

Public Health - Seattle & King County  
Tuberculosis Control Program

# Epidemiological Profile Supplement

# 2011

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[www.kingcounty.gov/health/TB](http://www.kingcounty.gov/health/TB)

**Public Health**  
Seattle & King County



## PROGRAM EVALUATION

**Table 1.** Washington state and national TB objectives for 2011/2015 with performance by King County in 2011

| Objective   | WA 2011 Target | US 2015 Target | Seattle & King County 2011 Performance |
|---|----------------|----------------|--|
| Treatment completion within 12 months   | 87.0           | 93.0           | 90.1*                                  |
| Incidence**   |                |                |  |
| Among US-born   | 1.3            | 0.7            | 0.8                                    |
| Among foreign-born  | 22.5           | 14.0           | 23.6                                   |
| Among US-born non-Hispanic blacks   | 5.2            | 1.3            | 4.6                                    |
| Among children younger than 5 years of age  | 1.7            | 0.4            | 1.7                                    |
| Contacts identified to sputum smear positive cases  | 100.0          | 100.0          | 100.0                                  |
| Contacts evaluated to sputum smear positive cases   | 81.0           | 93.0           | 75.6                                   |
| Contacts newly diagnosed starting LTBI treatment  | 74.0           | 88.0           | 59.4                                   |
| Contacts completing LTBI treatment among newly diagnosed  | 5.0            | 79.0           | 65.6*                                  |
| Initial drug susceptibility results reported for culture-positive cases                                       | 99.0           | 100.0          | 100.0                                  |
| Treatment initiation within 7 days of specimen collection for sputum smear-positive cases                     | 88.0           | n/a            | 68.0                                   |
| Sputum culture conversion documented within 60 days of treatment initiation for sputum culture-positive cases | 63.0           | 61.5           | 78.0                                   |
| Completeness of core RVCT data variables  | 99.0           | 99.2           | 96.4                                   |
| Started on recommended initial 4-drug regimen when suspected of having TB                                     | 92.0           | 93.4           | 88.8                                   |
| Reporting of genotype results for culture-confirmed cases   | 94.0           | 94.0           | 95.2                                   |
| Reporting of HIV status   | 86.0           | 88.7           | 84.9                                   |
| Evaluation initiation for Class B immigrants within 30 days of arrival  | 32.0           | n/a            | 78.1***                                |
| Evaluation completion for Class B immigrants within 90 days of arrival  | 81.0           | n/a            | 78.5***                                |
| Reporting of sputum-culture results in cases age 12 or older with pleural or respiratory site of disease      | 95.7           | 95.7           | 94.7                                   |

All units are in percent except where otherwise indicated.

\*Data is from 2010 cases as treatment regimen is not completed for some 2011 cases

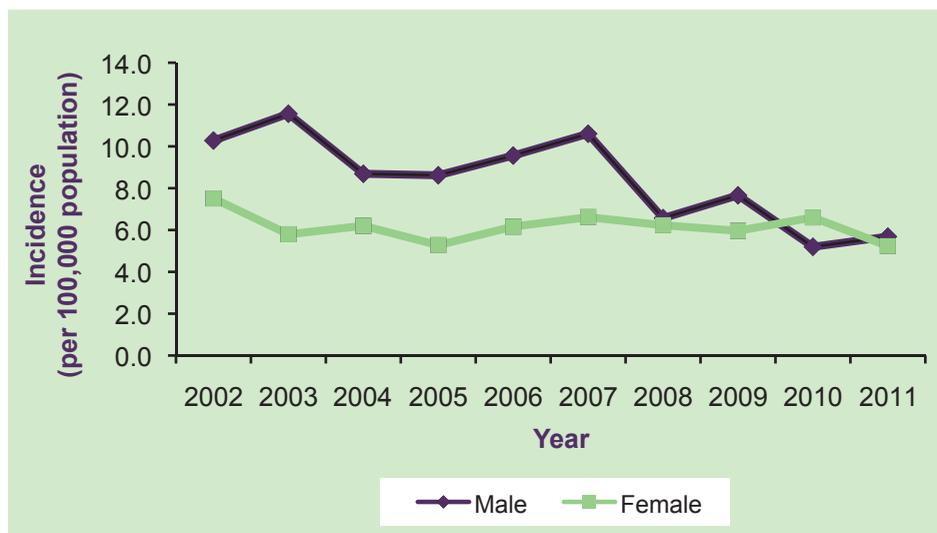
\*\*Case rate per 100,000 people

\*\*\*Class B1 only

## 10-YEAR SUMMARY

**Table 2.** TB case counts by gender and year, 2002-2011, King County, Washington

|      | MALE     | FEMALE  | TOTAL |
|------|----------|---------|-------|
|      | n (%)    | n (%)   | n     |
| 2002 | 91 (58)  | 67 (42) | 158   |
| 2003 | 103 (66) | 52 (34) | 155   |
| 2004 | 78 (58)  | 56 (42) | 134   |
| 2005 | 78 (62)  | 48 (38) | 126   |
| 2006 | 88 (61)  | 57 (39) | 145   |
| 2007 | 99 (61)  | 62 (39) | 161   |
| 2008 | 62 (51)  | 59 (49) | 121   |
| 2009 | 73 (56)  | 57 (44) | 130   |
| 2010 | 50 (44)  | 64 (56) | 114   |
| 2011 | 55 (52)  | 51 (48) | 106   |

