

FAST FACTS

Developing a Vaccine to Prevent Valley Fever: Protecting Both Ends of the Leash



A University of Arizona discovery could stop this public health problem.

Valley fever, medically known as coccidioidomycosis, is an endemic fungal infection which annually causes disability in 20,000 people, some of whom experience years- or life-long illnesses. There are medicines to treat Valley fever, but none are curative, and some patients are treated for life.

Recovery depends upon the development of immunologic resistance. Once immunity is established, patients are protected for life from future disease if exposed to the fungus again. The fact that immune protection results from infection started the 70-year search for a vaccine that could do the same thing.

At the University of Arizona Health Sciences, the Valley Fever Center for Excellence in the College of Medicine – Tucson recently discovered a vaccine that appears both safe and effective in animal models. It is currently in development in partnership with Anivive Lifesciences as a canine vaccine product that may be available to veterinarians as early as the second half of 2023.

Based on the science, there is no reason it could not also be developed to protect people.

Valley fever is intense where it is endemic, but its impact is not worldwide. Even so, a Valley fever vaccine deserves investment from the private sector. However, philanthropic, state, or federal support would unquestionably accelerate this campaign.

If this vaccine is going to be developed for people, first steps need to be taken. While the overall projected cost of developing a human vaccine is estimated to exceed \$200 million, work to achieve the first milestones would be much less expensive: \$2-5 million to confirm safety and develop the needed manufacturing process. A similar amount could be used to develop a vaccine plan satisfactory to the Food and Drug Administration, manufacture the first vaccine doses, and conduct the first-in-human clinical trial. Achieving these important first steps would go a long way toward influencing policymakers, both state and federal, to assist in supporting the more costly human studies needed for final FDA approval of a vaccine.

A vaccine candidate to prevent Valley fever is now at hand. It could be in clinical use within eight years. If this is to happen, now is the time for those who would most benefit to make their interest known.

- The national economic impact of Valley fever is \$1.5 billion per year.
- Arizonans account for two-thirds of national Valley fever cases.
- The annual death rate from Valley fever is 1 per 1,000 infections, which is similar to that of SARS-CoV-2 early in the pandemic.
- The overall morbidity of Valley fever on a per capita basis is similar to that of polio before there was a vaccine.
- Anyone living in or visiting Valley fever-endemic areas such as Phoenix would benefit from a protective vaccine.
- Groups particularly at risk are:
 - senior citizens
 - persons of color
 - border patrol agents
 - wildland firefighters
 - outdoor workers
 - military troops training in the Southwest
 - people receiving drugs such as Humira for rheumatologic diseases
 - prisoners and workers at California state prisons, where Valley fever has been an especially important health risk