



HEALTHTRUST®

November 13, 2020

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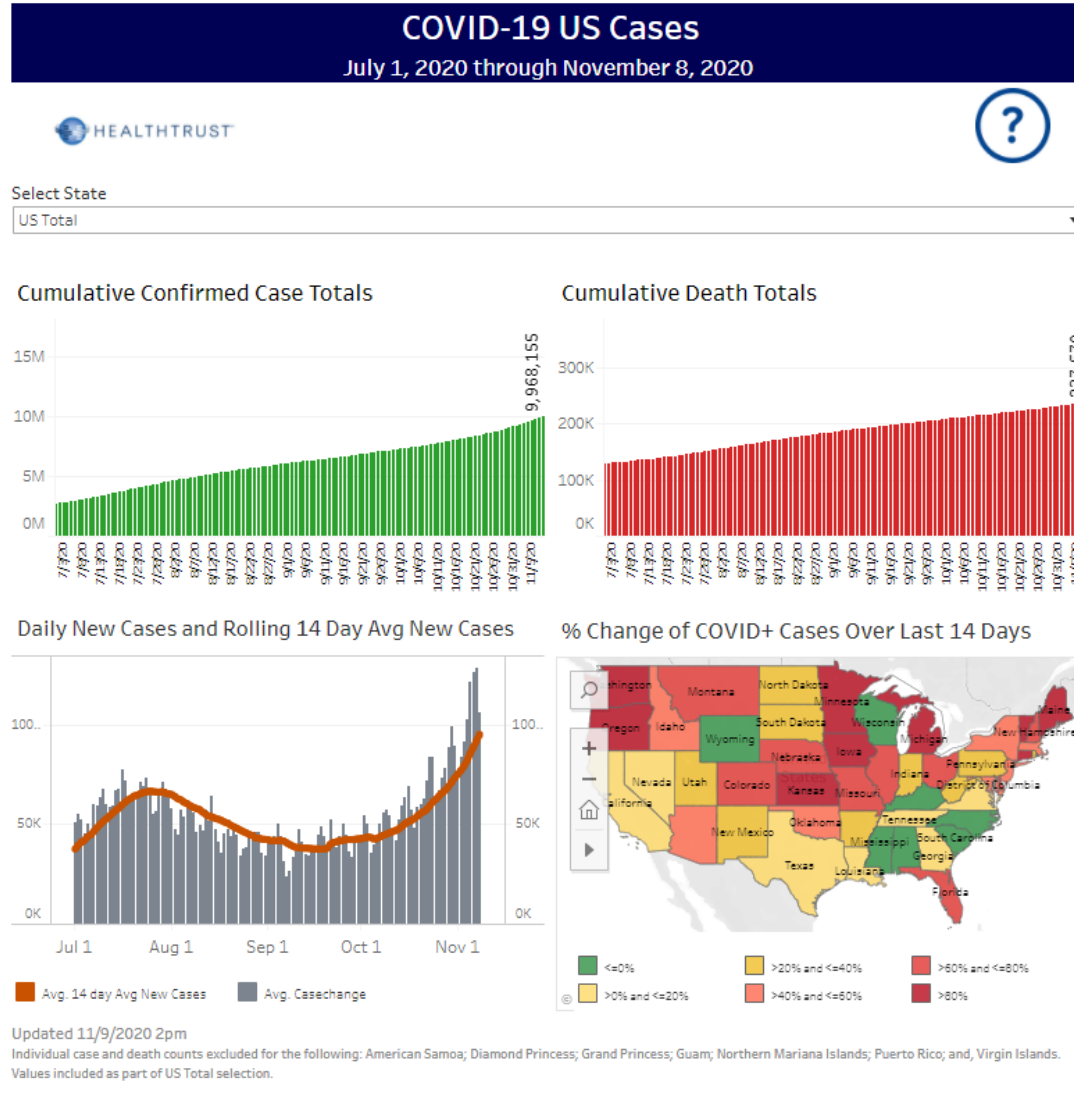
COVID-19 | Vaccine Update

Live webinar held 11/13/20; slides updated 12/03/20

Welcome & Introductions

Special thanks to Emily Singleton, PharmD for content assistance

COVID-19 Bad News, Good News

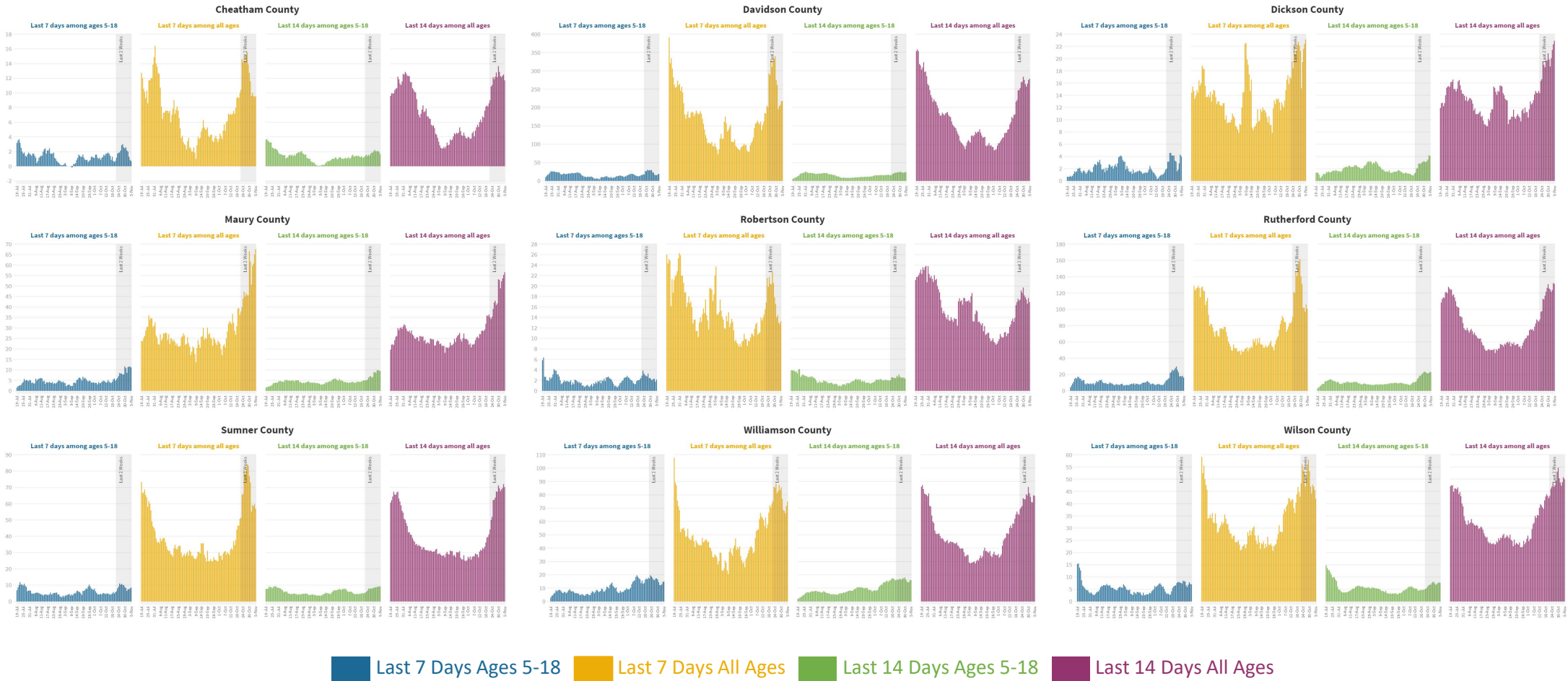


Good News

- Better understanding of disease progression and mitigation strategies
- Transmission related to school attendance
- EUA approval of treatments (convalescent plasma and monoclonal antibodies)
- Early data from Pfizer and BioNTech vaccine is promising
- Moderna results anticipated within weeks

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Average # of New Cases the Last 7 & 14 Days Between School Ages (5–18) & All Ages