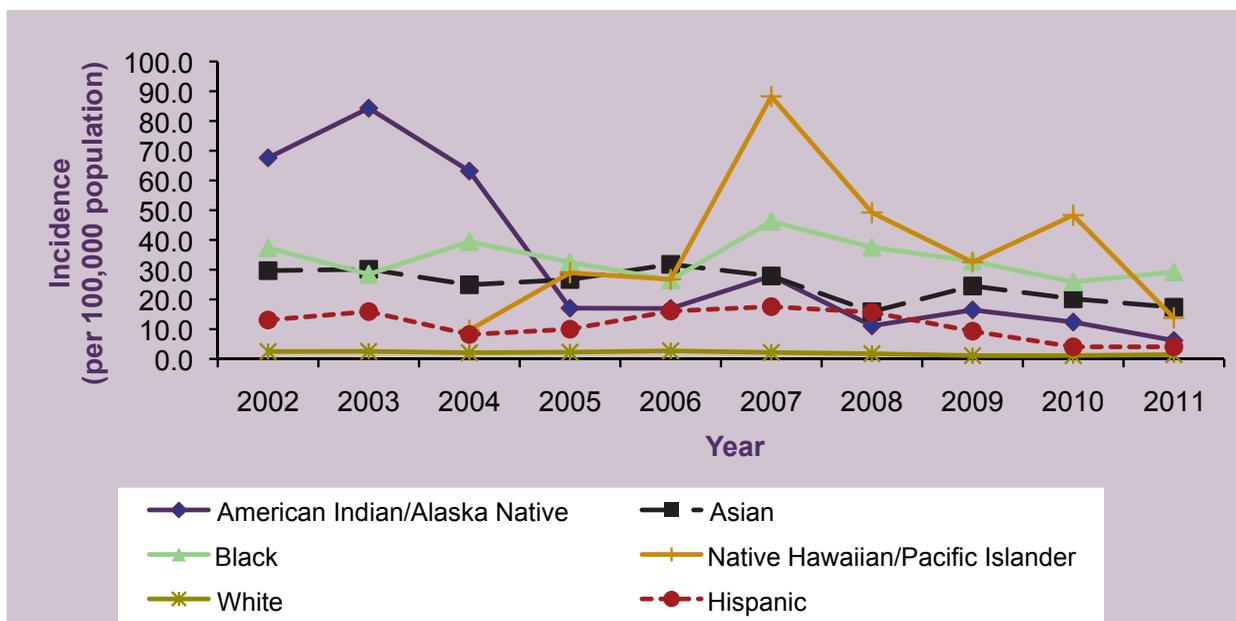
**Figure 1.** TB incidence (per 100,000 population) by gender and year, 2002-2011, King County, Washington

## 10-YEAR SUMMARY

**Table 3.** TB incidence (per 100,000 population) by race or ethnicity and year, 2002-2011, King County, Washington

|                                      | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 |
|--------------------------------------|------|------|------|------|------|------|------|------|------|------|
| American Indian/<br>Alaska Native    | 67.6 | 84.3 | 63.2 | 17.1 | 17.0 | 27.9 | 11.1 | 16.5 | 12.4 | 6.2  |
| Asian                                | 29.7 | 30.1 | 24.9 | 26.7 | 31.8 | 27.9 | 15.9 | 24.5 | 20.2 | 17.4 |
| Black                                | 37.3 | 28.5 | 39.4 | 32.5 | 26.6 | 46.2 | 37.5 | 32.8 | 25.9 | 29.2 |
| Native Hawaiian/<br>Pacific Islander | *    | *    | 9.7  | 29.0 | 26.8 | 88.3 | 49.2 | 32.5 | 48.3 | 13.8 |
| White                                | 2.5  | 2.5  | 2.1  | 2.3  | 2.7  | 2.2  | 1.7  | 1.1  | 1.1  | 1.4  |
| Hispanic                             | 13.1 | 15.9 | 8.2  | 10.0 | 16.1 | 17.6 | 15.7 | 9.3  | 4.1  | 4.1  |

