

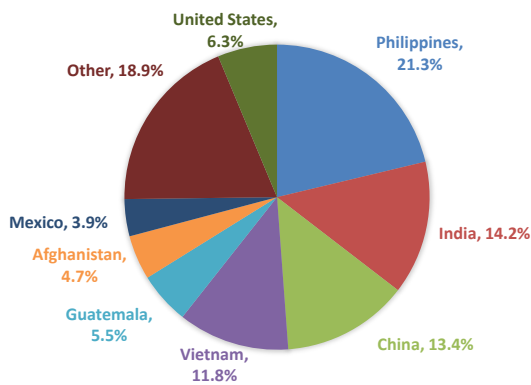


# Tuberculosis Fact Sheet— Alameda County, 2022

## OVERVIEW

During 2022, 127 tuberculosis (TB) cases were reported to Alameda County (excluding the City of Berkeley, which has its own local health department). The 2022 TB case rate in Alameda County was 8.4 cases per 100,000 residents, a 27% increase from the 2021 rate. The 2022 rate ranks second among all jurisdictions in California and is 1.8 times higher than the California state rate of 4.7 cases per 100,000 residents. The 2022 rate for Alameda County is higher than the other Bay Area counties, including Santa Clara (7.5 per 100,000), San Francisco (7.1 per 100,000), San Mateo (6.2 per 100,000), and Contra Costa (5.3 per 100,000) county.

**Figure 2: Percent of TB Cases, by Place of Birth, Alameda County, 2022**



## PATIENT DEMOGRAPHICS

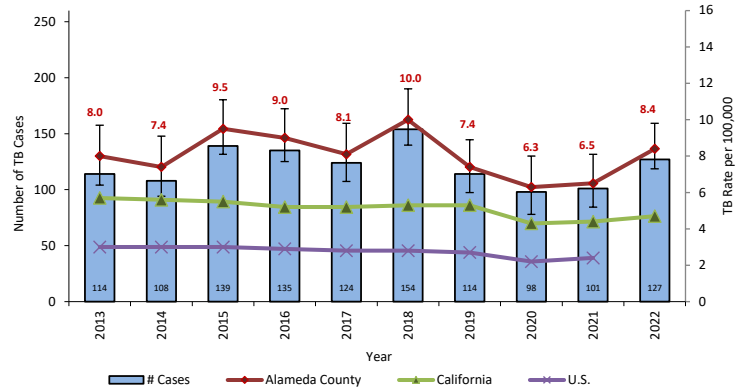
Similar to previous years, the majority of TB cases were male (64%). During 2022, the largest proportion of TB cases occurred among adults aged 65 years old and older (43%), and the lowest proportion occurred among children 0 to 4 years old (Table 1).

The majority of 2022 TB cases (92%) occurred among non-White residents (Table 1). From 2020 to 2022 Asian/Pacific Islander (API) residents in Alameda County had an average annual case rate of 15.6 cases per 100,000 residents, followed by Hispanic/Latino residents at 3.9 cases per 100,000 residents.

During 2022, 94% of TB cases identified were born outside of the U.S. (Table 1). The most frequent birthplaces outside of the U.S. were the Philippines, India, China, Vietnam, and Guatemala (Figure 2). The 2020-2022 average annual case rate for those born outside of the U.S. was 19.9 per 100,000 residents, 27 times the rate for cases born in the U.S. (<1.0 per 100,000). Of 2022 cases born outside of the U.S., 62% resided in the U.S. for 10 or more years before being diagnosed with TB.

The largest proportion of 2022 TB cases occurred among residents of Fremont (22%), Oakland (20%), and Hayward (16%). Five-year average rates were highest in the 94606 zip code of Oakland (more than twice the mapped five-year county average of 7.7 per 100,000) (Figure 3).

**Figure 1. Number of TB Cases and Rate per 100,000, Alameda County, 2013-2022**



**Table 1. Number of TB Cases and Rates per 100,000, Alameda County, 2020-2022**

		Number of 2022 Cases (N=127)	Percent	Average Case Rate per 100,000 (2020-2022)
<b>Sex</b>	Males	81	63.8%	8.4
	Females	46	36.2%	5.7
<b>Age Group</b>	0-4 yrs	<10	--	*
	5-24 yrs	<10	--	*
	25-44 yrs	32	25.2%	5.7
	45-64 yrs	31	24.4%	7.1
	65+ yrs	55	43.3%	19.9
<b>Race / Ethnicity</b>	Black/African American	<10	--	*
	Asian/Pacific Islander	92	72.4%	15.6
	Filipino	27	29.3%	--
	Chinese	24	26.1%	--
	Asian Indian	20	21.7%	--
	Vietnamese	13	14.1%	--
	Other Asian**	<10	--	--
	Amer Ind/Native AK	<10	--	*
	Hispanic/Latino	20	15.7%	3.9
	White	10	7.9%	*
<b>Birthplace</b>	United States	<10	--	*
	Outside of United States	119	93.7%	19.9

\* Categories with <10 average annual cases are unstable and not presented  
\*\*Includes Bangladeshi, Burmese, Cambodian, Korean, Laotian, Nepalese, and Thai

**CLINICAL CHARACTERISTICS**

Of all 2022 TB cases, 76% had pulmonary involvement and 24% were extrapulmonary only (Table 2). Of all pulmonary cases, a majority (59%) were acid-fast bacilli (AFB) smear-positive and 61% did not have evidence of cavitory disease on chest radiography. Only 2% of 2022 TB cases were co-infected with HIV and the most common comorbidity was diabetes (30%). Eighty-five patients (67%) reported having a usual source of care in the past two years.

