January, 2022.

Welcome to the Valley Fever Center for Excellence's website. Here we try to provide reliable and timely information about coccidioidomycosis, the medical name for Valley fever. The following is an editorial written by the Center's Director, Dr. John Galgiani, published by the Arizona Republic on January 22, 2022.

Valley fever is Arizona's disease. While rare at a national level, Valley fever is common in the southwestern United States and northern Mexico. It is primarily a disease of the lungs caused by the inhalation of airborne particles of the fungus Coccidioides, which is found in the region. Airborne spores of the fungus are carried by the wind when the desert soil is disturbed. Every year on average, more than 20,000 people in the U.S. are infected, and Arizona is home to two-thirds of them. Sixty percent of people have no symptoms or only very mild flu-like symptoms, do not see a doctor, and therefore do not make it into the statistics. However, those with symptoms can experience fatigue, cough, fever, profuse sweating at night, loss of appetite, chest pain, generalized muscle and joint aches particularly of the ankles and knees. Some people will develop a rash that resembles measles or hives but develops more often as tender red bumps on the shins or forearms. The length of illness depends on the severity of the infection. Symptoms may take months to even more than a year to resolve. Persons frequently complain of fatigue and joint aches lasting months. The chronic forms of Valley fever may last years, with a waxing and waning course.

At its November 18 meeting, the Arizona Board of Regents (ABOR) highlighted the New Economy Initiative (NEI), a 20-year program proposed by and initiated in this year's state budget. Notably, the NEI includes support for a Valley Fever Collaborative among the state's three public universities, which represents a major step in recognizing Valley fever (VF) as a significant public health and economic problem in Arizona.

VF, known medically as coccidioidomycosis, is an infection caused by a fungus that grows in dry, sandy soil, like that found in Arizona's Sonoran Desert and other parts of the Southwest. The disease is named after the San Joaquin Valley, where the first cases in the U.S. originated over a century ago, and it continues to be a significant problem.

Residents of that area have been demanding help for decades, and after pressing California state legislators for support, officials from Bakersfield were finally able to secure more than $8 million in state funding for a Valley Fever Vaccine Project. Additional millions of dollars have been earmarked for public health, research and a Bakersfield-based Valley Fever Institute.

A recent report by the Arizona Center for Investigative Reporting found that in 2019, the most recent year that comprehensive statistics were available, there were 144.1 cases per 100,000 Arizona residents. In California, for the same year, the case rate was just 22.5 cases per 100,000 residents. Despite this, calls for action in Arizona have largely gone unheard until now. As recently documented, Arizona's budget has not dedicated funds specifically for addressing VF since a one-time allocation 14 years ago.

Including the Valley Fever Collaborative in the NEI reflects the growing awareness that this is an important problem in Arizona. The disease presents a very real burden on Arizona's economy, costing $736 million in 2019 alone, as detailed in an analysis by the Seidman Institute.

But the indirect costs to the economy may be much higher, as the disease may well affect the decision for some individuals or businesses to relocate to Arizona – especially when the sensational, severe VF cases receive more attention than does the ability of healthcare professionals to effectively manage the disease when it is diagnosed early and treated appropriately. The Valley Fever Collaborative can help Arizona's economy continue to grow by implementing a management plan that emphasizes community awareness and provider education.

The University of Arizona's Valley Fever Center for Excellence (VFCE) was approved by ABOR 25 years ago to be a resource for the entire state. Its clinical activities are conducted in both Phoenix and Tucson through an affiliation agreement between Banner Health and UArizona's colleges of medicine in Tucson and Phoenix.

Since its founding, the VFCE has developed a novel drug, nikkomycin Z; advocated for earlier diagnosis and awareness; worked on more reliable and accessible diagnostic tests; and most recently invented a promising preventative vaccine for dogs, and potentially humans. The VFCE has played an important part in Arizona's awakening to the need to address VF.

The concept of a Valley Fever Collaborative began when faculty from UArizona's VFCE, Arizona State University and Northern Arizona University discussed the synergy that could come from pooling the strengths of all three schools.

For example, NAU's Pathogen and Microbiome Institute has ongoing studies of the VF fungus as it occurs in the environment. Faculty from NAU and ASU have published methods to detect the fungus in the air, which could be used to identify construction sites that are particularly risky for workers.

Also at ASU, the Biodesign Institute has made numerous inventions that could help manage VF. One in particular, an “immunosignature” technology, has shown the ability to differentiate VF from other causes of pneumonia. It might also make lung biopsies unnecessary in distinguishing between VF and cancer. This initiative was well underway before the pandemic and is now ripe for inclusion in the NEI program.

Arizona’s national leadership in the management of VF cannot come too soon. Ours is the state to benefit most, both in terms of public health and economic benefit. ABOR is to be congratulated for the New Economy Initiative and including Valley fever in it.