



The Biopharmaceutical Industry's Efforts to Beat Coronavirus

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Our Commitment to Beat Coronavirus



Our Commitment to *Beat* Coronavirus

We are **rapidly screening our vast global libraries of medicines** to identify potential treatments and have numerous clinical trials underway to test new and existing therapies

We are **dedicating our top scientists and using our investments in new technologies** to speed the development of safe and effective vaccines

We are **sharing the learnings from clinical trials in real time** with governments and other companies to advance the development of additional therapies

We are **expanding our unique manufacturing capabilities and sharing available capacity** to ramp up production once a successful medicine or vaccine is developed

We are **collaborating with government agencies, hospitals, doctors and others** to donate supplies and medicines to help those affected around the world

We are **working with governments and insurers** to ensure that when new treatments and vaccines are approved they will be available and affordable for patients

Factors Contributing to the Industry's Response

Armed with experience garnered from previous outbreaks and a vast storehouse of knowledge about infectious diseases like influenza, malaria and HIV, researchers are working to develop and deliver diagnostics, treatments and vaccines to save lives and restore the rhythms of daily life for billions of people.

DIAGNOSTICS

It's essential to know who has been infected.

- Companies are accelerating the development of diagnostic testing capabilities to scale-up screening and working in partnership with governments and diagnostic companies on existing screening programs to supplement testing.

EXISTING MEDICINES

Medicines approved for other diseases may have some benefit for patients with COVID-19.

- Researchers are testing antivirals, antibiotics and other medicines.
- These medicines have the potential to reduce the burden of COVID-19 on hospitals by reducing the length and severity of disease.

NEW TREATMENTS

Various drugs are in development, with some entering human trials.

- Researchers are working on new antiviral medications to interfere with ways the virus infects cells and reproduces.
- Antibody-based drugs may be able to mobilize the immune system against the virus.

VACCINES

A vaccine would provide a preventive approach to beating COVID-19.

- Although vaccines can take longer to develop than other treatments, once enough people in a community are vaccinated, individuals are protected and the community risk of transmission is reduced. A variety of biopharmaceutical companies are taking different approaches to find a vaccine. More "shots on goal" will significantly increase the chances of success.

MANUFACTURING

We are committed to manufacturing these medicines and making them available to those who need them.

- We're ramping up output of existing medicines with demonstrated benefit and investing in infrastructure to accelerate production of new treatments.
- Biopharmaceutical companies are planning and building manufacturing capacity without assurance medicine and vaccine candidates will ultimately be successful, to ensure that if one is, distribution can occur rapidly.
- America's biopharmaceutical companies are ensuring that solutions can be made available quickly to everyone who needs them.

The background is a solid teal color. On the left side, there is a complex white line pattern consisting of interconnected hexagons and circles, resembling a molecular structure. Scattered across the right side of the teal area are several smaller, isolated white hexagons. At the bottom of the slide, there is a horizontal band with a fine, diagonal white line pattern.

Supporting Diagnostic Efforts and Developing Treatments and Vaccines

Working Closely with FDA to Support Diagnostic and Serological Testing



FDA has issued **65 emergency use authorizations** for COVID-19 diagnostic tests

Data as of 5/8/2020



185 serological tests to evaluate antibodies to SARS-CoV-2 are being offered in the United States

[FDA Diagnostic FAQs](#)

Developing Treatments and Vaccines to Fight COVID-19

There are **750 clinical trials under way** across the globe for vaccinations and treatments.



