

Allergy & Asthma Network Upcoming Webinars



**Webinar: Vaccines & Vaccine
Hesitancy – How to Improve
Respiratory Outcomes**

January 26th – 4:00 PM ET



**Webinar: The Long-haul
Consequences of COVID-19:
Asthma, Allergies and All
Conditions**

February 4 – 4:00 PM



**Webinar: Sleep Issues: The
Effect of Allergies, Asthma &
Related Conditions**

February 25 – 4:00 PM ET

Look for more information at Allergyasthmanetwork.org



COVID-19 Vaccine: Allergies, Anaphylaxis & Answers

January 20, 2021

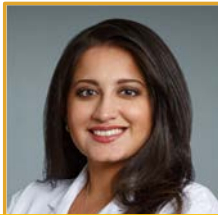
OUR SPEAKERS



Dr. Jackie Eghrari-Sabet

Clinical Assistant Professor of Medicine, George Washington School of Medicine & Health Sciences

Medical Director, Telehealth, Allergy & Asthma Network



Dr. Purvi Parikh

Clinical Assistant Professor of Medicine NYU Langone School of Medicine & Director, Allergy and Asthma Association, Murray Hill

National Spokesperson, Allergy & Asthma Network



Tonya Winders

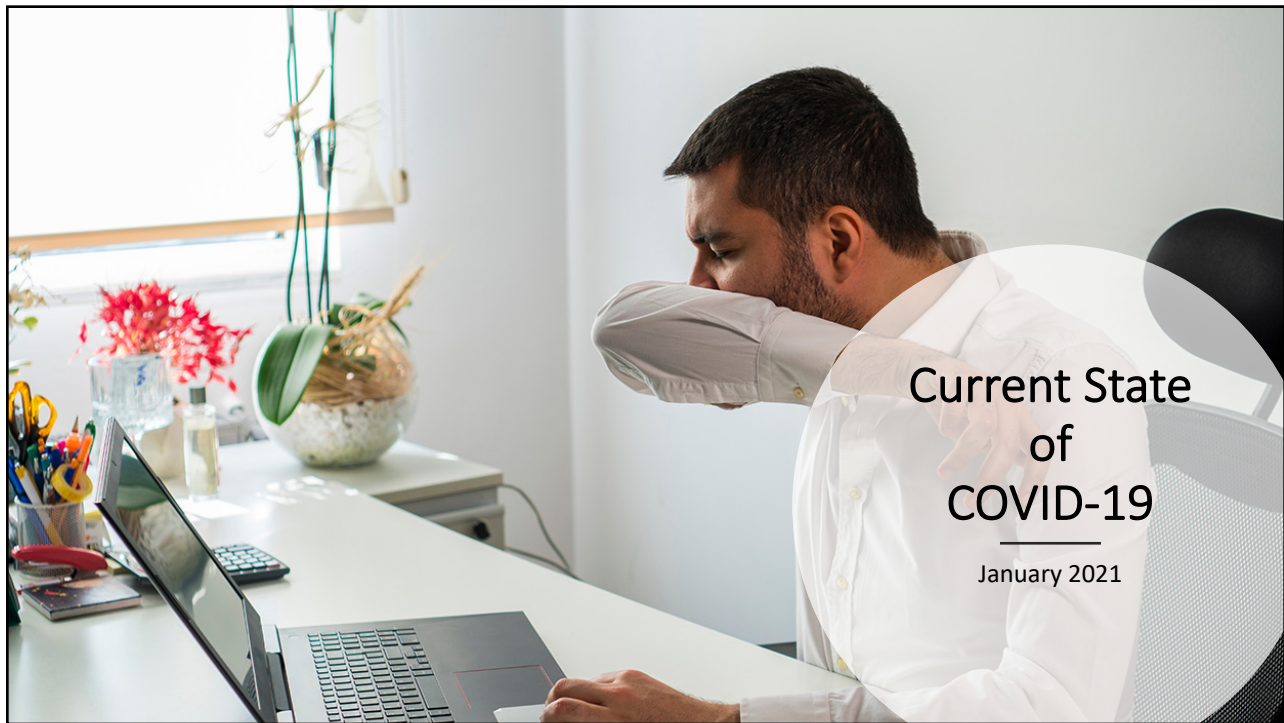
President & CEO, Allergy & Asthma Network

President, Global Allergy & Airways Patient Platform

PROGRAM OUTLINE

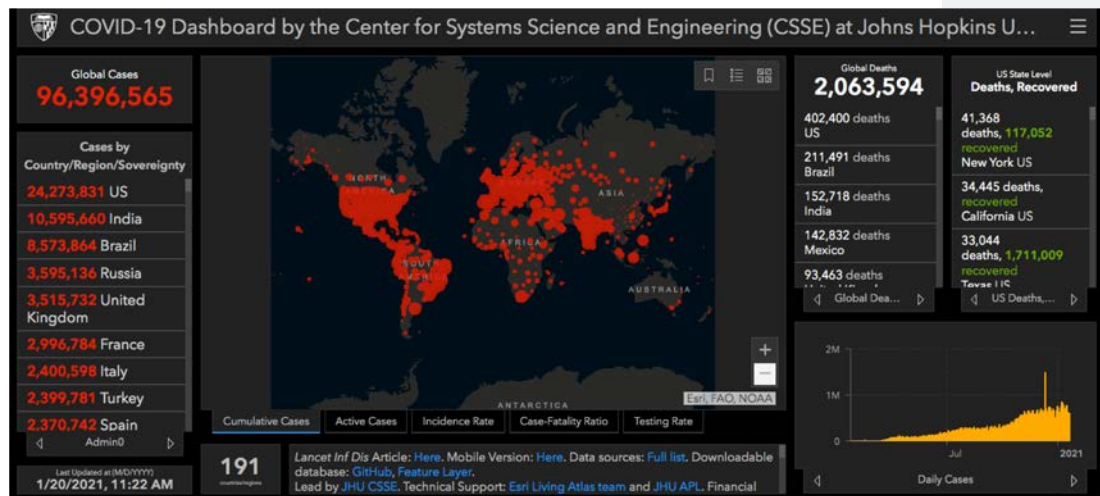
- Current State of COVID-19
- Vaccine Overview
- Identification & Management of Anaphylaxis
- Allergy & Asthma Network Resources