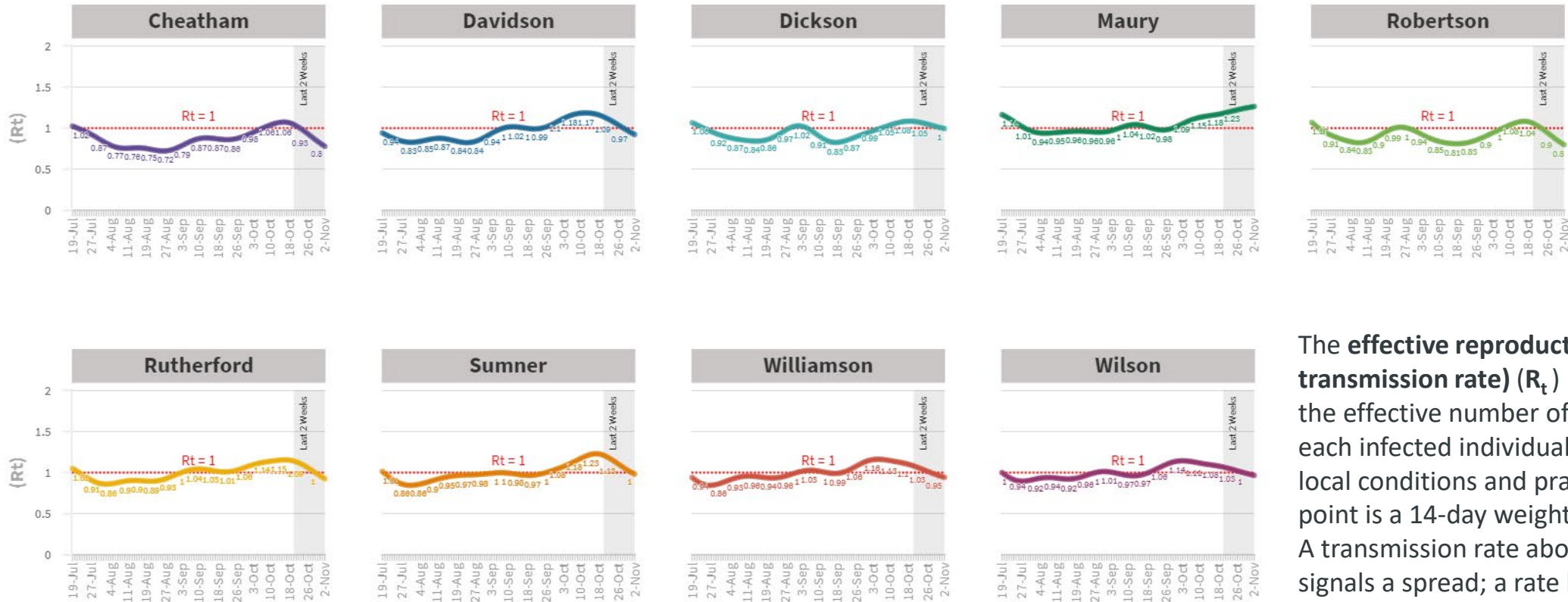


Data Sources: Tennessee Department of Health, Epidemiology and Surveillance Data; The COVID Tracking Project; Johns Hopkins University Center for Systems Science and Engineering (CSSE); Harvard Global Health Institute* Key Metrics for COVID Suppression, A Framework for policy makers and the public. July 2020, https://globalepidemics.org/wp-content/uploads/2020/06/key_metrics_and_indicators_v4.pdf

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Longitudinal Infection Rate Trajectories

14-Day Weighted Average Infection Rates Since July 19



The effective reproduction number (or transmission rate) (R_t) by county measures the effective number of people infected by each infected individual at time t under local conditions and practices. Each data point is a 14-day weighted moving average. A transmission rate above a rate of 1.0 signals a spread; a rate below 1.0 signals the spread is slowing.

Data Sources: Tennessee Department of Health, Epidemiology and Surveillance Data; The COVID Tracking Project; Johns Hopkins University Center for Systems Science and Engineering (CSSE); Harvard Global Health Institute* Key Metrics for COVID Suppression, A Framework for policy makers and the public. July 2020, https://globalepidemics.org/wp-content/uploads/2020/06/key_metrics_and_indicators_v4.pdf

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INFLUENZA VACCINATION IS STILL IMPORTANT

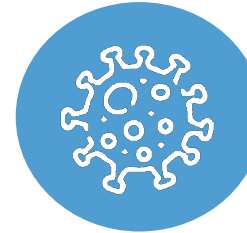


Influenza Vaccine

CDC burden of influenza averted by vaccination last season showed it prevented:

- 7.5 million flu illnesses
- 3.7 million flu medical visits
- 105,000 flu hospitalizations
- 6,300 flu deaths

2019–2020 vaccination coverage among those 6 months and older increased from last season to nearly 52%



COVID-19 Vaccine

COVID-19 Vaccination availability per DOD briefing on Operation Warp Speed

- 10s of millions by the end of December
- 100s millions by January or February

You can receive the influenza & COVID-19 vaccine in the same visit

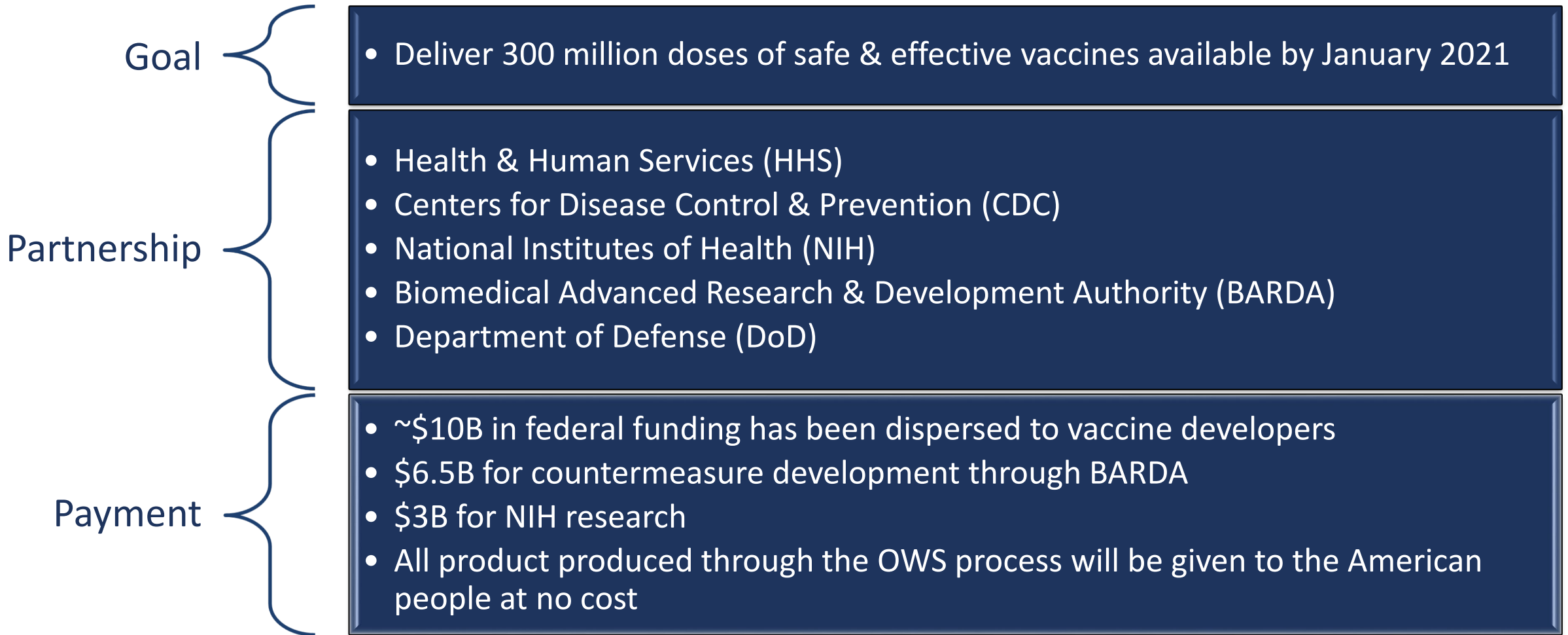
References:

Estimated Influenza Illnesses, Medical visits, Hospitalizations, and Deaths in the United States 2019-2020 Influenza Season. Available at: <https://www.cdc.gov/flu/about/burden-averted/2019-2020.htm>

US Dept of Defense. This week in Operation Warp Speed, October 16,2020 Briefing. Available at: <https://www.defense.gov/Newsroom/Releases/Release/Article/2385035/this-week-in-operation-warp-speed-oct-16-2020/>

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Operation Warp Speed (OWS)



<https://www.hhs.gov/coronavirus/explaining-operation-warp-speed/index.html>

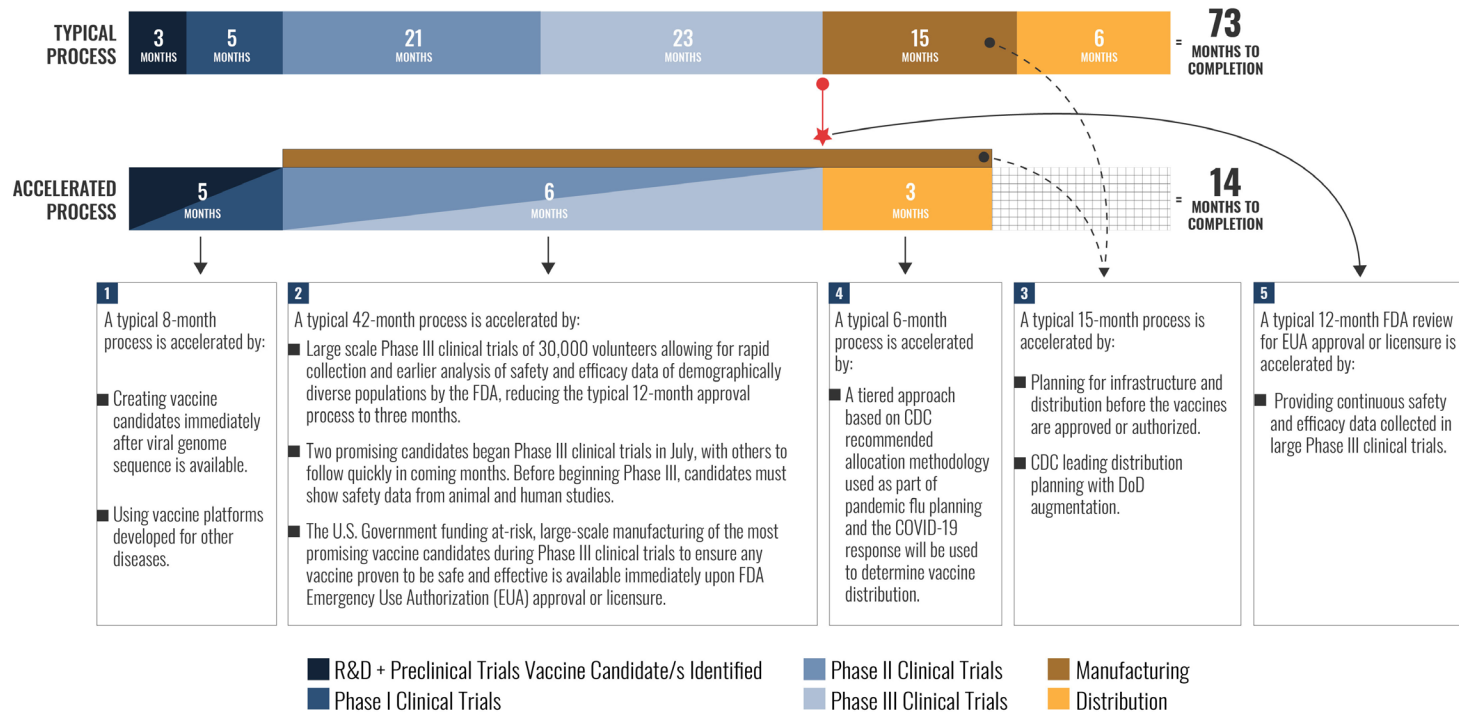
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Historical vs. OWS Vaccine Development Process



OPERATION WARP SPEED ACCELERATED VACCINE PROCESS

MISSION: Deliver 300 million doses of safe and effective vaccine by 1 January 2021.



