

# TUBERCULOSIS IN ARIZONA

## A Summary of Cases Reported through December 31, 1996

Report Generated on April 10, 1998

Tuberculosis Elimination Section  
Office of Infectious Disease Services/Bureau of Epidemiology and Disease Control  
Arizona Department of Health Services

Data in this Report are Provisional

### Morbidity

Table 1: Tuberculosis Cases and Case Rates per 100,000 Population: Arizona and United States, 1990-1996

| Year Reported* | Arizona |              |                  | United States |                      |
|----------------|---------|--------------|------------------|---------------|----------------------|
|                | Cases   | Population   | Rate per 100,000 | Cases****     | Rate per 100,000**** |
| 1990           | 275     | 3,665,228**  | 7.5**            | 25,701        | 10.3                 |
| 1991           | 324     | 3,763,372*** | 8.6***           | 26,283        | 10.4                 |
| 1992           | 258     | 3,858,825*** | 6.7***           | 26,673        | 10.5                 |
| 1993           | 228     | 3,946,975*** | 5.8***           | 25,287        | 9.8                  |
| 1994           | 247     | 4,036,875*** | 6.1***           | 24,361        | 9.4                  |
| 1995           | 317     | 4,184,723*** | 7.6***           | 22,860        | 8.7                  |
| 1996           | 282     | 4,462,717*** | 6.3***           | 21,337        | 8.0                  |
| Total          | 1,931   | NA           | NA               | 172,502       | NA                   |

\* Year reported reflects the year a case was counted by ADHS  
 \*\* Based on the 1990 Census  
 \*\*\* Based on population projections for the corresponding years  
 \*\*\*\* Data from the U.S. Department of Health and Human Services

### Demographics

Table 2: Tuberculosis Cases and Case Rates per 100,000 Population by Age Group: Arizona, 1996

| Age Group | Cases<br># ( % ) | Population* | Rate per<br>100,000* |
|-----------|------------------|-------------|----------------------|
| Under 5   | 9 ( 3.2 )        | 341,149     | 2.6                  |
| 5 - 14    | 12 ( 4.3 )       | 672,732     | 1.8                  |
| 15 - 24   | 12 ( 4.3 )       | 614,141     | 2.0                  |
| 25 - 44   | 85 ( 30.1 )      | 1,369,165   | 6.2                  |
| 45 - 64   | 80 ( 28.4 )      | 848,188     | 9.4                  |
| Over 64   | 84 ( 29.8 )      | 617,342     | 13.6                 |
| Total     | 282 ( 100 )      | 4,462,717   | 6.3                  |

\* Based on 1996 population projections

Table 3: Tuberculosis Cases by Age Group and Sex: Arizona, 1996

| Age Group | Male<br># (%) * (%) ** | Female<br># (%) * (%) ** | Total Cases<br># (%) * (%) ** |
|-----------|------------------------|--------------------------|-------------------------------|
| Under 5   | 1 ( 11.1 ) ( 0.5 )     | 8 ( 88.9 ) ( 8.0 )       | 9 ( 100 ) ( 3.2 )             |
| 5 - 14    | 5 ( 41.7 ) ( 2.7 )     | 7 ( 58.3 ) ( 7.0 )       | 12 ( 100 ) ( 4.3 )            |
| 15 - 24   | 6 ( 50.0 ) ( 3.3 )     | 6 ( 50.0 ) ( 6.0 )       | 12 ( 100 ) ( 4.3 )            |
| 25 - 44   | 61 ( 71.8 ) ( 33.5 )   | 24 ( 28.2 ) ( 24.0 )     | 85 ( 100 ) ( 30.1 )           |
| 45 - 64   | 57 ( 71.3 ) ( 31.3 )   | 23 ( 28.8 ) ( 23.0 )     | 80 ( 100 ) ( 28.4 )           |
| Over 64   | 52 ( 61.9 ) ( 28.6 )   | 32 ( 38.1 ) ( 32.0 )     | 84 ( 100 ) ( 29.8 )           |
| Total     | 182 ( 64.5 ) ( 100 )   | 100 ( 35.5 ) ( 100 )     | 282 ( 100 ) ( 100 )           |

