

Tuberculosis Surveillance Report

Arizona, 2004

**Arizona Department of Health Services
Bureau of Epidemiology and Disease Control
Office of Infectious Disease Services
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EXECUTIVE SUMMARY

Arizona reported 272 cases of active tuberculosis (TB) in 2004, ranking 15 among all reporting areas in the U.S. This reflects an 8% decrease from the previous year. While the U.S. has seen a 37% decline in the number of TB cases for the past 10 years (1995-2004), Arizona has experienced only a 15% decrease during the same period (Table 1 and Figure 1). Of concern is the number of cases among children less than five years that accounted for 8% of all cases. This age group has a case rate of 4.7 cases per 100,000. In addition, correctional facilities accounted for 13% of all cases.

The majority of TB cases (63%) in Arizona in 2004 were in working age adults (25-64 years) with a mean and median age of 41.0 and 40.5 years, respectively (Figure 2). Males accounted for 68% of cases (n=185). The breakdown by race/ethnicity was 55% Hispanic, 18% White, non-Hispanic, 10% Asian, 10% Black, non-Hispanic and 7% Native American. The highest TB case rate occurred in Asians with 23.5 cases per 100,000 (Table 2). The TB case rate for Hispanics is 9.3 cases per 100,000 and 86% of pediatric (<5 years) TB cases in 2004 occurred among Hispanics (Figure 3).

Pulmonary TB with no additional site of disease accounted for 76.1% of all cases in 2004 (Table 3). Total resistance to the anti-TB drug isoniazid (INH) was 9.8%. Persons resistant to at least INH and RIF (multi-drug resistant) accounted for only 1.0% of Arizona TB cases. All multi-drug resistant TB cases in the past five years in Arizona have been foreign-born (Table 4). Due to the high incidence of TB in many other parts of the world, being foreign-born constitutes the greatest risk factor for being identified with TB in Arizona. Foreign-born persons accounted for 57% of Arizona TB cases in 2004 with Mexico listed as the country of birth for 64% of the foreign-born cases and 37% of all Arizona cases (Figures 4 and 5). Other important risk factors identified among Arizona TB cases in 2004 were, excess alcohol use (18%), homelessness within the past year (7%), non-injecting drug use (11%), and HIV coinfection (8%). Among persons in the 25-44 year age group, 18% of TB cases were coinfecting with HIV (Table 5).

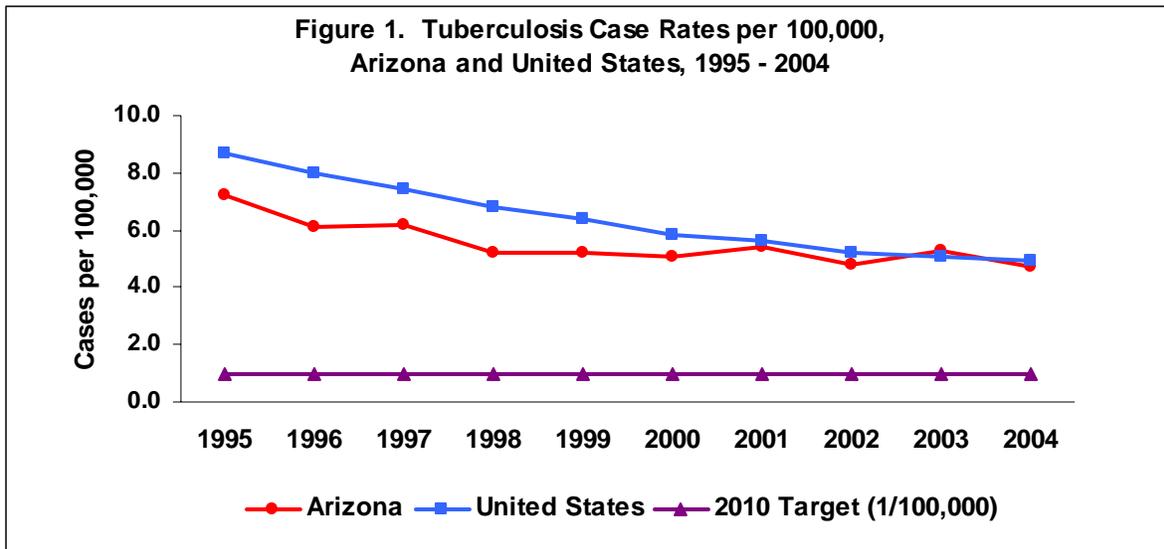
Maricopa County, with 61% of the total Arizona population, accounted for 68% of 2004 TB cases; other high morbidity counties include Pinal (9%), Pima (8%) and Yuma (7%). Pinal County had the highest case rate in 2004 (11.7 cases/100,000), followed by Yuma County (10.2 cases/100,000), La Paz County (10.1 cases/100,000) and Maricopa County (5.3 cases/100,000) (Figure 6). Table 6 provides a breakdown of all cases by county of residence and selected characteristics.