\*Population data not available

**Figure 2.** TB incidence (per 100,000 population) by race or ethnicity and year, 2002-2011, King County, Washington

# CHARACTERISTICS OF FOREIGN-BORN CASES BY REGION OF BIRTH

**Table 4.** Characteristics of TB cases born in Southeast Asia, 2007-2011, King County, Washington

| Year                          | 2007         | 2008        | 2009         | 2010        | 2011        |
|-------------------------------|--------------|-------------|--------------|-------------|-------------|
| <b>Total n Foreign-Born</b>   | <b>n=123</b> | <b>n=99</b> | <b>n=110</b> | <b>n=96</b> | <b>n=93</b> |
| <b>SOUTHEAST ASIA</b>         | <b>n(%)</b>  | <b>n(%)</b> | <b>n(%)</b>  | <b>n(%)</b> | <b>n(%)</b> |
| n, (% of foreign-born)        | 32 (26)      | 21 (21)     | 40 (36)      | 35 (36)     | 29 (31)     |
| Male                          | 18 (56)      | 11 (52)     | 24 (60)      | 16 (46)     | 15 (52)     |
| Female                        | 14 (44)      | 10 (48)     | 16 (40)      | 19 (54)     | 14 (48)     |
| <b>Age Group</b>              |              |             |              |             |             |
| 0-4 years                     | 0 (0)        | 0 (0)       | 0 (0)        | 0 (0)       | 0 (0)       |
| 5-14 years                    | 0 (0)        | 0 (0)       | 0 (0)        | 0 (0)       | 0 (0)       |
| 15-24 years                   | 1 (3)        | 2 (10)      | 6 (15)       | 3 (9)       | 2 (7)       |
| 25-44 years                   | 15 (47)      | 5 (24)      | 15 (38)      | 9 (26)      | 6 (21)      |
| 45-64 years                   | 11 (34)      | 7 (33)      | 11 (28)      | 11 (31)     | 12 (41)     |
| 65 years and older            | 5 (16)       | 7 (33)      | 8 (20)       | 12 (34)     | 9 (31)      |
| <b>Length of US Residency</b> |              |             |              |             |             |
| <1 year                       | 6 (20)       | 1 (5)       | 9 (23)       | 2 (6)       | 2 (7)       |
| 1-4 years                     | 3 (9)        | 1 (5)       | 8 (20)       | 4 (11)      | 3 (10)      |
| 5+ years                      | 23 (72)      | 19 (90)     | 23 (58)      | 29 (83)     | 24 (83)     |
| <b>Country of Origin</b>      |              |             |              |             |             |
| Burma                         | 1 (3)        | 0 (0)       | 5 (13)       | 4 (11)      | 1 (3)       |
| Cambodia                      | 3 (9)        | 3 (14)      | 0 (0)        | 4 (11)      | 6 (21)      |
| Indonesia                     | 0 (0)        | 0 (0)       | 1 (3)        | 2 (6)       | 0 (0)       |
| Laos                          | 4 (13)       | 0 (0)       | 1 (3)        | 1 (3)       | 0 (0)       |
| Malaysia                      | 0 (0)        | 0 (0)       | 0 (0)        | 0 (0)       | 0 (0)       |
| Philippines                   | 3 (9)        | 9 (43)      | 20 (50)      | 12 (34)     | 10 (34)     |
| Thailand                      | 0 (0)        | 0 (0)       | 2 (5)        | 1 (3)       | 0 (0)       |
| Vietnam                       | 21 (66)      | 9 (43)      | 11 (28)      | 11 (31)     | 12 (41)     |

# CHARACTERISTICS OF FOREIGN-BORN CASES BY REGION OF BIRTH

**Table 5.** Characteristics of TB cases born in East Africa, 2007-2011, King County, Washington

| Year                          | 2007         | 2008        | 2009         | 2010        | 2011        |
|-------------------------------|--------------|-------------|--------------|-------------|-------------|
| <b>Total n Foreign-Born</b>   | <b>n=123</b> | <b>n=99</b> | <b>n=110</b> | <b>n=96</b> | <b>n=93</b> |
| <b>EAST AFRICA</b>            | <b>n(%)</b>  | <b>n(%)</b> | <b>n(%)</b>  | <b>n(%)</b> | <b>n(%)</b> |
| n, (% of foreign-born)        | 35 (28)      | 34 (34)     | 31 (28)      | 24 (25)     | 28 (30)     |
| Male                          | 16 (46)      | 18 (53)     | 15 (48)      | 9 (38)      | 12 (43)     |
| Female                        | 19 (54)      | 16 (47)     | 16 (52)      | 15 (63)     | 16 (57)     |
| <b>Age Group</b>              |              |             |              |             |             |
| 0-4 years                     | 0 (0)        | 0 (0)       | 1 (3)        | 0 (0)       | 0 (0)       |
| 5-14 years                    | 3 (9)        | 4 (12)      | 0 (0)        | 0 (0)       | 2 (7)       |
| 15-24 years                   | 12 (34)      | 9 (26)      | 5 (16)       | 3 (13)      | 6 (21)      |
| 25-44 years                   | 13 (37)      | 15 (44)     | 20 (65)      | 11 (46)     | 14 (50)     |
| 45-64 years                   | 4 (11)       | 4 (12)      | 2 (6)        | 6 (25)      | 5 (18)      |
| 65 years and older            | 3 (9)        | 2 (6)       | 3 (10)       | 4 (17)      | 1 (4)       |
| <b>Length of US Residency</b> |              |             |              |             |             |
| <1 year                       | 10 (29)      | 5 (15)      | 7 (23)       | 3 (13)      | 8 (29)      |
| 1-4 years                     | 15 (43)      | 20 (59)     | 11 (35)      | 10 (42)     | 9 (32)      |
| 5+ years                      | 10 (29)      | 9 (26)      | 13 (42)      | 11 (46)     | 11 (39)     |
| <b>Country of Origin</b>      |              |             |              |             |             |
| Eritrea                       | 0 (0)        | 0 (0)       | 1 (3)        | 1 (4)       | 2 (7)       |
| Ethiopia                      | 14 (40)      | 12 (35)     | 13 (42)      | 13 (54)     | 13 (46)     |
| Kenya                         | 3 (9)        | 6 (18)      | 2 (6)        | 3 (13)      | 3 (11)      |
| Somalia                       | 17 (49)      | 16 (47)     | 15 (48)      | 7 (29)      | 10 (36)     |
| Tanzania                      | 1 (3)        | 0 (0)       | 0 (0)        | 0 (0)       | 0 (0)       |