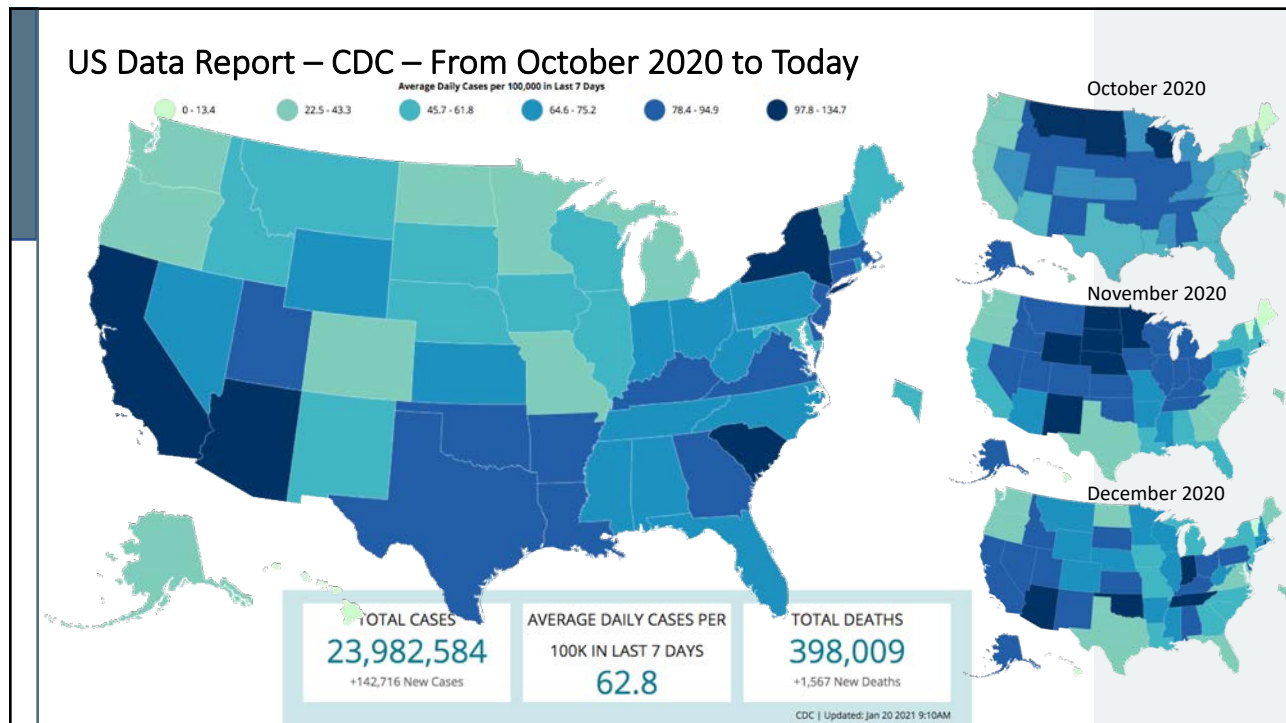




Johns Hopkins Global Map

January 20 – 11:22 AM



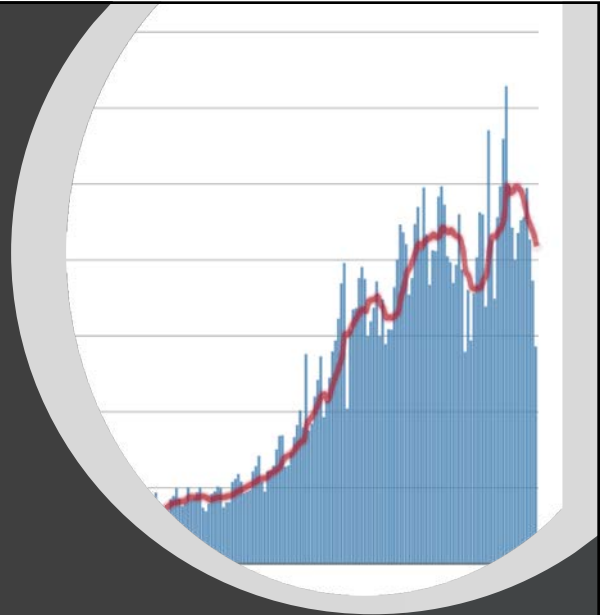


In the News

- At least 20 states are reporting new cases of the more-contagious COVID variant first found overseas
 - May be new “California Variant”
- Biden won’t end pandemic travel restrictions
 - Plans to “strengthen public health measures around international travel”
- Residents and staff at long-term care facilities starting to get 2nd dose of vaccine