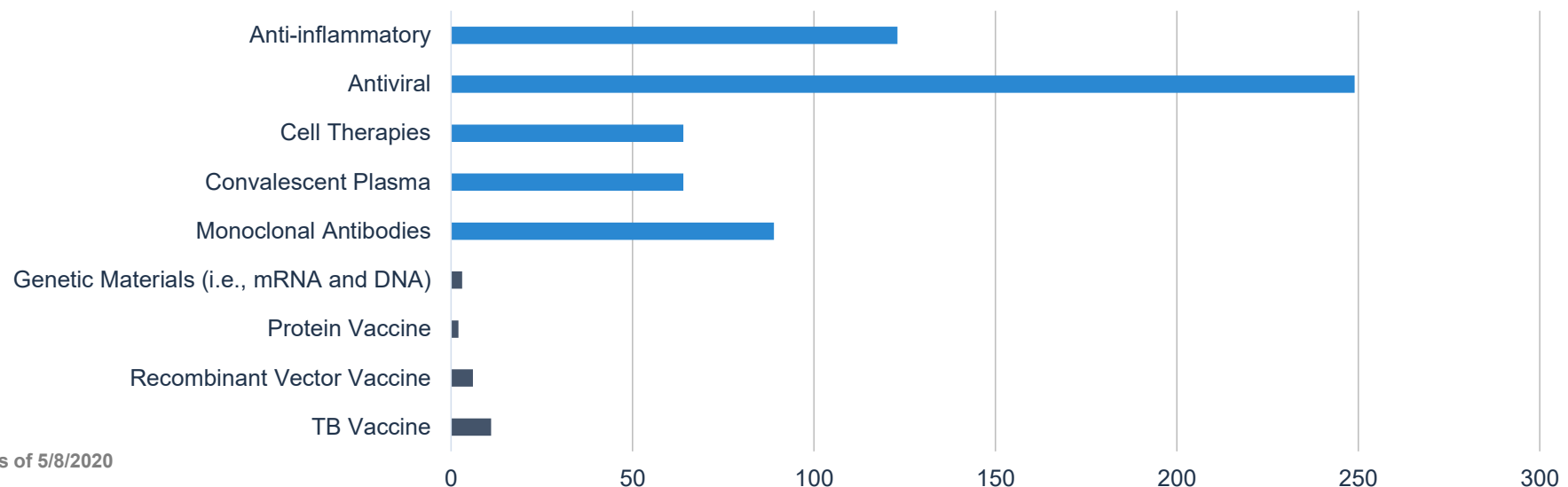
Data as of 5/8/2020

Source: World Health Organization International Clinical Trials Registry Platform (ICTRP)

Building a Diverse Research and Development Pipeline

These hundreds of clinical trials represent **multiple approaches for COVID-19 vaccines and therapies.**