# CHARACTERISTICS OF FOREIGN-BORN CASES BY REGION OF BIRTH

**Table 6.** Characteristics of TB cases born in Central America, 2006-2010, King County, Washington

| Year                          | 2007         | 2008        | 2009         | 2010        | 2011        |
|-------------------------------|--------------|-------------|--------------|-------------|-------------|
| <b>Total n Foreign-Born</b>   | <b>n=123</b> | <b>n=99</b> | <b>n=110</b> | <b>n=96</b> | <b>n=93</b> |
| <b>CENTRAL AMERICA</b>        | <b>n(%)</b>  | <b>n(%)</b> | <b>n(%)</b>  | <b>n(%)</b> | <b>n(%)</b> |
| n, (% of foreign-born)        | 14 (11)      | 15 (15)     | 9 (8)        | 6 (6)       | 7 (8)       |
| Male                          | 10 (71)      | 9 (60)      | 4 (44)       | 3 (50)      | 2 (29)      |
| Female                        | 4 (29)       | 6 (40)      | 5 (55)       | 3 (50)      | 5 (71)      |
| <b>Age Group</b>              |              |             |              |             |             |
| 0-4 years                     | 0 (0)        | 0 (0)       | 1 (11)       | 0 (0)       | 0 (0)       |
| 5-14 years                    | 0 (0)        | 0 (0)       | 0 (0)        | 0 (0)       | 1 (14)      |
| 15-24 years                   | 5 (36)       | 3 (20)      | 0 (0)        | 2 (33)      | 1 (14)      |
| 25-44 years                   | 4 (29)       | 8 (53)      | 7 (77)       | 3 (50)      | 3 (43)      |
| 45-64 years                   | 3 (21)       | 3 (20)      | 1 (11)       | 1 (17)      | 1 (14)      |
| 65 years and older            | 2 (14)       | 1 (11)      | 0 (0)        | 0 (0)       | 1 (14)      |
| <b>Length of US Residency</b> |              |             |              |             |             |
| <1 year                       | 1 (7)        | 1 (11)      | 0 (0)        | 0 (0)       | 0 (0)       |
| 1-4 years                     | 6 (43)       | 4 (27)      | 3 (33)       | 1 (17)      | 3 (43)      |
| 5+ years                      | 7 (50)       | 10 (67)     | 6 (67)       | 5 (83)      | 4 (57)      |
| <b>Country of Origin</b>      |              |             |              |             |             |
| El Salvador                   | 2 (14)       | 0 (0)       | 0 (0)        | 0 (0)       | 0 (0)       |
| Guatemala                     | 3 (21)       | 0 (0)       | 3 (33)       | 0 (0)       | 2 (29)      |
| Honduras                      | 1 (7)        | 1 (11)      | 0 (0)        | 1 (17)      | 0 (0)       |
| Mexico                        | 7 (50)       | 14 (93)     | 6 (67)       | 5 (83)      | 5 (71)      |
| Nicaragua                     | 1 (7)        | 0 (0)       | 0 (0)        | 0 (0)       | 0 (0)       |

