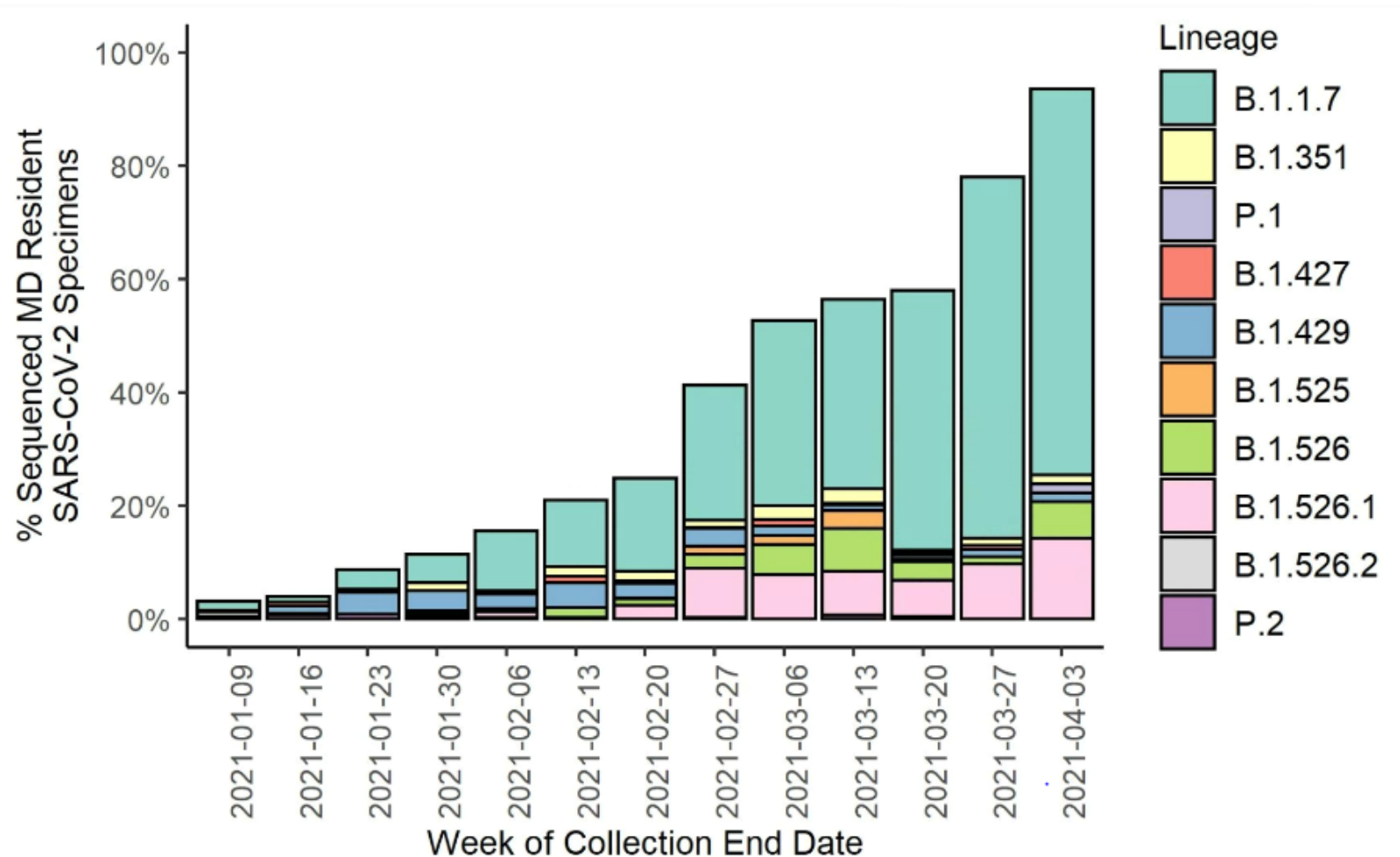
- ❖ Virus variants - [reporting](#)

Maryland Variant of Concern/ Interest ¹



1. [SARS-CoV-2 Variant Classifications and Definitions](#);
2. [Variant Proportions in the U.S.](#); 3. [US COVID-19 Cases Caused by Variants](#)

Proportion of Sequenced Specimens Identified as VOC/VOI



What you have done and what is left to be done

1. You have **identified all your high risk patients**
2. You have **provided vulnerable patients with expanded care**
3. You have **offered testing for all patients, as much as every visit – POC for those eligible for mAb therapy**
4. You have **stayed current and stayed safe**
5. **Now is the time to be a vaccinator - address vaccine hesitancy with patients, register as a Covid vaccinator in ImmuNet and plan for administration**

Now is the time for Primary Care to demonstrate the enormous value you bring to the health and well being of all Marylanders

How do we know when it is over?