“Coronavirus: Operation Warp Speed.” U.S. Department of Defense, www.defense.gov/Explore/Spotlight/Coronavirus/Operation-Warp-Speed/.

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Vaccine Candidates

COVID-19 Candidates in Phase 3 in the U.S.

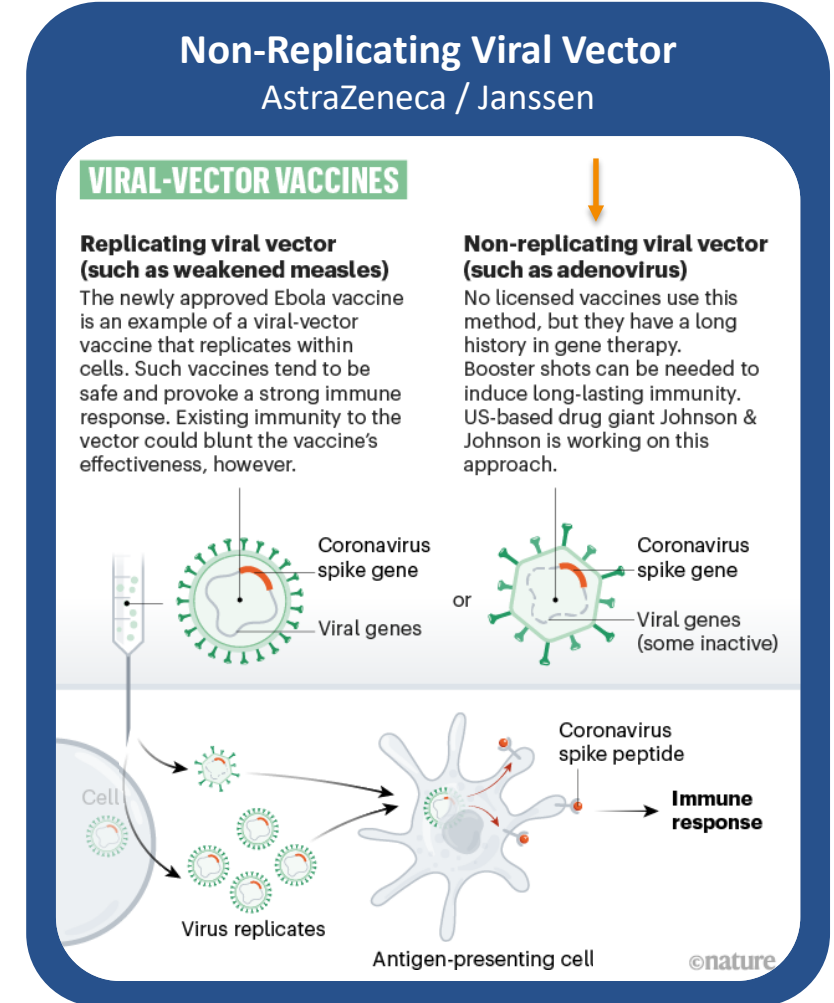
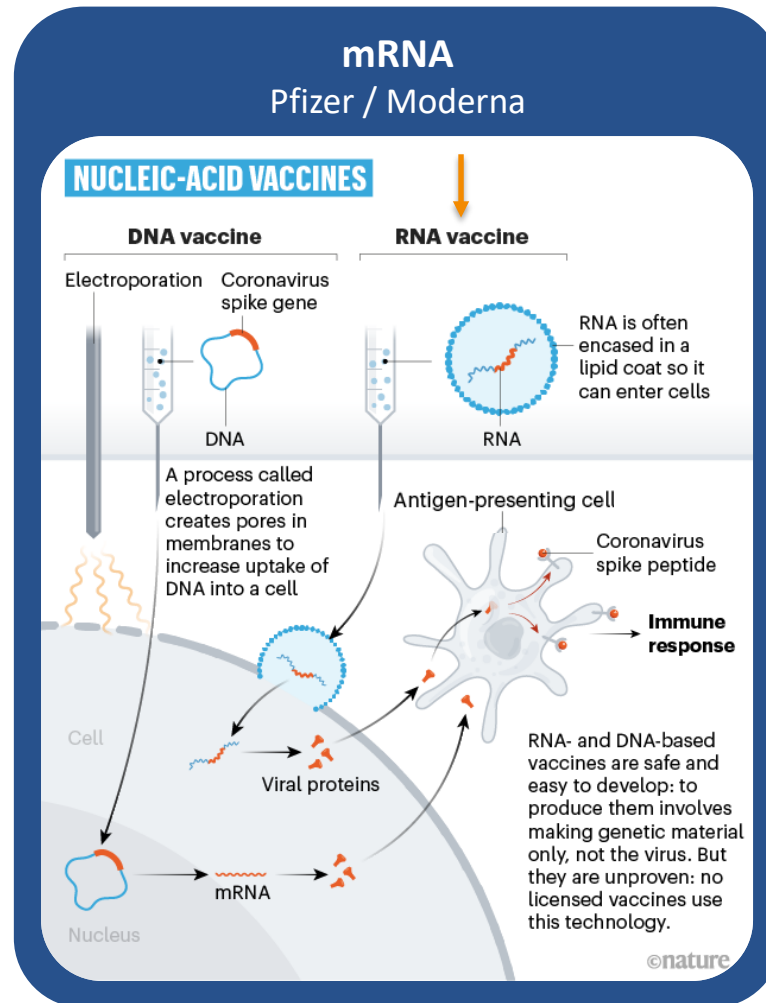
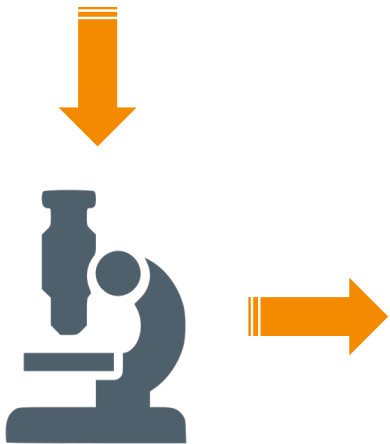
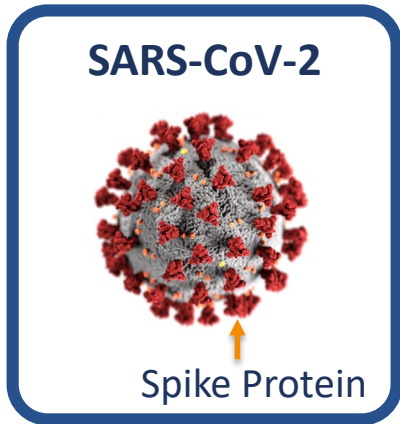
	BNT162b2	mRNA-1273	AZD1222	Ad26.COVS.2.S
Manufacturer	Pfizer & BioNTech	Moderna	AstraZeneca & University of Oxford	Janssen
Platform	mRNA	mRNA	Non-Replicating Viral Vector	Non-Replicating Viral Vector
Phase 3 Study Population	<ul style="list-style-type: none"> • 43,538 participants enrolled • Age 12-85 years 	<ul style="list-style-type: none"> • 30,000 participants enrolled • Age ≥18 years 	<ul style="list-style-type: none"> • ~30,000 participants planned • Age ≥18 years 	<ul style="list-style-type: none"> • ~60,000 participants planned • Age ≥18 years
Dosing	30 mcg/0.3 mL IM, 2 doses 21 days apart	100 mcg/0.5 mL IM, 2 doses 28 days apart	5 × 10 ¹⁰ vp/0.5 mL IM, 2 doses 28 days apart	5 × 10 ¹⁰ vp/0.5 mL IM, 1 dose
How Supplied	Solution for dilution in 5-dose vial	Solution in 10-dose vial	Solution in 10-dose vial	Solution in 5-dose vial
Storage & Stability	<ul style="list-style-type: none"> • 6 months in ultra-low temp freezer at -60 to -80°C • 30 days in thermal shipper at -60 to -80°C • 5 days in fridge at 2-8 °C • After dilution, 6 hours at room temperature 	<ul style="list-style-type: none"> • 6 months in freezer at -20°C • 30 days in fridge at 2-8°C • 12 hours at room temperature • Once entered, 6 hours at room temperature 	<ul style="list-style-type: none"> • In fridge at 2-8°C • 4 hours at room temperature 	<ul style="list-style-type: none"> • 3 months in fridge at 2-8°C • Once entered, 6 hours in fridge at 2-8°C
Timeline	Expect to have data required for EUA by 3 rd week of November then submit for EUA	Expect to have data required for EUA in 2 nd half of November then submit for EUA	Expect to have data later this year	To be determined

https://www.cdc.gov/vaccines/imz-managers/downloads/COVID-19-Vaccination-Program-Interim_Playbook.pdf

