# STATE OF CALIFORNIA

## *Indicators at a Glance*

| INDICATOR | YEAR* | CALIFORNIA DATA | NUMBER OF CASES OR CONTACTS NOT MEETING INDICATOR | CA 2010 OBJECTIVES** | CA 2015 OBJECTIVES** | CDC 2015 OBJECTIVES° |
|---|---|---|---|---|---|---|
| **GOAL B: Ensure early identification and reporting of all persons with tuberculosis.** | | | | | | |
| B1: TB Case Rate | 2015 | 5.5 | 2137 | 6.0 | 3.9 | N/A |
| B2: Timely Reporting | 2015 | 89% | 225 | 90% | 93% | N/A |
| B3: Complete Reporting | 2015 | KEY VARIABLES<br>Homelessness: 100%<br>IDU: 99%<br>Non IDU: 99%<br>Alcohol: 99% | 48 | 99% | >99% | N/A |
| B4: Culture Identification | 2015 | 92% | 139 | 96% | 98% | 96% |
| **GOAL C: Ensure timely completion of therapy for all persons with tuberculosis.** | | | | | | |
| C1: Recommended Initial Therapy | 2015 | 94% | 127 | 93% | 95% | 93% |
| C2: Timely Treatment | 2015 | 91% | 84 | 91% | 95% | N/A |
| C3: Culture Conversion | 2012 | 70% | 352 | 67% | 71% | 62% |
| C4-A: Appropriate DOT^ | 2012 | 57% | 268 | 77% | 89% | N/A |
| C4-B: Inappropriate SAT^ | 2012 | 5% | 65 | 5% | <1% | N/A |
| C5: Timely Completion of Therapy | 2012 | 87% | 247 | 83% | 88% | 93% |
| C6: Not Defaulting from Treatment | 2012 | 98% | 34 | 98% | 99% | N/A |

* The cohort year used to calculate data in the following columns.

** State objectives from "California Objectives for TB Indicators," October 2008, at www.cdph.ca.gov/programs/tb/pages/tuberculosisindicatorsproject.aspx.

° National objectives from "National TB Program Objectives and Performance Targets for 2015," January 2009, at www.cdc.gov/tb.

^ Per CDPH and HIV/MMWR guidelines, persons with the following factors measured by the RVCT are prioritized for DOT: children, adolescents, history of TB, homelessness, alcohol use, injecting/non-injecting drug use, diagnosis in a correctional facility, sputum smear-positive. Two factors for prioritized DOT that may be identified after treatment start are: resistance to isoniazid or rifampin, slow to culture convert (>2 months).



Print Date: 2/17/2016

Data Files Used: CI 2013 Final, prvctye15 (99.6% complete CA)

# STATE OF CALIFORNIA

## *Indicators at a Glance*

| INDICATOR | | YEAR | CALIFORNIA DATA | NUMBER OF CASES OR CONTACTS NOT MEETING INDICATOR | CA 2010 OBJECTIVES | CA 2015 OBJECTIVES | CDC 2015 OBJECTIVES |
|---|---|---|---|---|---|---|---|
| **GOAL D: Ensure contacts to a person with infectious TB are promptly identified, examined, and if appropriate, complete treatment for latent TB infections.** | | | | | | | |
| D1: Contact Identification | | 2013 | 93% | 67 | 95% | >99% | 100% |
| D2: Contact Evaluation | | 2013 | 87% | 1692 | 89% | 96% | 93% |
| D3: Contact Treatment Initiation | | 2013 | 64% | 1181 | 72% | 89% | N/A |
| D4: Contact Treatment Completion | | 2013 | 62% | 809 | 65% | 78% | N/A |
| **GOAL E: Reduce the occurrence of sentinel events.** | | | | | | | |
| SE1: Pediatric TB Cases | | 2015 | 1.7% | 36 | 2.5% | 1.3% | N/A |
| SE2: TB Deaths | Dead At Diagnosis | 2012 | 9.7% | 44 | 7.2% | 4.8% | N/A |
| | Deaths During Therapy | 2012 | | 168 | | | |





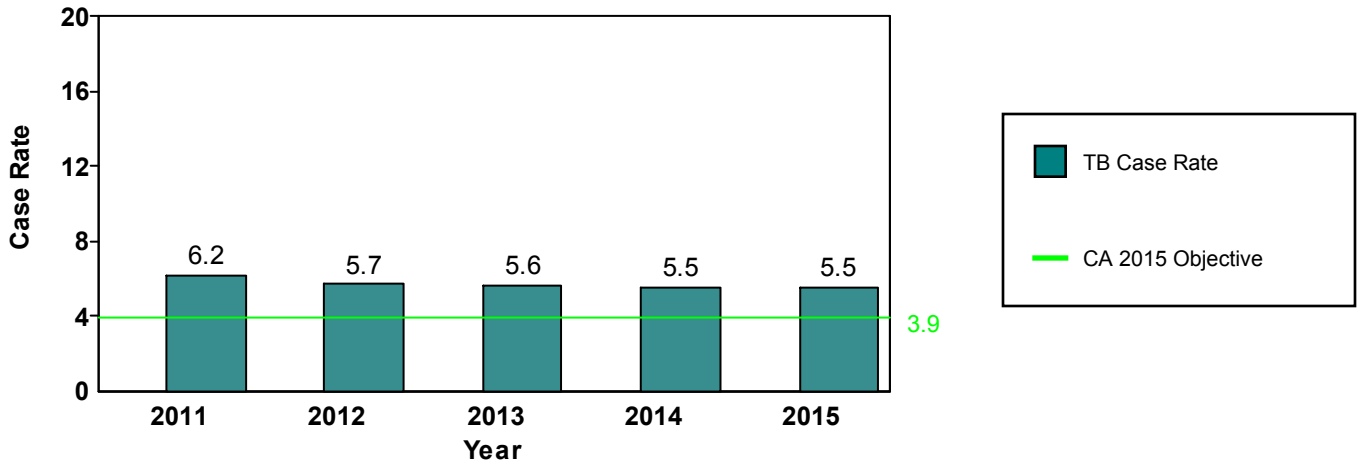
Print Date: 2/17/2016

Data Files Used: CI 2013 Final, prvctye15 (99.6% complete CA)

# STATE OF CALIFORNIA INDICATOR REPORT

## Indicator B1: TB Case Rate

**Trends in TB Case Rate Per 100,000 Population; California and National Objectives**




| | 2011 | 2012 | 2013 | 2014 | 2015 |
|---|---|---|---|---|---|
| **# Cases** | 2323 | 2187 | 2164 | 2134 | 2137 |
| **Case Rate** | 6.2 | 5.7 | 5.6 | 5.5 | 5.5 |

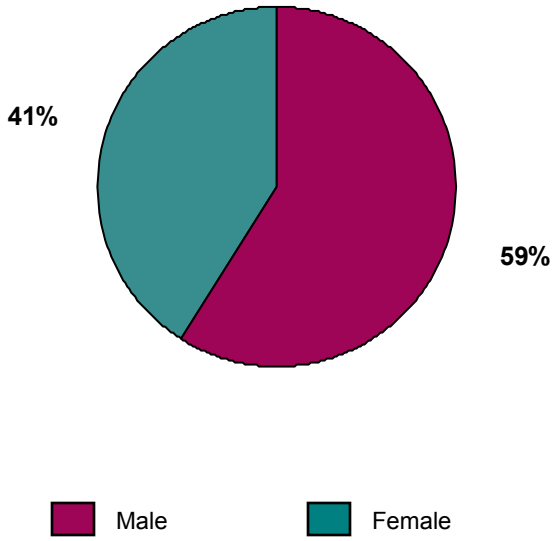
## METHODS

| | |
|---|---|
| *Data Sources:* | All cases counted in the year of interest |
| *Cohort:* | RVCT submitted to CDPH and population data from the California Department of Finance |
| *Definitions* | See the *TB Registry Guidelines* for TB case definition |
| *Calculation:* | (# of verified TB cases / population) x 100,000 |
| *Limitations:* | none |