In the News

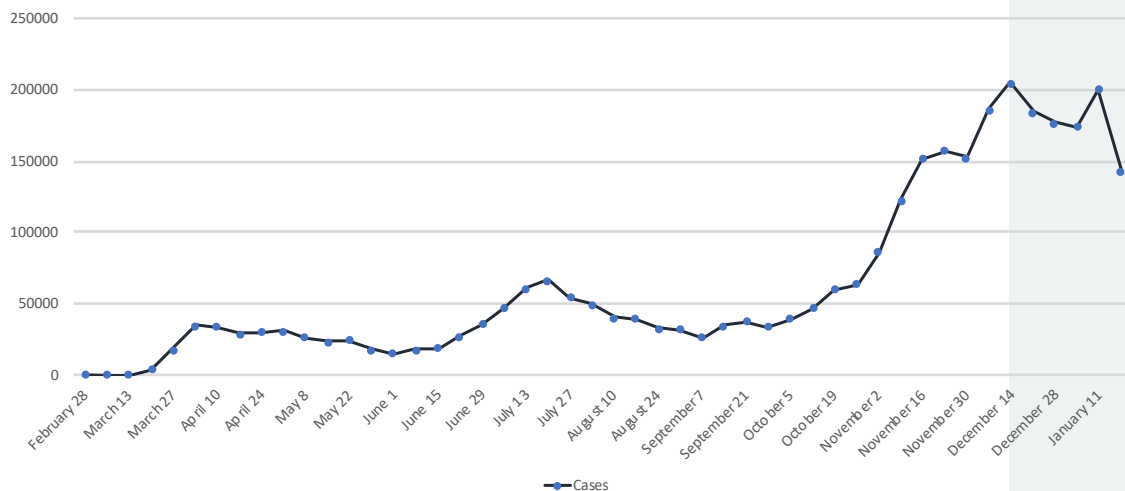
- New cases across the country have also been trending down since hitting a peak last week, experts urge Americans not to let their guard down yet.
- Data from the CDC shows:
 - Still a gap in the number of Covid-19 vaccines that have been distributed to states and the number of shots that have gone into arms
 - States complain the federal government is not sending vaccines fast enough.