Table 1. Tuberculosis Cases and Case Rates per 100,000 Population, Arizona and United States, 1995 - 2004

Year	Arizona			United States ^a	
	Cases	Population ^b	Rate	Cases	Rate
1995	319	4,432,499	7.2	22,860	8.7
1996	282	4,586,940	6.1	21,337	8.0
1997	296	4,736,990	6.2	19,851	7.4
1998	254	4,883,342	5.2	18,361	6.8
1999	262	5,023,823	5.2	17,531	6.4
2000	261	5,130,632	5.1	16,377	5.8
2001	289	5,306,966	5.4	15,989	5.6
2002	263	5,456,453	4.8	15,078	5.2
2003	295	5,580,811	5.3	14,871	5.1
2004	272	5,743,834	4.7	14,511	4.9

^aData from U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, available at: <http://www.cdc.gov/nchstp/tb/surv/surv2003/default.htm>

^bPopulation denominators for 1995-2004 are estimates from the National Center for Health Statistics (<http://www.cdc.gov/nchs/about/major/dvs/popbridge/popbridge.htm>), with the exception of year 2000, which is taken from the 2000 U.S. Census



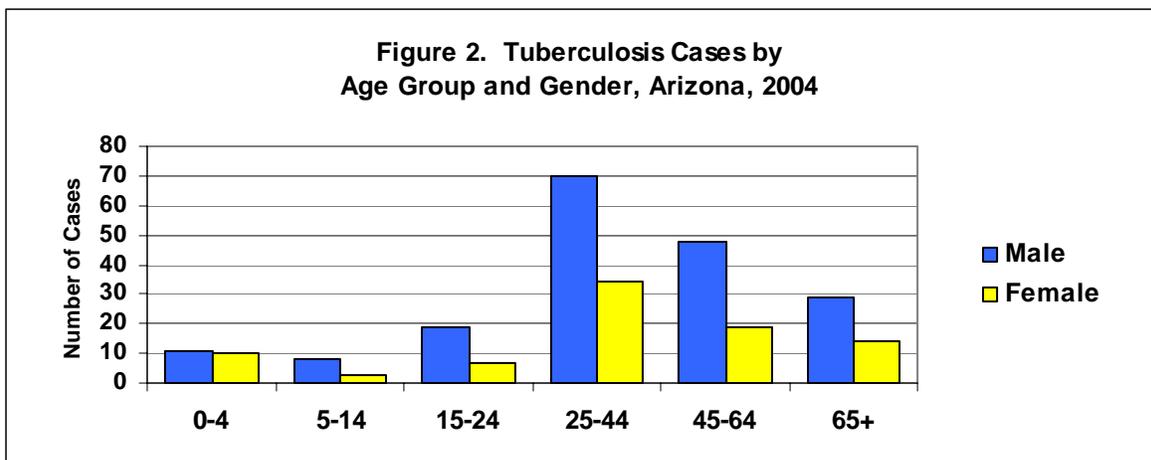


Table 2. Tuberculosis Cases by Ethnicity, Gender and Age Group, Arizona, 2004

	Age Group						Total by Ethnicity		
	< 5	5-14	15-24	25-44	45-64	65+	No.	(%)	Rate ^{a,b}
American Indian ^c									
Male	0	0	1	7	4	3	15		
Female	0	0	0	0	1	2	3		
Total	0	0	1	7	5	5	18	(6.6)	7.0
Asian									
Male	0	0	2	4	6	4	16		
Female	0	0	1	6	2	2	11		
Total	0	0	3	10	8	6	27	(9.9)	23.5