<https://clinicaltrials.gov>

Vaccine Candidates' Differing Approaches

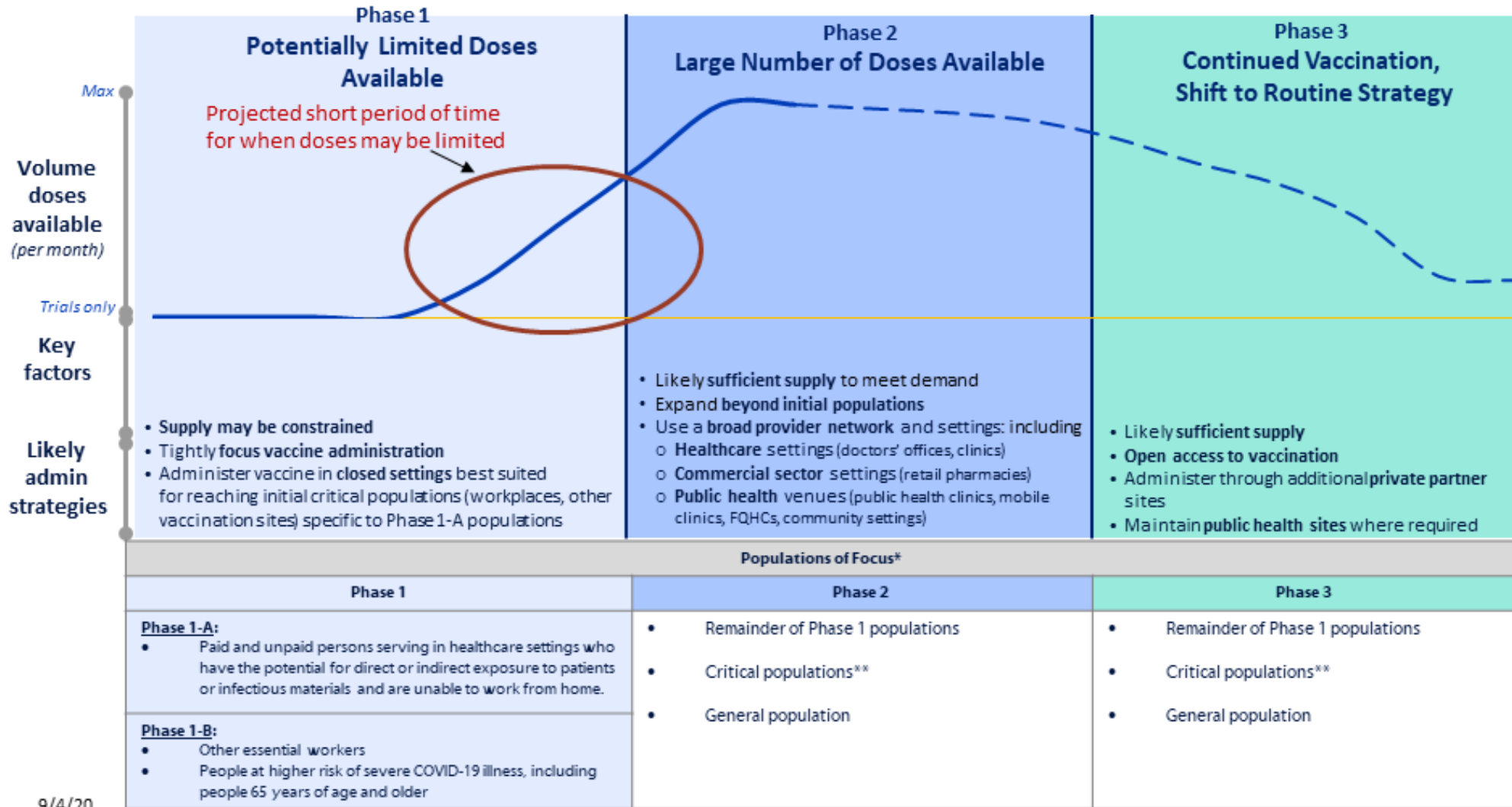
U.S. COVID-19 Candidates in Phase 3



<https://www.nature.com/articles/s41563-020-0746-0>

<https://www.nature.com/articles/d41586-020-01221-y>

Distribution in a Phased Approach



9/4/20

COVID-19 Vaccine Allocation Decision Framework

H = high risk; M = medium risk; L = low risk

The NIH & CDC requested that the National Academies of Sciences, Engineering & Medicine & the National Academy of Medicine (NAM) develop a framework to assist policymakers' plan for equitable allocation of COVID-19 vaccines



NAM findings from Sept. 1 were shared with the CDC's Advisory Committee on Immunization Practices (ACIP)



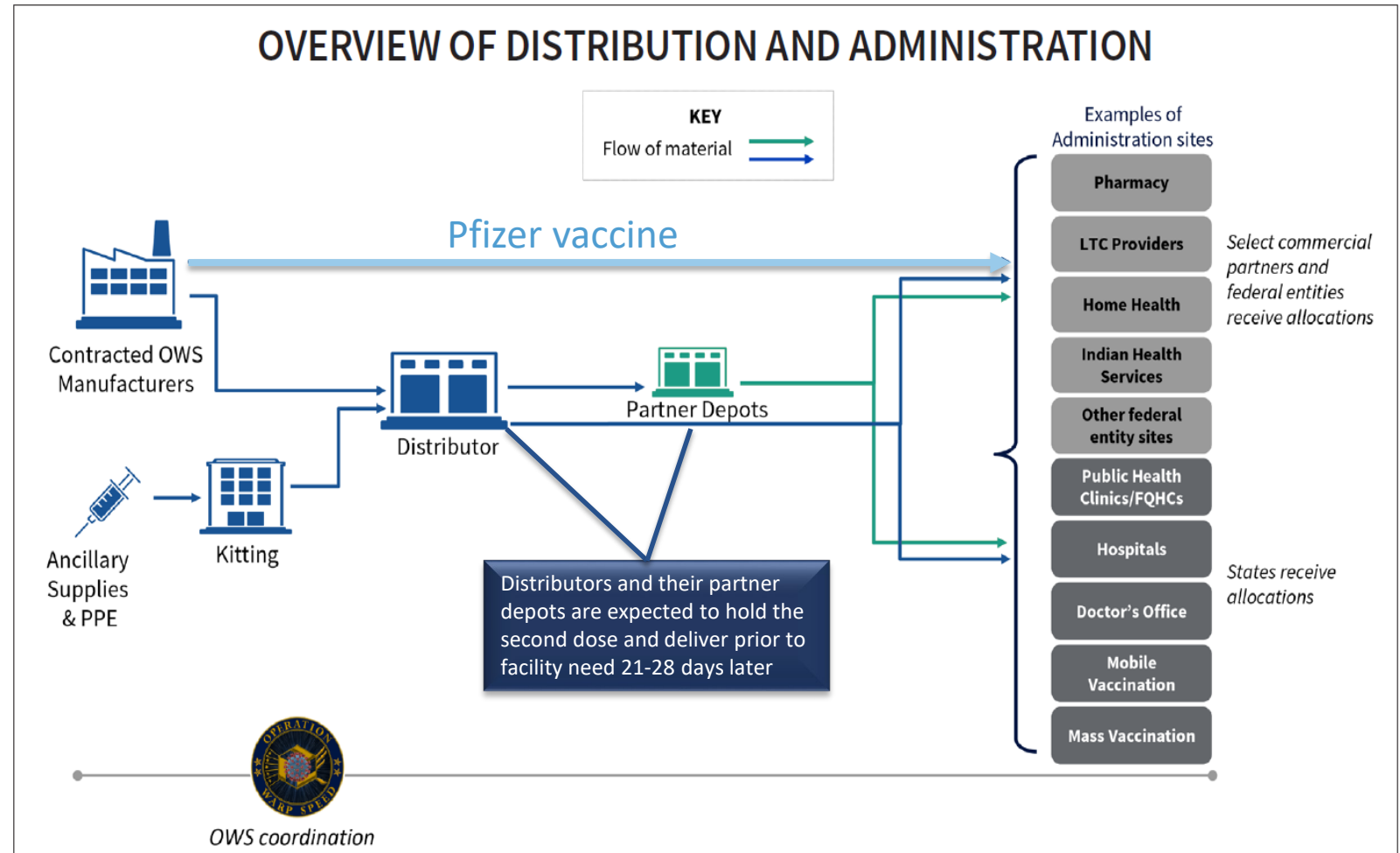
ACIP will review & incorporate epidemiology, vaccine safety, efficacy, quality & implementation issues

Phases	Population Group	Criterion 1: Risk of Acquiring Infection	Criterion 2: Risk of Severe Morbidity and Mortality	Criterion 3: Risk of Negative Societal Impact	Criterion 4: Risk of Transmitting Infection to Others	Mitigating Factors for Consideration
1a	High-risk health workers	H	M	H	H	Adequate access to personal protective equipment. Workplace management of exposure.
1a	First responders	H	M	H	H	Adequate access to personal protective equipment. Workplace management of exposure.
1b	People with significant comorbid conditions (defined as having two or more)	M	H	M	M	Ability to maintain social distance and isolate.
1b	Older adults in congregate or overcrowded settings	H	H	L	M	Effective institutional management of exposure.
2	K-12 teachers and school staff and child care workers	H	M	H	H	Online schooling, especially for lower grades, recognizing educational and social impacts.
2	Critical workers in high-risk settings	H	M	H	M	Adequate access to personal protective equipment. Workplace management of exposure.
2	People with moderate comorbid conditions	M	M	M	M	Ability to maintain social distance and isolate.
2	People in homeless shelters or group homes and staff	H	H	L	H	Adequate access to personal protective equipment. Effective institutional/workplace management of exposure.
2	Incarcerated/detained people and staff	H	M	L	H	Adequate access to personal protective equipment. Effective institutional/workplace management of exposure.
2	All older adults	M	H	L	L	Ability to maintain social distance and isolate.
3	Young adults	H	L	M	H	Ability to maintain social distance and isolate. Closure of congregate settings (e.g., bars).
3	Children	M	L	M	H	Ability to participate in online schooling.
3	Workers in industries important to the functioning of society	M	M	M	M	Adequate access to personal protective equipment. Effective institutional/workplace management of exposure.