- ❖ Now is the time for you to make this a reality
- ❖ It is over when
 - Cases rates are at or near zero
 - Hospitalizations are at or near zero
 - Deaths are at or near zero
- ❖ Until then- facial coverings, social distancing, hand hygiene, avoid crowds- with increasing exceptions among vaccinated persons



“Everything will be okay in the end. If it's not okay, it's not the end.”

— John Lennon

General Vaccine Resources

- ❖ [CDC Covid-19 Vaccination Communication Toolkit](#) - ready made materials, how to build vaccine confidence, social media messages
- ❖ [New York Times Vaccine Tracker](#) - information on every Covid vaccine in development
- ❖ [New York Times Vaccine Distribution Tracker](#) – information on the distribution of Covid vaccines in the United States
- ❖ [MDH Covidlink Vaccine Page](#) - information on vaccine priority groups in Maryland
- ❖ [CDC Vaccine Storage and Handling Toolkit](#)
- ❖ [Project ECHO Webinar](#) - webinar on vaccines and Long Term Care Facilities, relevant for primary care
 - ❖ CDC [Moderna vaccine storage](#)

CME Accreditation and Designation

- ❖ This activity has been planned and implemented in accordance with the Essential Areas and policies of the Accreditation Council for Continuing Medical Education (ACCME) through the joint providership of MedChi, The Maryland State Medical Society, and The Maryland Department of Health. MedChi is accredited by the ACCME to provide continuing medical education for physicians.
- ❖ MedChi designates this live webinar educational activity for a maximum of 1 AMA PRA Category 1 Credits™. Physicians should claim only the credit commensurate with the extent of their participation in the activity. Contact Frank Berry at fberry@medchi.org

CME Disclosures and Evaluation

- ❖ Presenters and Planners: Howard Haft, MD, has reported no relevant financial relationships to disclose.
- ❖ MedChi CME Reviewers: The reviewers from the MedChi Committee On Scientific Activities (COSA) for this activity have reported no relevant financial relationships to disclose.
- ❖ *Attendees can receive CME credit by completing [this evaluation](#) after each webinar. MedChi will then be in contact with the certificate*

Announcements

- ❖ Learn from:
 - Our [FAQs page](#) (last updated November 2020)
 - [MDH FAQs](#)
- ❖ "State of the MDPCP" All-Practice Call
 - [Friday, 4/23/21 \(5-6:30pm\)](#)
- ❖ Wednesday Covid-19 Updates (will move to biweekly after March)
 - [Wednesday, 4/28/21 \(5-6:30pm\)](#)
 - [Wednesday, 5/12/21 \(5-6:30pm\)](#)
 - [Wednesday, 5/26/21 \(5-6:30pm\)](#)
- ❖ Strategies for Providers to Increase Vaccine Uptake (BHA Webinar)
 - [Monday, 4/26/21 \(5-6pm\)](#)
- ❖ Guest Speaker
 - Today – Anastasia Edmonston, MS, CRC, Maryland Behavioral Health Administration



Brain Injury and Behavioral Health- A Quick Overview

April 14, 2021

Definitions

TBI Defined	ABI Defined
Traumatic Brain Injury (TBI) is an insult to the brain caused by an external physical force, such as a fall, motor vehicle accident, assault, sports-related incident, or improvised explosive device (IED) exposure	Acquired Brain Injury (ABI) is an insult to the brain that has occurred after birth, such as TBI, stroke, near suffocation, infections in the brain, or anoxia and opioid overdose(s)

***Both mechanisms of injury can result in a chronic disability that may get worse with age.**

Purpose

Why is it important for medical professionals, public health and behavioral health professionals to have a working understanding of Traumatic Brain Injury (TBI) and Acquired Brain Injury (ABI)?

- A history of TBI is often hidden among individuals living with behavioral health challenges (mental health and addiction), older adults, victims and perpetrators of intimate partner violence, the homeless and incarcerated individuals, adults and juveniles
- By understanding how traumatic and acquired brain injury impacts health and injury risks, changes can be made at the policy and clinical level to mitigate the impact of brain injury as well as prevent it

The Basic Brain Fast Facts

- 2.8 million Americans are treated in Emergency Departments (ED), hospitalized, or die as a result of a TBI each year
- The adult brain weighs 3 pounds
- The brain reaches maturity around age 25
- The frontal lobe is the last part of the brain to mature

Source: CDC 2017

TBI “Fingerprints”

Our frontal lobe and the temporal lobes are key to managing behavior and emotions.