\* Percentage of row total  
 \*\* Percentage of column total

Table 4: Tuberculosis Cases by Age Group and Race/Ethnicity: Arizona, 1996

| Age Group               | White, Not Hispanic<br># (%)* (%)** | African-American, Not Hispanic<br># (%)* (%)** | Hispanic, All Races<br># (%)* (%)** | Native American, Not Hispanic<br># (%)* (%)** | Asian/Pacific Islander, Not Hispanic<br># (%)* (%)** | Unknown<br># (%)* (%)** | Total Cases<br># (%)* (%)** |
|-------------------------|-------------------------------------|------------------------------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------------|-------------------------|-----------------------------|
| Under 5                 | 1 (11.1) ( 1.2)                     | 0                                              | 8 (88.9) ( 5.8)                     | 0                                             | 0                                                    | 0                       | 9 (100) ( 3.2)              |
| 5 - 14                  | 3 (25.0) ( 3.7)                     | 1 ( 8.3) (10.0)                                | 7 (58.3) ( 5.1)                     | 1 ( 8.3) ( 3.1)                               | 0                                                    | 0                       | 12 (100) ( 4.3)             |
| 15 - 24                 | 0                                   | 0                                              | 9 (75.0) ( 6.6)                     | 0                                             | 3 (25.0) (14.3)                                      | 0                       | 12 (100) ( 4.3)             |
| 25 - 44                 | 24(28.2) (29.3)                     | 5 ( 5.9) (50.0)                                | 41 (48.2) (29.9)                    | 5 ( 5.9) (15.6)                               | 10 (11.8) (47.6)                                     | 0                       | 85 (100) (30.1)             |
| 45 - 64                 | 21(26.3) (25.6)                     | 3 ( 3.8) (30.0)                                | 37 (46.3) (27.0)                    | 12 (15.0) (37.5)                              | 7 ( 8.8) ( 33.3)                                     | 0                       | 80 (100) (28.4)             |
| Over 64                 | 33(39.3) (40.2)                     | 1 ( 1.2) (10.0)                                | 35 (41.7) (25.5)                    | 14 (16.7) (43.8)                              | 1 ( 1.2) ( 4.8)                                      | 0                       | 84 (100) (29.8)             |
| Total                   | 82 (29.1) (100)                     | 10 ( 3.5) (100)                                | 137 (48.6) ( 100)                   | 32(11.3) ( 100)                               | 21 (7.4) ( 100)                                      | 0                       | 282 (100) (100)             |
| 1996 Population*<br>**  | 3,047,087                           | 154,471                                        | 918,360                             | 258,157                                       | 84,642                                               | NA                      | 4,462,717                   |
| Rate per 100,000<br>*** | 2.7                                 | 6.5                                            | 14.9                                | 12.4                                          | 24.8                                                 | NA                      | 6.3                         |

\* Percentage of row total

\*\* Percentage of column total

\*\*\* Race-specific rates based on 1996 population estimates (Table 10B-3: Arizona Department of Economic Security, Population Statistics Unit)

## Selected Clinical Characteristics

Table 5: Tuberculosis Cases by Form of Disease and Vital Status at Diagnosis: Arizona, 1996

| Form of Disease                                   | Cases Alive at Diagnosis<br># (%)* (%)** | Cases Diagnosed after Death*** | Total Cases<br># (%)* (%)** |
|---------------------------------------------------|------------------------------------------|--------------------------------|-----------------------------|
| Pulmonary Only ****                               | 222 (96.1) (82.5)                        | 9 ( 3.9) (69.2)                | 231 (100) (81.9)            |
| Pulmonary & Extra-pulmonary (includes miliary TB) | 14 (87.5) ( 5.2)                         | 2 (12.5) (15.4)                | 16 (100) ( 5.7)             |
| Extra-pulmonary Only                              | 33 (94.3) (12.3)                         | 2 ( 5.7) (15.4)                | 35 (100) (12.4)             |
| Total                                             | 269 (95.4) (100)                         | 13 ( 4.6) (10.0)               | 282 (100) (100)             |