<https://www.hhs.gov/sites/default/files/strategy-for-distributing-covid-19-vaccine.pdf>
<https://www.nap.edu/catalog/25917/framework-for-equitable-allocation-of-covid-19-vaccine>

COVID-19 Vaccine Distribution: A Logistical Challenge

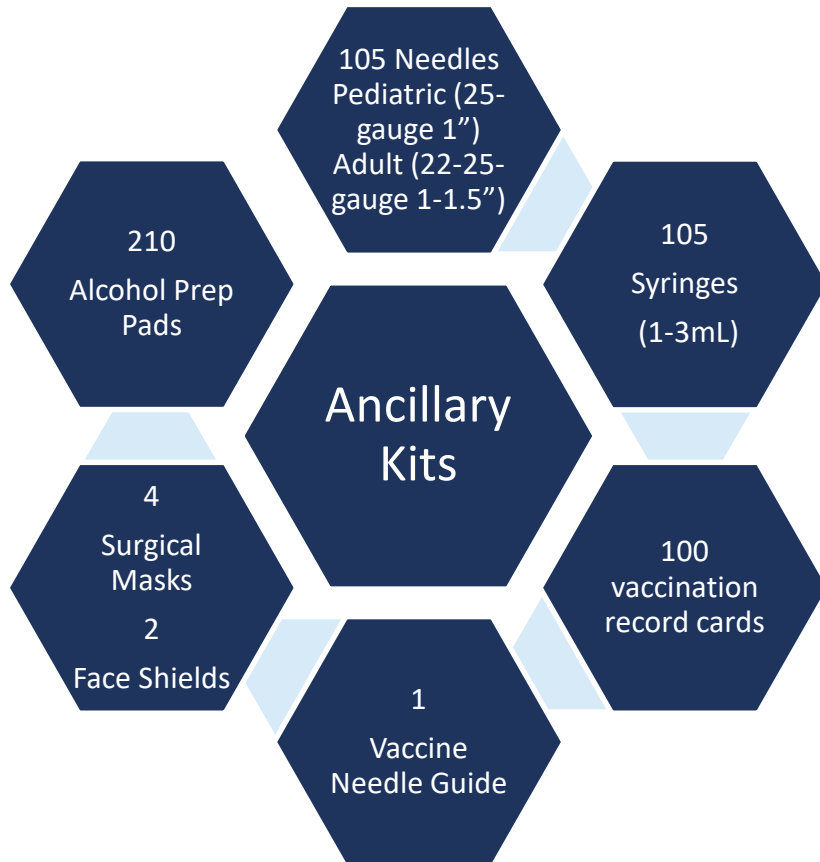
- McKesson will be sole distributor for all COVID-19 vaccines with the exception of Pfizer
- Pfizer vaccines will come direct from Pfizer to administration sites
- Ancillary kits will be supplied separately but shipped to match vaccine delivery schedule
- Partner depots (i.e., FedEx, UPS) have freezer farms to hold shipments
- Ultra cold chain and two-shot vaccination series complicate the scenarios



<https://www.hhs.gov/sites/default/files/strategy-for-distributing-covid-19-vaccine.pdf>

Vaccine Administration Supplies

Administration Ancillary Kits



Diluent Kits & Timing of Delivery

McKesson Distributed Vaccines
For vaccines requiring a diluent to mix, a separate kit with needles, syringes & alcohol pads will be automatically ordered

May be delivered in separate package from vaccine, but arrive on or before vaccine delivery

Pfizer Distributed Vaccines
Combined kit of administration supplies, mixing supplies & vials of diluent will ship together

Additional Supplies Needed

For all vaccine administration

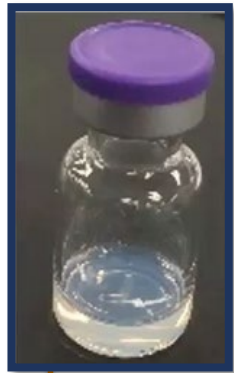
- Sharps containers
- Exam gloves
- Bandages
- Additional PPE required by hospital policy

For Pfizer vaccine

- Cryogenic gloves
- Dry ice shovel / scoop
- Eye protection

<https://www.hhs.gov/sites/default/files/strategy-for-distributing-covid-19-vaccine.pdf>

Pfizer Candidate: How Supplied



1 Vial
= 5 doses



1 Tray
= 195 vials
= 975 doses



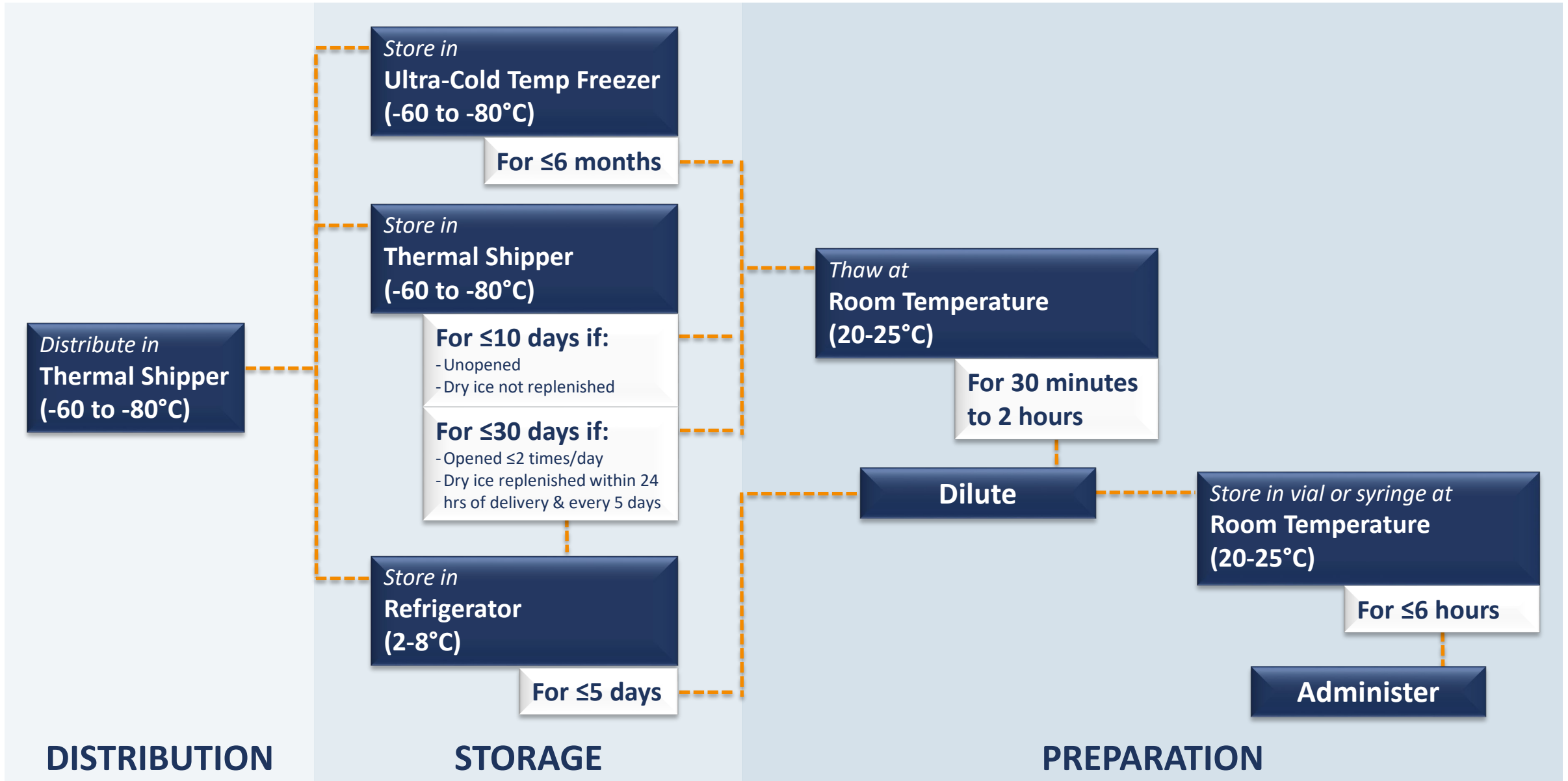
ITEM	DESCRIPTION
1	DRY ICE POD
2	PAYLOAD (VIAL TRAYS)
3	INNER LID
4	PAYLOAD SLEEVE
5	OUTER CARTON

Weights and Dimensions	
Tare Weight (Inc. Dry-Ice)	8.5kg (31.5kg)
Volumetric Weight	15.0kg
Payload Space L x W x H	245x245x241mm
Shipper Dimensions L x W x H	400x400x560mm