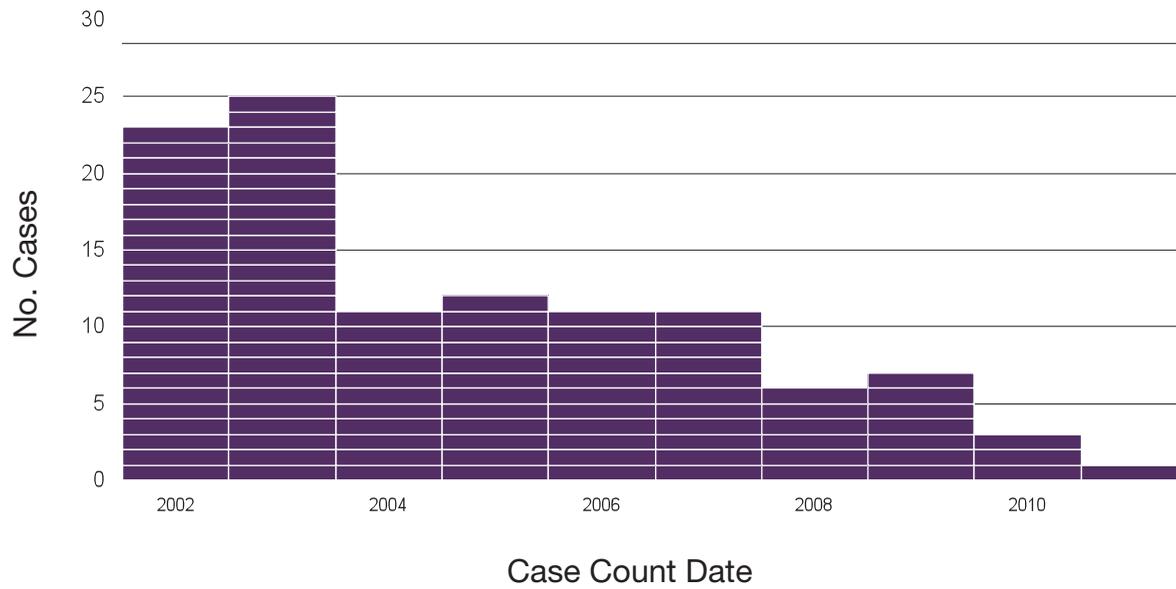
# CHARACTERISTICS OF CASES AMONG THE HOMELESS

**Table 7.** Characteristics of homeless people diagnosed with TB, 2002-2011, King County, Washington

| Year                                 | 2002    | 2003    | 2004    | 2005    | 2006    | 2007    | 2008    | 2009    | 2010   | 2011    |
|--------------------------------------|---------|---------|---------|---------|---------|---------|---------|---------|--------|---------|
| Total n                              | (n=29)  | (n=35)  | (n=25)  | (n=25)  | (n=22)  | (n=15)  | (n=14)  | (n=7)   | (n=6)  | (n=2)   |
| Foreign-Born                         | n(%)    | n(%)   | n(%)    |
| <b>Gender</b>                        |         |         |         |         |         |         |         |         |        |         |
| Male                                 | 25 (86) | 28 (80) | 22 (88) | 23 (92) | 21 (95) | 11 (73) | 13 (93) | 7 (100) | 2 (33) | 2 (100) |
| Female                               | 4 (14)  | 7 (20)  | 3 (12)  | 2 (8)   | 1 (5)   | 4 (27)  | 1 (7)   | 0 (0)   | 4 (67) | 0 (0)   |
| <b>Age group</b>                     |         |         |         |         |         |         |         |         |        |         |
| 0-4 years                            | 0 (0)   | 0 (0)   | 0 (0)   | 0 (0)   | 0 (0)   | 0 (0)   | 0 (0)   | 0 (0)   | 0 (0)  | 0 (0)   |
| 5-14 years                           | 0 (0)   | 0 (0)   | 0 (0)   | 0 (0)   | 0 (0)   | 1 (7)   | 0 (0)   | 0 (0)   | 0 (0)  | 0 (0)   |
| 15-24 years                          | 0 (0)   | 2 (6)   | 7 (28)  | 1 (4)   | 0 (0)   | 0 (0)   | 1 (7)   | 0 (0)   | 0 (0)  | 0 (0)   |
| 25-44 years                          | 16 (55) | 15 (43) | 7 (28)  | 8 (32)  | 9 (41)  | 3 (20)  | 8 (57)  | 2 (29)  | 2 (33) | 1 (50)  |
| 45-64 years                          | 13 (45) | 16 (46) | 10 (40) | 15 (60) | 13 (59) | 11 (73) | 4 (29)  | 5 (71)  | 4 (67) | 1 (50)  |
| 65+ years                            | 0 (0)   | 2 (6)   | 1 (4)   | 1 (4)   | 0 (0)   | 0 (0)   | 1 (7)   | 0 (0)   | 0 (0)  | 0 (0)   |
| <b>Race</b>                          |         |         |         |         |         |         |         |         |        |         |
| White                                | 6 (21)  | 11 (31) | 4 (16)  | 10 (40) | 14 (64) | 3 (20)  | 8 (57)  | 2 (29)  | 1 (17) | 1 (50)  |
| Black                                | 11 (38) | 10 (29) | 12 (48) | 11 (44) | 5 (23)  | 8 (53)  | 3 (21)  | 3 (43)  | 3 (50) | 1 (50)  |
| Asian                                | 0 (0)   | 0 (0)   | 1 (4)   | 1 (4)   | 0 (0)   | 1 (7)   | 0 (0)   | 0 (0)   | 0 (0)  | 0 (0)   |
| American Indian/<br>Alaska Native    | 11 (38) | 14 (40) | 8 (32)  | 1 (4)   | 3 (14)  | 3 (20)  | 2 (14)  | 0 (0)   | 1 (17) | 0 (0)   |
| Native Hawaiian/<br>Pacific Islander | 1 (3)   | 0 (0)   | 0 (0)   | 2 (8)   | 0 (0)   | 0 (0)   | 0 (0)   | 1 (14)  | 1 (17) | 0 (0)   |
| <b>Ethnicity</b>                     |         |         |         |         |         |         |         |         |        |         |
| Hispanic                             | 3 (10)  | 4 (11)  | 1 (4)   | 5 (20)  | 6 (27)  | 2 (13)  | 7 (50)  | 1 (14)  | 0 (0)  | 0 (0)   |
| <b>Birthplace</b>                    |         |         |         |         |         |         |         |         |        |         |
| US-born                              | 24 (83) | 32 (91) | 13 (52) | 14 (56) | 14 (64) | 12 (80) | 6 (43)  | 4 (57)  | 4 (67) | 1 (50)  |
| Foreign-born                         | 5 (17)  | 3 (9)   | 12 (48) | 11 (44) | 8 (36)  | 3 (20)  | 8 (57)  | 3 (43)  | 2 (33) | 1 (50)  |
| <b>HIV Positive</b>                  | 9 (31)  | 2 (6)   | 0 (0)   | 3 (12)  | 4 (18)  | 2 (13)  | 5 (36)  | 1 (14)  | 1 (17) | 1 (50)  |