Thus, damage to these regions can contribute to mental health and/or addiction problems. Damage to these lobes is considered the **“Fingerprint of Traumatic Brain Injury.”**

Connecting the Dots: Brain Injury and Behavioral Health

Brain Injury has been linked to:

- Mental Health Disorders
- Substance Use Disorders
- Overdose(s)
- Attempting/Completing Suicide

Connecting the Dots: Recognizing Brain Injury

People with TBI are over-represented:

- Among the incarcerated
- Among the homeless
- In addiction services
- In mental health services
- Among those impacted by Intimate Partner Violence
- Native Americans and African Americans
- Individuals impacted by racial and economic disparities
- Among those who serve/have served in the Armed Forces*
- Athletes—professional and amateur

*Most service-related TBIs are not combat-related; they occur during training exercises, and during accidents on and off base

Connecting the Dots:

Brain Injury and Behavioral Health-Findings of a longitudinal

Danish study of over 7 million individuals, including 113,906 who had incurred a traumatic brain injury (TBI)

- TBI increases the risk of developing psychiatric disorders and is highest in the first year post injury
 - Schizophrenia-65%
 - Depression-59%
 - Bipolar Disorder-28%
- This study also found the risk of suicide was higher following severe TBI than after a mild TBI and a higher suicide rate was observed among individuals whose first TBI occurred in young adulthood

Source: JAMA. 2018 Aug 14; 320(6): 580–588.

Published online 2018 Aug 14. doi: 10.1001/jama.2018.10211: 10.1001/jama.2018.10211

Connecting the Dots: Brain Injury and Behavioral Health

The results of a 2016 Canadian study published in a *Washington Post* article by Erin Blakemore in February 2016 found the following:

- The long-term risk of suicide increases three-fold among adults who have had concussions
- Found suicide rate of 31 deaths per 100,000 —three times the population norm
- The mean time, between a mild concussion and suicide was 5.7 years with each additional concussion raising risk of suicide

Connecting the Dots: Brain Injury and Behavioral Health

Individuals with brain injury have increased vulnerability for misuse and addiction to substances:

- Over 40% of people in treatment for a substance use related disorder have had at least one TBI with a loss of consciousness
- “When all factors are considered, it would appear reasonable to expect **half of the adults under age 65 receiving inpatient rehabilitation for a primary diagnosis of TBI to have prior histories of either alcohol misuse or illicit drug use.**”
- 10-20% of people with TBI develop a new onset of a Substance Use Disorder

Source: <https://heller.brandeis.edu/ibh/research/inroads/publications-products.html>.
<https://www.liebertpub.com/doi/abs/10.1089/neu.2019.6451>

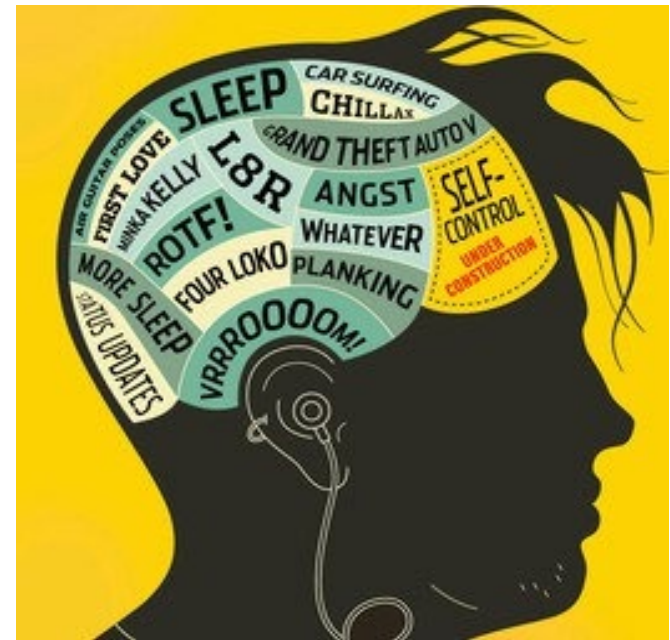
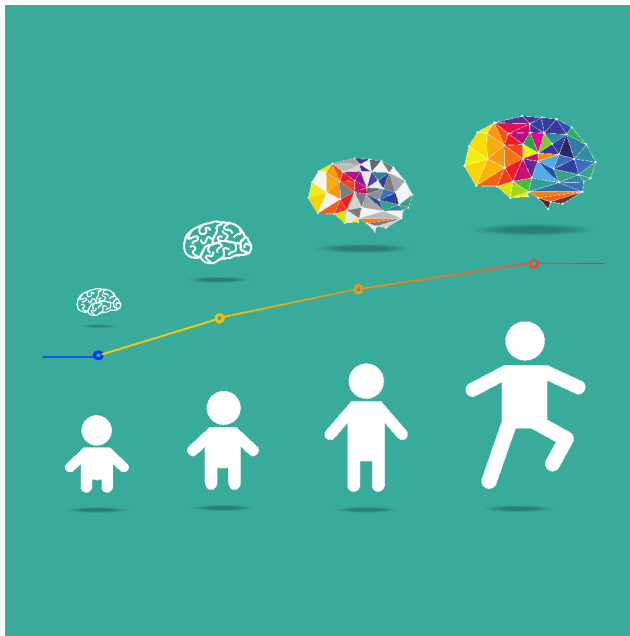
Connecting the Dots: Brain Injury and Behavioral Health