COVID-19 Cases in US by Date Reported



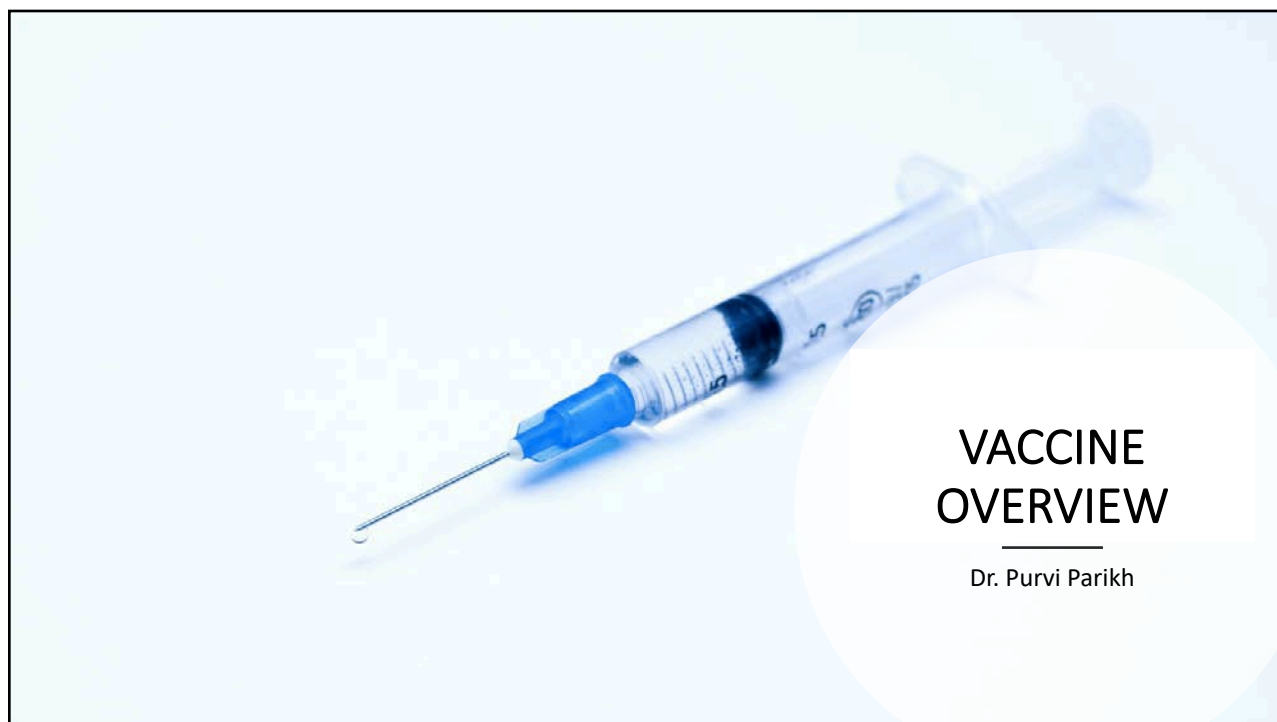
New Cases by Day



Poll Question

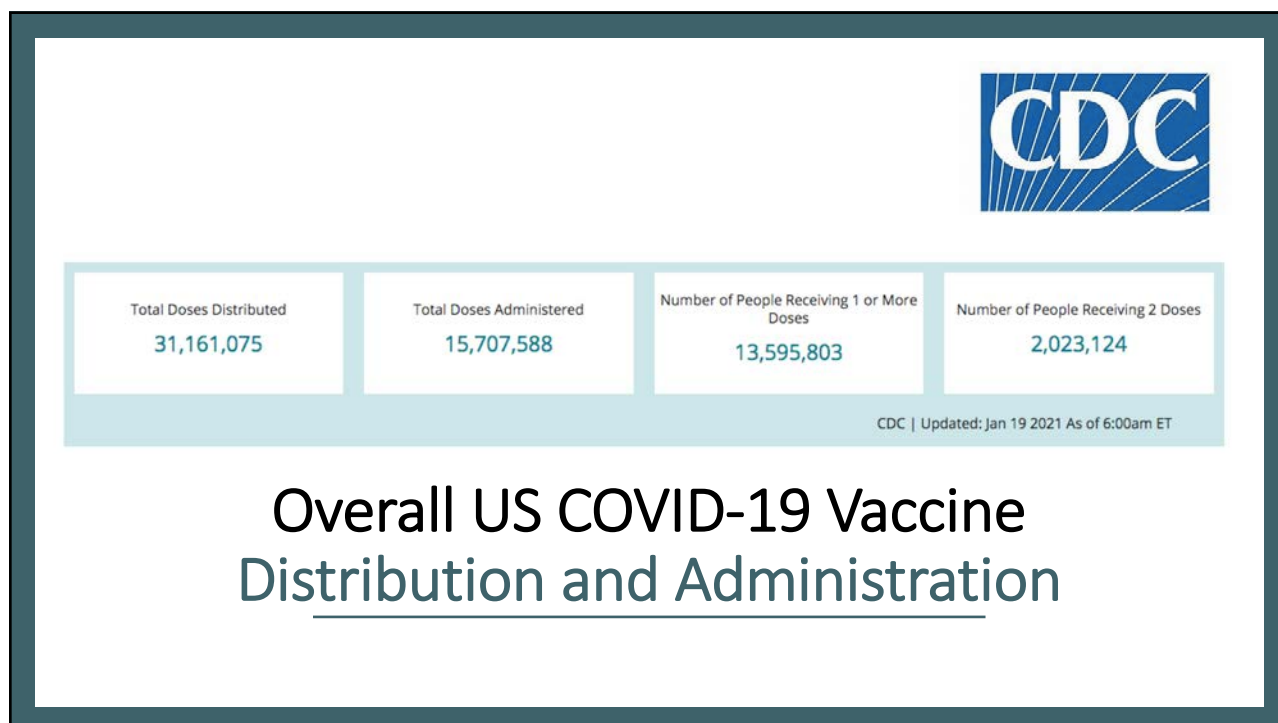


- **Are COVID-19 virus numbers going up in your area, staying the same or going down?**
- (Make it your best guess!)



VACCINE OVERVIEW

Dr. Purvi Parikh



Are Vaccines Effective?

Vaccines save lives.

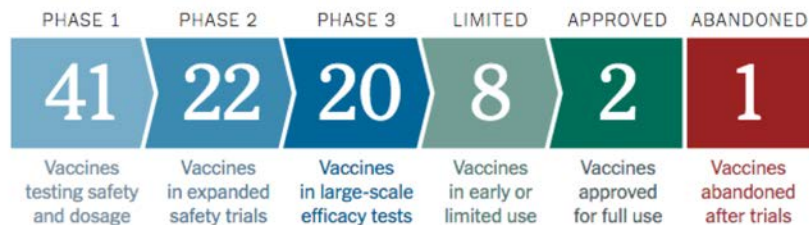
Scientists widely consider immunization to be one of the greatest public health achievements of the 20th century

- Flu vaccination reduces the risk of flu illness by between 40% and 60% among the overall population. – CDC
- Two doses of inactivated polio vaccine (IPV) are 90% effective or more against polio; three doses are 99% to 100% effective. - CDC

NY Times Vaccine Tracker

Coronavirus Vaccine Tracker

By Carl Zimmer, Jonathan Corum and Sul-Lee Wee Updated Jan. 19, 2021



Types of COVID-19 Vaccines

mRNA vaccine

- Synthetically produced RNA fragments of the virus are used to give the body those instructions that enable it to produce a protein that mimics a subset of the virus.
- This is recognized by the immune system, which reacts and produces antibodies and T cells. If the real coronavirus appears, the defence system is equipped and can prevent infection.

Vector vaccine

- Consists of a genetically modified chimpanzee cold virus, with which genetic material from Sars-CoV-2 is introduced into human cells as a vector.
- Same concept used in the Ebola vaccine

Vaccine Overview

Moderna

mRNA-1273

- First to fix formulation
- mRNA vaccine
- Two doses – 4 weeks apart
- 94.5% effective
- Slightly more effective in younger groups than in elderly

- ✓ Caused side effects in more people
- ✓ Mainly included:
 - Pain at the injection site
 - Flu-like symptoms
 - Subsided quickly
- ✓ Stored at -20 degrees for up to six months
 - Easier to store for non-hospital settings
- ✓ FDA factsheet:

<https://www.fda.gov/media/144638/download>

Vaccine Overview

BioNTech/Pfizer

NT162b2

- First to clear approval
- Already used on a massive scale
- mRNA vaccine
- Two doses – 3 weeks apart
- 95% effective
- Gives protection to older population

- ✓ Side effects limited
- ✓ Mainly included:
 - Pain at the injection site
 - Flu-like symptoms
 - Subsided quickly – 1 to 2 days
- ✓ Must be shipped and temporarily stored at -70 degrees
- ✓ At normal refrigerator temperatures - has a shelf life of 5 days
- FDA factsheet:

<https://www.fda.gov/media/144414/download>

Vaccine Overview

AstraZeneca

ChAdOx1 nCoV-19

- Can be produced in large quantities
- Does not require special cooling
- 90% effective when a ½ dose was administered followed by a full dose
- Two doses – one month apart
- ✓ No serious side effects
- ✓ Approved in UK
- ✓ Booster at 3 months
- FDA factsheet not yet available

Vaccine Overview

Gamaleja-Institute Moskau

Sputnik V

- Vector vaccine
- Innovative process
- More than 95% effective
- Often requires multiple doses
- ✓ More information:

[https://www.thelancet.com/journals/laninf/article/PIIS1473-3099\(20\)30923-3/fulltext](https://www.thelancet.com/journals/laninf/article/PIIS1473-3099(20)30923-3/fulltext)

Vaccine Overview

Sinopharm China

CNBG-vaccine

- Does not use genetic engineering
- Classic method of triggering an immune response by killing the virus
- 79% effective in trials
- ✓ International confidence in Chinese vaccines is lacking
- ✓ Few test results have been published
- ✓ Approved in China and UAE





Vaccine Overview

Johnson & Johnson

Ensemble / Ensemble 2

- Not yet approved – expected soon
- Viral vector vaccine
- 97% effective - study participants developed antibodies
- Studied as single and two-dose vaccine
- ✓ Booster shots may be required over time similarly to the pneumococcal vaccine
- ✓ Ongoing clinical trials
- FDA factsheet not yet available










