



**Public Health Investigation Into Reported Valley Fever Cases
Between December 4, 2017 and March 31, 2018**

May 21, 2018

BACKGROUND

Valley Fever, also known as coccidioidomycosis or “cocci”, is caused by inhaling spores of a fungus known to exist in soil in the southwestern United States, particularly California and Arizona. People get infected by breathing in spores present in dust that gets into the air when it is windy or when soil is disturbed, like digging during construction. Most infected people do not show signs of illness. Those who do become ill with Valley Fever may have symptoms similar to other illnesses, including influenza or pneumonia, so Valley Fever is not always recognized. Rarely, people can develop more severe disease such as infection of the brain, joints, bone, skin, or other organs.

In February 2018, the Santa Barbara County Public Health Department (SBCPHD) became aware of concerns within the local healthcare community of a potential link between increases in Valley Fever cases and the Thomas Fire and 1-9 Debris Flow events. A thorough investigation was initiated by the SBCPHD.

METHODS

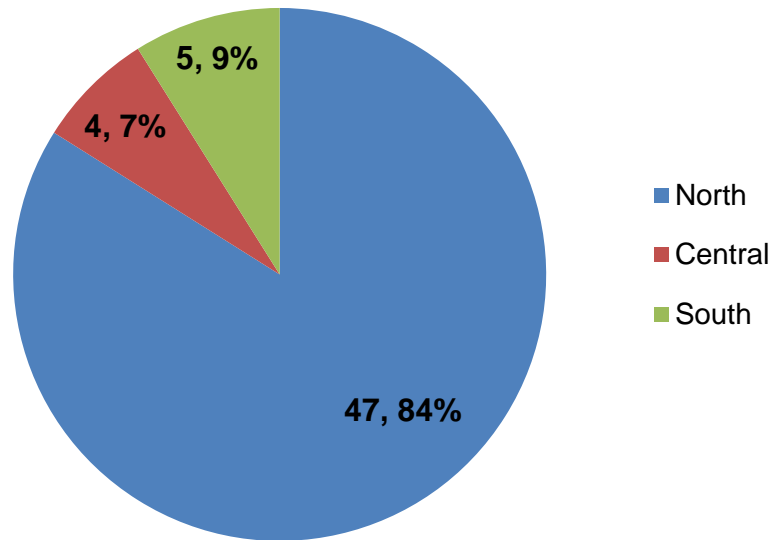
Data on all confirmed, probable, or suspect (per classification definition) cases of Valley Fever reported to the SBCPHD via the CalREDIE provider portal was extracted on April 4, 2018 and analyzed. After excluding non-cases and previously reported cases, a total of 56 cases were included in the investigation. Attempts were made to contact and interview each case in both English and Spanish using a standardized set of interview questions; 43 interviews were conducted.

SBCPHD data was analyzed and compared to Valley Fever data for the state of California, including trends since 2016.