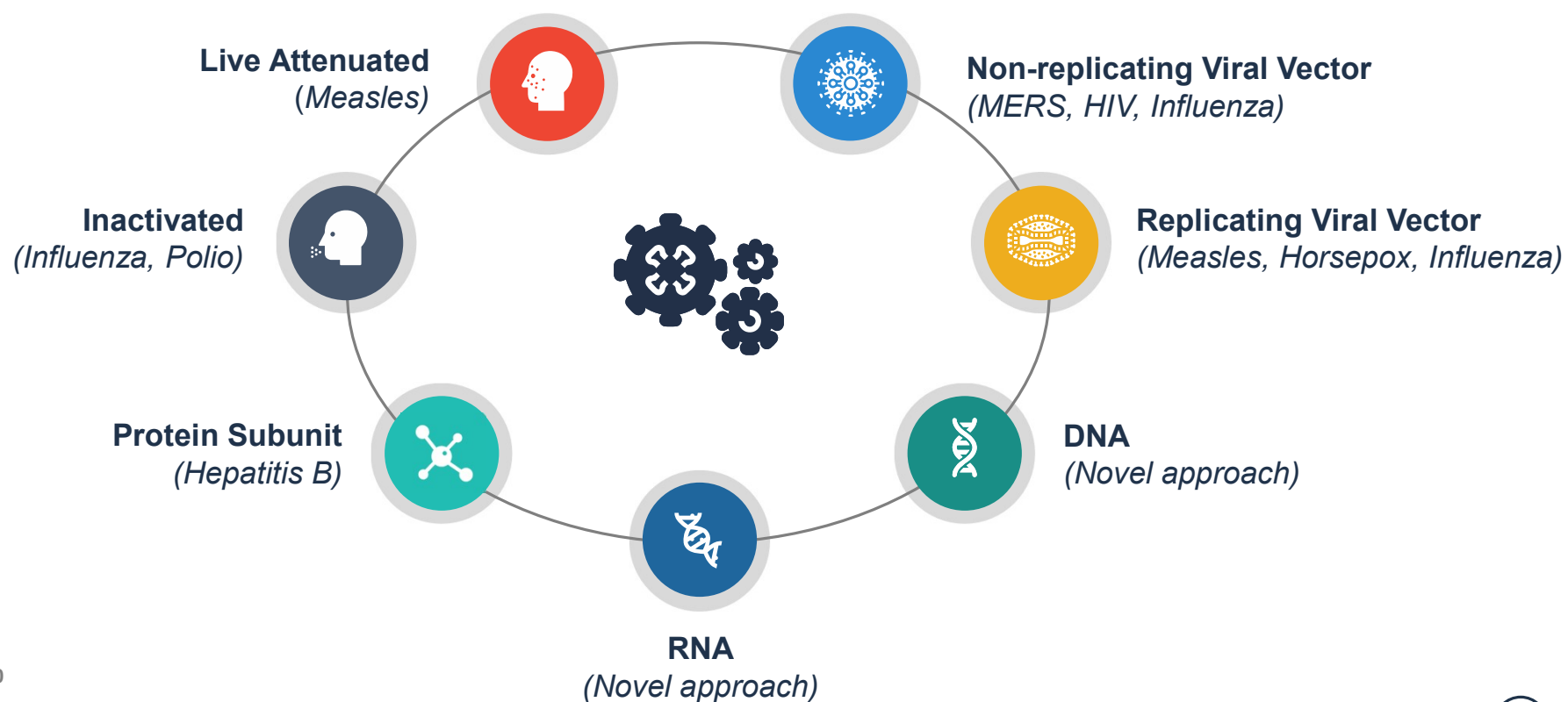
Number of Trials Testing Types of Therapies and Vaccines for COVID-19



Data as of 5/8/2020

Source: World Health Organization International Clinical Trials Registry Platform (ICTRP)

Using Many Approaches to Develop Vaccines

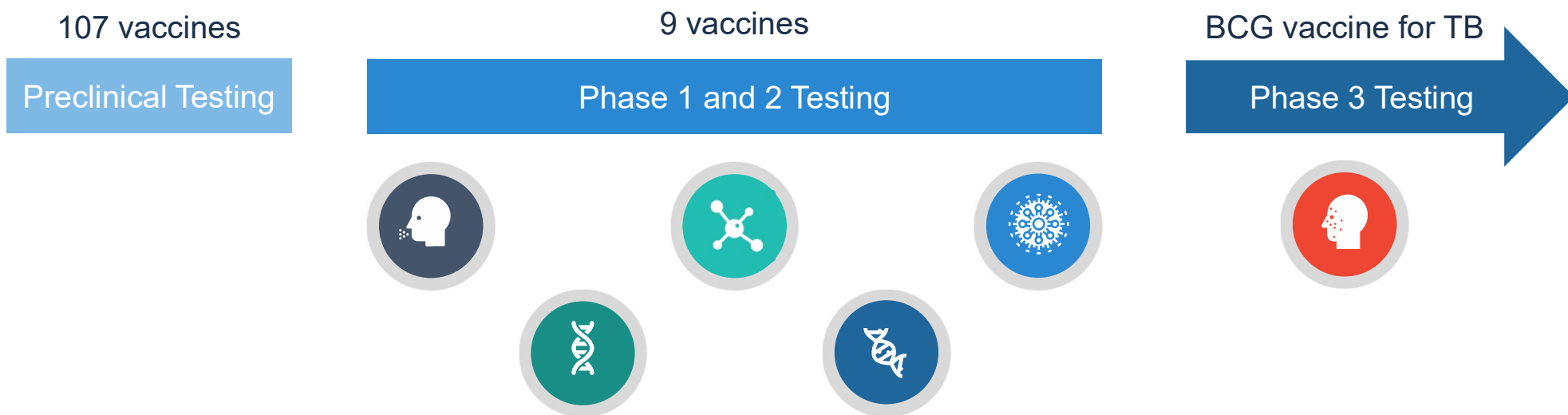


Data as of 5/8/2020

Source: World Health Organization International Clinical Trials Registry Platform (ICTRP)