\* Percentage by row

\*\* Percentage by column

\*\*\* It is unknown if TB was the underlying cause of death

\*\*\*\* The classification of Pulmonary TB includes laryngeal TB

Table 6: Tuberculosis Cases Resistant to INH and Other Anti-TB Drugs: Arizona, 1993 - 1996

| Year Reported* | Cases | Number of Culture Confirmed Cases with Initial Drug Sensitivity Test Results | INH Resistant**<br># (%)*** | Multiple Drug Resistant****<br># (%)*** | Other Drug Resistance****<br># (%)*** | Total Cases with Drug Resistance<br># (%)*** |
|----------------|-------|------------------------------------------------------------------------------|-----------------------------|-----------------------------------------|---------------------------------------|----------------------------------------------|
| 1993           | 228   | 193                                                                          | 11 ( 5.7)                   | 3 ( 1.6)                                | 17 ( 8.8)                             | 31 (16.1)                                    |
| 1994           | 247   | 204                                                                          | 15 ( 7.4)                   | 4 ( 2.0)                                | 17 ( 8.3)                             | 36 (17.6)                                    |
| 1995           | 317   | 231                                                                          | 8 ( 3.5)                    | 3 ( 1.3)                                | 29 (12.6)                             | 40 (17.3)                                    |
| 1996           | 282   | 223                                                                          | 5 ( 2.2)                    | 7 ( 3.1)                                | 24 (10.8)                             | 36 (16.1)                                    |
| Total          | 1074  | 847                                                                          | 39 ( 4.6)                   | 17 ( 2.0)                               | 87 ( 10.3)                            | 143 (16.9)                                   |

\* Year reported reflects the year a case was counted by ADHS

\*\* Resistant to at least INH **without** resistance to RIF

\*\*\* Percent of total cases with sensitivity testing

\*\*\*\* Resistant to **at least** INH and RIF\*\*\*\*\* Resistance to drugs **other than** INH

## County of Residence

Table 9: Tuberculosis Cases by County of Residence and Selected Characteristics: Arizona, 1996