RESULTS

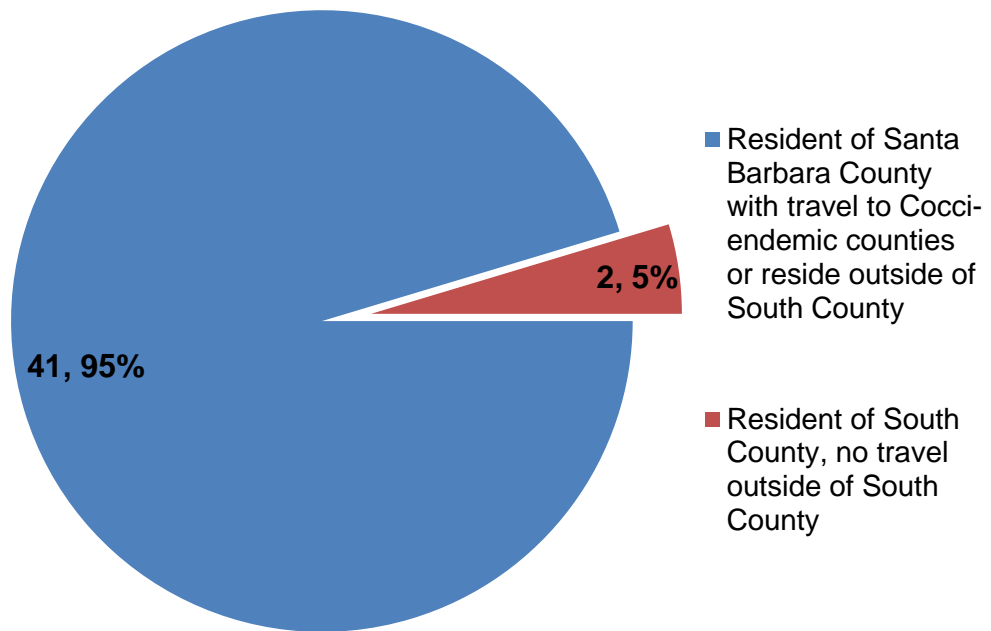
Of the 56 cases included in this investigation, the median age was 38 and the average age was 41.

Santa Barbara County resident *Cocci* cases* by region of Santa Barbara County residence with onset between 12/4/17-3/30/2018, N=56.



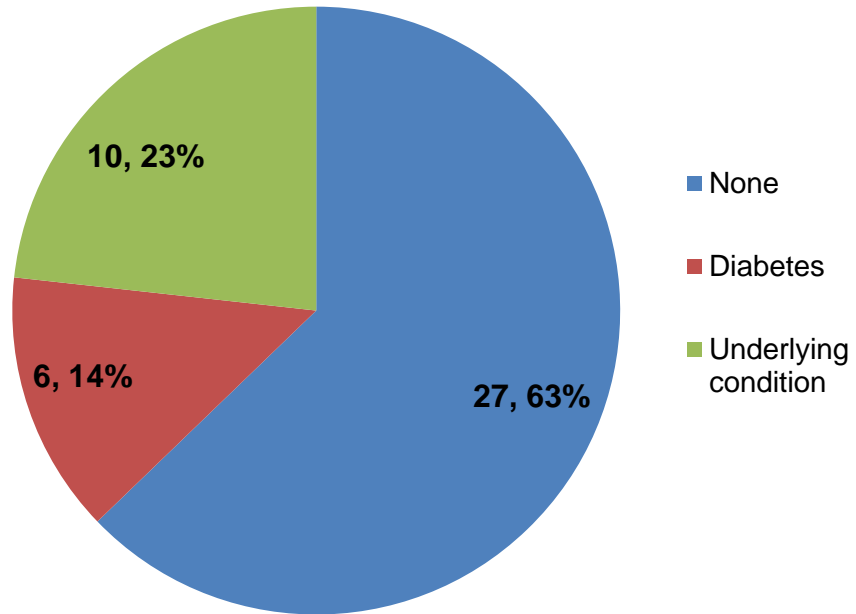
Source: CalREDIE Data Distribution Portal, Santa Barbara County Public Health Department, April 4, 2018.
 * Resolution status of Confirmed, Probable or Suspect are included in the case counts.
 North = Guadalupe, Cuyama, Santa Maria; Central = Lompoc and Buellton; South = Goleta and Santa Barbara.

Interviewed Santa Barbara County resident *Cocci* cases* with onset between 12/4/17-3/30/2018, N=43.



Source: CalREDIE Data Distribution Portal, Santa Barbara County Public Health Department. April 4, 2018.
 * Resolution status of Confirmed, Probable or Suspect are included in the case counts.