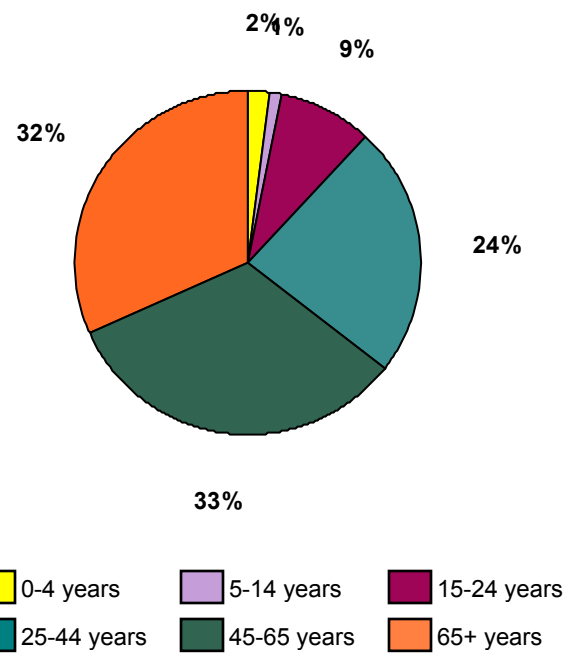
# STATE OF CALIFORNIA INDICATOR REPORT

## DEMOGRAPHICS, 2015

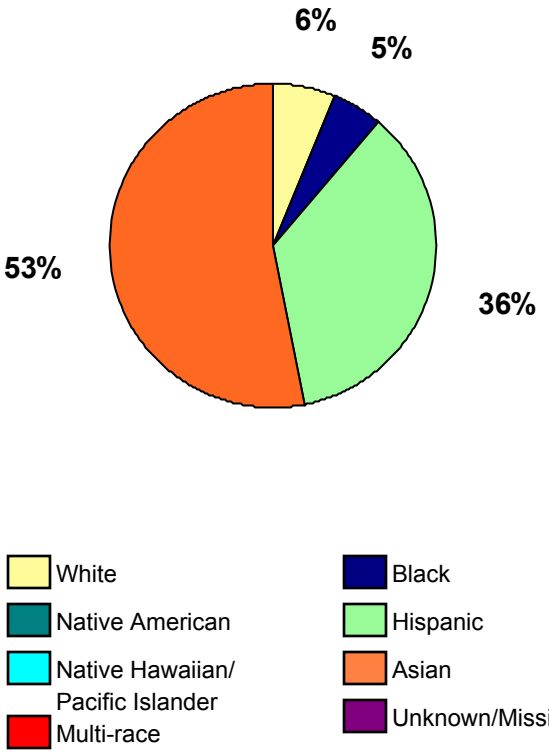
**Cases, by SEX**
**N=2137**



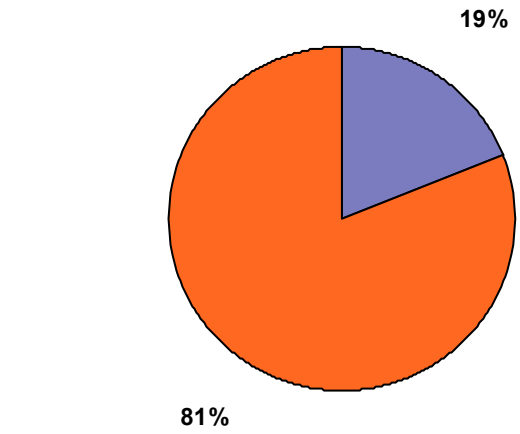

**Cases, by AGE**
**N=2137**




**Cases, by RACE/ETHNICITY**
**N=2137**




**Cases, by U.S.- vs. FOREIGN-BORN**
**N=2137**

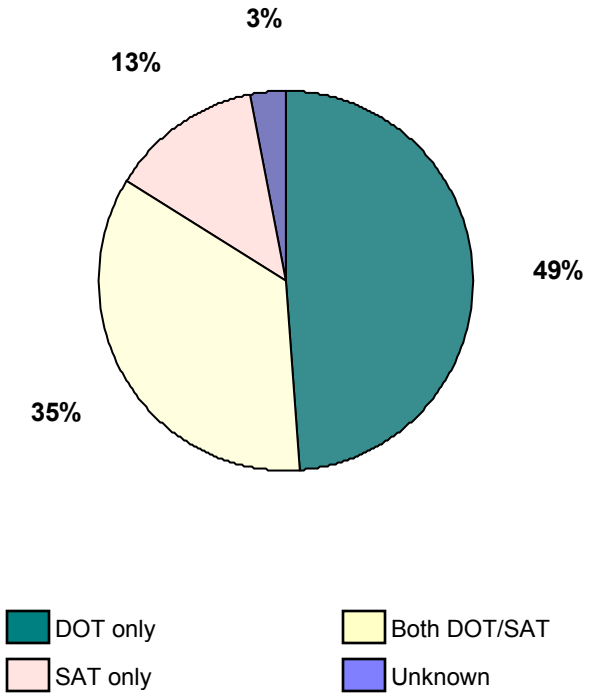



Note: Demographic categories under 1% are not represented in the pie charts.

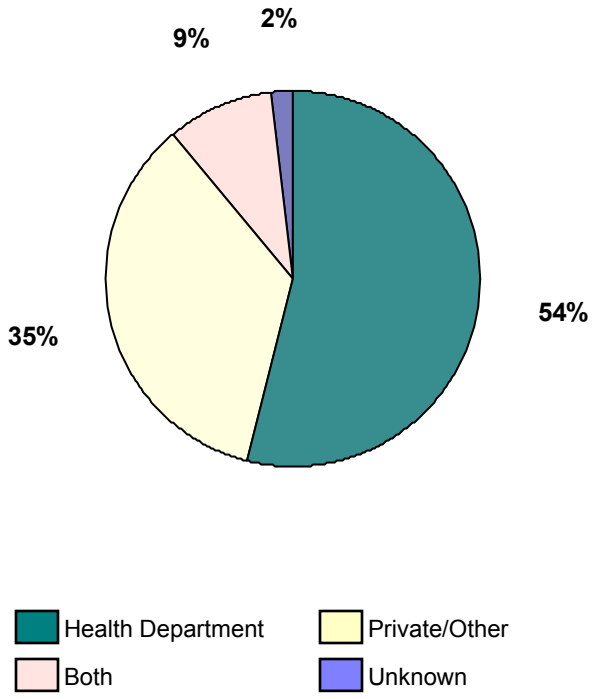
# STATE OF CALIFORNIA INDICATOR REPORT

## CASE MANAGEMENT, 2012

**Cases, by THERAPY TYPE**
**N=2187**

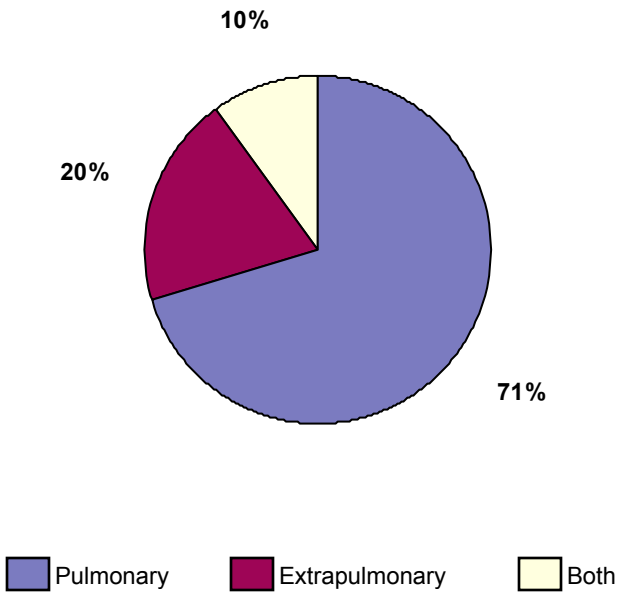



**Cases, by PROVIDER TYPE**
**N=2187**

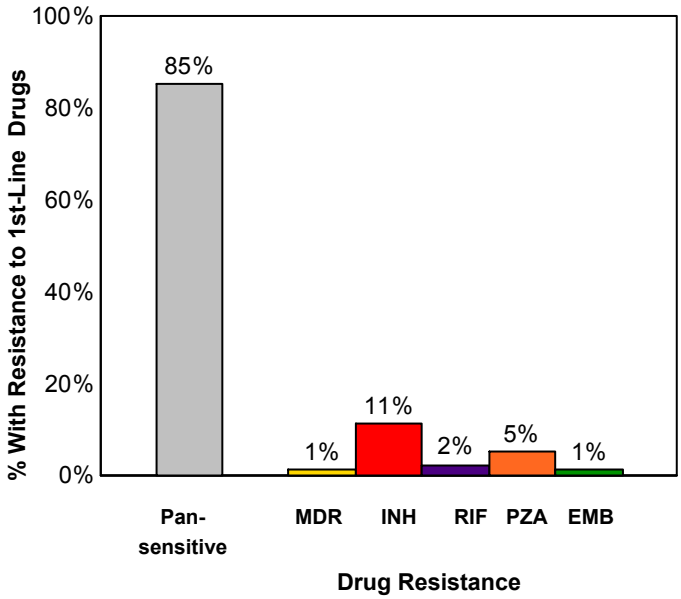



## CLINICAL CHARACTERISTICS, 2015

**Cases, by DISEASE SITE**
**N=2137**




**Cases, by First-Line Drug Resistance***
**N=2137**



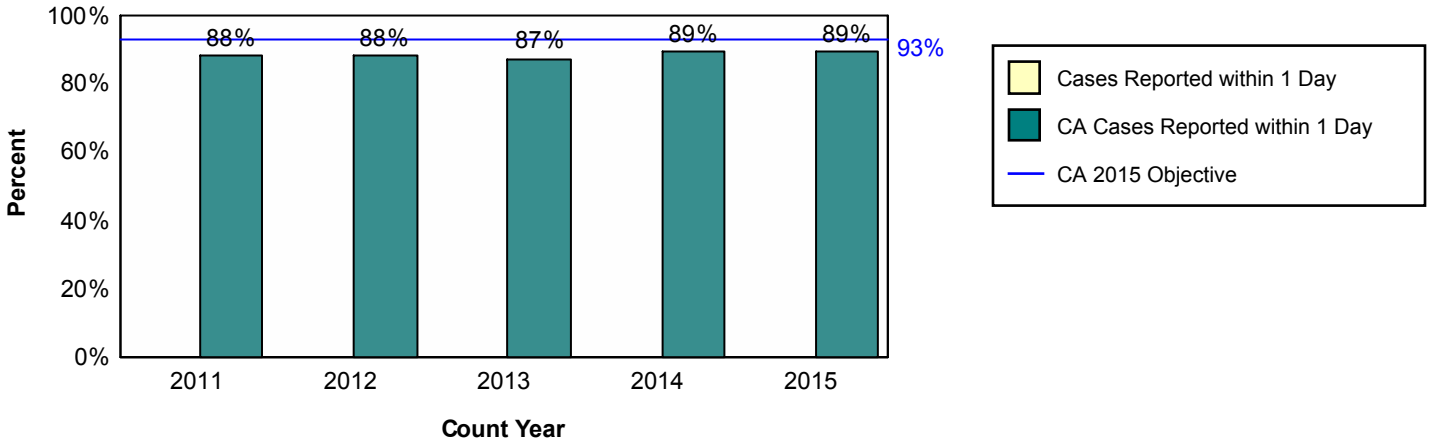

Note: Demographic categories under 1% are not represented in the pie charts.