# CHARACTERISTICS OF CASES AMONG THE HOMELESS

**Figure 3.** Homeless TB Outbreak Strain, 2002-2011, King County, Washington



# TB DISEASE CHARACTERISTICS AND TREATMENT

**Table 8.** Disease characteristics, 2007-2011, King County, Washington

| Year   | 2007     | 2008    | 2009    | 2010    | 2011    |
|--|----------|---------|---------|---------|---------|
|  | n=161    | n=121   | n=130   | n=114   | n=106   |
|  | n(%)     | n(%)    | n(%)    | n(%)    | n(%)    |
| Exclusively Pulmonary  | 72 (45)  | 55 (45) | 71 (55) | 54 (47) | 42 (40) |
| Both Pulmonary and Extrapulmonary                            | 36 (22)  | 25 (21) | 17 (13) | 18 (16) | 12 (11) |
| Exclusively Extrapulmonary                                   | 53 (33)  | 41 (34) | 42 (32) | 42 (37) | 52 (49) |
| Sputum smear-positive*                                       | 44 (41)  | 39 (49) | 31 (35) | 29 (40) | 25 (46) |
| Sputum smear-negative*                                       | 54 (50)  | 38 (48) | 52 (59) | 35 (49) | 23 (43) |
| <b>DISEASE SITE**</b>  |          |         |         |         |         |
| Pulmonary  | 108 (67) | 80 (66) | 88 (68) | 72 (63) | 54 (51) |
| Pleural  | 25 (15)  | 12 (10) | 12 (9)  | 12 (11) | 12 (11) |
| Lymphatic  | 43 (26)  | 27 (22) | 25 (19) | 25 (22) | 24 (23) |
| Bone and/or Joint  | 10 (6)   | 7 (6)   | 2 (2)   | 7 (6)   | 10 (9)  |
| Genitourinary  | 3 (2)    | 2 (2)   | 3 (2)   | 3 (3)   | 1 (1)   |
| Meningeal  | 3 (2)    | 1 (<1)  | 0 (0)   | 3 (3)   | 1 (1)   |
| Peritoneal   | 1 (1)    | 1 (<1)  | 6 (5)   | 3 (3)   | 9 (8)   |
| Other  | 8 (5)    | 21 (17) | 18 (14) | 10 (9)  | 8 (8)   |
| <b>PROVIDER IF PULMONARY DISEASE*</b>                        |          |         |         |         |         |
| Health Department  | 98 (91)  | 57 (64) | 73 (83) | 58 (81) | 47 (87) |
| Private/Other  | 3 (3)    | 3 (4)   | 2 (5)   | 7 (14)  | 1 (2)   |
| Both   | 7 (6)    | 19 (20) | 12 (11) | 7 (5)   | 6 (11)  |
| <b>PROVIDER IF PULMONARY DISEASE*, SPUTUM SMEAR POSITIVE</b> |          |         |         |         |         |
| Health Department  | 40 (91)  | 30 (77) | 28 (90) | 27 (93) | 24 (96) |
| Private/Other  | 1 (2)    | 2 (5)   | 0 (0)   | 1 (3)   | 0 (0)   |
| Both   | 3 (7)    | 7 (18)  | 3 (10)  | 1 (3)   | 1 (4)   |
| <b>PROVIDER IF PULMONARY DISEASE*, SPUTUM SMEAR NEGATIVE</b> |          |         |         |         |         |
| Health Department  | 51 (94)  | 25 (66) | 42 (81) | 27 (77) | 20 (87) |
| Private/Other  | 1 (2)    | 1 (3)   | 2 (4)   | 5 (14)  | 0 (0)   |
| Both   | 2 (4)    | 11 (29) | 8 (15)  | 3 (8)   | 3 (13)  |
| <b>PROVIDER IF EXTRAPULMONARY DISEASE</b>                    |          |         |         |         |         |
| Health Department  | 35 (66)  | 18 (44) | 11 (26) | 7 (17)  | 8 (15)  |
| Private/Other  | 13 (25)  | 5 (12)  | 3 (7)   | 30 (71) | 34 (65) |
| Both   | 5 (9)    | 18 (44) | 28 (67) | 5 (12)  | 10 (19) |

\*Of cases with any pulmonary disease.

\*\*Categories not mutually exclusive; one case may have multiple sites of disease.

# TB DISEASE CHARACTERISTICS AND TREATMENT

**Table 9.** Treatment of TB disease, 2007-2011, King County, Washington

| Year  | 2007     | 2008     | 2009     | 2010     | 2011    |
|---|----------|----------|----------|----------|---------|
|   | n=161    | n=121    | n=130    | n=114    | n=106   |
|   | n(%)     | n(%)     | n(%)     | n(%)     | n(%)    |
| <b>TREATMENT</b>                                |          |          |          |          |         |
| Initiation of Four Drug Therapy*                | 142 (88) | 111 (92) | 119 (92) | 100 (88) | 93 (88) |
| <b>DRUG RESISTANCE</b>                          |          |          |          |          |         |
| Any Initial Resistance                          | 19 (12)  | 9 (7)    | 19 (15)  | 20 (18)  | 18 (17) |
| Multi-Drug Resistance**                         | 2 (1)    | 3 (2)    | 0 (0)    | 2 (2)    | 1 (1)   |
| <b>DEATHS</b>                                   |          |          |          |          |         |
| Dead at Diagnosis                               | 1 (1)    | 2 (2)    | 1 (1)    | 1 (1)    | 1 (1)   |
| Died During Treatment                           | 6 (4)    | 6 (5)    | 6 (5)    | 9 (8)    | 8 (7)   |
| <b>TREATMENT COMPLETION***</b>                  |          |          |          |          |         |
| Ever Completed                                  | 142 (95) | 105 (96) | 113 (96) | 99 (99)  | 69 (75) |
| Completed Within 12 months                      | 134 (90) | 98 (90)  | 107 (91) | 90 (90)  | 66 (72) |
| Lost to Follow-up/Moved/Refused                 | 7 (5)    | 4 (4)    | 5 (4)    | 1 (1)    | 3 (3)   |
| <b>METHOD OF TREATMENT†</b>                     |          |          |          |          |         |
| Directly Observed Therapy Only                  | 97 (66)  | 61 (56)  | 74 (64)  | 59 (57)  | 40 (57) |
| Directly Observed Therapy & Self Administration | 28 (19)  | 25 (23)  | 15 (13)  | 7 (7)    | 8 (11)  |
| Self Administration Only                        | 21 (14)  | 22 (20)  | 27 (23)  | 38 (37)  | 22 (31) |

\*Recommended initial treatment with isoniazid, rifampin, pyrazinamide, and ethambutol

