

## INFECTION RESEARCH

People with cystic fibrosis are prone to infections because of the thick, sticky mucus that clogs their airways. Because people with CF who have chronic infections are at a greater risk for worsening lung disease, infection remains a top concern for them and clinicians.

### Infection Research Initiative

The Cystic Fibrosis Foundation has funded more than \$100 million in infection research as part of the Infection Research Initiative, a comprehensive approach that started in 2018 to improve outcomes associated with infections through enhanced detection, diagnosis, prevention, and treatment. We will continue to fund any science that we believe holds real promise to address infections.

This initiative paves the way for our continuing efforts to pursue novel and non-traditional ways to treat drug-resistant infections, optimize current therapies, and expand our work into better detection and diagnosis. A major focus moving forward is the development of new technologies for quicker, more accurate tests to detect and diagnose infections beyond sputum (mucus or phlegm coughed up from the lungs).

MORE THAN  
**\$100M**  
IN FUNDING FROM 2018-2021

## ANTIMICROBIAL RESISTANCE

**Drug-resistant infections are a global problem that increasingly pose a threat to people with CF, and we are aggressively pursuing innovative approaches to address these infections.**

By targeting the biological processes of bacteria, we are investing in novel approaches that work differently than traditional antibiotics. For example, we are conducting research into inhaled and IV gallium, a molecule which mimics the iron that bacteria need to grow. When substituted for iron, it starves bacteria of its needed nutrients. Other potential therapies target biofilms — protective layers formed by bacteria that make them more resistant to antibiotics.

The Foundation is doing everything it can to put new infection treatments into the hands of patients, but investment in research and development alone will not solve current marketplace challenges. We have taken a leading role in advocating for congressional legislation to strengthen the antibiotics pipeline by creating new ways to incentivize and reward companies that bring vital new antibiotics to market.



# INFECTION RESEARCH SNAPSHOT

In 2021-22, we met with more than 40 companies to discuss projects and potential treatments. From those meetings, we executed more than 10 new contracts to develop treatments.



## Nontuberculous mycobacteria (NTM)

NTM is one of our highest priority antimicrobial areas. Recognizing the need for better treatments, the Foundation developed the NTM consortium, a network of researchers focused on NTM. We are supporting two large studies through this consortium so we can learn more about how to diagnose NTM and when to treat it. The PREDICT study aims to develop a systematic way to identify people with CF who require treatment for NTM infections, while the PATIENCE study is focusing on standardizing treatment options. We also are supporting several industry studies investigating treatments for NTM.



## *Pseudomonas aeruginosa*

*Pseudomonas* research projects compose almost 40% of our infection research portfolio.

Most projects are directed at improving our understanding of how *Pseudomonas* interacts with other germs and how the body responds to *Pseudomonas* infections.



PEOPLE WITH CF  
WHO CULTURED  
POSITIVE FOR  
PSEUDOMONAS  
IN 2020

## MRSA

Methicillin-resistant *Staphylococcus aureus* (MRSA) infections are becoming more prevalent in people with cystic fibrosis.

The Foundation is working to improve current treatments to address MRSA infections.



PEOPLE WITH CF  
WHO CULTURED  
POSITIVE FOR  
MRSA IN 2020

## Bacteriophage (Phage) Therapy

Phage therapy is an experimental treatment that uses specialized viruses to kill specific bacterial strains. We are supporting several studies to explore the feasibility of phage therapy as a treatment for drug-resistant infections.

## Fungal Infections

We need to learn more about when and how to treat fungal infections. We're funding research to standardize the detection of fungi and improve our understanding of when and how to treat fungal infections, especially *Aspergillus*.