| County of Residence                  | Apache | Cochise | Coconino | Gila | Graham | Greenlee | La Paz | Maricopa | Mohave | Navajo | Pima | Pinal | Santa Cruz | Yavapai | Yuma | Total Cases |
|--------------------------------------|--------|---------|----------|------|--------|----------|--------|----------|--------|--------|------|-------|------------|---------|------|-------------|
| Cases                                | 6      | 3       | 6        | 3    | 1      | 1        | 1      | 147      | 8      | 7      | 37   | 20    | 2          | 3       | 37   | 282         |
| Rate per 100,000 Population*         | 9.3    | 2.6     | 5.3      | 6.6  | 3.2    | 11.6     | 5.5    | 5.6      | 6.3    | 8.3    | 4.7  | 13.9  | 5.7        | 2.2     | 29.6 | 6.3         |
| Race/Ethnicity                       |        |         |          |      |        |          |        |          |        |        |      |       |            |         |      |             |
| White, Not Hispanic                  | 0      | 0       | 1        | 0    | 0      | 1        | 0      | 53       | 5      | 1      | 15   | 4     | 0          | 0       | 2    | 82          |
| African-American, Not Hispanic       | 0      | 0       | 0        | 0    | 0      | 0        | 0      | 8        | 0      | 0      | 1    | 0     | 0          | 1       | 0    | 10          |
| Hispanic, All Races                  | 0      | 2       | 1        | 1    | 0      | 0        | 0      | 63       | 2      | 0      | 17   | 12    | 2          | 2       | 35   | 137         |
| Native American, Not Hispanic        | 6      | 0       | 4        | 2    | 1      | 0        | 1      | 7        | 1      | 6      | 2    | 2     | 0          | 0       | 0    | 32          |
| Asian/Pacific Islander, Not Hispanic | 0      | 1       | 0        | 0    | 0      | 0        | 0      | 16       | 0      | 0      | 2    | 2     | 0          | 0       | 0    | 21          |
| Sex/Age                              |        |         |          |      |        |          |        |          |        |        |      |       |            |         |      |             |
| All Sexes, Children <= 14 years      | 0      | 0       | 0        | 0    | 0      | 0        | 0      | 15       | 0      | 0      | 0    | 0     | 0          | 0       | 6    | 21          |
| Females, >14 years                   | 4      | 1       | 1        | 0    | 1      | 0        | 0      | 42       | 2      | 3      | 12   | 7     | 0          | 1       | 11   | 85          |
| Males, > 14 years                    | 2      | 2       | 5        | 3    | 0      | 1        | 1      | 90       | 6      | 4      | 25   | 13    | 2          | 2       | 20   | 176         |
| Type of Residence                    |        |         |          |      |        |          |        |          |        |        |      |       |            |         |      |             |
| Correctional Facility                | 0      | 1       | 0        | 0    | 0      | 0        | 0      | 5        | 0      | 0      | 1    | 10    | 0          | 0       | 1    | 18          |
| Long Term Care Facility              | 0      | 0       | 0        | 0    | 0      | 0        | 0      | 9        | 0      | 0      | 3    | 2     | 0          | 1       | 0    | 15          |
| Homeless**                           | 0      | 0       | 2        | 1    | 0      | 0        | 0      | 22       | 1      | 0      | 3    | 2     | 1          | 1       | 1    | 34          |
| Country of Birth                     |        |         |          |      |        |          |        |          |        |        |      |       |            |         |      |             |
| Foreign-born                         | 0      | 2       | 0        | 0    | 0      | 0        | 0      | 47       | 2      | 0      | 17   | 10    | 1          | 0       | 28   | 107         |
| Drug Resistance                      |        |         |          |      |        |          |        |          |        |        |      |       |            |         |      |             |
| INH Resistance***                    | 0      | 0       | 0        | 0    | 0      | 0        | 0      | 4        | 0      | 0      | 0    | 1     | 0          | 0       | 0    | 5           |
| MDR****                              | 0      | 0       | 0        | 0    | 0      | 0        | 0      | 3        | 0      | 0      | 1    | 1     | 0          | 0       | 2    | 7           |

\* Based on 1996 population projections  
 \*\* Within the year before TB diagnosis (routine collection of information began Jan. 1, 1993).  
 \*\*\* Resistance to at least INH **without** resistance to RIF  
 \*\*\*\* Resistance to at least INH and RIF

Document - H:\tbes\epidem\1996\aztb96v4.wpd  
 Database - H:\tbes\1997.rec  
 Date - 4/10/98  
 Author- DGM

Note: The data in this report are provisional.  
 Report approved by OIDS Office Chief on