# STATE OF CALIFORNIA INDICATOR REPORT

## Indicator B2: Timely Reporting

## Proportion of verified tuberculosis cases reported to the local health jurisdiction within 1 working day from treatment start

### Performance Trends in Timely Reporting; California Objectives




| | 2011 | 2012 | 2013 | 2014 | 2015 |
|---|---|---|---|---|---|
| **Total # of TB cases with complete reporting date** | 2261 | 2128 | 2104 | 2076 | 2066 |
| **# with report date within 1 day of treatment start date** | 1994 | 1874 | 1839 | 1839 | 1841 |

## METHODS

*Data Sources:* RVCT (field # 6, 13, 28) and TIMS (user field "report date")

*Cohort:* Cases counted in the year of interest, alive at diagnosis and starting treatment, with complete reporting date (day, month & year)

*Definitions*

**Report date:** date of initial notification to LHJ.
**Treatment start date:** date noted on the RVCT as the first day of anti-TB therapy.

*Calculation:* (# of cases where report date is <= (treatment start date + 1 day)) / (total # of cases reported in year of interest, alive at diagnosis and starting treatment, with complete reporting date)

*Notes:*

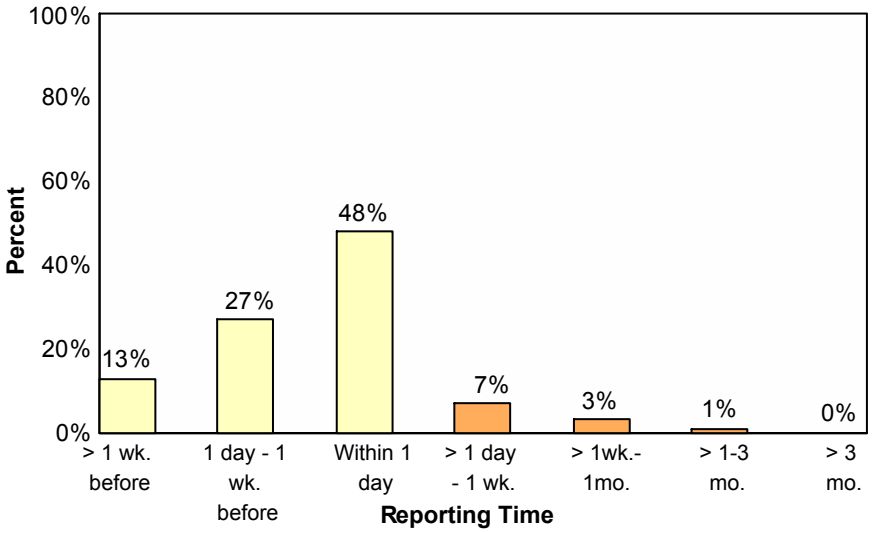
* Intervals from treatment start date to report date do not include weekend days. Holidays are included in the interval calculations.
* In situations where the date the case was reported to the LHJ was prior to the treatment start date, calculation of the interval between report date and treatment start date will yield a negative value and will be considered as a zero-day interval.

*Limitations:* Data for this indicator are only available beginning in 1999, after implementation of the "report date" user field. Accuracy of this indicator will depend on the completeness of reporting in this field.

"Date treatment started" will be used as a surrogate for the date of diagnosis, which is not reported on the RVCT. Timeliness of reporting of cases who are dead at diagnosis, or who do not start treatment, are not included in the cohort and will not be reflected in the indicator.

# STATE OF CALIFORNIA INDICATOR REPORT

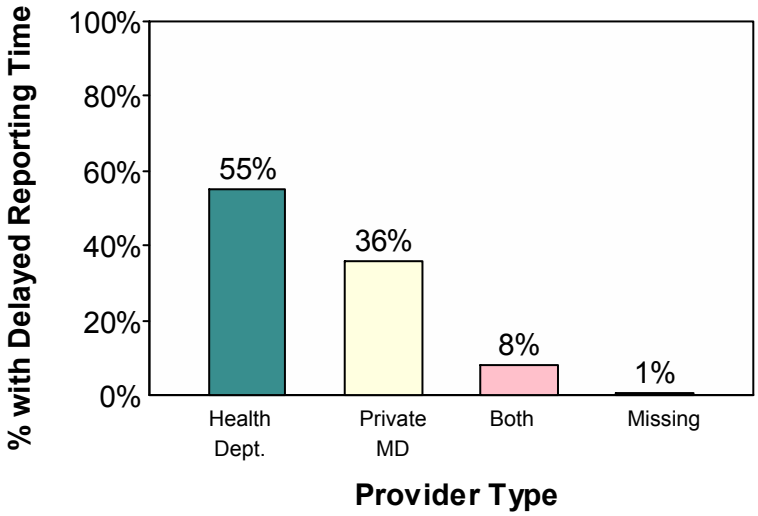
## Distribution of Reporting Time in Relation to Start of Treatment, 2015




**Reporting Time Distribution:**

| | All TB Cases with Usable User-Report Fields |
|---|---|
| | **# cases** |
| > 1 week before rx | 278 |
| 1 day - 1 week before rx | 565 |
| Within 1 day | 998 |
| 1 day - 1 week | 143 |
| 1 week - 1 month | 58 |
| 1 - 3 months | 21 |
| > 3 months | 3 |
| **Total** | **2066** |

## Cases with Delayed Reporting Time, by Provider Type*, 2012




**Provider Type Distribution:**

| | All TB Cases w/ Usable User-Report Fields | With Delayed Reporting Time |
|---|---|---|
| Health Dept. | 1166 | 139 |
| Private MD | 754 | 92 |
| Both | 198 | 20 |
| Missing | 10 | 3 |
| **Total** | **2128** | **254** |

* Figures shown as a proportion of total cases without timely reporting

**SPUTUM SMEAR STATUS, 2015**

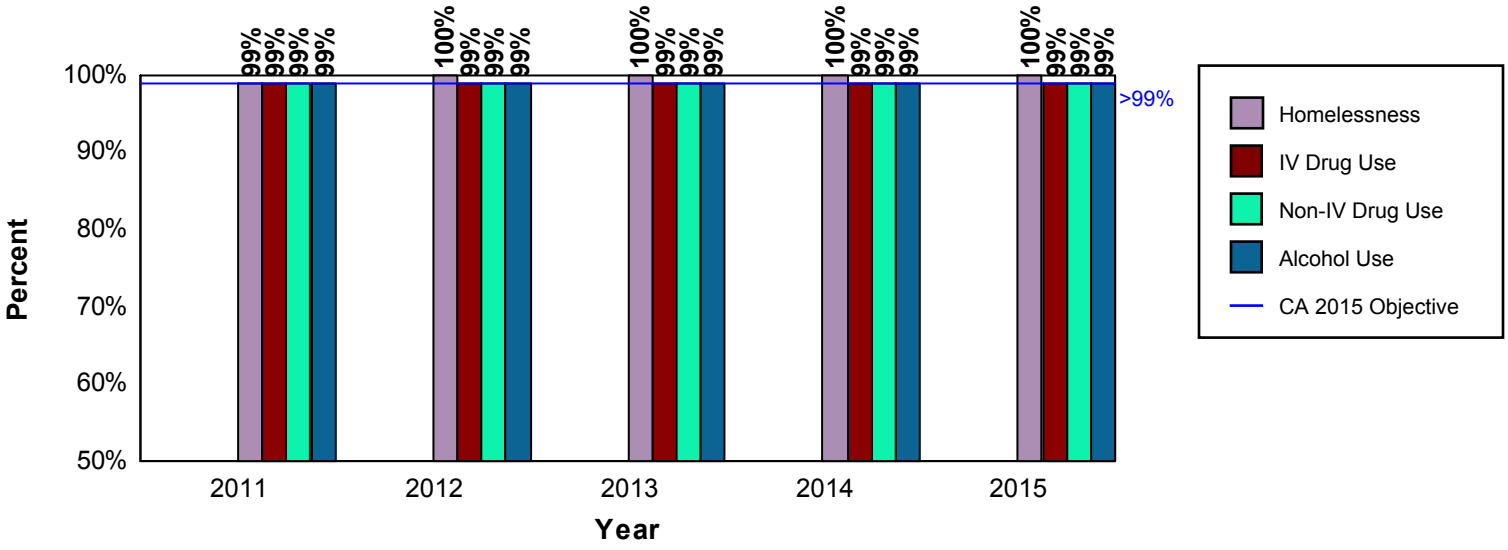
| SPUTUM SMEAR STATUS | Positive (%) | Negative (%) | Not Done/Unknown (%) | Total |
|---|---|---|---|---|
| **Reporting within 1 day** | 830 (45.1%) | 822 (44.6%) | 189 (10.3%) | 1841 |
| **Not Reporting within 1 day** | 68 (30.2%) | 121 (53.8%) | 36 (16.0%) | 225 |

# STATE OF CALIFORNIA INDICATOR REPORT

## Indicator B3: Complete Reporting

## Proportion of cases with complete data on key variables for TB

### Performance Trends in Completeness of Key Risk Factor Variables; California and National Objectives




| | 2011 | 2012 | 2013 | 2014 | 2015 | |
|---|---|---|---|---|---|---|
| **Total number of cases** | 2275 | 2143 | 2118 | 2093 | 2094 | |
| NUMBER OF CASES WITH COMPLETE DATA | | | | | | |
| **On homelessness** | 2254 | 2134 | 2114 | 2087 | 2084 | |
| **On intraveneous (IV) drug use** | 2243 | 2120 | 2103 | 2069 | 2065 | |
| **On non-intravenous (Non-IV) drug use** | 2245 | 2116 | 2102 | 2074 | 2063 | |
| **On alcohol use** | 2248 | 2117 | 2104 | 2076 | 2068 | |

## METHODS

*Data Sources:* RVCT (fields # 6, 13, 24, 29, 30, 31)

*Cohort:* All cases alive at diagnosis counted in the year of interest

*Definitions* **Key variables:** homelessness, injecting (IV) drug use, non-injecting drug use, excess alcohol use

*Calculation:* (# of cases with "yes" or "no" response for each of the key variables) / (total # of cases alive at diagnosis). Cases with "unknown" or missing responses are classified as not meeting the indicator.