- TBI often results in headaches & orthopedic injuries leading to prescriptions for opioids-**70-80% of all patients with TBI are discharged with a prescription for opioids**
- TBI often results in impairment of memory, leading people to forget when and how much they have taken of prescribed opioids
- TBI often results in impaired judgement and impulsivity which can also lead to overuse of pain medication
- TBI related cognitive and behavioral impairments and related social, community re- entry, and vocational challenges can contribute to the development of mood disorders, for which individuals may self medicate with opioids

At present there are no opioid prescribing guidelines for people living with TBI

Source: <https://acl.gov/sites/default/files/news%202018-05/20180502NIDILRRopioidRFIFindings.pdf>

Brain Injury: *Growing* into Brain Injury ...



Connecting the Dots: Brain Injury and Substance Use Disorders

Injury to the developing brain can have life altering consequences:

Those hospitalized with **first TBI before age six** are three times more likely to have a diagnosis of either alcohol or drug dependence by age 25

Those hospitalized with **first TBI between ages 16–21** are three times more likely to be diagnosed with drug dependence

Childhood and adolescent brain injuries are highly associated with the likelihood of arrest by young adulthood

Source: John Corrigan Ph.D., Ohio Valley Center 2014

Screening in Schools

- In 2019 the Maryland State Department of Education (MSDE) reported 112,855 students identified as receiving special education services. However only 223, or 0.2% re identified as having a traumatic brain injury.
- At the same time the Maryland Department of Health reported that in 2017 alone there were 4,794 Emergency Department visits and 210 hospitalizations for Marylanders ages 0–18 years old with a diagnosis of TBI
- Many times families do not remember a concussion, especially if it occurred years earlier, or do not associate it with problems in school
- The nature of brain development can often mask problems from a brain injury for months or even years. This is especially true of the adolescent brain and the frontal lobe, which starts to develop in the early teenage years.
- One study done in Minnesota found over 82% of inmates in a correctional facility had a history of TBI. If we want to end the school to prison pipeline this is one step that can be taken to help individuals who are at an increased risk of becoming involved in the correctional system.

Source: Martin Kerrigan M.ED, MD TBI Partner Grant Consultant

Covid-19 and Neuropsychiatric Challenges: Dots to be Connected

In the news:

April 6, 2021-*A third of COVID survivors suffer neurological or mental disorders-study* (anxiety 17%, mood disorders, 14%) and did not appear to be related to severity of infection; those admitted to intensive care with severe COVID-19, 7% had a stroke within 6 months, and almost 2% were diagnosed with dementia <https://www.reuters.com/article/uk-health-coronavirus-brain/a-third-of-covid-survivors-suffer-neurological-or-mental-disorders-study-idUKKBN2BT2ZG>

“I felt this intense paranoia hit me...I was hearing voices outside my window. I thought I heard people in the bushes...It was the most terrifying thing I have ever experienced in my life.” Ivan Agerton, Seattle to CBS News

<https://www.cbsnews.com/news/covid-survivors-neurological-mental-disorder-study-oxford/>

Covid-19 and Neurological Challenges: Dots to be Connected-Stroke

Nannoni S, de Groot R, Bell S,

Markus HS. Stroke in COVID-19: A systematic review and meta-analysis. *Int J Stroke*. 2021;16(2):137-149.
doi:10.1177/1747493020972922

Meta-analysis of 61 articles. Out of 108,571 individuals with Covid-19, acute cardiovascular disease (CVA) occurred in 1.4%, of those:

- 87.4% - acute ischemic stroke

- 11.6-intracerebral hemorrhage

Development of acute CVD was associated with older age, hypertension, diabetes mellitus, coronary artery disease (CAD), and severe infection

Features of Covid-19 related stroke included; younger age, less likely to have hypertension and previous stroke, severity of stroke worse among those with COVID-19

Screen for a history of Brain Injury

Connecting the Dots: Brain Injury and Substance Use Disorders

BHA incorporated a brief screen into the authorization workflow for Psychiatric Rehabilitation Programs (PRP) and Assertive Community Treatment (ACT) several years ago:

OSU TBI-ID Quick Screen Questions:

Ever knocked out or lost consciousness?