Developing and Testing Vaccines to Prevent COVID-19

COVID-19 vaccines currently under investigation include **over 115 unique “shots on goal”**

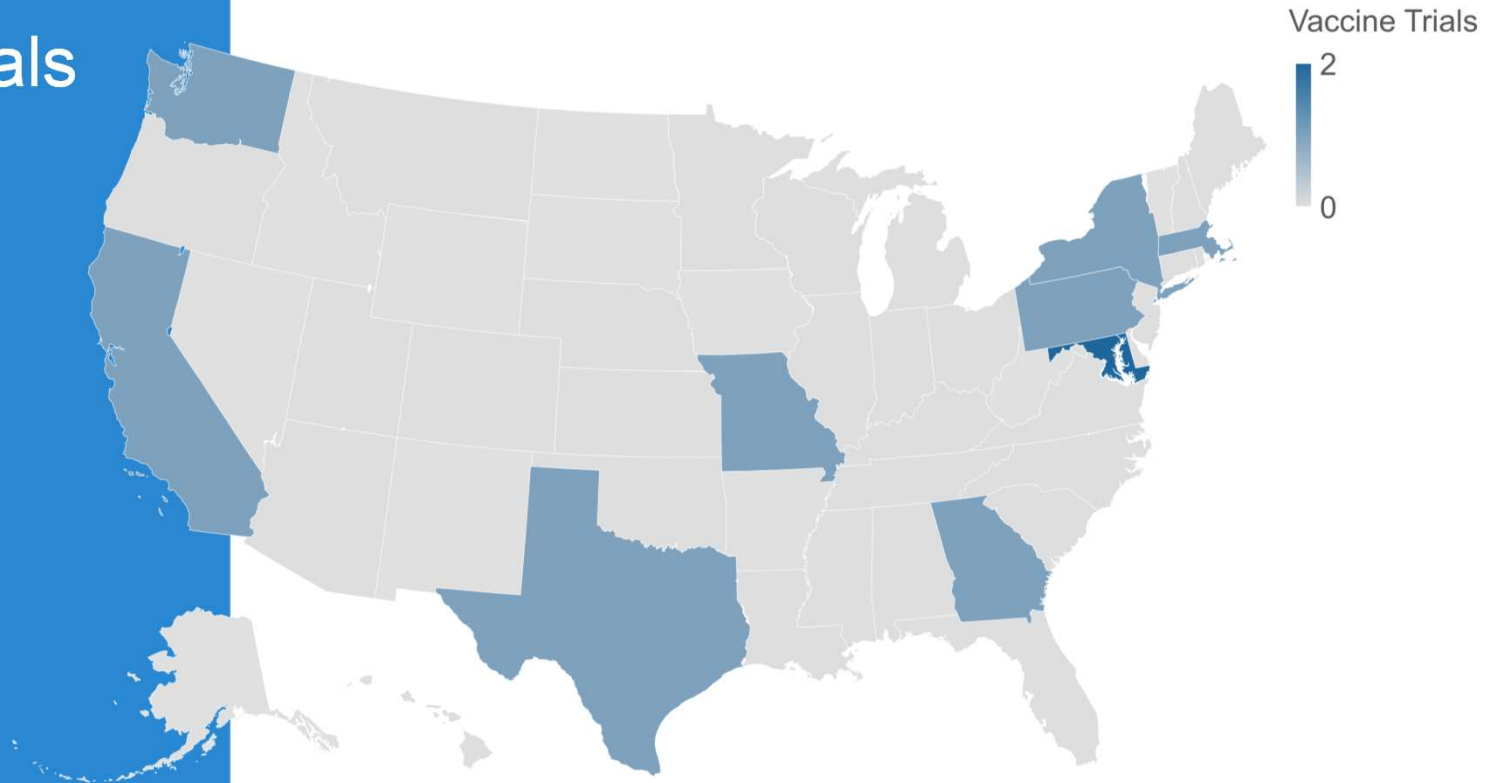


Data as of 5/8/2020

Source: World Health Organization International Clinical Trials Registry Platform (ICTRP)