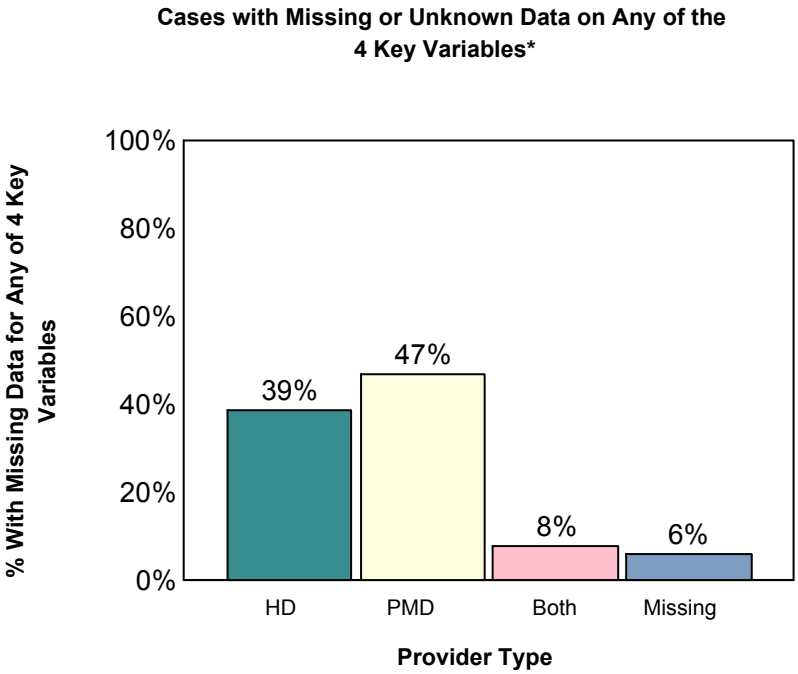
This indicator will be calculated individually for each of the following 4 variables:

1. Homelessness
2. Injecting (IV) drug use
3. Non-injecting (Non-IV) drug use
4. Excess alcohol use

*Limitations:* This indicator will not capture classification problems associated with collecting information on these variables prior to RVCT submission. If, for example, at the LHJ level a missing field is automatically coded as a "No" response, it may bias (over represent) the degree to which these risk factors are evaluated.

# STATE OF CALIFORNIA INDICATOR REPORT

## PROVIDER TYPE, 2012




**2012 Provider Type Distribution:**

| | All TB Cases | Missing Data |
|---|---|---|
| | # cases | # cases |
| Health Dept. | 1172 | 14 |
| Private MD | 758 | 17 |
| Both | 199 | 3 |
| Missing | 14 | 2 |
| **Total** | **2143** | **36** |

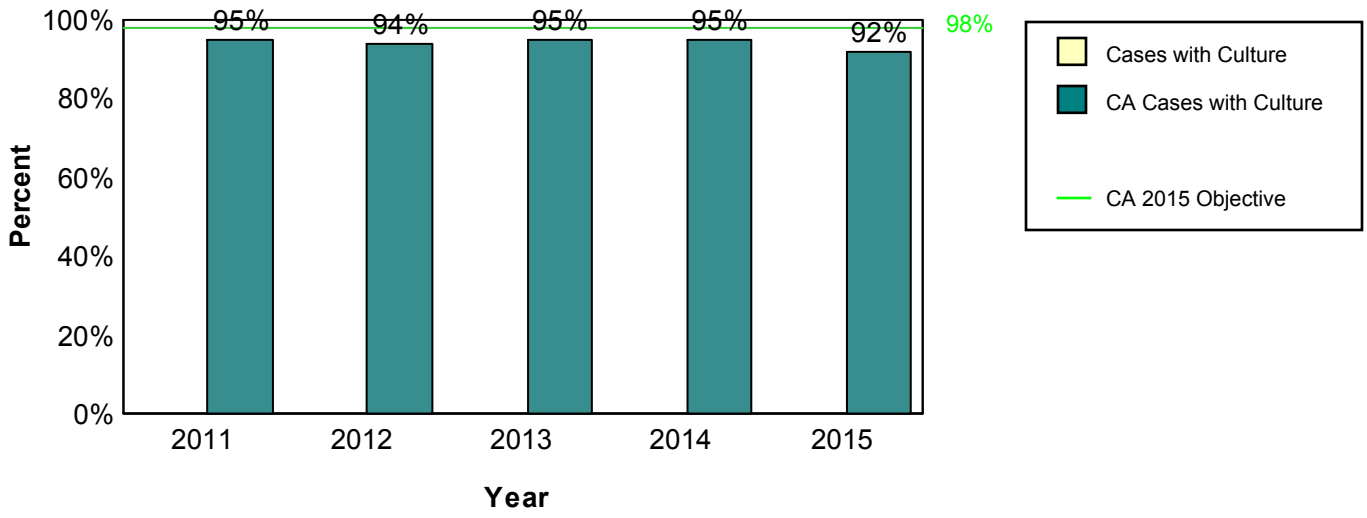
* Provider types shown are proportions of total cases with missing information in any of the 4 key variables.

# STATE OF CALIFORNIA INDICATOR REPORT

## Indicator B4: Culture Identification

**Proportion of pulmonary/laryngeal TB cases >= 12 years of age with sputum culture obtained.**

### Performance Trends in Culture Identification: California Objectives



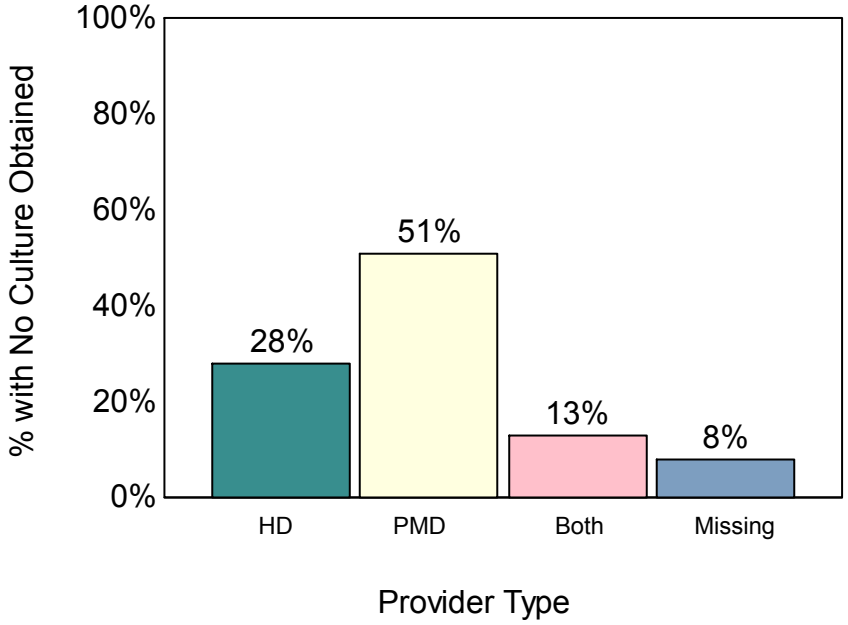

| | 2011 | 2012 | 2013 | 2014 | 2015 |
|---|---|---|---|---|---|
| **# pulmonary cases >= 12 years** | 1,768 | 1,636 | 1,666 | 1,632 | 1,675 |
| **# pulmonary cases >= 12 years with culture obtained** | 1,676 | 1,535 | 1,588 | 1,556 | 1,536 |

## METHODS

| | |
|---|---|
| *Data Sources:* | RVCT (fields # 6, 7, 15, 16, 18) |
| *Cohort:* | Pulmonary or laryngeal cases >= 12 years of age, counted in the year of interest |
| *Definitions* | **Culture obtained:** sputum culture done (as indicated by a "positive" or "negative" response); excludes "not done", "unknown", or missing |
| *Calculation:* | (# of pulmonary or laryngeal TB cases >= 12 years of age with sputum culture obtained) / (all pulmonary or laryngeal cases >= 12 years of age) |
| *Limitations:* | This indicator will incorrectly classify as "culture not obtained" pulmonary cases with cultures from bronchial washing, tissue biopsy, and/or other specimens obtained but without sputum cultures. |

# STATE OF CALIFORNIA INDICATOR REPORT

**Provider Type for Cases with No Culture Obtained*, 2012**




| Provider Type Distribution: | All pTB Cases | Without Culture |
|---|---|---|
| | # cases | # cases |
| Health Dept. | 921 | 28 |
| Private MD | 534 | 52 |
| Both | 154 | 13 |
| Missing | 27 | 8 |
| **Total** | **1636** | **101** |