Black, Not Hispanic									
Male	1	3	4	6	2	0	16		
Female	1	1	1	7	1	0	11		
Total	2	4	5	13	3	0	27	(9.9)	15.2
Hispanic or Latino ^d									
Male	9	5	12	44	20	13	103		
Female	9	2	5	13	12	6	47		
Total	18	7	17	57	32	19	150	(55.1)	9.3
Native Hawaiian ^e									
Male	0	0	0	1	0	0	1		
Female	0	0	0	0	0	0	0		
Total	0	0	0	1	0	0	1	(0.4)	N/A
White, Not Hispanic									
Male	1	0	0	8	16	9	34		
Female	0	0	0	7	3	4	14		
Total	1	0	0	15	19	13	48	(17.6)	1.4
More than one race									
Male	0	0	0	0	0	0	0		
Female	0	0	0	1	0	0	1		
Total	0	0	0	1	0	0	1	(0.4)	N/A
Total by Gender									
Male	11	8	19	70	48	29	185	(68.0)	6.4
Female	10	3	7	34	19	14	87	(32.0)	3.0
Total by Age Group									
No.	21	11	26	104	67	43	272		
(%)	(7.7)	(4.0)	(9.6)	(38.2)	(24.6)	(15.8)		(100.0)	
Rate ^{a,b}	4.7	1.3	3.2	6.4	5.3	5.9			4.7

^aRate per 100,000 population

^bPopulation denominators are 2004 estimates from the National Center for Health Statistics (<http://www.cdc.gov/nchs/about/major/dvs/popbridge/popbridge.htm>)

^cIncludes American Indians and Native Alaskans

^dPersons of Hispanic or Latino origin may be either Black or White

^eIncludes Native Hawaiians and Pacific Islanders

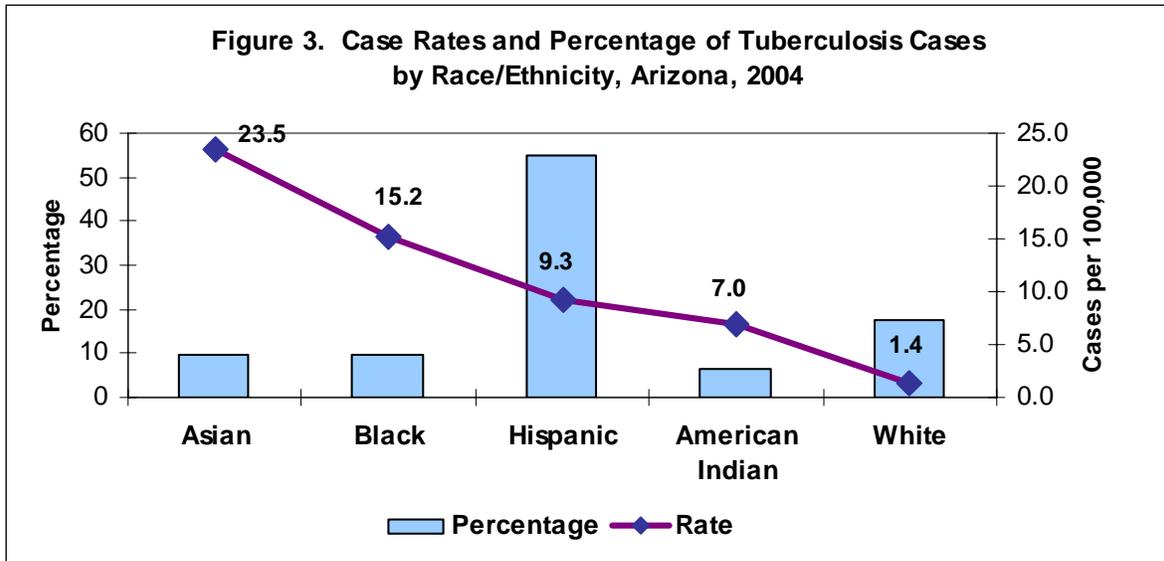


Table 3. Tuberculosis Cases by Form of Disease and Vital Status at Diagnosis, Arizona, 2004