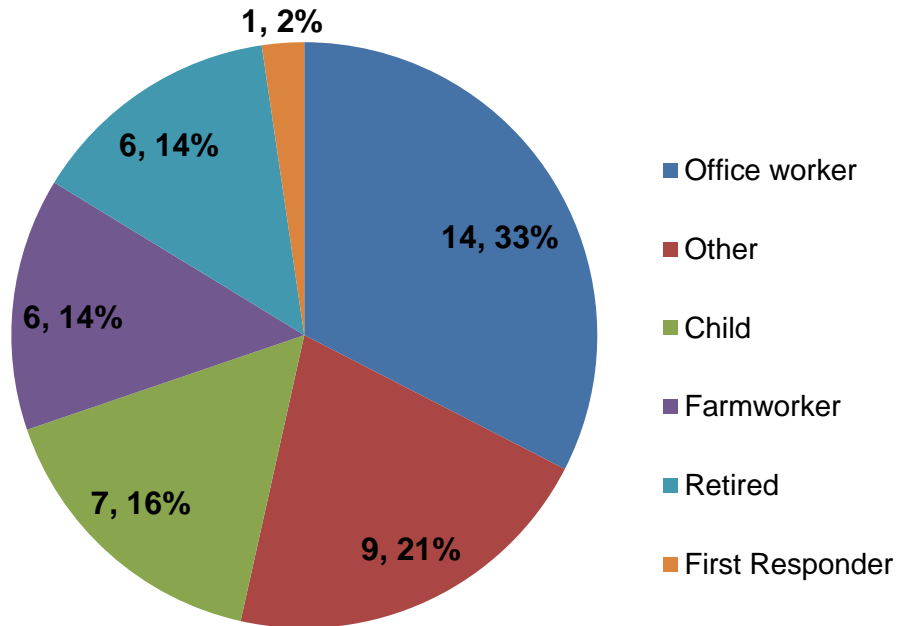
Comorbidities of interviewed Santa Barbara County resident *Cocci* cases* with onset between 12/4/17-3/30/2018, N=43.



* Of the 56 *Cocci* cases included in this investigation, 43 were interviewed.

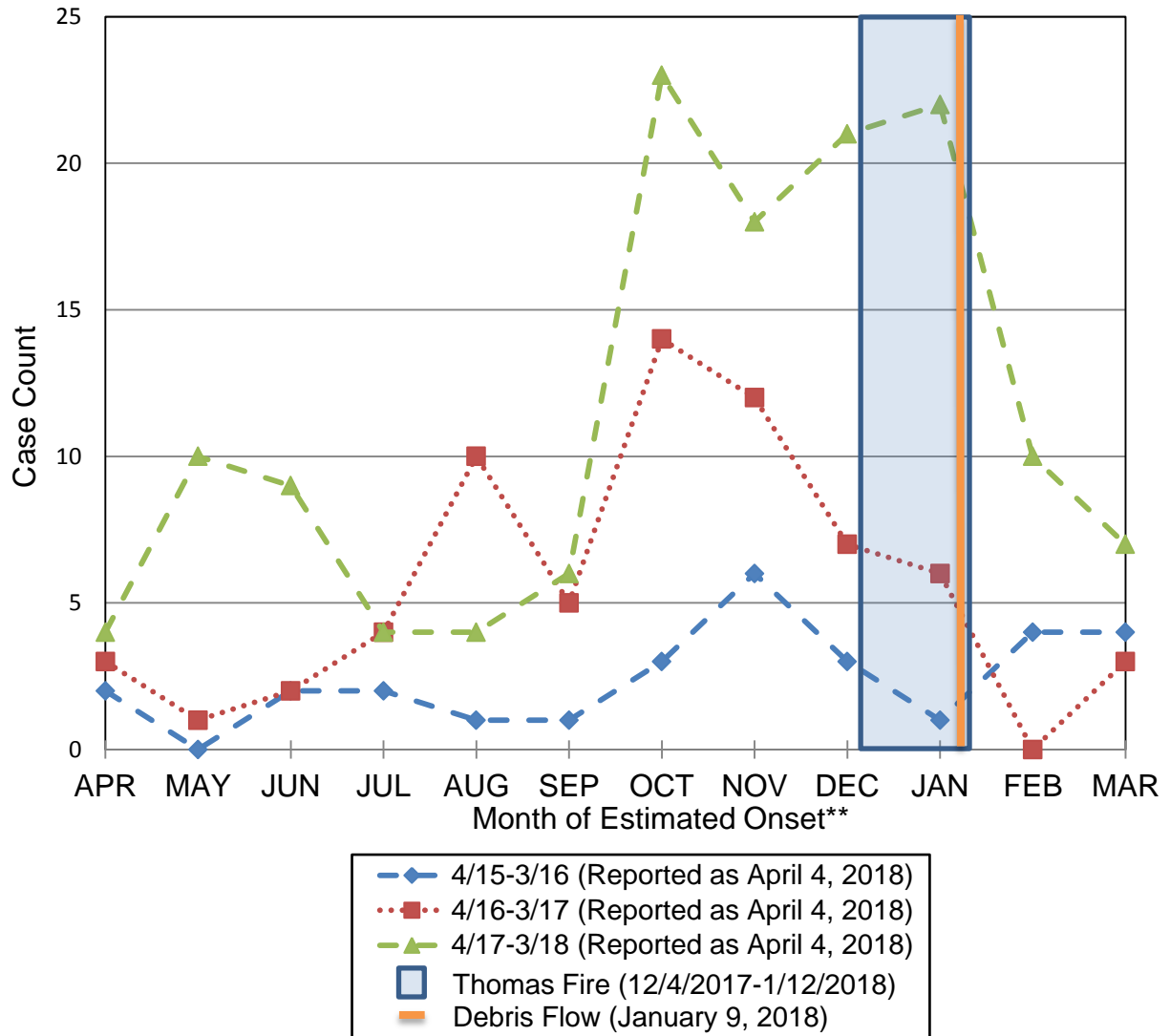
** Underlying conditions include: asthma, cardiovascular disease, COPD, chemotherapy treatment or other undisclosed medical condition.