\*\*Resistant to at least isoniazid and rifampin

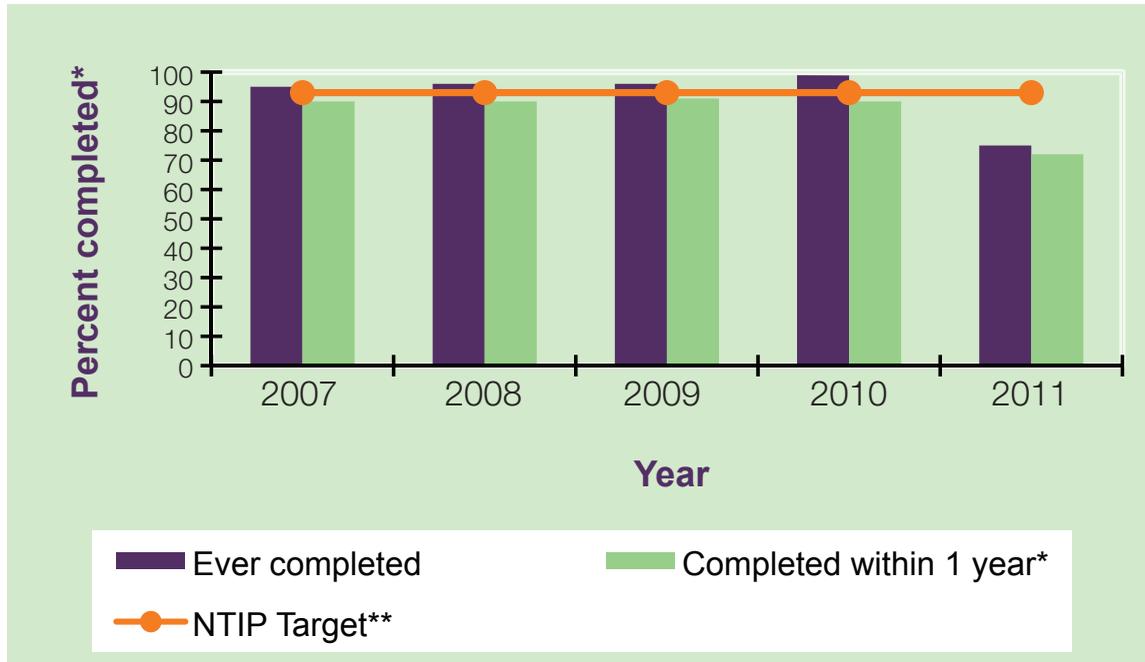
\*\*\*Per CDC National Tuberculosis Indicators Project (NTIP), this includes all TB patients, for whom 12 months of treatment or less is recommended, alive at diagnosis, initiated treatment with one or more drugs, and counted in the year of interest. Patients with any rifampin-resistant TB or meningeal TB, and children age 14 or younger with disseminated TB are excluded. Disseminated TB is defined by having "miliary" checked in RVCT form as a major site of disease or a positive blood culture. Patients who died during treatment or moved out of the U.S. before finishing treatment are excluded.

†Among those who completed treatment

Note: Treatment for patients from 2011 may still be ongoing.

## TB DISEASE CHARACTERISTICS AND TREATMENT

**Figure 4.** Completion of TB treatment, 2007-2011, King County, Washington



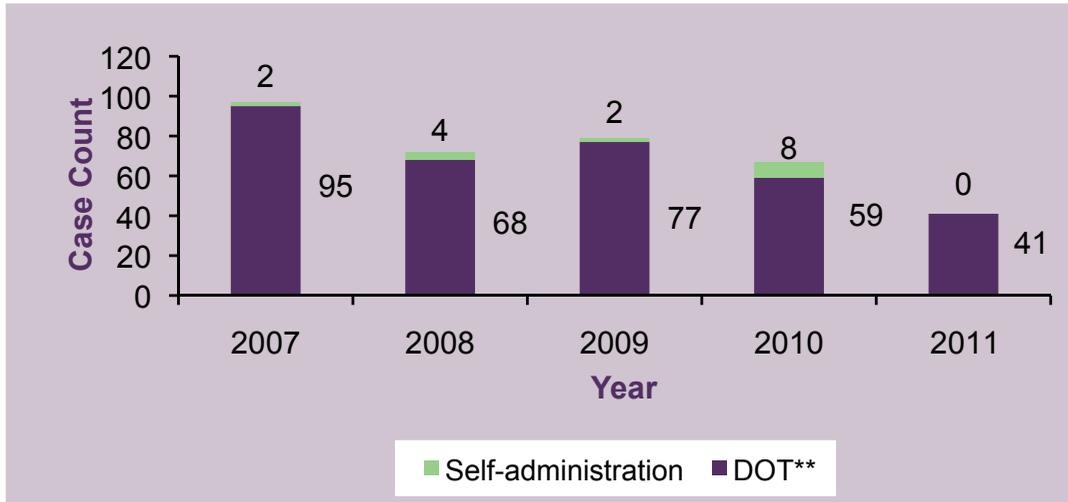
\*Per CDC National Tuberculosis Indicators Project (NTIP), this includes all TB patients, for whom 12 months of treatment or less is recommended, alive at diagnosis, initiated treatment with one or more drugs, and counted in the year of interest. Patients with any rifampin-resistant TB or meningeal TB, and children age 14 or younger with disseminated TB are excluded. Disseminated TB is defined by having "miliary" checked in RVCT form as a major site of disease or a positive blood culture. Patients who died during treatment or moved out of the U.S. before finishing treatment are excluded.

\*\*NTIP 2015 goal is 93% completion within one year or less.

Note: Treatment for patients from 2011 may still be ongoing.