U.S. Clinical Trials of Vaccines

Four clinical trials testing vaccine candidates are occurring across nine states



Data as of 5/8/2020

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Source: World Health Organization International Clinical Trials Registry Platform (ICTRP)

It Will Take a Minimum of 18 to 24 Months for Potential FDA Approval of a COVID-19 Vaccine

Faster Timeline

- **This is significantly less time than it has taken for previous vaccine development programs**
 - In 2003, it took 20 months from sequencing SARS to the first human study of a vaccine
 - Today, it has been less than 4 months from sequencing SARS-CoV-2 to the first human study of a vaccine

Differing Approaches

- **Some approaches offer speed**
 - Knowing the virus's genetic sequence, companies can synthesize and scale up production of a RNA vaccine in a matter of weeks
- **Some approaches can boost the impact of a potential vaccine**
 - Adjuvants can boost the immune response and minimize the amount of vaccine needed

Failure Rate

- **There is a high failure rate**
 - Only 5-10% are likely to succeed
 - We need lots of shots on goal

Developing and Testing Therapies to Treat COVID-19

There are **730 clinical trials** across the globe to test **278 therapies** to treat COVID-19

Number Of Unique Therapies Under Investigation

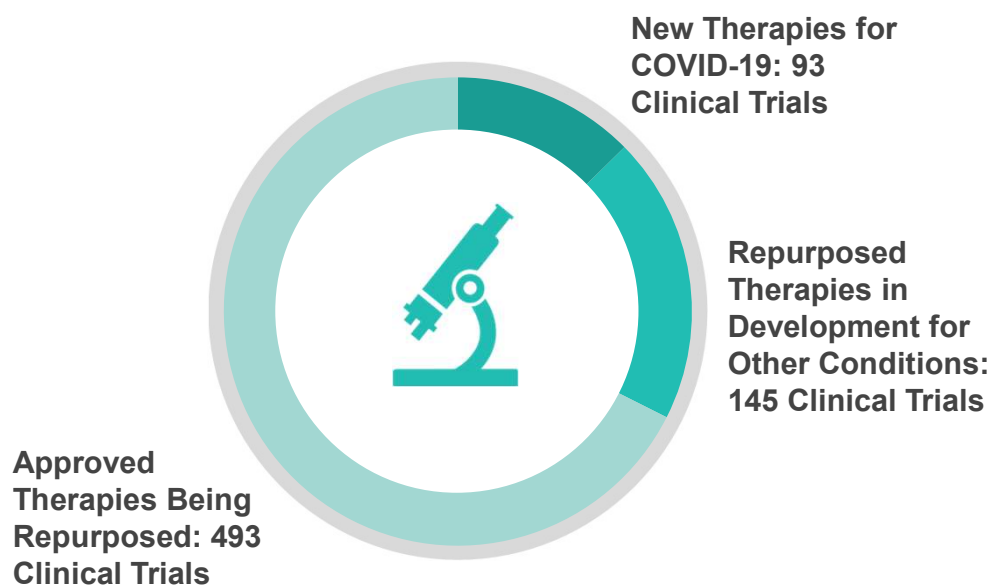


Data as of 5/8/2020

Source: World Health Organization International Clinical Trials Registry Platform (ICTRP)