## Risk Factor Information

Table 7: Tuberculosis Cases by Selected Characteristics: Arizona, 1993 - 1996

| Risk Factor (RF)             | 1993 Cases with RF<br># (% of all 1993 cases) | 1994 Cases with RF<br># (% of all 1994 cases) | 1995 Cases with RF<br># (% of all 1995 cases) | 1996 Cases with RF<br># (% of all 1996 cases) |
|------------------------------|-----------------------------------------------|-----------------------------------------------|-----------------------------------------------|-----------------------------------------------|
| <b>Occupation</b>            |                                               |                                               |                                               |                                               |
| Correctional Facility Worker | 0                                             | 0                                             | 0                                             | 0                                             |
| Health Care Worker           | 3 ( 1.3)                                      | 6 ( 2.4)                                      | 8 ( 2.5)                                      | 2 ( 0.7)                                      |
| Migrant Farm Worker          | 5 ( 2.2)                                      | 7 ( 2.8)                                      | 4 ( 1.3)                                      | 9 ( 3.2)                                      |
| <b>Reported Behaviors</b>    |                                               |                                               |                                               |                                               |
| Injectable Drug User*        | 8 ( 3.5)                                      | 4 ( 1.6)                                      | 17 ( 5.4)                                     | 12 ( 4.3)                                     |
| Non-injectable Drugs ONLY*   | 9 ( 3.9)                                      | 5 ( 2.0)                                      | 14 ( 4.4)                                     | 13 ( 4.6)                                     |
| Excessive Alcohol Use*       | 22 ( 9.6)                                     | 28 (11.3)                                     | 43 (13.6)                                     | 37 (13.1)                                     |
| <b>Type of Residence</b>     |                                               |                                               |                                               |                                               |
| Long Term Care Facility      | 5 ( 2.2)                                      | 10 ( 4.0)                                     | 16 ( 5.0)                                     | 15 ( 5.3)                                     |
| Correctional Facility        | 6 ( 2.6)                                      | 6 ( 2.4)                                      | 16 ( 5.0)                                     | 18 ( 6.4)                                     |
| Homeless*                    | 31 (13.6)                                     | 26 (10.5)                                     | 45 (14.2)                                     | 34 (12.1)                                     |
| <b>Country of Birth</b>      |                                               |                                               |                                               |                                               |
| Foreign Born                 | 75 (32.9)                                     | 88 (35.6)                                     | 121 (38.2)                                    | 107 (37.9)                                    |
| <b>Underlying Disease</b>    |                                               |                                               |                                               |                                               |
| Known HIV/AIDS**             | 16 ( 7.0)                                     | 14 ( 5.7)                                     | 28 ( 8.8)                                     | 16 ( 5.7)                                     |

\* Within the year before TB diagnosis (routine collection of information began Jan. 1, 1993)

\*\* Due to the lag in HIV/AIDS reporting, the data on HIV/AIDS and TB co-morbidity may be incomplete

Table 8: Tuberculosis Cases Among Foreign-born Persons by Length of Time in the United States: Arizona, 1996

| Area of Origin                             | Years in the United States Before Tuberculosis Report |                                    |                              |                         |                             |
|--------------------------------------------|-------------------------------------------------------|------------------------------------|------------------------------|-------------------------|-----------------------------|
|                                            | Less than Two Years<br># (%)* (%)**                   | Two to Three Years<br># (%)* (%)** | Four or More<br># (%)* (%)** | Unknown<br># (%)* (%)** | Total Cases<br># (%)* (%)** |
| Asia/Pacific Islands                       | 9 (39.1) (27.3)                                       | 2 ( 8.7) (11.0)                    | 9 (39.1) (21.4)              | 3 (13.1) (21.4)         | 23 (100) (21.5)             |
| Mexico                                     | 23 (29.1) (69.7)                                      | 14 (17.7) (77.8)                   | 31 (39.2) (73.8)             | 11 (14.0) (78.6)        | 79 (100) (73.8)             |
| Other Central and South American Countries | 0                                                     | 1 ( 100) ( 5.6)                    | 0                            | 0                       | 1 (100) ( 1.0)              |
| Other                                      | 1 (25.0) ( 3.0)                                       | 1 (25.0) ( 5.6)                    | 2 (50.0) ( 4.8)              | 0                       | 4 (100) ( 3.7)              |
| Total                                      | 33 (30.8) (100)                                       | 18 (16.8) ( 100)                   | 42 (39.3) (100)              | 14 (13.1) (100)         | 107 (100) (100)             |

\* Percentage of row total

\*\* Percentage of column total