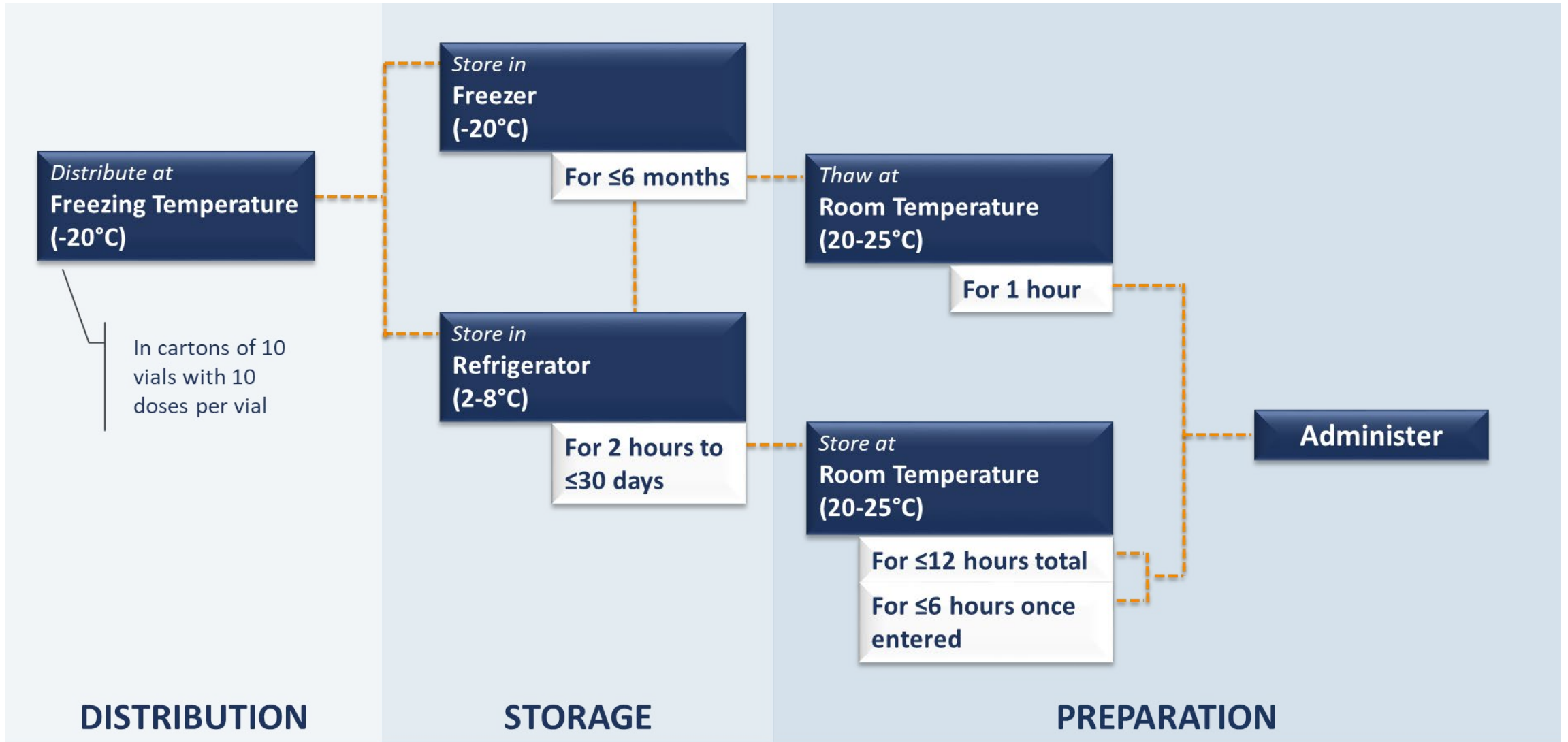
1 Thermal Shipper
= 5 trays
= 975 vials
= 4,875 doses

https://www.cdc.gov/vaccines/imz-managers/downloads/COVID-19-Vaccination-Program-Interim_Playbook.pdf
<https://www.pfizer.com/>

Pfizer Candidate: Storage & Stability



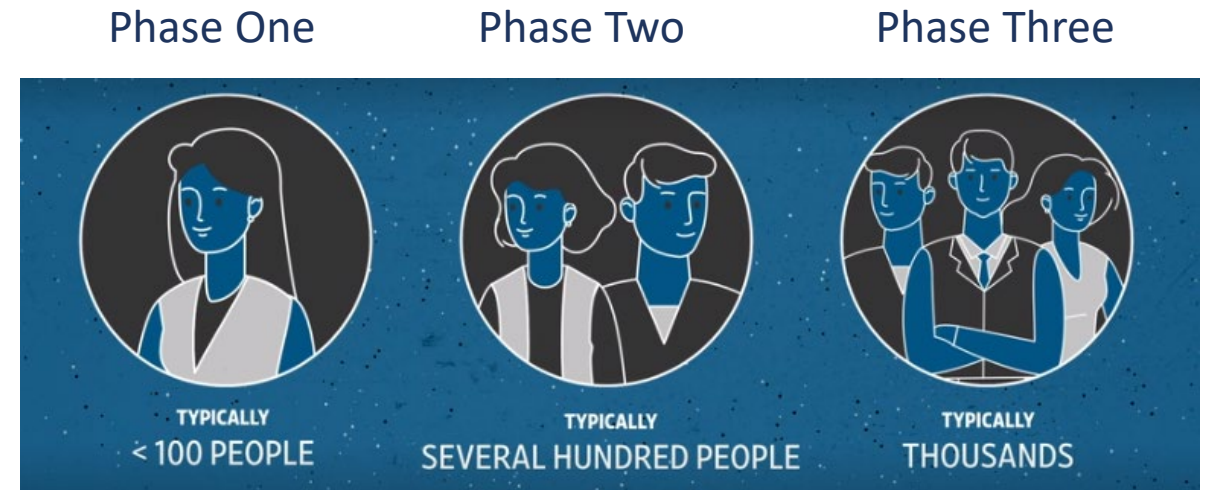
Moderna Candidate: How Supplied & Storage & Stability



https://www.cdc.gov/vaccines/imz-managers/downloads/COVID-19-Vaccination-Program-Interim_Playbook.pdf
<https://www.modernatx.com/>

How We Have Expedited Development

- Prior knowledge of coronaviruses (SARS, MERS)
- Improvement in gene sequencing
- Advancements in bioengineering tech
 - Weakened virus (Flu shots) – expensive & time-consuming
 - Spike Proteins (Sanofi, AZ)
 - Viral vector (J&J)
 - Genetic code (Inovio, Pfizer, Moderna) – first in class
- Government support & funding
 - \$10 Billion in funding
 - Allows for parallel testing to occur without risk of losing millions
- Shortened testing timeline
 - Cells
 - Animals
 - Human
 - ✓ Phase 1, 2 and 3 done in parallel
 - ✓ Very costly – but government funded



COVID-19 Vaccine Safety & Efficacy

Pre-approval 5 checkpoints



Post-approval safety monitoring

- Vaccine Adverse Event Reporting System
- Vaccine Safety Datalink
- Clinical Immunization Safety Assessment Project
- FDA and The Centers for Medicare and Medicaid Services
- FDA Biologics Effectiveness and Safety System
- FDA: Sentinel Initiative
- Department of Defense
- Department of Veterans Affairs
- Indian Health Service

Expanded safety monitoring

- CDC: V-SAFE
- CDC National Healthcare Safety Network
- FDA: Other large insurer/payer databases

References:

<https://www.cdc.gov/coronavirus/2019-ncov/vaccines/safety.html>

<https://www.fda.gov/media/139638/download>

Program Planning – Getting Started

Connect with your jurisdiction

- Jurisdictions consist of:
 - 50 states
 - 6 cities (Chicago, Houston, Philadelphia, District of Columbia, New York City & San Antonio)
 - 8 territories (American Samoa, Guam, Marshall Islands, Micronesia, N. Mariana Islands, Palau, Puerto Rico, U.S. Virgin Islands)
 - 1 federal entity – Indian Health Services
- Each jurisdiction developed, and submitted for approval, its COVID-19 Vaccination Plan, based on the guidance from the CDC
- Access to executive summaries of these plans is available [here](#)
- The HealthTrust Vaccination Checklist

Each location wishing to receive/administer COVID-19 vaccine (point of dispensing) must work with its jurisdiction to complete the Vaccination Provider Enrollment & the CDC COVID-19 Vaccination Provider Profile form for each location where the vaccine will be administered.