Yes, No, Not screened

Longest time knocked out?

Less than 30 minutes,

30 minutes–24 hours,

> 24 hours

Age (1–99) when first knocked out or lost consciousness? ____

Name: _____ Current Age: _____ Interviewer Initials: _____ Date: _____

Lifetime History of Traumatic Brain Injury (from the OSU TBI-ID) and other Acquired Brain Injuries

1. Please think about injuries you have had during your entire lifetime, especially those that affected your head or neck. It might help to remember times you went to the hospital or emergency department. Think about injuries you may have received from a car or motorcycle wreck, bicycle crash, being hit by something, falling down, being hit by someone, playing sports or an injury during military service.

a. Thinking about any injuries you have had in your lifetime, were you ever knocked out or did you lose consciousness?

- ☐ Yes
☐ No (IF NO, GO TO QUESTION 2)

b. What was the longest time you were knocked out or unconscious? (Choose just one; if you are not sure please make your best guess.)

- ☐ knocked out or lost consciousness for less than 30 minutes
☐ knocked out or lost consciousness between 30 minutes and 24 hours
☐ knocked out or lost consciousness for 24 hours or longer

c. How old were you the first time you were knocked out or lost consciousness?
_____ years old

Complete this screening to determine if a person may have had a brain injury. It is important to note that this screening does not result in a diagnosis, is not intended to be used for eligibility determination and DOES NOT replace a face-to-face evaluation and assessment with a trained professional. This information should be treated as Protected Health Information. Deidentified data may be analyzed for program evaluation.

2. Have you ever had a period of time in which you experienced multiple, repeated impacts to your head (e.g., history of abuse, contact sports, military duty)?

- ☐ Yes
☐ No (IF NO, GO TO QUESTION 3)

a. How old were you when these repeated injuries began?
_____ years old

b. How old were you when these repeated injuries ended?
_____ years old

3. Have you ever lost consciousness from a drug overdose or being choked or strangled?

- ☐ Yes
☐ No (IF NO, GO TO QUESTION 4)

a. How many times from a drug overdose?
_____ overdose(s)

b. How many times from being choked?
_____ choked or strangled

c. What was the longest time you have been unconsciousness from an overdose, or incident of being choked or strangled? (If you are not sure please make your best guess.)
_____ minutes

4. Have you EVER been told by a doctor or other health professional that you had any of the following?

- ☐ Epilepsy or seizures
☐ A stroke, cerebral vascular disease or a transient ischemic attack
☐ A tumor of the brain
☐ Swelling of the brain (edema)
☐ Toxic effects or poisoning by substances – like from lead poisoning, alcohol, prescription medications or recreational drugs
☐ Infection like meningitis or encephalitis
☐ A brain bleed or hemorrhage
☐ Child or adult maltreatment syndrome
☐ Loss of oxygen to the brain - like from a time when you stopped breathing, had a near drowning or experienced a strangulation
☐ Encephalopathy due to endocrine, nutritional, renal or liver disorders

Interpreting Findings

The validity of this tool is not based on elicitation of a perfect accounting for a person's lifetime history of brain injury. Instead, it provides a means to estimate the likelihood that consequences have resulted from one's lifetime exposure.

A person may be more likely to have ongoing problems if they have any of the following:

- **WORST:** one moderate or severe TBI
- **FIRST:** TBI with loss of consciousness before age 20
- **ANOXIC:** a single incident of prolonged loss of consciousness from an overdose or being choked or strangled.
- **MULTIPLE:** multiple instances of blows to the head or multiple overdoses or incidents of being choked or strangled.
- **OTHER SOURCES:** any ABI combined with another way their brain function has been impaired or any brain injury diagnosed by a doctor or other health professional.



Interpreting the ABI Screening Tool

The validity of this tool is not based on elicitation of a perfect accounting for a person's lifetime history of brain injury. Instead, it provides a means to estimate the likelihood that consequences have resulted from one's lifetime exposure.

A person may be more likely to have ongoing problems if they have any of the following:

- WORST: one moderate or severe TBI
- FIRST: TBI with loss of consciousness before age 15
- OTHER SOURCES: any TBI combined with another way their brain function has been impaired

Source: © reserved 2018, The Ohio Valley Center for Brain Injury Prevention and Rehabilitation - Iowa ACBI approved September 13, 2019

Stasia's Tips

Even if you *Know*, the person is living with a brain injury, still conduct the screening, why you ask?