* Provider types shown as a proportion of cases without culture identification

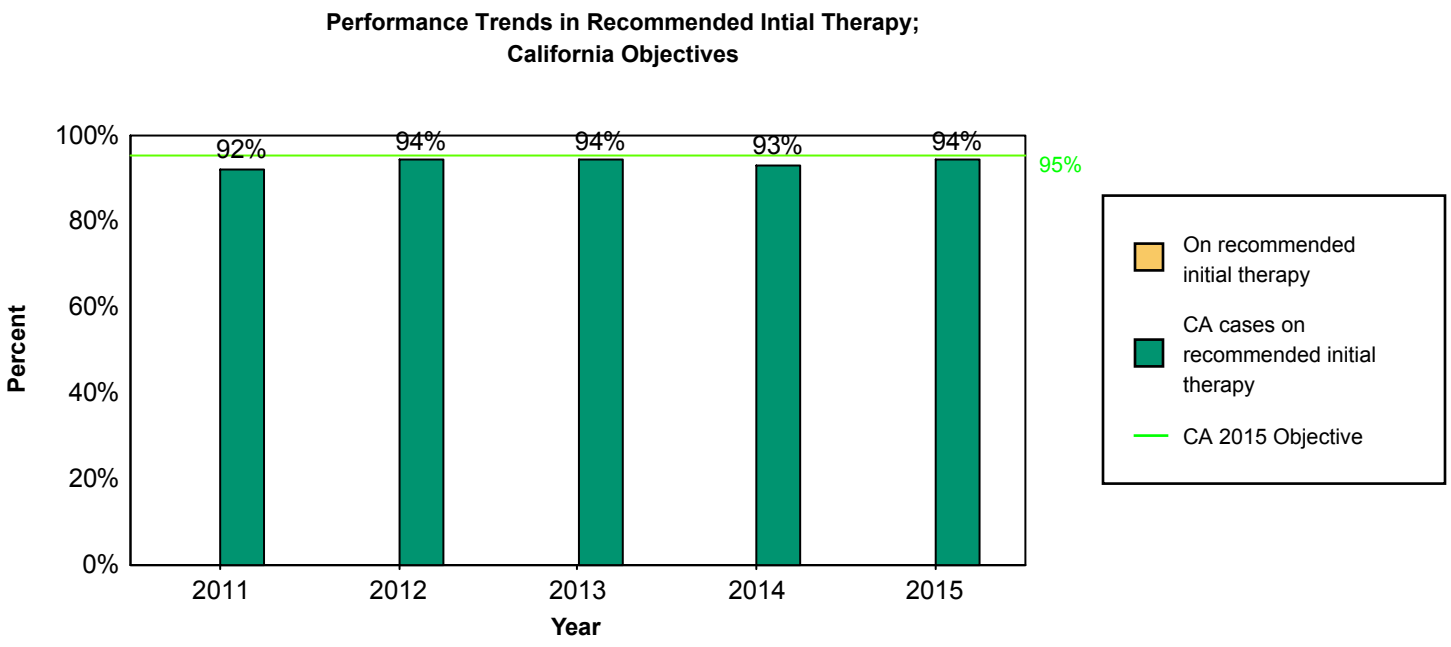


Data File Used: prvctye15 (CA FU-2=100% complete)

# STATE OF CALIFORNIA INDICATOR REPORT

## Indicator C1: Recommended Initial Therapy

### Proportion of TB cases started on the recommended 4-drug regimen




| | 2011 | 2012 | 2013 | 2014 | 2015 |
|---|---|---|---|---|---|
| **# cases alive at diagnosis** | 2275 | 2143 | 2118 | 2093 | 2094 |
| **# with regimen information** | 2261 | 2130 | 2104 | 2078 | 2066 |
| **# started on 4 drugs** | 2083 | 1996 | 1976 | 1940 | 1939 |

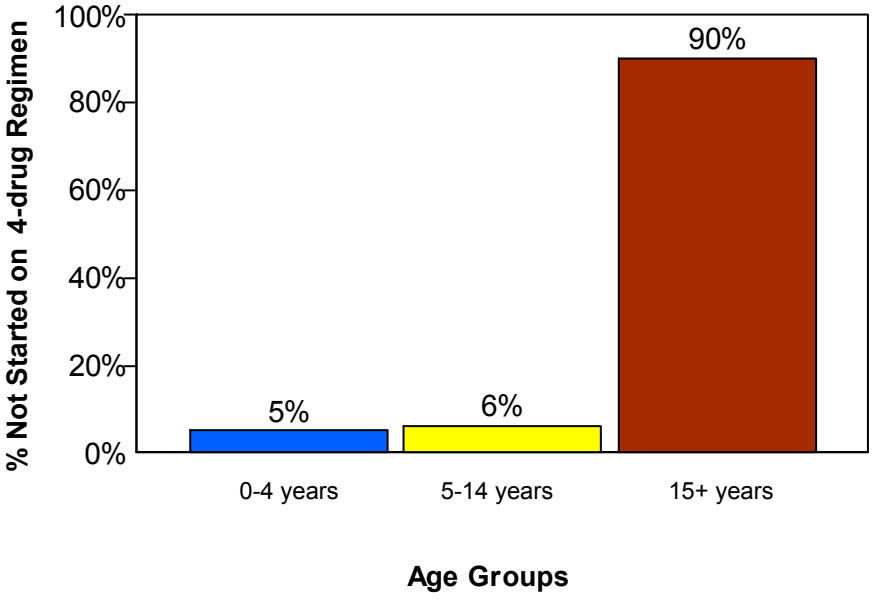
## METHODS

| | |
|---|---|
| *Data Sources:* | RVCT (fields # 6, 7, 13, 27) |
| *Cohort:* | All TB cases alive at diagnosis and with data on initial treatment regimen, counted in the year of interest. |
| *Definitions* | **Initial therapy:** the first regimen taken for at least 2 weeks |
| | **Recommended 4-drug regimen:** Isoniazid (INH), Rifampin/Rifabutin (RIF), Pyrazinamide (PZA), and Ethambutol. If other drugs are given in addition to these four, the regimen is still counted as appropriate. Note that per California's *TB Registry Guidelines*, Rifamate is marked as both INH and RIF, and Rifater is marked as INH, RIF, and PZA. |
| *Calculation:* | # TB cases initiated on 4-drug regimen) / (total # TB cases alive at diagnosis and with data on initial regimen). |
| *Limitations:* | If drug resistance or contraindications (e.g., pregnancy) are known at the time of diagnosis, it may not be appropriate to use the above 4 drugs. Contraindications are not reported on the RVCT. |

# STATE OF CALIFORNIA INDICATOR REPORT

## AGE GROUP, 2015

**Cases Not Started on Recommended 4-drug Regimen, by Age Group***

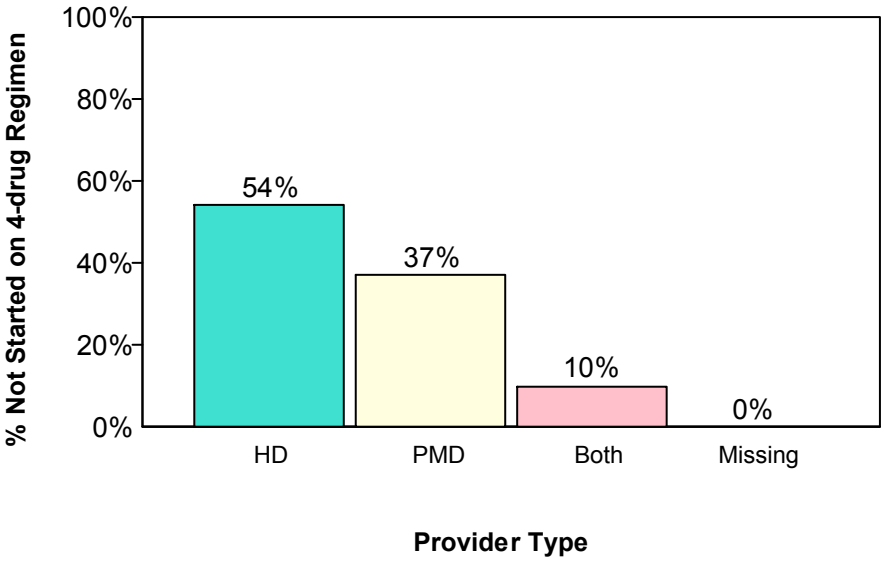



**Age Distribution:**

| | All TB Cases | Not on 4 drugs |
|---|---|---|
| | # cases | # cases |
| 0-4 years | 36 | 6 |
| 5-14 years | 32 | 7 |
| 15+years | 1998 | 114 |
| **Total** | **2066** | **127** |

## PROVIDER TYPE, 2012

**Cases Not Started on Recommended 4-drug Regimen, by Provider Type***




**Provider Type Distribution:**

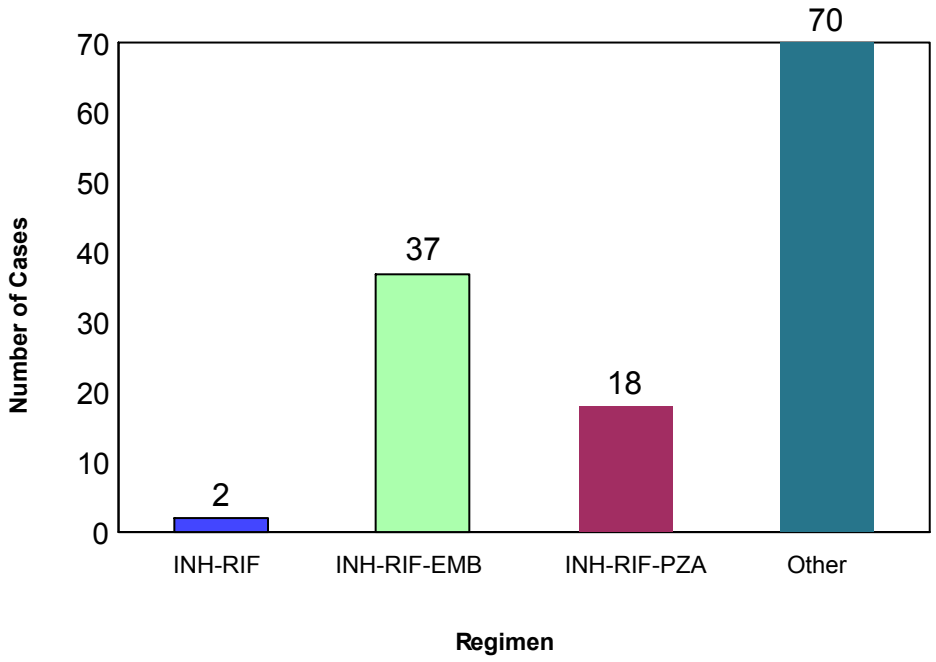
| | All TB Cases | Not on 4 drugs |
|---|---|---|
| | # cases | # cases |
| Health Dept. | 1168 | 72 |
| Private MD | 754 | 49 |
| Both | 198 | 13 |
| Missing | 10 | 0 |
| **Total** | **2130** | **134** |

* Figures shown as a proportion of cases not starting on recommended 4-drug therapy.