Occupations of interviewed Santa Barbara County resident *Cocci* cases* with onset between 12/4/17-3/30/2018, N=43.



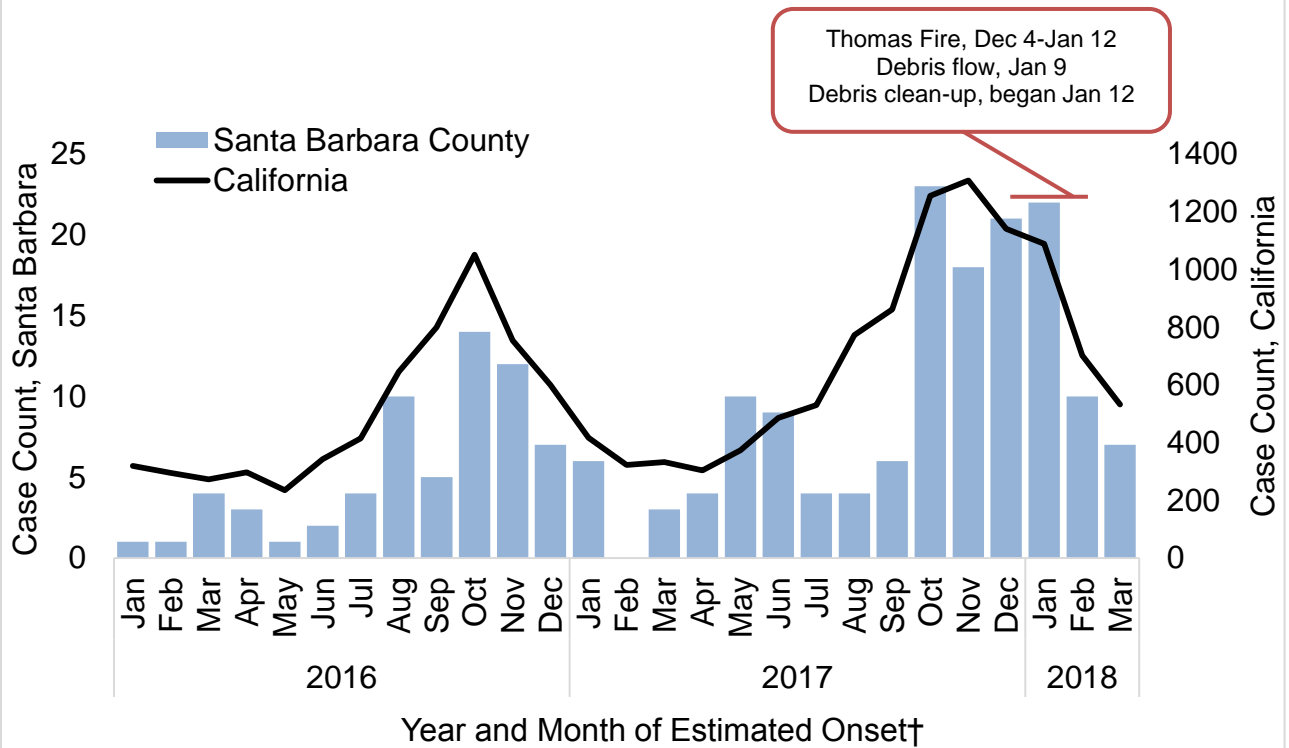
* Of the 56 *Cocci* cases included in this investigation, 43 were interviewed.