- Maybe they are just aware of the last or most obvious injury, e.g. were in the hospital, have a diagnosis of a Traumatic or Acquired Brain Injury
- Earlier insults and injuries to the brain may have been forgotten or assumed to have been no big deal (“hey, everyone got their bell rung on my team”)
- Knowing that earlier injuries can contribute to functional difficulties and each injury can magnify the negative effect of the earlier one(s)

Stasia's Tips-why screen

- If the last, known injury looked to be “no big deal” to those around the individual as well to healthcare professionals, but the individual is having issues, thinking (trouble concentrating), physical (deep fatigue), and/or behavioral (depression), those around them may either dismiss their concerns, or believe they are exaggerating their symptoms, or are experiencing mental health issues (and they may very well be experiencing mental health issues), especially if they are living with untreated, undertreated and or unrecognized brain injury or injuries.

Strategies and Recommendations

A Brain Injury Informed Approach is recommended in *ALL* Behavioral Health and Somatic Health Settings

Recommended Alcohol Use Screening Tools

- CAGE Questionnaire
- Brief Michigan Alcoholism Screening Test (BMAST)
- AUDIT

These instruments are recommended for use by brain injury professionals who specialize in treating individuals who also misuse substances as they are brief and concrete in their language

Screening Tools 2

- 12-item form of the Screener & Opioid Assessment for Patients with Pain Revised-recommended by TBI Model System Researchers for use during inpatient rehabilitation stays to help determine risk factors
- (TAPS) Tobacco, Alcohol, Prescription Medication, and other Substance use Tool
- Ask about cannabis use

Best Practices

- Brain Injury Informed Supports offered and guided by the person's preferences
- Cognitive Behavioral Therapy
- Motivational Interviewing
- Stages of Change Model approach
- **Consider including the Brain Injury Screening Tool into SBIRT**

Any Questions?



Want more information?

Go to: : <https://bha.health.maryland.gov/Pages/Traumatic-Brain-Injury.aspx>

We have uploaded over 20 fact sheets, sample powerpoints and other resources, including a brief brain injury screening tool to the Behavioral Health Administration's website

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2021

Appendix

Resources and Links

Contact Tracing

Methods


- ❖ Contact tracer calls
- ❖ MD Covid Alert – cell phone
- ❖ Provider alerting

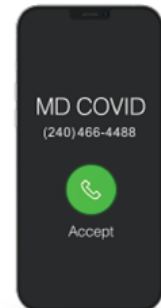
Thank You for Getting Tested for COVID-19

Follow directions from your testing facility on when and how you will receive your test results.



What Happens Next

- ▶ **Stop the spread.** Stay at home and separate from others if you were tested because you have symptoms or were exposed.
- ▶ **Identify the people you might have exposed.** Make a list of everyone you came in close contact with starting two days before your symptoms started or two days before your test date (if you don't have symptoms). Close contact means within 6 feet for a total of 15 minutes or more. If you test positive, a contact tracer will provide guidance to the people on the list.
- ▶ **Scan the QR code** and opt-in or download the MD COVID Alert app. 
- ▶ **Add MD COVID**, (240) 466-4488, to your contacts.
- ▶ **Answer the call** when you see "MD COVID" or (240) 466-4488 on your caller ID. If you test positive, a contact tracer will call you. Your participation helps slow the spread of COVID-19. Any information you share is **CONFIDENTIAL**.
- ▶ **Learn more** at covidlink.maryland.gov



ADD YOUR PHONE. FIGHT COVID-19.
GET COVID-19 EXPOSURE ALERTS

MDCOVID
ALERT

Learn more about how contact tracing can fight COVID-19 at covidlink.maryland.gov

 @MDHealthDept
Updated 1/7/2021

Multiple COVID-19 variants are circulating globally

B.1.1.7	B.1.351	P.1
<ul style="list-style-type: none">• Variant name is a reference to its lineage• Appears to have originated in the UK with an unusually large number of mutations• Was first detected in 9/2020• Spreads more quickly and easily than other variants• Some evidence it causes more severe illness or increased risk of death• Highly prevalent in London and southeast England• Doubling every 10 days in the United States• Vaccines appear to work well against it	<ul style="list-style-type: none">• Variant name is a reference to its lineage Has emerged in South Africa, is independent of B.1.1.7• Originally detected in 8/2020• Shares some mutations with B.1.1.7• Clinical trials of vaccines show they offer less protection against this variant than other variants• The FDA is preparing a plan to update vaccines if B.1.351 surges in the United States	<ul style="list-style-type: none">• Variant name is a reference to its lineage• Emerged in Brazil• Was identified in four travelers from Brazil, who were tested during routine screening at Haneda airport outside Tokyo, Japan• Contains a set of additional mutations that may affect its ability to be recognized by antibodies• Is a close relative of B.1.351• May be able to overcome the immunity developed after infection by other variants