**DRUG RESISTANCE**

A similar proportion of drug-resistant isolates were identified among culture-positive cases in 2022 and 2021 (12% and 13%, respectively). During 2022, all 12 drug-resistant TB cases were resistant to at least one of the first-line TB medications (i.e., isoniazid, rifampin, ethambutol or pyrazinamide). Of the 10 cases resistant to only one first-line drug, 6 cases were resistant to isoniazid, 3 cases were resistant to pyrazinamide, and 1 case was resistant to rifampin. Two cases were multidrug-resistant TB (Table 2).

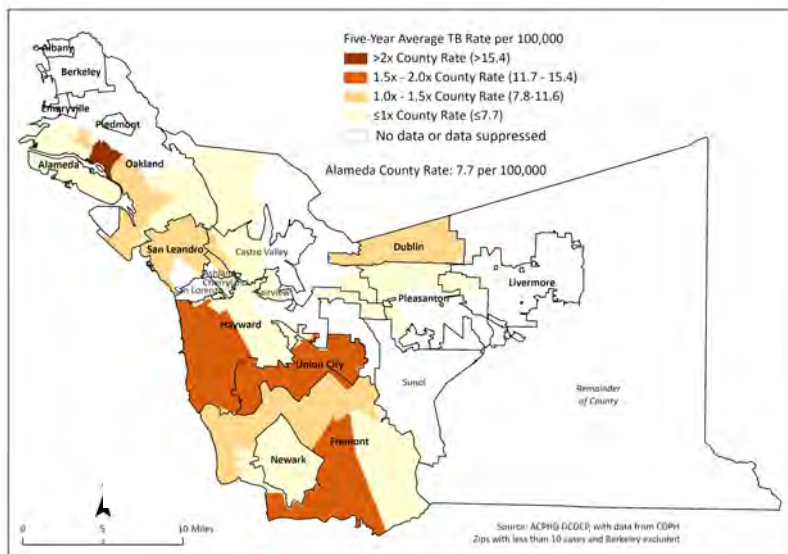
**DIAGNOSTIC TESTING**

Among 2022 TB cases with any pulmonary disease that had a sputum smear performed, 78% received a nucleic acid amplification (NAA) test at diagnosis, similar to 2021 cases (75%). Like 2021, more 2022 cases with positive sputum AFB smears received NAA tests compared to patients with negative sputum AFB smears (95% and 49%, respectively). The number of cases with negative sputum AFB smears receiving a NAA test decreased from 2021 to 2022 (60% and 49% , respectively).

**SUMMARY**

TB remains an important public health problem in Alameda County. Cases in the county increased 27% from 2021, a much higher increase than that seen at the state level. This increase may be due to a variety of factors as the COVID-19 pandemic continued into year three, such as more healthcare utilization, increased immigration, and providers now performing more diagnostic procedures than the prior years. A large proportion of Alameda County TB cases continue to occur among older adults, those born outside of the U.S., and non-U.S.-born cases who have been in the U.S. for 10 or more years before TB diagnosis; all are known risk factors for latent TB infection (LTBI). Reports have also indicated that 80%-86% of all TB cases are due to LTBI reactivation. Therefore, identifying and treating LTBI is a key TB control strategy. TB Control also continues to encourage early diagnosis through the use of NAA tests regardless of sputum smear results, as this practice may facilitate earlier TB treatment initiation and reduce disease transmission.

**Figure 3: Average Annual TB Rates per 100,000, by Zip Code, Alameda County, 2018-2022**



**Table 2. Clinical and Laboratory Characteristics of TB Cases, Alameda County, 2022**

		Number	Percent	
<b>Site of disease</b>	Pulmonary only	88	69.3%	
	Extrapulmonary only	30	23.6%	
	Both	9	7.1%	
<b>Among cases with any pulmonary disease (N=97)</b>				
Sputum smear	Positive	57	58.8%	
	Negative	33	34.0%	
	Not done	7	7.2%	
Cavitory disease*	Present	38	39.2%	
	Absent	59	60.8%	
<b>Comorbidities</b>	HIV/AIDS	3	2.4%	
	Diabetes	38	29.9%	
	End-stage renal disease	3	2.4%	
	Other immunosuppression**	11	8.7%	
	Hepatitis B	8	6.3%	
<b>Drug resistance among culture-positive cases (N=103)</b>	Resistance to any TB medications	12	11.7%	
	Resistance to INH only	6	5.8%	
	Resistance to PZA only	3	2.9%	
	Resistance to RIF only	1	1.0%	
	Multidrug resistance (i.e., resistant to at least isoniazid and rifampin)	2	1.9%	
<b>Nucleic Acid Amplification Test (NAAT) on Pulmonary Specimen at TB diagnosis</b>	<b>Among cases with any pulmonary disease and sputum smear performed (N=90)</b>			
	Sputum smear positive (N=57)	NAAT performed	54	94.7%
		NAAT positive	52	96.3%
	Sputum smear negative (N=33)	NAAT performed	16	48.5%
NAAT positive		14	87.5%	

\* Per X-ray, CT, or other chest imaging; \*\* Due to a medical condition, such as hematologic or reticuloendothelial malignancies or immunosuppressive therapy, such as prolonged use of high-dose adrenocorticosteroids.

For questions or additional information, contact:

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<http://www.acphd.org/tb.aspx>  
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