References : <https://www.cdc.gov/vaccines/covid-19/covid19-vaccination-guidance.html>
https://www.cdc.gov/vaccines/imz-managers/downloads/COVID-19-Vaccination-Program-Interim_Playbook.pdf

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HEALTHTRUST
COVID-19 VACCINE
Checklist for Vaccine Preparation
10/29/20

Date	Activity	Additional Resources/Information
Pre-Vaccine Enrollment		
	Consider establishing a COVID-Vaccine Coordinator	• This person will stay abreast of vaccine progress and availability, assist with coordination of operational considerations and ensure appropriate staff education.
	Review jurisdiction COVID-19 Interim Vaccination Plan	• Internet search jurisdiction name and "COVID-19 Vaccination Plan".
	Check jurisdiction requirements for vaccination enrollment	• This varies by jurisdiction, check the vaccination plan for details.
	Complete the COVID-19 Program Provider Agreement	• This form is required by the CDC, but submitted to jurisdiction. Many jurisdictions are creating on line versions of this form for submission. Review a draft of the agreement.
	Complete the COVID-19 Vaccination Program Provider Profile Form	• This form is required by the CDC, but submitted to jurisdiction. Many jurisdictions are creating online versions of this form for submission. Information to have available can be located here .
	Consider your capacity to store and administer a two-stage vaccine 21-28 days apart	• Storage, staffing and patient flow.
Immunization Information System (IIS)		
	Identify the system the jurisdiction is using to submit vaccination information	• The system utilized varies by jurisdiction. Check your jurisdiction's plan.
	Confirm facility is enrolled in the system. If not take steps to enroll	
	Request or verify user access for individuals who will be providing vaccines and entering patient information into the IIS	
	Verify if EMR in use will communicate with IIS	

[Click to download.](#)

Consider Current Processes for Influenza Vaccination During COVID-19

SIMILARITIES

- Appropriate PPE for vaccine administrators
- Schedule appointments
- Screen for COVID-19 symptoms
- Call from car prior to entering
- Ensure patient flow to avoid congestion prior to and after vaccination
- Maintain social distancing and universal masking

DIFFERENCES

- Ordering
- Distribution
- Storage
- Reactogenicity
- Education

Ordering & Distribution



Influenza Vaccine Pull With Open Dispensing

- Order vaccine and it is delivered to the site
- Points of dispensing (POD) are open
- Vaccine can be administered to any patient
- Vaccine is accessible in multiple locations



COVID-19 Vaccination Push/Closed Distribution

Initial Phases (I/II) of vaccination

- Vaccine is ordered by the jurisdiction through the VTrkS System
- The vaccine is pushed to the jurisdictions as it becomes available
- The jurisdiction allocates the vaccine to predetermined points of dispensing based on specific criteria
 - Jurisdiction Vaccination Plan
 - Advisory Committee for Immunization Practices
 - Sites ability to vaccinate target population
 - POD must file appropriate documents with the jurisdiction
- Vaccine is distributed to a defined population within the POD (closed dispensing)

References:

US Dept of Defense. This week in Operation Warp Speed, October 16,2020 Briefing. Available at: <https://www.defense.gov/Newsroom/Releases/Release/Article/2385035/this-week-in-operation-warp-speed-oct-16-2020/>

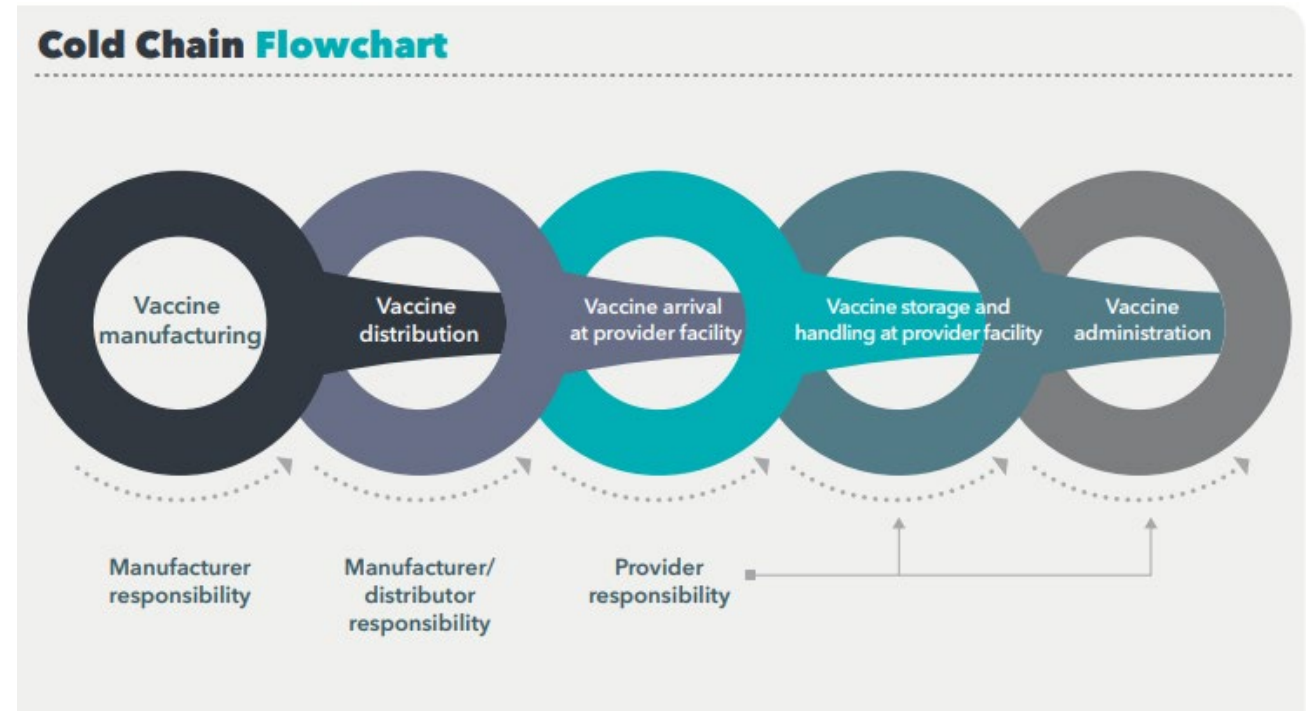
CDC COVID-19 Vaccination Program Interim Playbook Jurisdiction Operations. Available at: https://www.cdc.gov/vaccines/imz-managers/downloads/COVID-19-Vaccination-Program-Interim_Playbook.pdf

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Storage

Risk of improper storage & security risk

- Each of the COVID-19 vaccines has different storage requirements
- Concerns have been voiced regarding security risk
- Delivery locations should have availability of 24-hour delivery with two points of contact for each location
- Review of standard operating procedures for vaccine delivery and security is recommended
- Ensure all staff are educated as to proper delivery and security procedures
- Staff must be educated on proper storage and handling of each vaccine
 - Dry ice management
 - Viability of vaccine once thawed



References: CDC COVID-19 Vaccination Program Interim Playbook Jurisdiction Operations. Available at: https://www.cdc.gov/vaccines/imz-managers/downloads/COVID-19-Vaccination-Program-Interim_Playbook.pdf

CDC Vaccine Storage and Handling Toolkit Available at : <https://www.cdc.gov/vaccines/hcp/admin/storage/toolkit/storage-handling-toolkit.pdf>

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Reactogenicity – Body’s Local & Systemic Response to Vaccine

Safe vaccines can have significant reactogenicity. Note: all injections are likely to cause local pain & tenderness.

Messenger RNA Vaccine	Systemic Reaction Type (mild to moderate)	Timing of Reaction
Pfizer mRNA	Fever, chills, HA, myalgia, nausea	More significant after second dose
Moderna mRNA	Chills, HA, myalgia, fatigue	More significant after second dose
Viral Vectored Vaccine	Systemic Reaction Type (mild to moderate)	Timing of Reaction
AstraZeneca ChAd Spike	Chills, feverish, HA, malaise, muscle ache	More significant after first dose
Janssen Ad26 Spike	Fatigue, HA, myalgia, fever	More significant after first dose (within 2 days, lasting 2 days)
SS-Protein Based	Systemic Reaction Type	Timing of Reaction
Novavax	Systemic: Fatigue, HA, myalgia, malaise	Single dose vaccine

MHJ Lifesciences COVID-19 Race for a Vaccine webinar October 27, 2020
 Available at: <https://www.mjhlifesciences.com/covid/race-for-vaccine>

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Staff Education

CDC recommended education

- Different vaccines: Storage, administration
- Vaccine development and safety
- Who will receive the vaccine when (Phase Ia, Ib, II, III)
- Currently no vaccination dosages for pediatric patients
- Who is considered a high-risk patient
- Vaccine administration record
- Vaccine adverse event reporting system (VAERS)
- Use of [vaccine finder](#)
- Necessary patient education:
 - Vaccine development and safety
 - Vaccinate even if previously COVID-19 positive
 - Two vaccines 21–28 days apart
 - Process for reminder notification
 - EUA process and paperwork
 - Potential side effects

COVID-19 Vaccine Comparative Matrix

Vaccine Platform	Vaccine	Supplier	Trial Phase Status	Administration Route	Number of Doses	How Supplied	Distribution	Storage & Stability	U.S. Commitments
Messenger RNA	mRNA-1273	Moderna	Phase 3	IM	Likely 2	Likely powder in vial; reconstitute with saline	Currently 20°C	Currently 2–8°C	100 million doses ± 400 million doses
	BNT162b2	Pfizer & BioNTech	Phase 3	IM	Likely 2	Likely powder in 5-dose vial; reconstitute with saline	Likely ultra-cold chain	Phase 3 • 6 months in ultra-low temperature freezer • 15 days in dry ice • 5 days at 2–8°C • 24 hours at room temperature for 6 hours	100 million doses ± 500 million doses
Non-Replicating Live Attenuated	AD26.COV2.5	Johnson & Johnson	Phase 3	IM	Potentially 1	Currently solution in single-use vial	Currently cold chain	Expected to be -20°C for 2 years or 2–8°C for 18 months	100 million doses ± 200 million doses
	AZD1222	AstraZeneca & University of Oxford	Phase 3	IM	Likely 2	Currently solution in vial	Currently cold chain	Currently 2–8°C	100 million doses
DNA	INO-4800	Inovio & Beijing Advotect	Phase 1	ID + IP	Likely 2	Not Available	Not Available	Not Available	Not Available; not part of OHSU
	NIH-COV2373	Novavax	Phase 1/2	IM	Likely 2	Solution	Not Available	Currently 2–8°C	100 million doses
	TB0	Sanoofi & GlaxoSmithKline	Phase 1/2	IM	Likely 1 or 2	Not Available	Not Available	Not Available	100 million doses ± 500 million doses