Investigational Therapies to Treat COVID-19

Where the Investigational Therapies Came From



Data as of 5/8/2020

What The Investigational Therapies are Targeting

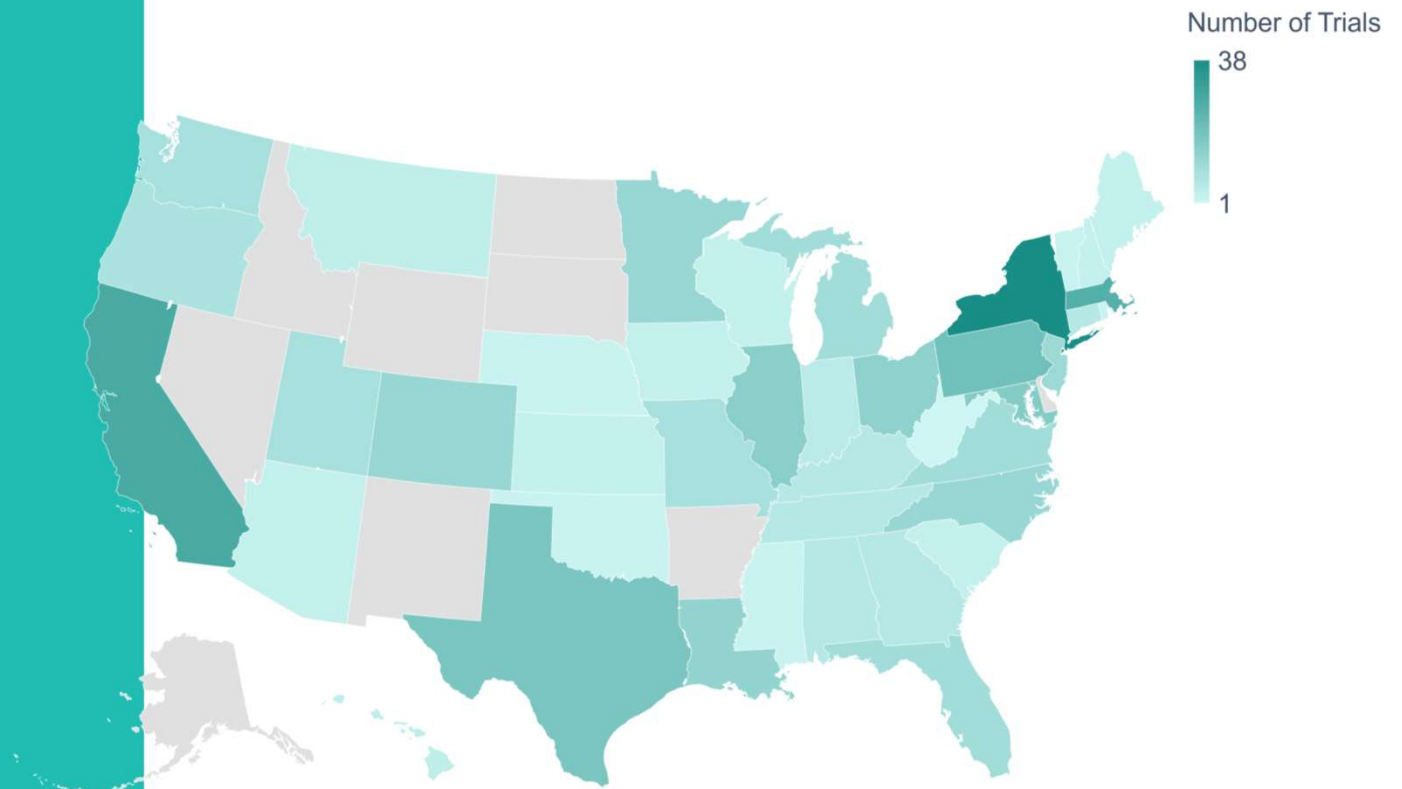


U.S. Clinical Trials of Investigational Therapies

There are 152 clinical trials investigating therapeutics in 41 states and Washington, D.C.