## TB DISEASE CHARACTERISTICS AND TREATMENT

**Figure 5.** Pulmonary\* TB cases by treatment method, 2007-2011, King County, Washington

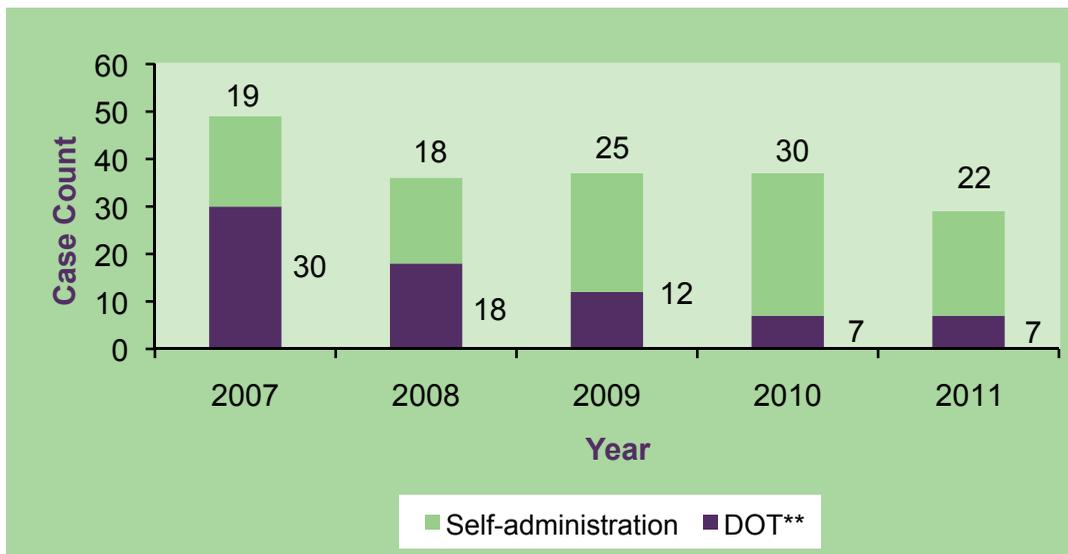


\*Includes patients with only a pulmonary site of disease or pulmonary and extra-pulmonary sites of disease.

\*\*Includes patients treated with DOT only and a combination of DOT and self-administered therapy.

Note: Treatment for patients from 2011 may still be ongoing.

**Figure 6.** Extrapulmonary\* TB cases by treatment method, 2007-2011, King County, Washington



\*Includes patients with only an extra-pulmonary site of disease.

\*\*Includes patients treated with DOT only and a combination of DOT and self-administered therapy.

Note: Treatment for patients from 2011 may still be ongoing.

Since TB is a reportable disease, all 2011 cases are assumed to have been included in this report. For detailed reporting requirements, see the TB Control Program Resource Guide found on our website. Case verification is determined by the Washington State Department of Health using TB case classifications defined by the Centers for Disease Control and Prevention (CDC).

All case data came from the Public Health Information Management System database (PHIMS). This database was designed to allow counties and states to report TB surveillance data to the CDC. PHIMS uses data from the Report of Verified Case of Tuberculosis (RVCT) case report form, submitted by all reporting areas. Additional information is supplemented by internal program databases.

Washington state 2011 performance indicators are courtesy of the Washington State TB Epidemiological Report, 2010. <http://www.doh.wa.gov/Portals/1/Documents/Pubs/343-112-WATBEpiReport2010.pdf>

National 2015 performance indicators and data are courtesy of the Centers for Disease Control and Prevention, Division of Tuberculosis Elimination National Tuberculosis Indicators Project (NTIP). <http://www.cdc.gov/tb/programs/Evaluation/Indicators/default.htm>

Patient-level genotyping data came from the CDC's Genotyping Information Management System (GIMS) database. GIMS provides TB genotyping information data for TB patients nationwide. <http://www.cdc.gov/tb/programs/genotyping/default.htm>

King County 2007-2009 and 2011 total population, age and gender are from the Washington State Office of Financial Management Intercensal and Postcensal Estimates of April 1 County Population by Age and Sex: 1990-2011. <http://www.ofm.wa.gov/pop/coagemf/default.asp>

King County 2010 population, age, gender, race and ethnicity and 2011 race/ethnicity (replicated from the 2010 data, which is the most recent available) are from the 2010 Census (DP-1 - King County, Washington: Profile of General Population and Housing Characteristics: 2010). [http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=DEC\\_10\\_DP\\_DPDP1&prodType=table](http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=DEC_10_DP_DPDP1&prodType=table)

2007-2009 Race/ethnicity are from the Washington State Community Health Assessment Tool (1990-2009 Population Estimates: Population Estimates for Public Health Assessment, Washington State Department of Health and Krupski Consulting. December 2009.).

U.S./Foreign-Born black are from the American Community Survey Selected Population Profiles (1 yr estimates), 2007-2010. 2011 ACS data are replicated from 2010 numbers, which are the most recent data available. [http://factfinder.census.gov/servlet/DatasetMainPageServlet?\\_program=ACS&\\_submenuid=&\\_lang=en&\\_ts=http://www.kingcounty.gov/health-services/health.aspx](http://factfinder.census.gov/servlet/DatasetMainPageServlet?_program=ACS&_submenuid=&_lang=en&_ts=http://www.kingcounty.gov/health-services/health.aspx)

Washington data are courtesy of the Washington State Department of Health. <http://www.doh.wa.gov/cfh/TB/default.htm>

National data are from the CDC's Reported Tuberculosis in the United States, 2010 and Trends in Tuberculosis-United States, 2011. MMWR Morb Mortal Wkly Rep 2012 Mar 23; 61:181-5. <http://www.cdc.gov/tb>

Hispanic ethnicity is of any race. Race is single race only, regardless of ethnicity. Race definitions are changed from reports prior to 2010, which used "Black alone or in combination with one or more other races" (all ethnicities) and may result in a change in rates reported in previous years.

All charts and tables are from TB Control Program, Public Health - Seattle & King County.

Data reported for previous years may change slightly from what was reported in the respective year's summary, as population data are updated with current statistics upon preparation of this report.

Some percentages may not sum to 100 percent due to rounding.

## ACKNOWLEDGEMENTS

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**W**e express gratitude to our community-based medical colleagues for their diagnosis, reporting, and collaboration in the management of TB cases, as well as to the various institutions and agencies that support our case management and contact investigation efforts. We also acknowledge the staff of Public Health - Seattle & King County TB Control Program for their dedication to providing high-quality patient service in order to prevent transmission of TB in King County