Reported Suspect, Probable, and Confirmed *Cocci* cases by Month and Year of Estimated Onset, Santa Barbara County, April 2015-March 2018.



** Estimated onset date is the date closest to the time when symptoms first appeared. For cases which date of onset was not recorded, the estimated onset date can range from the date of first appearance of symptoms to the date the report was made to Public Health; Reported via CalREDIE for Santa Barbara County Residents.

Provisional* Numbers of Reported Valley Fever Cases by Month and Year of Estimated Onset†, Santa Barbara County and California

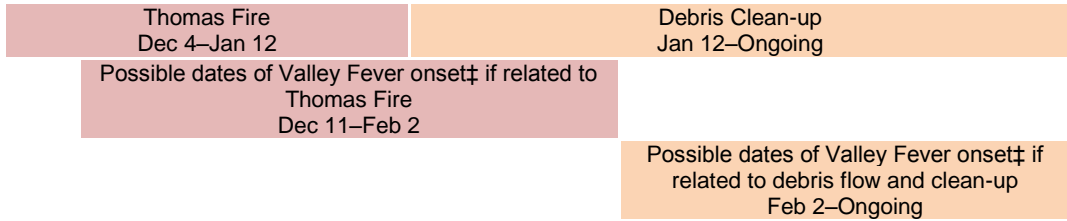
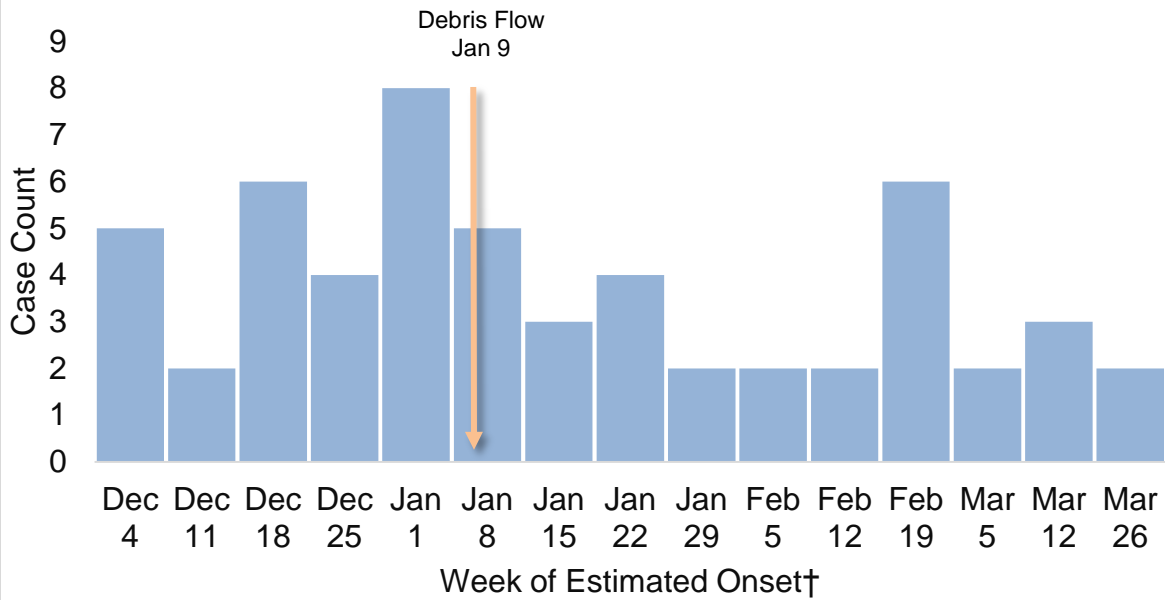