31 of the 152 clinical trials are being conducted in more than one state

Data as of 5/8/2020



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Hundreds of these Clinical Trials are Testing 66 Unique Investigational Therapies from PhRMA Members



Data as of 5/8/2020

Source: World Health Organization International Clinical Trials Registry Platform (ICTRP)



Ensuring Supply Chain Continuity

Ensuring Continuity in the Medicine Supply Chain

Biopharmaceutical Companies

- **Companies report substantial data on certain types of potential shortages to FDA** and they work closely with the agency to prevent and mitigate shortages
- **Companies have robust inventory management systems** that typically include:
 - Data on anticipated demand reflecting historical demand and supply data
 - Risk management plans that address additional or alternate manufacturing sites, inventory reserves, and/or a range of global external suppliers
 - Logistics planning to ensure continuity in shipping of supplies

U.S. Food and Drug Administration

- **FDA is working with individual companies to facilitate ramping up manufacturing** to address surges in demand and expediting approvals of changes in the drug supply chain
- **FDA is working closely with companies to expedite development and availability of COVID-19 treatments and vaccines**, including helping companies to leverage scientific and clinical trial data from the United States and other countries

Manufacturers' Supply Chain Responsibilities



Report to FDA sourcing of API including information on all intermediate and final drug substance manufacturing and testing sites.



Register with FDA and list each drug manufactured at their U.S. and foreign drug manufacturing establishments for commercial distribution and submit updated drug listing information to FDA twice yearly.



Comply with FDA's Current Good Manufacturing Practice (CGMP) requirements for all components of a finished drug product, including APIs.



Ensure API – made in the U.S. or abroad – **meets certain quality standards** before they are used in finished drug products sold to American patients.



Perform certain tests to **ensure that finished drugs meet requirements for its intended use.**

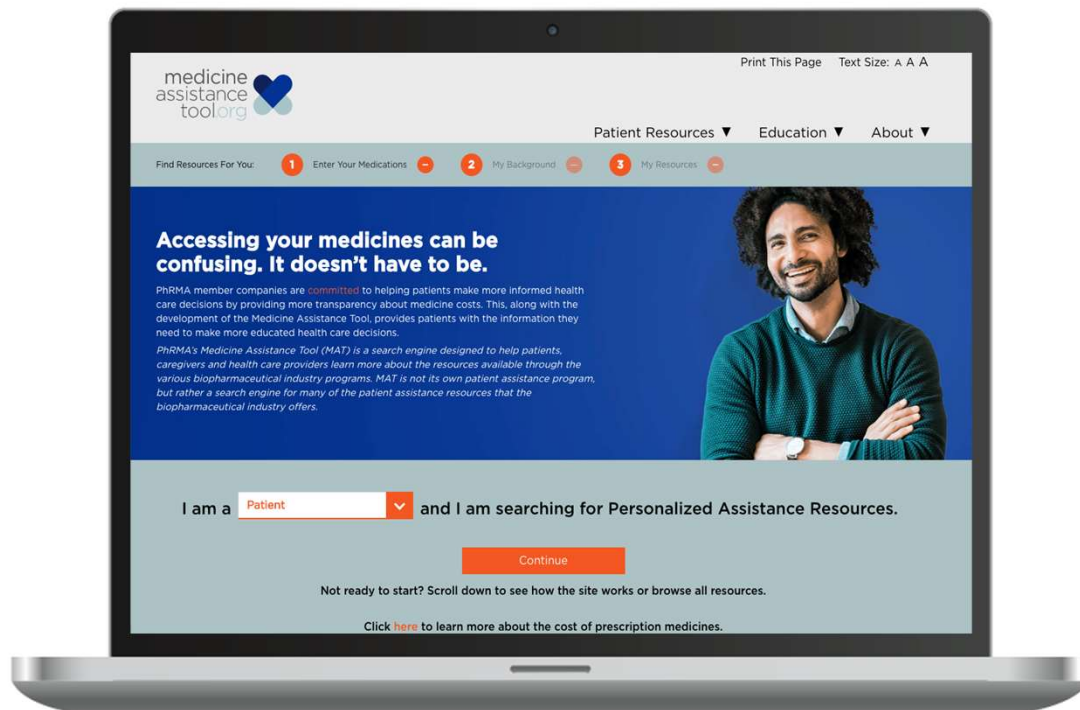


Establish robust supplier qualification programs to vet potential vendors before engaging in transactions with them, and, as a matter of course, enter into quality agreements with their API suppliers to audit their suppliers to ensure they meet CGMP requirements.