Key features of the COVID-19 Vaccine Frontrunners

	Pfizer/BioNTech BNT162b2	Moderna mRNA-1273	AstraZeneca/ Oxford ChAdOx1-S/AZD1222	Janssen (Johnson & Johnson) Ad26COVS1
<i>Type of vaccine</i>	mRNA in lipid nanoparticles 	mRNA in lipid nanoparticles 	Non-replicating adenovirus vector 	Non-replicating adenovirus vector 
<i>Dosage</i>	2 doses 21 days apart	2 doses 28 days apart	2 doses 28 days apart	1 or 2 doses 56 days apart
<i>Antibody detection</i>	7 days after booster	14 days after booster	14 days after booster	14 days after booster
<i>Efficacy</i>	95%	95%	70%	N.A.

Key features of the COVID-19 Vaccine Frontrunners

	Pfizer/BioNTech BNT162b2	Moderna mRNA-1273	AstraZeneca/ Oxford ChAdOx1-S/AZD1222	Janssen (Johnson & Johnson) Ad26COVS1
<i>Planned Production Volume</i>	50M (2020) 1.3B (2021)	20M (2020) 0.5 – 1B (2021)	3B (2021)	1B (2021)
<i>Storage Requirement</i>	-70°C±10°C	-20°C	2 - 8°C	2 - 8°C
<i>Shelf life once thawed</i>	5 days	30 days	180 days	180 days
<i>Phase III Trial Enrollment</i>	43,000 (ages 16-85)	30,000 (age 18+)	11,500 (age 18+)	Single dose – 60,000 Two dose – 30,000 (age 18+)
<i>Percentage high-risk population in phase III trial</i>	40.90%	42%	N.A.	N.A.

How some of the Covid-19 vaccines compare

Company	Type	Doses	How effective*	Storage	Cost per dose
 Oxford Uni-AstraZeneca	Viral vector (genetically modified virus)	x2 	62-90%	Regular fridge temperature	£3 (\$4)
 Moderna	RNA (part of virus genetic code)	x2 	95%	-20C up to 6 months	£25 (\$33)
  Pfizer-BioNTech	RNA	x2 	95%	-70C	£15 (\$20)
 Gamaleya (Sputnik V)	Viral vector	x2 	92%	Regular fridge temperature (in dry form)	£7.50 (\$10)

*preliminary phase three results, not yet peer-reviewed

Source: Respective companies, WHO

BBC

Vaccine Roll-out National Academy of Sciences

Allocation Framework

Goal

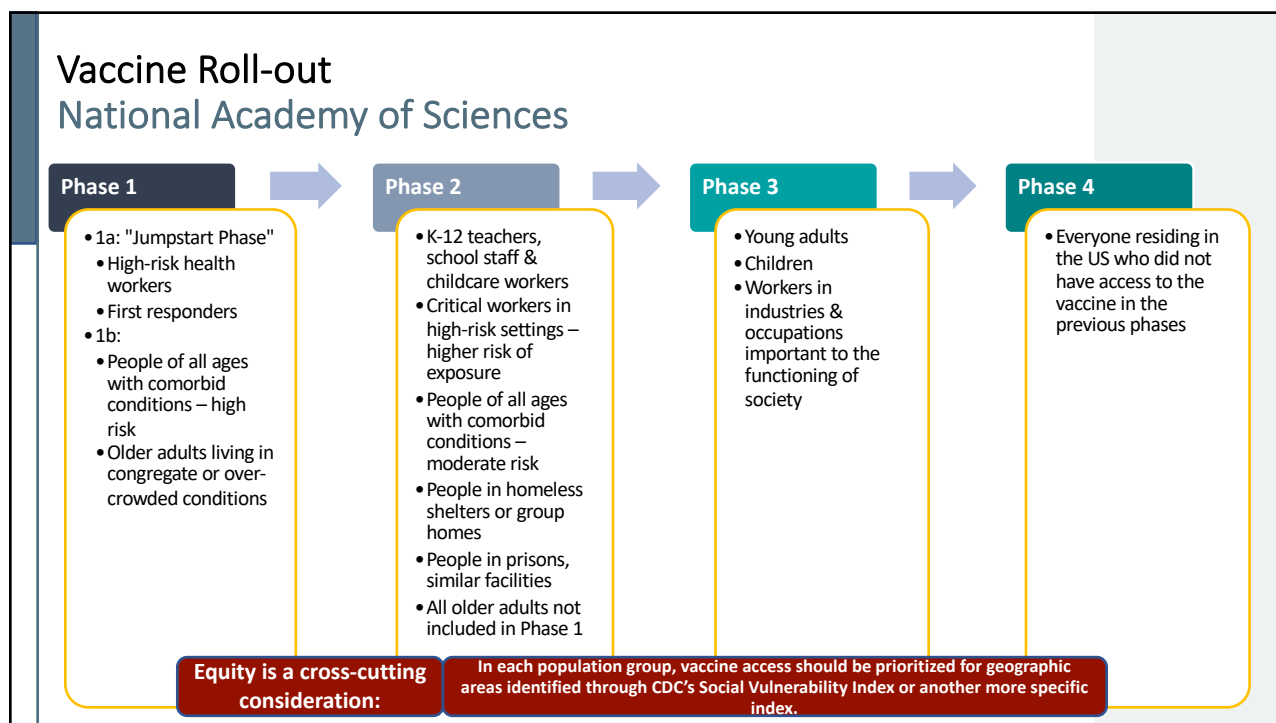
- Reduce severe morbidity and mortality & negative societal impact due to the transmission of SARS-CoV-2

Allocation Criteria

- Risk of: (1) acquiring infection,
- (2) severe morbidity & mortality,
- (3) negative societal impact &
- (4) transmitting infection to others