New Variant Reporting to MDH

As part of these MDH surveillance efforts, MDH requests that clinicians report, via an online portal, COVID-19 cases among any of the following groups:

- ❖ **Individuals who first test positive for COVID-19 after receiving COVID-19 vaccination** (either one or two doses)
- ❖ **Severely immunocompromised individuals with prolonged COVID-19 infection**
- ❖ **Individuals suspected of reinfection** – specifically, symptomatic individuals who test PCR positive for SARS-CoV-2 more than 90 days after an initial infection from which they clinically recovered
- ❖ **Individuals with recent international travel** (travel in the 14 days prior to symptom onset)
- ❖ **Any other individuals for whom you have clinical suspicion of infection with a possible variant** (e.g., unusual clinical manifestation, etc.)

[Clinician Letter Link](#)

Covid-19 mAb Treatment Criteria

❖ Patient Criteria

- Have BMI ≥ 35
- Have chronic kidney disease
- Have diabetes
- Are currently receiving immunosuppressive treatment
- Are ≥ 65 years old
- Are ≥ 55 years old and have
 - ✓ Cardiovascular disease, or
 - ✓ Hypertension, or
 - ✓ Chronic obstructive pulmonary disease/other chronic respiratory disease
- Are 12 – 17 years old AND have
 - ✓ BMI $\geq 85^{\text{th}}$ percentile for their age and gender based on CDC growth charts, or
 - ✓ Sickle cell disease, or
 - ✓ Congenital or acquired heart disease, or
 - ✓ Neurodevelopmental disorders, or
 - ✓ A medical-related technological dependence, or
 - ✓ Asthma

Covid-19 Testing Information

- ❖ [Maryland Department of Health testing announcements and accessibility information and resources](#)
- ❖ [CDC Covid-19 testing overview](#)
- ❖ [MDPCP Roadmap to Recovery – Covid-19 testing guidelines](#)
- ❖ [Maryland Department of Health guidance regarding point of Care rapid antigen Covid testing](#)
- ❖ [myLAB Box - Covid-19 testing program for Maryland clinicians](#)
- ❖ [FDA letter to clinical laboratory staff and health care providers about the potential for false positive results with rapid antigen tests for Covid-19](#)

Scheduling In-Office Appointments

- ❖ Patient calls in for an appointment
 - Reception screens patient on the phone using the [pre-visit screening template](#)
 - Schedule in-office visits for different groups: At-risk and vulnerable patients on certain days, healthier patients on other days
 - Schedule telehealth and non-office-based care for other patients including follow-ups and patients uncomfortable with office visits
- ❖ Check In
 - Practice remote check in and limited front-desk contact
 - Consider using a triage zone outside of office or main area;
 - Or use a barrier at the front desk
 - Design your office to accommodate patients who come in specifically for Covid testing and triage, separate from patients who arrive for non-Covid related and elective procedures
 - ✓ Ensure patients and staff do not cross between Covid and non-Covid areas
 - ✓ Set aside a specific area for patients who come in for testing to wait and be triaged

Scheduling In-Office Appointments

- ❖ Checking out
 - Practice remote check out, limit front desk exposure;
 - Or use a barrier at the front desk
- ❖ If patient is paying co-pays, etc., set up credit card reader outside of the barrier
- ❖ Other workflow resources
 - [Care management workflows](#)
 - [BMJ telemedicine workflow graphics](#)
 - [CDC flowchart to identify and assess 2019 novel Coronavirus](#)
 - [CDC telephone evaluation flow chart for flu](#)
 - [CDC guidance for potential Covid-19 exposure associated with international or domestic travel](#)

CDC Guidelines for Covid Patient Management

- ❖ Healthy people can be monitored, self-isolated at home
- ❖ People at higher risk should contact healthcare providers early, even if illness is mild
- ❖ Older adults and people with severe underlying chronic medical conditions are at higher risk, need closer contact
- ❖ Emergency Department and Hospitals only when needed - not for screening or low risk/minimal disease
- ❖ **Guidelines are important and powerful tools, but remember providers' clinical experience and judgment are key to care**

Personal Protective Equipment (PPE) Sources and Requests

- ❖ Practices should initially request PPE through their usual vendors
- ❖ Practices should make their PPE requests through their local health departments
- ❖ Maryland PPE Manufacturers List – next slide
- ❖ [National and international PPE supplier list](#)
- ❖ [PPE request form](#)