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Helping Patients During the Coronavirus Pandemic

Many of America's Biopharmaceutical Companies Are Expanding Their Assistance Programs To Help More People



950+

public and
private programs

The Medicine Assistance Tool (MAT) is a web platform designed to help patients, caregivers and health care providers learn more about some of the resources available to assist in affording their medicines.

www.MAT.org

MAT Can Help Patients Learn More About Their Medicine Costs

PhRMA member companies are committed to helping patients make more informed health care decisions by providing more transparency about medicine costs. Through MAT.org, we share links to member company websites that include:



**List Price of
a Medicine**



**Average Estimated
or Typical Patient
Out-of-pocket Costs**



**Other Context About
Potential Cost of the
Medicine**

Each member company has individually and independently determined the content of any cost information provided on their websites.

PhRMA and Healthcare Ready

PhRMA has joined forces with **Healthcare Ready** to facilitate the financial support and in-kind donations of personal protective equipment, medicines, and critical medical supplies.

Examples of requests Healthcare Ready can support include:

- Personal protective equipment
- Medical supplies
- Assistance in helping a constituent fill their prescription

**These requests can be made by
contacting alerts@healthcareready.org.**



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We're working around the clock to make sure we're prepared for the worst while also putting measures in place to help us from reaching that point. We need more masks & ventilators. But we also need folks to take this seriously. Stay home. Stop the spread.



From **CBS This Morning** ✓

Healthcare Ready Programs for Constituents

Healthcare Ready Resources

RX OPEN: Provides access to open and closed pharmacies in a disaster-stricken area.

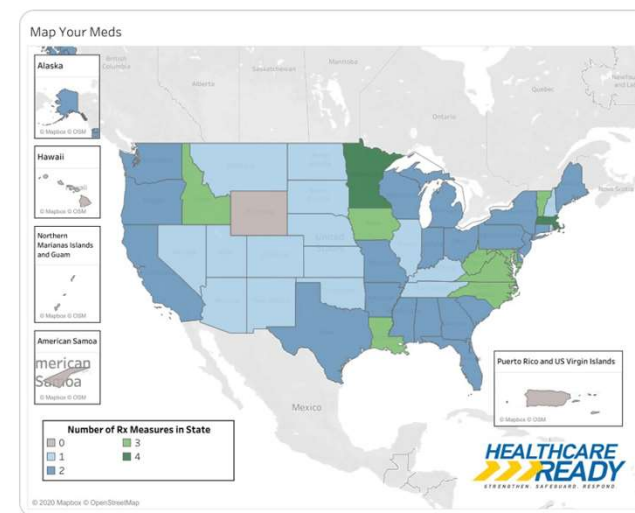
RX ON THE RUN: Personalized wallet card to document prescriptions and other important medical information.

COVID-19 Resource Hub: Resources for individuals and patients including state-level insurance emergency orders on prescription refills and telehealth coverage policies for COVID-19, and relevant pandemic business continuity resources.



#MapYourMeds: New interactive state-by-state guide to getting Rx refills during an emergency: bit.ly/HcR-MYM

#MYM #COVID-19





Where to Go for More Information

For More Resources and Information, Visit **PhRMA.org/Coronavirus**



An up-to-date list of member company efforts to combat COVID-19



A factsheet on the pipeline for new vaccine and treatments



An open letter from PhRMA's CEO and PhRMA's Chairman of the Board



The latest Catalyst blog posts on COVID-19



An infographic on how the industry is fighting COVID-19