# STATE OF CALIFORNIA INDICATOR REPORT

## INITIAL REGIMENS OTHER THAN RECOMMENDED 4 DRUGS, 2015

**Regimens Used to Treat Cases Not Started on Recommended 4-drug Regimen**




**Distribution of Other Drug Regimens**

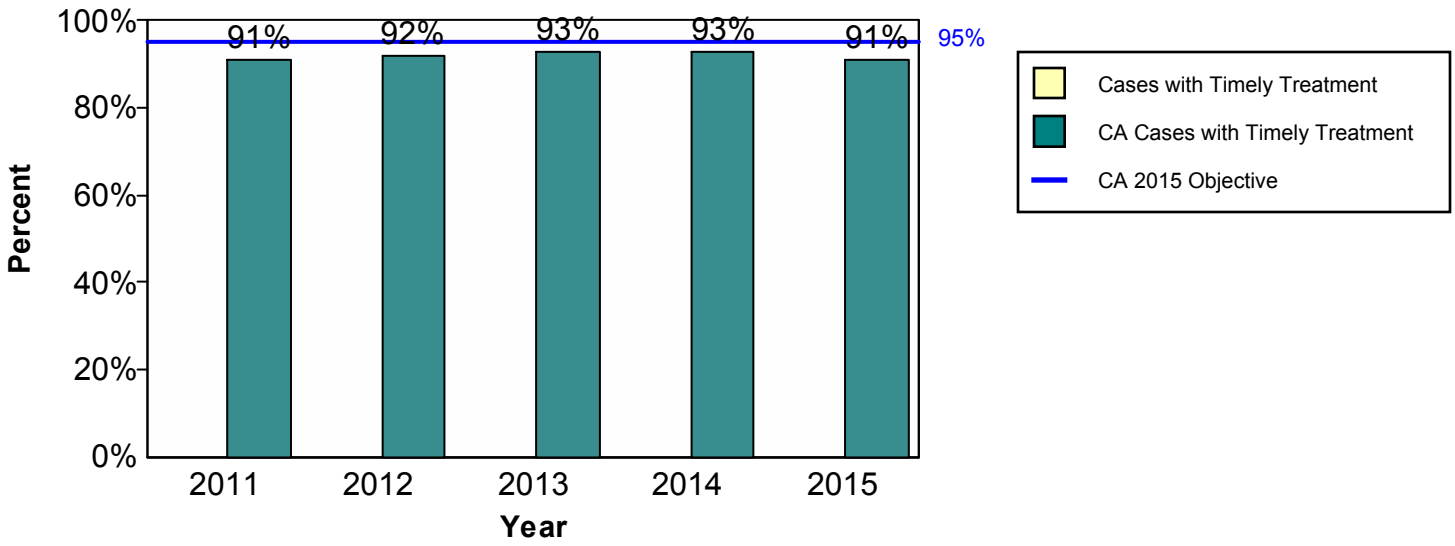
| | # cases |
|---|---|
| < 3 drugs | 6 |
| 3 drugs | 82 |
| 4 other drugs | 33 |
| > 4 drugs | 6 |
| **Total** | 127 |

# STATE OF CALIFORNIA INDICATOR REPORT

## Indicator C2: Timely Treatment

**Proportion of smear-positive pulmonary/laryngeal TB cases initiating treatment in ≤ 7 days from specimen collection.**

**Performance Trends in Timely Treatment; California Objectives**




| | 2011 | 2012 | 2013 | 2014 | 2015 |
|---|---|---|---|---|---|
| **Number smear (+) pulmonary TB cases** | 915 | 847 | 903 | 886 | 895 |
| **Number starting Rx within 7 days** | 836 | 781 | 836 | 823 | 811 |

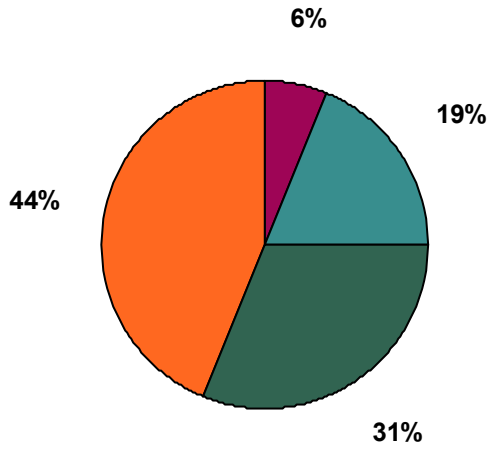
## METHODS

| | |
|---|---|
| *Data Sources:* | RVCT (fields # 6, 13, 15, 16, 17, 28), FU-1 (field # 33) |
| *Cohort:* | All smear-positive pulmonary or laryngeal TB cases alive at diagnosis counted in the year of interest. |
| *Definitions* | Date the first isolate was collected for drug susceptibility testing will be used as a surrogate for the date of the initial positive sputum smear, which is not reported on the RVCT. |
| *Calculation:* | (# sputum smear (+) pulmonary or laryngeal TB cases initiating treatment within 7 days of the date of isolate collection) / (# sputum smear (+) pulmonary or laryngeal TB cases alive at diagnosis)<br>*Note:*<br>If treatment is started prior to specimen collection, the case is counted as timely treatment. |
| *Limitations:* | This indicator uses the date of the first isolate collection as a proxy for the date of the first positive sputum smear. The indicator will be less sensitive if the collection date of the first positive culture is later than the collection date of the first smear-positive specimen. In this case, more cases would appear to meet the indicator and the performance measure would be falsely elevated. |

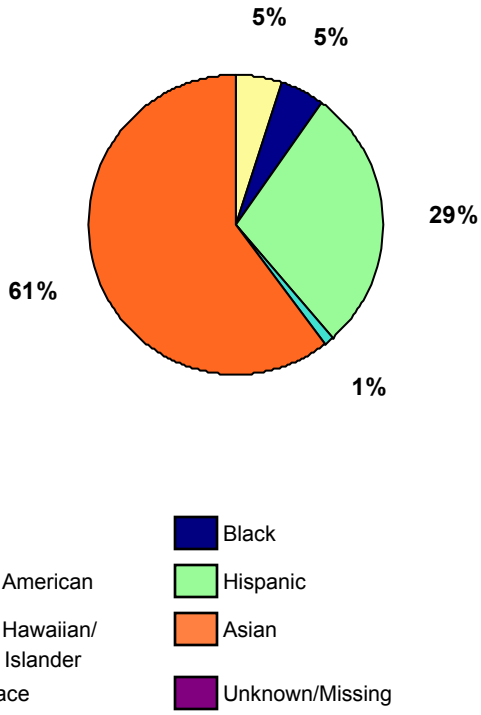
# STATE OF CALIFORNIA INDICATOR REPORT

## DEMOGRAPHICS, 2015

**Delayed Treatment Initiation, by AGE (N=84)**



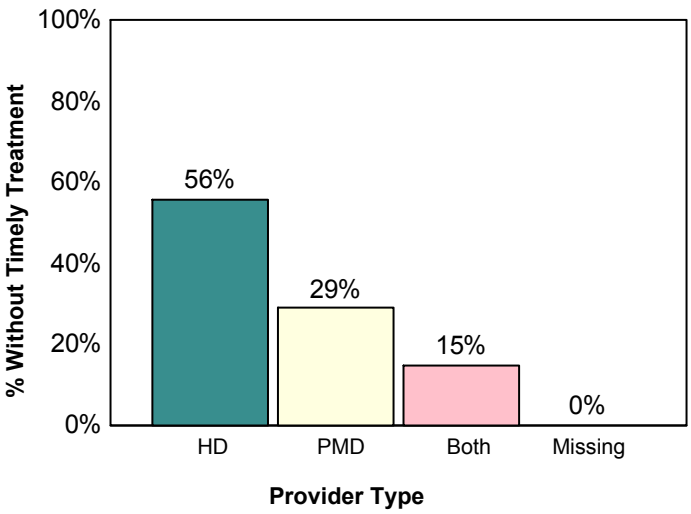

**Delayed Treatment Initiation, by RACE/ETHNICITY (N=84)**




Note: Demographic categories under 1% are not represented in the pie charts

## PROVIDER TYPE, 2012

**Delayed Treatment Initiation, by Provider Type***




**Provider Type Distribution:**

| | Smear (+) Pulmonary TB w/Rx Data | Delayed Treatment Initiation |
|---|---|---|
| | # cases | # cases |
| Health Dept. | 532 | 37 |
| Private MD | 233 | 19 |
| Both | 77 | 10 |
| Missing | 5 | 0 |
| **Total** | **847** | **66** |