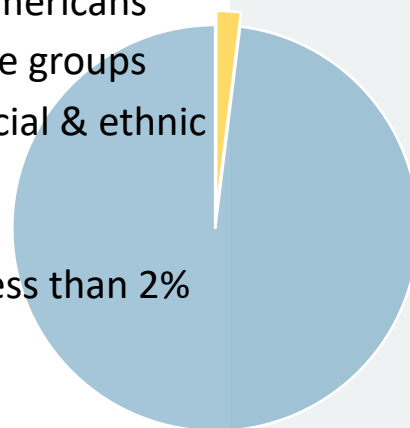
Four Allocation Phases

Vaccine Roll-out National Academy of Sciences



COVID-19 Vaccine

- Landmark in the pandemic response for Americans
- Appears to be equally protective across age groups
- Appears to be equally protective across racial & ethnic groups
- Severe systemic events were reported in less than 2%



Banerji A, Wickner PG, Saff R, Stone CA Jr, Robinson LB, Long AA, Wolfson AR, Williams P, Khan DA, Phillips E, Blumenthal KG, mRNA Vaccines to Prevent COVID-19 Disease and Reported Allergic Reactions: Current Evidence and Approach, The Journal of Allergy and Clinical Immunology: In Practice (2021), doi: <https://doi.org/10.1016/j.jaip.2020.12.047>.

Summary of Allergic Reactions

Following release of Pfizer Vaccine (published January 6th)

104 cases of allergic reactions

21 cases of anaphylaxis after administration of 1,893,360 first doses

- 10 times the anaphylaxis rate of the flu vaccine
- 17 cases occurred in persons with a documented history of allergies or allergic reactions
 - 7 of these had a history of anaphylaxis

Summary of Allergic Reactions

Following release of Pfizer Vaccine (published January 6th)

Allergic symptoms onset after vaccine

- Median of 13 minutes (2-150 minutes)
- 71% onset within 15 minutes

Non-anaphylaxis symptoms:

- Pruritis
- Rash
- Itchy & scratchy throat
- Mild respiratory symptoms

Reports of Possible Allergic Reactions

- Very strong safety profiles
- Reports of possible allergic reactions
 - Raised public concern
- Recommendations:
 - All patients be observed for 15 minutes after injection
 - Staff must be able to identify and manage anaphylaxis



Banerji A, Wickner PG, Saff R, Stone CA Jr, Robinson LB, Long AA, Wolfson AR, Williams P, Khan DA, Phillips E, Blumenthal KG, mRNA Vaccines to Prevent COVID-19 Disease and Reported Allergic Reactions: Current Evidence and Approach, The Journal of Allergy and Clinical Immunology: In Practice (2021), doi: <https://doi.org/10.1016/j.jaip.2020.12.047>.

Allergic Reactions

Confirmed allergic reactions to vaccines are not frequently attributed to active ingredients

- But to inactive ingredients:
 - Includes egg protein, gelatin, formaldehyde, thimerosal or neomycin
 - PEG – polyethylene glycol, polysorbate

Current vaccines are not formulated with any food, drugs or latex



Banerji A, Wickner PG, Saff R, Stone CA Jr, Robinson LB, Long AA, Wolfson AR, Williams P, Khan DA, Phillips E, Blumenthal KG, mRNA Vaccines to Prevent COVID-19 Disease and Reported Allergic Reactions: Current Evidence and Approach, The Journal of Allergy and Clinical Immunology: In Practice (2021), doi: <https://doi.org/10.1016/j.jaip.2020.12.047>.

Risk Stratifying Patients for Allergies Before Vaccination

Followed by skin allergy testing if deemed to be at "higher risk"

4 Screening Questions:

Do you have a history of a *severe* allergic reaction to an injectable medication?

Do you have a history of a *severe* allergic reaction to a prior vaccine?

Do you have a history of a *severe* allergic reaction to another allergen (e.g. food, venom or latex)?

Do you have a history of a *severe* allergic reaction to polyethylene glycol (PEG) a polysorbate or polyoxyl 35 castor oil containing injectable or vaccine?

Banerji A, Wickner PG, Saff R, Stone CA Jr, Robinson LB, Long AA, Wolfson AR, Williams P, Khan DA, Phillips E, Blumenthal KG, mRNA Vaccines to Prevent COVID-19 Disease and Reported Allergic Reactions: Current Evidence and Approach, The Journal of Allergy and Clinical Immunology: In Practice (2021), doi: <https://doi.org/10.1016/j.jaip.2020.12.047>.

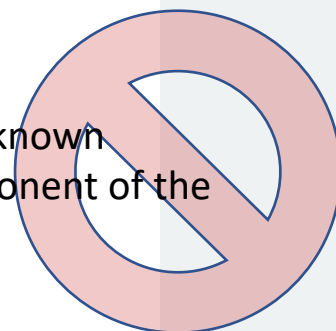
FDA Emergency Use Authorization

Pfizer-
BioNTech

Moderna

Guidance:

Do not administer vaccine to individuals with a known history of a severe allergic reaction to any component of the COVID-19 vaccine.



Management of Possible Reaction to COVID-19 Vaccine

- Should the second dose be administered?
- Need to verify that an allergic reaction occurred
 - Follow up with an allergist
 - Pre-treatment with antihistamine not recommended – masks symptoms, doesn't treat anaphylaxis
- If allergy testing is positive, avoid the second dose
- Vaccines have good efficacy with one dose – but approved based on two doses



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Need to Support Patients

“We need to understand the safety issues surrounding these vaccines, because the success of this mRNA platform is foundational to the flexibility of the COVID-19 response and our response to other viruses with similar vaccines in phase I and II trials.”