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Recommended COVID-19 Vaccination Provider Training

Created 10/29/20

The CDC and the jurisdiction will provide educational tools to assist with the necessary training of vaccination providers. Tracking of essential training will be completed at the jurisdiction and will determine the most efficient method of training delivery and tracking. The CDC recommends the following as minimum training for vaccine providers:

- ACIP COVID-19 vaccine recommendations, when available
- How to order and receive COVID-19 vaccines
- COVID-19 vaccine storage and handling (including transport requirements)
- How to administer vaccines, including reconstitution, use of adjuvants, appropriate needle size, aseptic sites for vaccine administration, avoiding shoulder injury with vaccine administration, etc.
- How to document and report vaccine administration via the jurisdiction's IS or other external system
- How to manage vaccine inventory, including accessing and managing product expiration dates
- How to report vaccine inventory
- How to manage temperature excursions
- How to document and report vaccine waste/spillage
- Procedures for reporting incidents and events: adverse events as well as vaccine administration errors to VAERS
- Providing link back sheets or VHS to vaccine recipients (how to submit facility information for COVID-19 vaccination clinics to CDC's Vaccine Finder (particularly for pharmacies or other high-volume vaccination providers/clinics))

References:
Centers for Disease Control and Prevention. COVID-19 Vaccination Program Interim Playbook for Jurisdiction Operations. Published on line 9/18/2020. https://www.cdc.gov/vaccines/imz-managers/downloads/COVID-19-Vaccination-Program-Interim_Playbook.pdf. Accessed 10/20/2020.

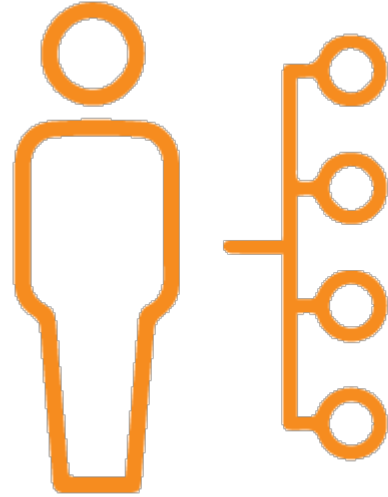
[Click to download.](#)

References: CDC COVID-19 Vaccination Program Interim Playbook Jurisdiction Operations. Available at: https://www.cdc.gov/vaccines/imz-managers/downloads/COVID-19-Vaccination-Program-Interim_Playbook.pdf

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COVID-19 Vaccine Coordinator

Responsible for all vaccine management activities, including an in-depth understanding of the jurisdiction's plan for vaccination



RESPONSIBILITIES

- Receive, process and maintain records of inventory
- Ensure acceptable temperature ranges have been maintained during transport
- Maintain proper vaccine storage & monitoring
- Request new inventory
- Maintain list of ordering and vaccinating providers with credentials
- Ensure proper education of staff


CDC COVID-19 Vaccination Program Interim Playbook Jurisdiction Operations. Available at: https://www.cdc.gov/vaccines/imz-managers/downloads/COVID-19-Vaccination-Program-Interim_Playbook.pdf

Vaccine coordinator posting <https://www.vdh.virginia.gov/content/uploads/sites/11/2016/04/VaccineCoordinator.pdf>

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For more COVID-19 Vaccine Resources

<https://education.healthtrustpg.com/covid-19-resources/#vaccine-information>

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COVID-19 VACCINE

Checklist for Vaccine Preparation

10/29/20

Date	Activity	Additional Resources/Information
Pre-Vaccine Enrollment		
	Consider establishing a COVID-Vaccine Coordinator	<ul style="list-style-type: none"> This person will stay abreast of vaccine progress and availability, assist with coordination of operational considerations and ensure appropriate staff education.
	Review jurisdiction COVID-19 Interim Vaccination Plan	<ul style="list-style-type: none"> Internet search jurisdiction name and "COVID-19 Vaccination Plan".
	Check jurisdiction requirements for vaccination enrollment	<ul style="list-style-type: none"> This varies by jurisdiction, check the vaccination plan for details.
	Complete the COVID-19 Program Provider Agreement	<ul style="list-style-type: none"> This form is required by the CDC, but submitted to jurisdiction. Many jurisdictions are creating online versions of this form for submission. Preview a draft of the agreement.
	Complete the COVID-19 Vaccination Program Provider Profile Form	<ul style="list-style-type: none"> This form is required by the CDC, but submitted to jurisdiction. Many jurisdictions are creating online versions of this form for submission. Information to have available can be located here.
	Consider your capacity to store and administer a two-stage vaccine 21-28 days apart	<ul style="list-style-type: none"> Storage, staffing and patient flow.
Immunization Information System (IIS)		
	Identify the system the jurisdiction is using to submit vaccination information	<ul style="list-style-type: none"> The system utilized varies by jurisdiction. Check your jurisdiction's plan.
	Confirm facility is enrolled in the system. If not take steps to enroll	
	Request or verify user access for individuals who will be providing vaccines and entering patient information into the IIS	
	Verify if EMR in use will communicate with IIS	

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Education & Clinical Resources

COVID-19 Vaccine Comparative Matrix

Created: 10/28/20

Vaccine Platform	Vaccine	Supplier	Trial Phase Status	Administration Route	Number of Doses	How Supplied	Distribution	Storage & Stability	U.S. Commitments
Messenger RNA	mRNA-1273	Moderna	Phase 3	IM	Likely 2	Likely powder in vial; reconstitute with saline	Currently -20°C	Currently 2-8°C	100 million doses ± 400 million doses
	BNT162b2	Pfizer & BioNTech	Phase 3	IM	Likely 2	Likely powder in 5-dose vial; reconstitute with saline	Likely ultra-cold chain	Planned: • 6 months in ultra-low temperature freezer • 15 days in dry ice thermal shipper • 5 days at 2-8°C • Diluted vial stable at room temperature for 6 hours	100 million doses ± 500 million doses
Non-Replicating Viral Vector	Ad26.COV2.S	Johnson & Johnson	Phase 3	IM	Potentially 1	Currently solution in single-use vial	Currently cold chain	Expected to be -20°C for 2 years or 2-8°C for 23 months	100 million doses ± 200 million doses
	AZD1222	AstraZeneca & University of Oxford	Phase 3	IM	Likely 2	Currently solution in vial	Currently cold chain	Currently 2-8°C	300 million doses
DNA	INO-4800	Inovio & Beijing Advaccine	Phase 1	ID + EP	Likely 2	Not Available	Not Available	Not Available	Not Available - not part of QWS
Protein Subunit	NVX-CoV2373	Novavax	Phase 1/2	IM	Likely 2	Solution	Not Available	Currently 2-8°C	100 million doses ± 500 million doses
	TBD	Sanofi & GlaxoSmithKline	Phase 1/2	IM	Likely 1 or 2	Not Available	Not Available	Not Available	100 million doses ± 500 million doses

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COVID-19 VACCINE PREPARATION – SUPPLIES

Vaccine orders will be approved and transmitted in CDC's Vaccine tracking System (VTrackS) by jurisdiction for each vaccination provider (jurisdictions consist of: 50 states, 8 territories, and 6 large cities). Vaccine (and adjuvant or diluent, if required) will be shipped in quantities of 100 to provider sites within 48 hours of order approval by the immunization program, if supply is available.

Ancillary supply kits and diluent (if required) will ship separately from the vaccine due to different cold chain requirements, but shipment will be timed to arrive with or before the vaccine.

Each Ancillary Kit will have enough supplies to administer 100 doses of the vaccine, including:

- Needles – 105 per kit (various sizes for the population served by the ordering vaccination provider)
- Syringes – 105 per kit
- Alcohol prep pads – 210 per kit
- 4 surgical masks and 2 face shields for vaccinators – per kit
- COVID-19 vaccination record cards for vaccine recipients – 100 per kit
- **Note:** Pfizer kits are delivered in quantities of 975 doses. These kits will contain 1 ml syringes because they are small volume vaccines.
- Kits that require reconstitution with diluent or mixing adjuvant will include additional necessary syringes, needles and other supplies for this purpose.

What is not included:

- Sharps containers
- Gloves
- Bandages
- Gowns

The CDC advised jurisdictions to make plans to provide additional PPE. Some of the jurisdictions have included this information in their individual plans for COVID-19 distribution.

Please check with your local jurisdiction to determine plans for these types of supplies.

Additional items to consider:

Some of these vaccines will be delivered in dry ice which will need to be monitored and may need to be replenished. Therefore it is recommended to also consider the following:

- Access to dry ice suppliers
- Equipment for handling of dry ice
- Thermometers for monitoring temperatures
- **Note:** The Pfizer thermal shippers are supposed to come with a reusable GPS temperature monitoring device, therefore thermometer may not be necessary.
- Tracking tool for recording temperatures, sample found [here](#)

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Upcoming COVID-19 Vaccine Podcast & COVID-19 Collaborative Community



**Join our mailing list or
Collaborative Community**

Contact Elle Petty

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December 2020 – COVID-19 Vaccine Podcast

- Dr. John Young, CMO, HealthTrust and Dr. Kelly Moore, Founder and President of The Vaccine Advisor, discuss vaccine distribution planning, vaccine prioritization and programs.
- Join our Candid Conversations mailing list for podcast news and updates

COVID-19 Collaborative Community (HealthTrust Members Only)

- Directly connect with peers for collaborative learning in real-time to learn best practices
- Quick and easy access to HealthTrust COVID resources
- Awareness of HealthTrust educational events