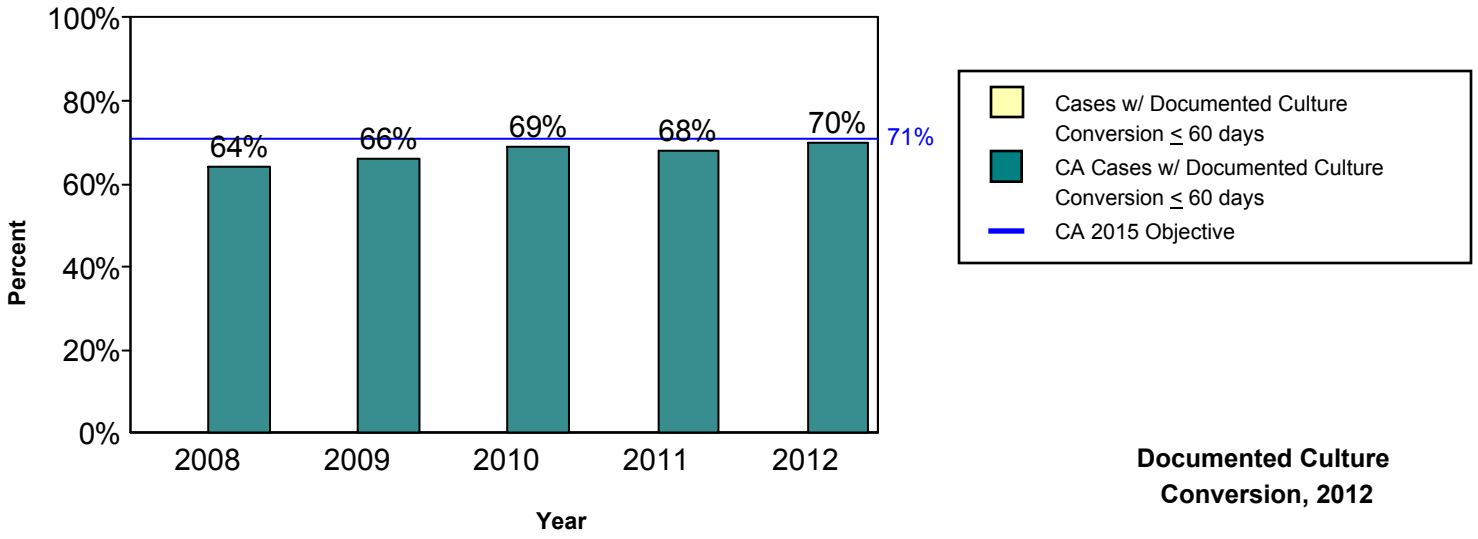
* Provider types shown as a proportion of smear positive cases with delayed treatment initiation.

# STATE OF CALIFORNIA INDICATOR REPORT

## Indicator C3: Culture Conversion

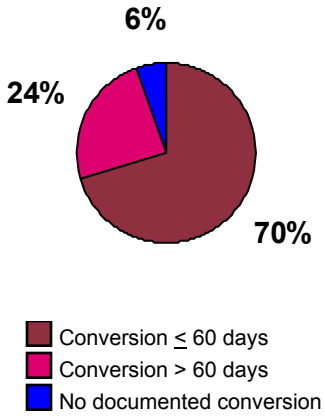
**Proportion of sputum culture-positive TB cases that converted to culture-negative within 60 days from initiation of treatment.**

### Performance Trends in Culture Conversion; California Objectives




| | 2008 | 2009 | 2010 | 2011 | 2012 |
|---|---|---|---|---|---|
| **# sputum culture (+) cases** | 1511 | 1295 | 1234 | 1302 | 1186 |
| **# with documented culture conversion ≤ 60 days** | 973 | 849 | 846 | 890 | 834 |
| **# with documented culture conversion > 60 days** | 403 | 328 | 324 | 336 | 285 |
| **# without documented culture conversion ever** | 135 | 118 | 64 | 76 | 67 |

### Documented Culture Conversion, 2012



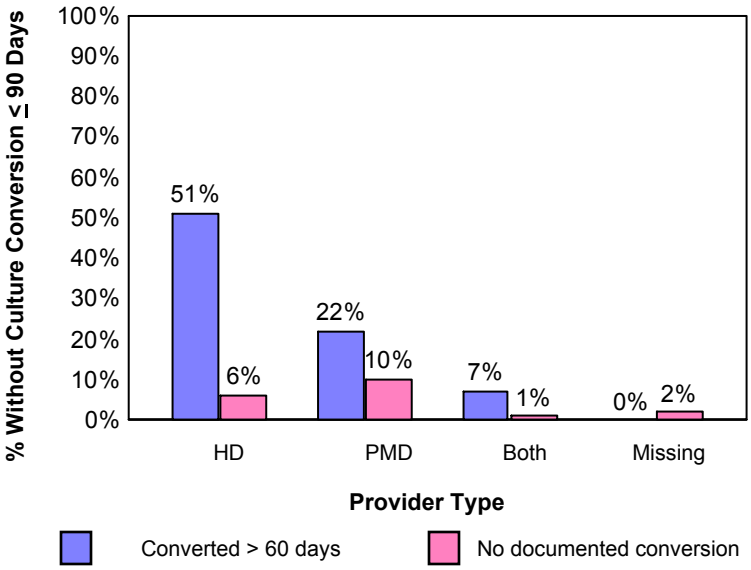

## METHODS

| | |
|---|---|
| *Data Sources:* | RVCT (fields # 6, 13, 18, 28), FU-2 from initial LHJ (fields # 35, 37) |
| *Cohort:* | Sputum culture-positive TB cases alive at diagnosis and starting treatment, counted in the year of interest. Cases who die within 60 days of starting treatment are excluded. |
| *Definitions* | **Time to conversion:** the number of days from the date the patient was started on therapy to the collection date of the first of consistently negative cultures. |
| *Calculation:* | [# sputum culture (+) TB cases documented to have converted to sputum culture (-) within 60 days of the date of treatment initiation] / [total # sputum culture (+) TB cases alive at diagnosis and starting treatment - cases who die within 60 days of starting treatment] |
| *Limitations:* | The indicator may not be valid in instances where it is not possible to obtain a follow-up specimen from the patient. The indicator does not exclude cases that move during the first 60 days of treatment initiation. Therefore, performance for the originating jurisdiction may be under- or over-estimated depending on sputum culture conversion among moved cases in the receiving jurisdiction(s). |

# STATE OF CALIFORNIA INDICATOR REPORT

## PROVIDER TYPE, 2012

### Cases Without Culture Conversion ≤ 60 Days*

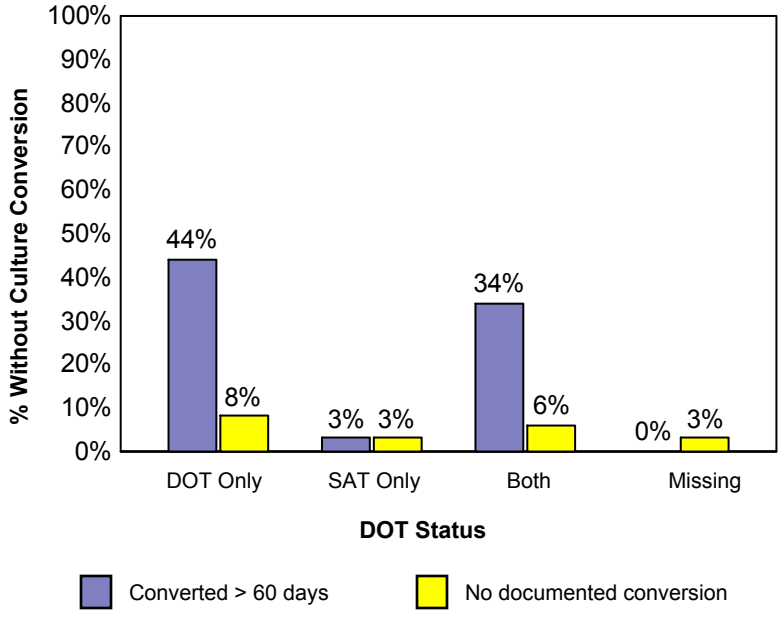



**Provider Type Distribution:**

| | All Sputum (+) TB Cases | Documented Conversion > 60 Days | No Documented Conversion |
|---|---|---|---|
| | # cases | # cases | # cases |
| Health Dept. | 737 | 180 | 21 |
| Private MD | 326 | 79 | 35 |
| Both | 116 | 26 | 4 |
| Missing | 7 | 0 | 7 |
| **Total** | **1186** | **285** | **67** |

## THERAPY TYPE, 2012

### Cases Without Culture Conversion by Therapy Type, 2012 *




**Therapy Type Distribution:**

| | All Sputum (+) TB Cases | Documented Conversion > 60 Days | No Documented Conversion |
|---|---|---|---|
| | # cases | # cases | # cases |
| DOT Only | 647 | 154 | 27 |
| SAT Only | 58 | 12 | 9 |
| Both | 470 | 118 | 21 |
| Missing | 11 | 1 | 10 |
| **Total** | **1186** | **285** | **67** |

* Figures shown as proportions of total cases with either no documented culture conversion > 60 days or no documented conversion.