Banerji A, Wickner PG, Saff R, Stone CA Jr, Robinson LB, Long AA, Wolfson AR, Williams P, Khan DA, Phillips E, Blumenthal KG, mRNA Vaccines to Prevent COVID-19 Disease and Reported Allergic Reactions: Current Evidence and Approach, The Journal of Allergy and Clinical Immunology: In Practice (2021), doi: <https://doi.org/10.1016/j.jaip.2020.12.047>.

Poll Question



- **Will the concern about allergies keep you from getting the COVID vaccine?**



Identification & Management of Anaphylaxis

Dr. Jackie Eghrari-Sabet

Anaphylaxis

“A life-threatening allergic reaction that affects more than one body system.”

Anaphylaxis and anaphylactic shock are terms that are usually used for the same thing.

A drop in blood pressure and narrowing of the airways in response to the exposure to an allergen can officially be called anaphylactic shock, while most people refer to it as anaphylaxis.

Symptoms:

- Mouth
- Throat
- Heart
- Chest
- Skin
- Stomach
- Other

Severe reactions can start out with mild symptoms and quickly get worse.



Anaphylaxis At a Glance

Anaphylaxis is a life-threatening allergic reaction that affects more than one organ system.



Allergens that can set off anaphylaxis

FOOD

- Peanuts
- Tree nuts: almonds, pecans, cashews, walnuts
- Shellfish
- Cow's milk products
- Hen's eggs
- Fish
- Soy
- Wheat

VENOM

- Yellow jackets
- Wasps and hornets
- Honeybees
- Fire ants
- Spiders

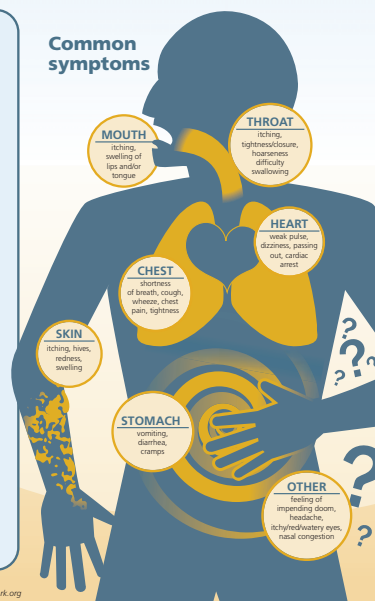
LATEX

- Balloons
- Rubber gloves
- Condoms
- Elastic bands (i.e., physical therapy bands/rubber bands)
- Dental dams

MEDICATION

- Penicillin
- Aspirin, ibuprofen and other NSAID pain relievers

Common symptoms



Epi Everywhere! Every Day! Right Away!

RECOGNIZE THE SEVERITY



Anaphylaxis is life-threatening, unpredictable, presents in multiple ways and can progress quickly. If symptoms appear refer to your Emergency Care/Action Plan.

USE EPINEPHRINE IMMEDIATELY



Epinephrine is the **first line** of treatment to stop the progression of anaphylaxis. Use your epinephrine auto-injector at the **first sign of symptoms** – don't wait to see what happens!

CALL 911



Always call for emergency medical assistance and go to the emergency room for follow-up observation and treatment.

CARRY TWO AUTO-INJECTORS



Keep two epinephrine auto-injectors on hand, in case symptoms recur before emergency medical assistance is available. Up to 35% of people will require more than one dose.

FOLLOW UP



Consult a board-certified allergist for accurate diagnosis and prevention/treatment plan.

Treatment

- The first line treatment for anaphylaxis is epinephrine.
- It's the **ONLY** medication proven to stop a life-threatening allergic reaction.
- Epinephrine needs to be given as soon as anaphylaxis symptoms occur.

Epinephrine FIRST. Epinephrine FAST.

Epinephrine

- Epinephrine is a form of adrenaline, a hormone that naturally occurs in the body.
- Epinephrine is given using an auto-injector or injection into the muscle in the outer thigh.
- When epinephrine is given by injection
 - Increases your heart rate and blood pressure
 - Relaxes the muscles in the airways
 - Reverses swelling and suppresses the body's immune system's response to allergens.
 - Reverses the symptoms of anaphylactic shock and temporarily halts the allergic reaction.

Epinephrine Treatments 2019
AllergyAsthmaNetwork.org • 800.878.4403

Allergy & Asthma Network is a national nonprofit organization dedicated to ending needless death and suffering due to asthma, allergies and related conditions through outreach, education, advocacy and research.

	Brand Devices			Generic Devices		
	Auvi-Q®	EpiPen®	SYMJEPI™	Epinephrine Auto-Injector (Mylan)	Epinephrine Auto-Injector (Impax)	Epinephrine Auto-Injector (Teva)
Type	Auto-Injector	Auto-Injector	Pre-filled syringe	Auto-Injector	Auto-Injector	Auto-Injector
Pediatric Dosage	0.10 mg for 16.5 - 33 lbs. 0.15 mg for 33 - 66 lbs.	0.15 mg for 33 - 66 lbs.	0.15 mg for 33 - 66 lbs.	0.15 mg for 33 - 66 lbs.	0.15 mg for 33 - 66 lbs.	0.15 mg for 33 - 66 lbs.
Adult Dosage	0.3 mg for over 66 lbs. 0.6 to 77 degrees F	0.3 mg for over 66 lbs. 68 to 77 degrees F	0.3 mg for over 66 lbs. 68 to 77 degrees F	0.3 mg for over 66 lbs. 68 to 77 degrees F	0.3 mg for over 66 lbs. 68 to 77 degrees F	0.3 mg for over 66 lbs. 68 to 77 degrees F
Storage Temperature	Room temperature	Room temperature	Room temperature	Room temperature	Room temperature	Room temperature
Administration	Outer middle of thigh	Outer middle of thigh	Outer middle of thigh	Outer middle of thigh	Outer middle of thigh	Outer middle of thigh
Hold Time	2 seconds	2 seconds	2 seconds	3 seconds	10 seconds	3 seconds
Does package include a trainer?	Yes	Yes	No	Yes	No	Yes
Is needle fully retractable or covered inside device after injection?	Yes	Yes	Yes	Yes	No	Yes
Voice prompts	Yes	No	No	No	No	No
Stock School Program	Yes	Yes	No	No	No	No
Manufacturer	Kaleo	Mylan	Adamas Pharmaceuticals	Mylan	Impax Laboratories, Inc.	Teva Pharmaceuticals
Website	www.auvi-q.com	www.epipen.com	www.symjepi.com	www.epipen.com	www.epipenautoinjector.com	www.epinephrine.com
Patient assistance	877-302-8847	800-395-5376	877-253-4017	800-395-5376	800-934-6729	800-210-5451