Note: Santa Barbara County and California case counts are shown on different scales in this graph (Santa Barbara County, left y-axis; California, right y-axis).

*Reported suspect, probable, and confirmed cases of Valley Fever reported as of March 31 of the following year for California and as of April 4 of the following year for Santa Barbara County.

†Estimated onset date is the date closest to the time when symptoms first appeared. For cases which date of onset was not recorded, the estimated onset date can range from the date of first appearance of symptoms to the date the report was made to Public Health; Reported via CalREDIE for Santa Barbara County Residents.

Provisional* Numbers of Reported Valley Fever Cases by Week of Estimated Onset†, Santa Barbara County



*Reported suspect, probable, and confirmed cases of Valley Fever reported as of April 4 of the following year.
 †Estimated onset date is the date closest to the time when symptoms first appeared. For cases which date of onset was not recorded, the estimated onset date can range from the date of first appearance of symptoms to the date the report was made to Public Health; Reported via CalREDIE for Santa Barbara County Residents.
 ‡Onset of Valley Fever symptoms typically occurs 7 to 21 days following exposure to the Valley Fever fungus.

DISCUSSION and CONCLUSIONS

Most of the Valley Fever cases lived in North (47 cases, 85%) or Central (5 cases, 9%) Santa Barbara County with only four cases (7%) living in South County. In addition, two of the four South County residents had traveled outside of South County to areas where cases of Valley Fever more commonly occur. Only two of the cases in this investigation lived in South County and did not travel outside of South County.

None of the 56 cases were firefighters but one was a first responder who worked on the Thomas Fire.

The data from this investigation correlate closely with the epidemiology and seasonality of California’s statewide increases since 2015. The reasons for these increases are not completely understood, but climatic environmental factors favorable to the fungus *Coccidioides* proliferation might have contributed. This includes rainfall after several years of drought.

It is important to note limitations of this investigation. This data reflects passive public health surveillance only. No active case finding was conducted. It is not a comprehensive study designed to definitively answer the question of whether the Thomas Fire and 1-9 Debris Flow lead to an increase in Valley Fever cases. Although the investigation's data helps inform Public Health efforts to prevent and respond to disease, more comprehensive investigations are needed to determine if recent natural disasters directly contributed to increased rates of Valley Fever both locally and across California.

Public Health will continue to monitor reported Valley Fever cases in Santa Barbara County and keep our healthcare providers informed on epidemiology patterns. Data from the time period included in this investigation may be refined in the future if more cases are retroactively reported.

The causes of increasing Valley Fever cases is a concern to local and state Public Health agencies and will continue to be investigated.

REFERENCES AND RESOURCES

<https://www.cdph.ca.gov/Programs/CID/DCDC/CDPH%20Document%20Library/CocciinCAProvisionalMonthlyReport.pdf>

<https://www.cdc.gov/fungal/diseases/coccidioidomycosis/index.html>