Form of Disease	Alive at Diagnosis		Diagnosis After Death		Total Cases	
	No.	(%)	No.	(%)	No.	(%)
Pulmonary ^a	204		3		207	(76.1)
Extrapulmonary ^b	43		2		45	(16.5)
Persons with Both Pulmonary and Extrapulmonary Disease	20		0		20	(7.4)
Total (%)	267	(98.2)	5	(1.8)	272	(100.0)

^aIncludes cases with pulmonary listed as major site of disease and no additional site of disease

^bIncludes cases with pleural, lymphatic, bone and/or joint, meningeal, peritoneal, or other site, excluding pulmonary, listed as the major site of disease

Table 4. Drug Resistance Among U.S.-born and Foreign-born Tuberculosis Cases, Arizona, 2000 - 2004

Year	INH Resistance ^a			Multi-Drug Resistant ^{a,b}			Other Drug Resistance ^c		
	U.S.-born		Total ^d	U.S.-born		Total ^c	U.S.-born		Total ^c
	No.	(%)		No.	(%)		No.	(%)	
2000	2 (2.1)	15 (12.1)	17 (7.7)	0 (0.0)	2 (1.6)	2 (0.9)	10 (10.4)	9 (7.3)	19 (8.6)
2001	4 (3.3)	8 (7.8)	12 (5.3)	0 (0.0)	3 (2.9)	3 (1.3)	8 (6.6)	10 (9.7)	18 (8.0)
2002	1 (1.0)	10 (8.9)	11 (5.3)	0 (0.0)	1 (0.9)	1 (0.5)	8 (8.2)	16 (14.3)	24 (11.5)
2003	4 (4.7)	10 (7.2)	14 (6.2)	0 (0.0)	2 (1.4)	2 (0.9)	10 (11.6)	9 (6.5)	19 (8.4)
2004	6 (7.4)	14 (11.4)	20 (9.8)	0 (0.0)	2 (1.6)	2 (1.0)	10 (12.3)	14 (11.4)	24 (11.7)

^aIsolates may also be resistant to other drugs, including rifampin, initial susceptibility results only

^bResistant to at least isoniazid and rifampin, initial susceptibility results only

^cOther drug resistance without isoniazid resistance.

^dIncludes persons of unknown country of birth.

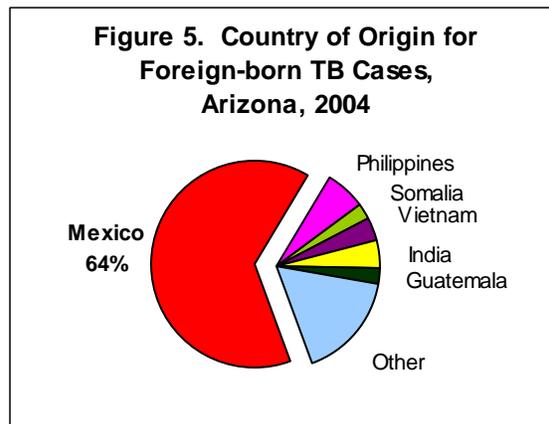
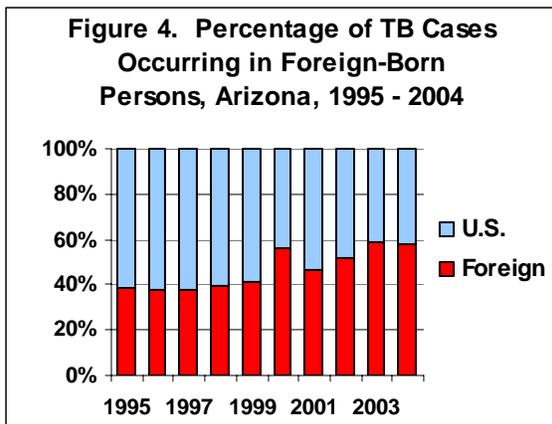