Reviewed by Stanley Freeman, MD, Vito Iuliano, MD and Dennis Williams, PharmD

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Epinephrine

- Epinephrine is the ONLY drug that will reverse anaphylaxis and should be given as soon as symptoms appear.
- Any delay in giving epinephrine greatly increases the chance of hospitalization.
- Deaths due to anaphylaxis are often associated with either delaying the use of epinephrine or not using it at all.

Antihistamine or Epinephrine?

- Antihistamines will not reverse anaphylaxis. Doctors recommend using an epinephrine auto-injector as the first treatment at the sign of any severe allergic reaction. Epinephrine will not harm a patient.
- Antihistamines only treat a few minor symptoms of anaphylaxis – like hives. Antihistamines take about 30 or more minutes to take effect, which is far too long to treat an urgent medical condition.
- Don't wait. Don't delay giving epinephrine.
- One more time: epinephrine will treat a life-threatening allergic reaction – antihistamines will not.

Anaphylaxis At a Glance

Anaphylaxis is a life-threatening allergic reaction that affects more than one organ system.

Allergens that can set off anaphylaxis

FOOD

- Peanuts
- Tree nuts: almonds, pecans, cashews, walnuts
- Shellfish
- Cow's milk products
- Hen's eggs
- Fish
- Soy
- Wheat

VENOM

- Yellow jackets
- Wasps and hornets
- Honeybees
- Fire ants
- Spiders

LATEX

- Balloons
- Rubber gloves
- Condoms
- Elastic bands (i.e., physical therapy bands/rubber bands)
- Dental dams

Foods with cross-reactive proteins to natural rubber: banana, avocado, chestnut and kiwi

MEDICATION

- Penicillin
- Aspirin, ibuprofen and other NSAID pain relievers

Common symptoms

Epi Everywhere! Every Day! Right Away!

RECOGNIZE THE SEVERITY

Anaphylaxis is life-threatening, unpredictable, presents in multiple ways and can progress quickly. If symptoms are severe, call your Emergency Care/Action Plan.

USE EPI/EPHEDRINE IMMEDIATELY

Epinephrine is the first line of treatment to stop the progression of anaphylaxis. Use your epinephrine as soon as you notice the first signs of anaphylaxis.

CALL 911

Always call for medical assistance. Emergency medical services are available 24/7.

CARRY TWO AUTO-INJECTORS

Keep two auto-injectors on hand, in case symptoms return before emergency medical services are available. Up to 10% of people require more than one auto-injector.

FOLLOW UP

Consult a board-certified allergist for accurate diagnosis and prevention/treatment plan.

Allergy & Asthma Network Resources

Tonya Winders

COVID-19 Information Center

Coronavirus: What You Need to Know

Check here weekly for updated information and news webinars, fact sheets, podcasts and infographics to help you.

- [COVID-19 FAQs →](#)
- [Mental Health Impact of COVID-19 →](#)
- [COVID-19 Myths Busted →](#)
- [Asthma and Covid-19 →](#)
- [Mental Health Tools →](#)
- [Distinguishing between COVID-19 vs Allergies vs Flu →](#)
- [Latex allergy and COVID-19 →](#)
- [COVID-19 Webinars & Videos →](#)
- [COVID-19 School Resources for Allergies & Asthma →](#)
- [AERD and COVID-19 →](#)

For People with Asthma, Allergies and Related Diseases

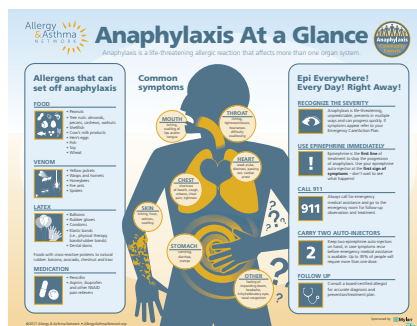
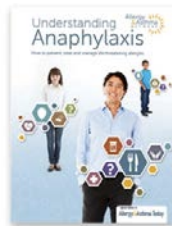
We're here for you!

We know COVID-19 is a serious concern for you if you have asthma, allergies or related diseases. Right now, experts are learning more about the coronavirus every week. We want to make sure you have the most current, accurate and trustworthy information to manage your health.

Poll Question



- Have you visited the Allergy & Asthma Network COVID-19 Information Center?



Publications

Understanding Anaphylaxis

- a “101 Guide” to allergies & anaphylaxis

Epinephrine Treatments Poster

- A guide to the available epinephrine auto-injectors for all ages

Anaphylaxis at a Glance Poster

- Signs, symptoms and recommended treatment

Videos

- Patient Learning Pathways –


- Short videos explaining anaphylaxis in easy to understand terms



TIME FOR QUESTIONS



Record your questions in the question box
We'll get to as many as we can!



JOIN US FOR OUR
NEXT COVID-19 WEBINAR

- The Long-Haul Consequences of COVID-19: Asthma, Allergies and All Conditions
- Thursday, February 4th
- 4:00 PM ET

A Moment for
Providers from the CDC

- The COVID-19 Vaccine
- <https://youtu.be/oErqII0ZdWo>





COVID-19 Vaccine:
Allergies, Anaphylaxis & Answers

Allergyasthmanetwork.org