Personal Protective Equipment (PPE) Sources and Requests

- ❖ Increasing Maryland's supply of PPE – one of the 4 building blocks on the Road to Recovery
- ❖ Maryland has launched the [Maryland Manufacturing Network Supplier Portal](#), an online platform that helps connect Maryland suppliers with buyers in need of critical resources
- ❖ For additional business resources during Covid-19, visit businessexpress.maryland.gov/coronavirus
- ❖ Providers may also request PPE from the non-profit [‘Get Us PPE’](#)

Provider/Patient Mental Health Resources

❖ Providers

- “Helping the Helpers and Those They Serve,” a [webinar series](#) from the Maryland Department of Health Behavioral Health Administration and MedChi (on the 2nd and 4th Thursdays of every month starting 11/12/2020)
- [Heroes Health Initiative](#)

❖ Patients

- [Ask Suicide-Screening Questions toolkit](#)
- CDC [list of resources](#) for coping with stress

Health Equity Resources

- ❖ [Maryland Department of Health Office of Minority Health and Health Disparities](#) (MHHD)
- ❖ Maryland Department of Health Minority Outreach and Technical Assistance Program [overview](#)
- ❖ MHHD fiscal year 2020 minority outreach and technical assistance [program information](#)
- ❖ [Description](#) of the term “health disparity”
- ❖ [Implicit bias test](#)
- ❖ “Hundreds of Days of Action as a Start to Address Hundreds of Years of Inequality” – New England Journal of Medicine [article](#) by Maulik Joshi, DrPH
- ❖ “Discussion Draft of the Preliminary Framework for Equitable Allocation of COVID-19 Vaccine” – [discussion draft](#) for public comment by Committee on Equitable Allocation of Vaccine for the Novel Coronavirus, The National Academies of Science, Engineering, Medicine

Telehealth Resources

- ❖ [Maryland Health Care Commission Telehealth](#)
- ❖ [Maryland Health Care Commission Telehealth Readiness Assessment Tool](#)
- ❖ [U.S. Department of Health and Human Services Health Insurance Portability and Accountability Act \(HIPAA\) for Professionals](#)
- ❖ [American Telehealth Association](#)
- ❖ [Maryland Telehealth Alliance](#)
- ❖ [National Consortium of Telehealth Resource Centers](#)

Support for Patients at Home

❖ Food

- Meals on Wheels

❖ Caregivers

- Visiting nurses and caregivers

❖ Emotional support

- Support from family
- Phone calls and videochat to fight loneliness
- MD Department of Aging [Senior Call Check Program](#)

Staying Current - Sources

- ❖ [CDC](#)
- ❖ [MDH Covid-19 information page](#)
- ❖ [MDPCP Covid-19 webpage](#)
- ❖ Local Health Departments
- ❖ [CONNECT](#)
- ❖ Clinician Letters
- ❖ Multiple Resource Links in Appendix

Food Resources

❖ Nutrition: Inform patients that children can receive three free meals/day at sites listed on:

➤ [Maryland Summer Meals](#)

➤ [Montgomery County](#)

➤ [Prince Georges County](#)

➤ [Charles County](#)

➤ [Frederick County](#)

[Howard County](#)

[Anne Arundel County](#)

[St. Mary's County](#)

[Harford County](#)

[Calvert County](#)

❖ Free meals available from 42 rec centers in Baltimore

➤ Call 311 for locations and to schedule pickup time

Resources for Specific Groups

- ❖ Community- and Faith-Based Organizations
(<https://www.cdc.gov/coronavirus/2019-ncov/community/guidance-community-faith-organizations.html>)
- ❖ Mass Gatherings and Large Community Events
(<https://www.cdc.gov/coronavirus/2019-ncov/community/mass-gatherings-ready-for-covid-19.html>)
- ❖ Non-Pharmaceutical Interventions for Specific Groups
(<https://www.cdc.gov/nonpharmaceutical-interventions/index.html>)

Resources and References

- ❖ Maryland Department of Health Coronavirus Website (<https://coronavirus.maryland.gov>)
- ❖ CDC Coronavirus Website (<https://www.cdc.gov/coronavirus/2019-nCoV/index.html>)
- ❖ CDC National data on Covid-19 infection and mortality (<https://www.cdc.gov/coronavirus/2019-ncov/cases-updates/cases-in-us.html>)
- ❖ CDC Interim Guidance for Homes and Communities (<https://www.cdc.gov/coronavirus/2019-ncov/hcp/guidance-prevent-spread.html>)
- ❖ CDC Interim Guidance for Businesses (<https://www.cdc.gov/coronavirus/2019-ncov/specific-groups/guidance-business-response.html>)
- ❖ CDC Interim Guidance for Childcare and Schools (<https://www.cdc.gov/coronavirus/2019-ncov/specific-groups/guidance-for-schools.html>)
- ❖ CDC Travel Website (<https://wwwnc.cdc.gov/travel/>)