Table 5. Tuberculosis Cases by Selected Risk Factors, Arizona, 2000 - 2004

	2000		2001		2002		2003		2004	
	No.	(%)								
Occupation										
Correctional Facility Worker	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)
Health Care Worker	6	(2.3)	5	(1.7)	3	(1.1)	3	(1.0)	7	(2.6)
Migrant Farm Worker	9	(3.4)	6	(2.1)	8	(3.0)	4	(1.4)	10	(3.7)
Reported Behaviors										
Injecting Drug Use ^a	11	(4.2)	11	(3.8)	10	(3.8)	5	(1.7)	7	(2.6)
Non-injecting Drug Use ^a	20	(7.7)	22	(7.6)	27	(10.3)	24	(8.1)	31	(11.4)
Excess Alcohol Use ^a	46	(17.6)	61	(21.1)	41	(15.6)	57	(19.3)	48	(17.6)
Type of Residence										
Long Term Care Facility ^b	7	(2.7)	12	(4.2)	7	(2.7)	5	(1.7)	9	(3.3)
Correctional Facility ^b	21	(8.0)	16	(5.5)	19	(7.2)	39	(13.2)	36	(13.2)
Homeless ^a	39	(14.9)	45	(15.6)	32	(12.2)	36	(12.2)	20	(7.4)
Country of Birth										
Foreign Born ^c	147	(56.3)	134	(46.4)	137	(52.1)	172	(58.3)	156	(57.4)
Underlying Disease										
HIV infection, All Ages ^d	18	(6.9)	12	(4.2)	18	(6.8)	17	(5.8)	23	(8.5)
HIV infection, 25-44 Years Old ^d	13	(14.3)	8	(8.9)	12	(14.0)	13	(14.6)	19	(18.3)
Total Cases	261		289		263		295		272	

^aWithin one year prior to diagnosis of tuberculosis.

^bResidence at time of diagnosis.

^cIncludes persons born outside the United States.

^dTuberculosis cases with a reported positive HIV test result. The percent positive represents HIV co-infection among all verified TB cases, including those not tested for HIV infection.

