Although it is now, Arizona has not always been the epicenter for coccidioidomycosis (Valley Fever). A century ago, “coccidioidal granuloma,” as it was first named, was thought to be a rare, nearly always fatal infection. In the 1930's, as a result of the collaboration between a Stanford professor and the public health physician for California’s Kern County, the connection was made between these few devastating infections and a cryptic, common, and self-limited illness, “San Joaquin Valley Fever.”

These historical roots in Kern and its major city, Bakersfield, carry forward to the present as evidenced by that community’s very strong support of Valley Fever research to produce a preventative vaccine. For example, Kevin McCarthy, while Bakersfield’s representative to the California state legislature, insisted on vaccine research funds to support the Valley Fever Vaccine Project. Now in the U.S. Congress, McCarthy has formed a Congressional Valley Fever Task Force.

Eventually, Arizona was discovered to also be endemic for the causative fungus, Coccidioides spp. In fact, the first ever Symposium on Coccidioidomycosis, sponsored by the Centers for Diseases Control, was held in Phoenix in 1956. However, most of the research and medical publications addressing this problem originated from clinicians and scientists in California.

The difference between the first half of last century and the situation now is that demographics have reshuffled the deck. In the 1950's and before, both the California Central Valley and the south and central portions of Arizona were essentially vast rural expanses. Table 1 shows how that has changed. The enormous population growth on the Arizona Sonoran deserts, particularly within Maricopa, Pinal and Pima Counties, has no parallel in the most intensely endemic counties of California.

The population growth in Arizona has largely involved migration of persons from parts of the country that are not endemic for Coccidioides spp. This has dramatically increased the number of susceptible persons exposed to spores and the consequent number of infections. In addition, a large proportion of newcomers are seniors, attracted to Arizona as a place to retire. Since seniors are several times more likely to be diagnosed with coccidioidomycosis, this trend further increases the number of new infections reported to the state. As metropolitan communities, the medical programs in Phoenix and Tucson have also expanded, increasingly caring for patients with compromised immune systems. Compromised cellular immunity is the greatest risk factor for serious coccidioidal complications.

Because of these ongoing trends, Arizona has emerged as the nation’s leader in reported cases of coccidioidomycosis. Approximately 20,000 cases of Valley Fever were reported to the CDC in 2011 and over 16,000 of them were from Arizona. Overall, two-thirds of all cases in the United States originate in Arizona and 80% of Arizona infections come from Maricopa County. Valley Fever is so common here that it is responsible for at least a quarter of all community-acquired pneumonias diagnosed in ambulatory patients.

Like it or not, the communities along the 150 miles of Interstate 10 from Tucson to Phoenix have become the “Valley Fever Corridor” and this comes with a price. How large the cost was made clear by an Arizona Department of Health Services publication, reporting the findings from a questionnaire survey of newly diagnosed patients with Valley Fever.
Fever in 2007. Some of the highlights from this report are:

- Illness lasted an average of 6 months.
- 75% of employed persons stopped working, half missing two or more weeks.
- 40% were hospitalized.

Hospital costs alone in 2007 amounted to $86 million. More recent data from 2012 shows this number to exceed $100 million. Considering additional outpatient care costs and lost productivity, the economic impact of Valley Fever on Arizona is easily $0.25 billion annually.

A recent publication from California estimated that Valley Fever hospital costs for a twelve-year period totaled $2 billion, a similar but even higher total for that state as well.

The medical community of Arizona in general has been slow to realize how large a public health problem Valley Fever has become. Coccidioidomycosis causes many persons to become ill and patients with coccidioidomycosis likely constitute a significant proportion of most general practices or urgent care clinics within the Valley Fever Corridor Counties. Even so, clinicians throughout Arizona are surprisingly slow to consider this diagnosis, much less try to rule it in with the needed specific diagnostic tests.

In another survey by the Arizona Department of Health Services, Arizona clinicians were asked about their knowledge, attitudes, and practice with respect to Valley Fever. Only 12% of respondents reported that they had learned medicine in Arizona schools and 47% had no clinical training in Arizona prior to starting practice here. Moreover, 40% lacked confidence in diagnosing a coccidioidal infection. In another study of two physician group practices, only 2% and 13% of patients with community-acquired pneumonia were actually evaluated for the possibility that it could be caused by Coccidioides.

It is time for the medical community throughout Arizona to raise its standard of care. To help catalyze this effort, the Maricopa County Medical Society last month initiated its Honor Roll Program and has chosen Valley Fever along with viral hepatitis, both HBV and HCV, as the lead diseases to address. This program was also highlighted in last year’s Valley Fever Awareness Week, November 10-19. The Honor Roll program is available to any clinician anywhere in Arizona, whether or not they are members of the Maricopa County Medical Society. Details about the program can be found at http://www.mcmsonline.com/sites/default/files/uploads/honor-roll_pledgeform.pdf.

The timing could not be better. Across the United States and even internationally there is increased attention to Valley Fever. Stories about its impact on persons in the southwest and the special problem for prisoners in California have been featured on CBS and BBC news reports. In January of this year the New Yorker Magazine published a long article entitled “The Death Dust. The Valley Fever Menace.”

Last fall, a two-day symposium was held in Bakersfield featuring presentations by heads of both the CDC and the NIH. As a follow-up, Congressman Schweikert, co-chair of the Congressional Valley Fever task force held Town Hall meetings in Phoenix and Tucson. For all of these reasons, patients are more in tune with what Valley Fever is and why physicians are looking for it.

In 2012 the University of Arizona and the St. Joseph’s Hospital teamed up to open a Valley Fever Center in Phoenix. This new program is the latest initiative of the Valley Fever Center for Excellence, originally approved by the Arizona Board of Regents in 1996, to help the entire state deal with this disease. Since its inception the Valley Fever Center has been supporting the expansion of research at

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all three state universities and raising awareness both in the community and among healthcare professions. The Valley Fever Center in Phoenix provides a much needed resource for patients with Valley Fever who are seeking a referral or a second opinion about their infection.

Just as importantly, the Valley Fever Center in Phoenix is planned to be the “hub-of-the-wheel” for an expanding network of clinicians, not just at St. Joseph’s but across Maricopa County and the rest of Arizona to manage Valley Fever patients. As the Center becomes more established, it can also provide a platform not previously available for the testing of better diagnostics, new therapies, and eventually clinical trials of preventative vaccines, goals that are all actively being pursued by Arizona’s scientists and clinicians.

I hope all Arizona clinicians will join in this effort to make Arizona the place where patients with Valley Fever routinely and in all practice groups receive the best care for their infections. Much of this can be done by primary care physicians, following the algorithm shown in Figure 1. Training for managing the commonest forms of Valley Fever can be found at the Valley Fever for Excellence’s website (www.vfce.arizona.edu) in a general syllabus or in a free online CME course. Also, on November 8th of this year there will be a CME program about Valley Fever, especially for primary care clinicians, at Good Samaritan Medical Center in Phoenix. Details for this will be on the Center’s website as details become available.

For patients who are at risk for or have complications of Valley Fever, the Valley Fever Center in Phoenix is now a ready resource to assist all physicians with their patient’s problems, either at St. Joseph’s or by connecting the patient to a member of the Valley Fever Alliance of Arizona Clinicians, a state-wide organization established for this purpose. Care and knowledgeable management of patients with coccidioidomycosis is both a highly rewarding challenge for clinicians and often results in very good results for patients. Let’s all become familiar with how to do this, incorporate it into our practices, and encourage other clinicians to do the same. AM

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References