Tuberculosis Cases and Case Rates per 100,000 Population, Arizona 2004

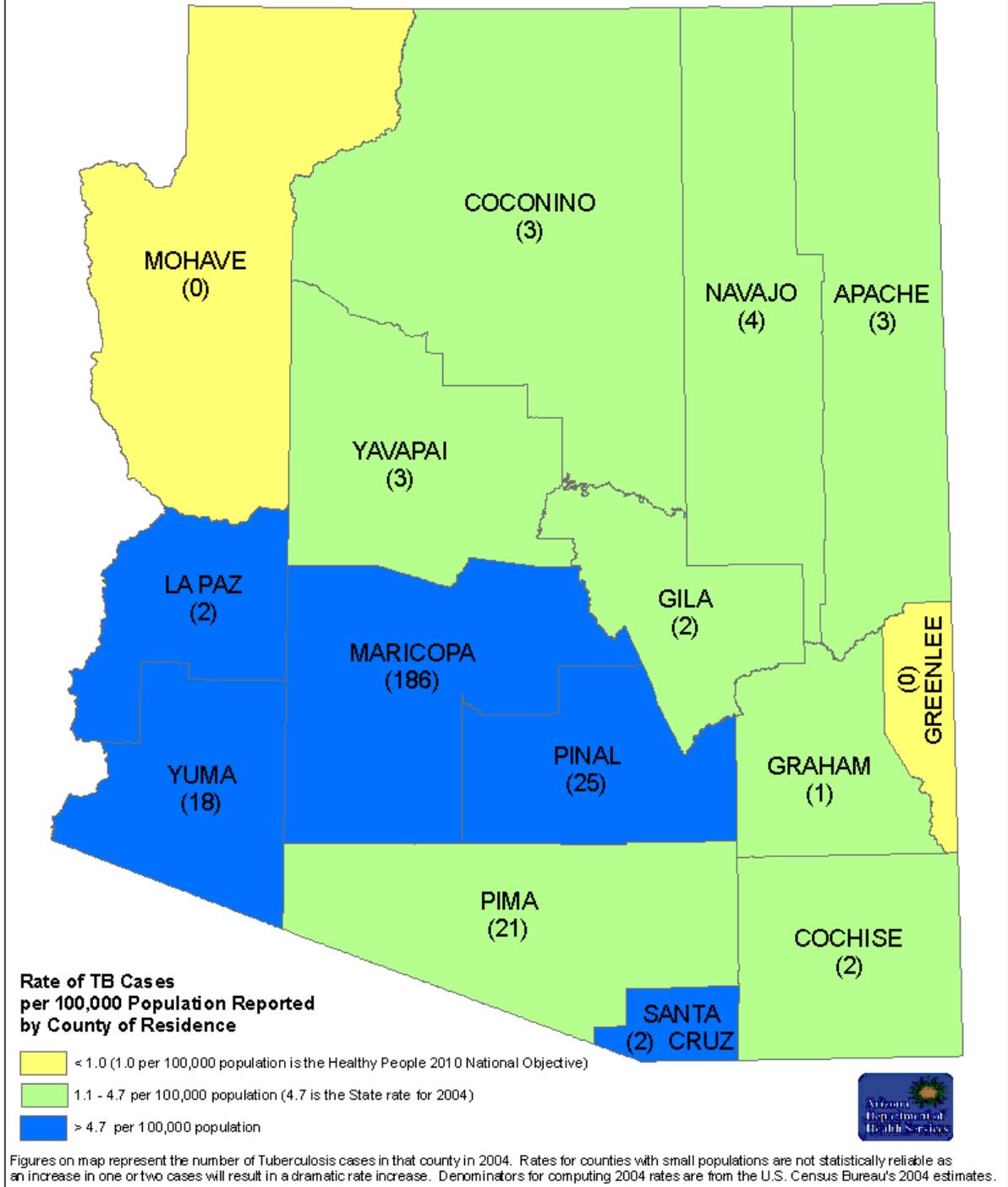


Figure 6. Tuberculosis Cases and Case Rates per 100,000 (in parentheses) by County, Arizona, 2004.

Table 6. Tuberculosis Cases by County of Residence and Selected Characteristics, Arizona, 2004

	Apache	Cochise	Coconino	Gila	Graham	Greenlee	La Paz	Maricopa	Mohave	Navajo	Pima	Pinal	Santa Cruz	Yavapai	Yuma	Total
Cases	3	2	3	2	1	0	2	186	0	4	21	25	2	3	18	272
Population	68,903	124,013	122,754	51,422	32,993	7,501	19,898	3,501,001	179,981	106,455	907,059	214,359	40,784	190,628	176,083	5,743,834
Rate/100,000 ^a	4.4	1.6	2.4	3.9	3.0	0.0	10.1	5.3	0.0	3.8	2.3	11.7	4.9	1.6	10.2	4.7
Race/Ethnicity																
American Indian ^b	3	0	3	1	0	0	0	4	0	4	1	2	0	0	0	18
Asian	0	0	0	0	0	0	0	22	0	0	4	1	0	0	0	27
Black	0	0	0	0	0	0	0	27	0	0	0	0	0	0	0	27
Hispanic	0	2	0	0	1	0	2	93	0	0	11	22	2	0	17	150
Native Hawaiian ^c	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
White	0	0	0	1	0	0	0	38	0	0	5	0	0	3	1	48
Multiple Races	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
Sex/Age																
Both < 15 years	0	0	0	0	0	0	0	26	0	0	0	0	1	0	5	32
Females >=15	1	0	1	0	0	0	0	61	0	1	6	2	0	0	2	74
Males >=15	2	2	2	2	1	0	2	99	0	3	15	23	1	3	11	166
Residence																
Correctional Facility ^d	0	0	0	0	1	0	2	8	0	0	1	22	0	0	2	36
Homeless ^e	1	0	0	0	0	0	1	11	0	1	1	0	0	3	2	20
Country of Birth																
Foreign-born	0	1	0	0	1	0	2	106	0	0	14	21	0	0	11	156
Drug Resistance																
INH Resistance ^e	0	0	0	0	0	0	0	11	0	0	0	6	0	1	2	20
MDR ^f	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	2

^aPopulation denominators are 2004 estimates from the National Center for Health Statistics (<http://www.cdc.gov/nchs/about/major/dvs/popbridge/popbridge.htm>)

^bIncludes American Indians and Native Alaskans

^cIncludes Native Hawaiians and Pacific Islanders

^dResidence at time of diagnosis

^eWithin one year prior to diagnosis with tuberculosis

^fIsolates may also be resistant to other drugs, initial susceptibility results only

^fResistant to at least isoniazid and rifampin, initial susceptibility results only

The *Tuberculosis Surveillance Report* is published annually by the Arizona Department of Health Services, Tuberculosis Control Section. All data are provisional. Report finalized on 7/21/2005 based on data available 7/13/2005.