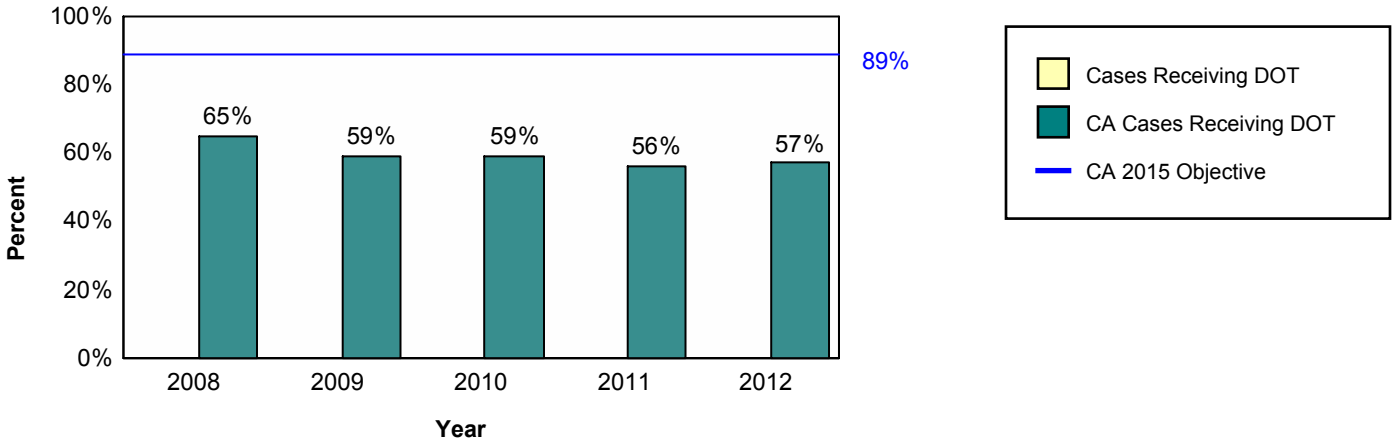


Data File Used: prvctye15 (CA FU-2=100% complete)

# STATE OF CALIFORNIA INDICATOR REPORT

## Indicator C4-A: Appropriate Directly Observed Therapy (DOT)
## Proportion of TB cases for whom DOT is recommended who receive DOT throughout the course of treatment.

**Performance Trends in Appropriate DOT: California Objectives**




| | 2008 | 2009 | 2010 | 2011 | 2012 |
|---|---|---|---|---|---|
| **Total # cases, alive and starting therapy** | 2438 | 2233 | 2251 | 2261 | 2128 |
| **# cases for whom DOT is recommended** | 772 | 662 | 650 | 671 | 618 |
| **# cases on DOT only for whom DOT is recommended** | 501 | 388 | 385 | 378 | 350 |
| **# cases on both DOT and SAT for whom DOT is recommended** | 222 | 217 | 225 | 262 | 230 |
| **# cases on SAT only for whom DOT is recommended** | 44 | 46 | 37 | 25 | 31 |

Note: Cases for whom DOT is recommended with unknown or missing therapy type are considered as not meeting the indicator and are not shown as separate categories in the above table.

## METHODS

*Data Sources:* RVCT (fields # 6, 7, 13, 14, 24, 25, 26, 28, 29, 30, 31), FU-2 from initial LHJ (field # 37, 39), and TB/AIDS Registry Match

*Cohort:* All TB cases for whom DOT is particularly recommended, alive at diagnosis and starting treatment, counted in the year of interest. Excludes cases who move during treatment.

*Definitions* **TB cases for whom DOT is recommended:** <18 years old; homeless within the past year; resident of correctional facility or a long-term care facility at the time of diagnosis; injection or non-injection drug user; excess alcohol consumption within the past year; history of active TB disease. Drug resistance, slowness in culture conversion, and sputum smear positivity are also factors in recommending patients for DOT only, for which RVCT data are available. However, drug resistance and slow culture conversion may not be recognized before a patient begins treatment. Some local health departments may opt to cease DOT once sputum smear-positive patients with no other factors for recommending DOT are smear-negative. Therefore, patients with these disease characteristics, who may receive a combination of DOT and SAT, are not included in the cohort for this indicator.
**Use of DOT throughout the course of treatment:** designated "DOT only" on the RVCT. For daily therapy, 5 days DOT each week counts as DOT only (i.e., weekend doses may be self-administered). For intermittent therapy, DOT for each dose counts as DOT only. Holidays and vacations are not excluded.

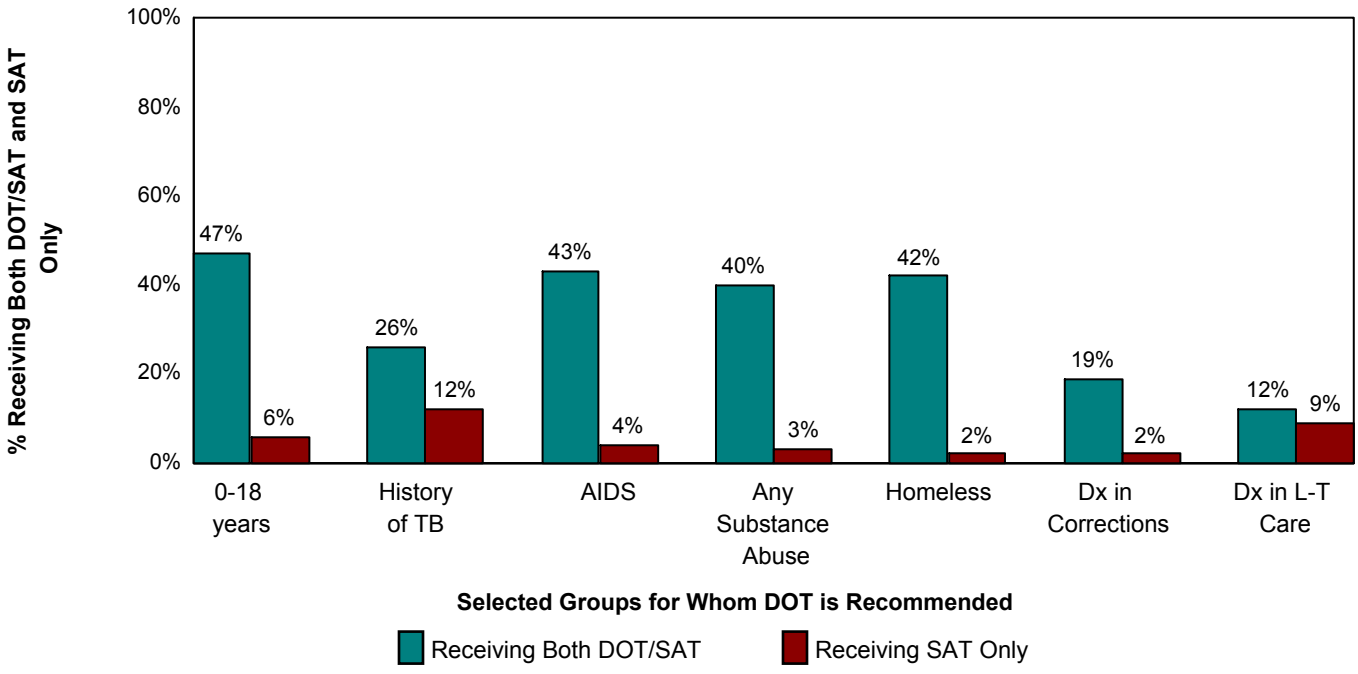
*Calculation:* [(# TB cases for whom DOT is recommended who receive DOT throughout the course of treatment) / (# TB cases for whom DOT is recommended, alive at diagnosis and starting treatment) - (# cases that move during treatment)]

*Limitations:* This indicator may lack sensitivity because other risk factors for non-adherence may not be captured on RVCT (e.g., mental illness). Use of the strict definition of "DOT only" (no missed doses) may result in the need for additional analyses of patients on "Both DOT/SAT" to determine the proportion of DOT received in each case. Evaluation of LHJ and statewide performance on this indicator and comparison between jurisdictions may be difficult due to varying interpretations of "DOT only" used in RVCT preparation. In excluding cases that move during treatment, these cases who may be at especially high risk for non-adherence and adverse treatment outcomes are excluded from consideration.

# STATE OF CALIFORNIA INDICATOR REPORT

## SELECTED GROUPS FOR WHOM DOT IS RECOMMENDED, 2012

**Cases in Selected Groups For Whom DOT is Recommended, Receiving Both DOT/SAT and SAT Only***




* Figures shown as proportions of cases with given risk factor not receiving recommended DOT out of total cases with risk factor

**Distribution of Selected Groups on Both DOT/SAT and SAT Only for Whom DOT is Recommended:**

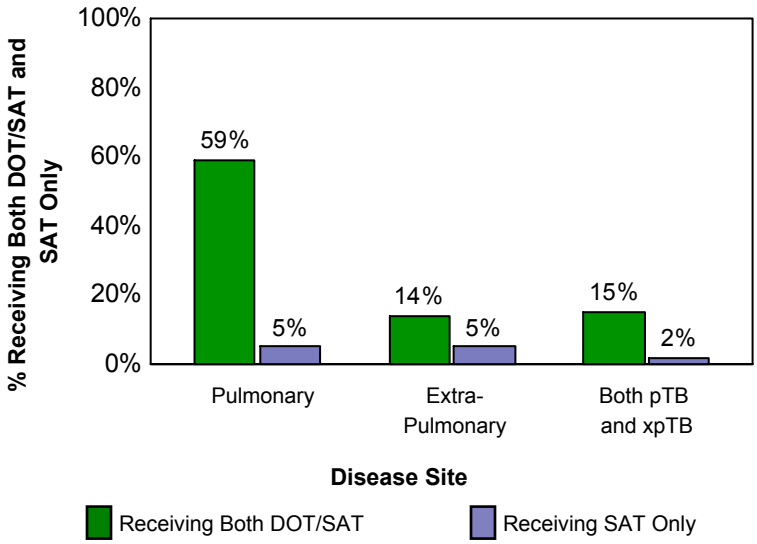
| | Cases for Whom DOT Recommended | Receiving Both DOT/SAT | Receiving SAT Only |
|---|---|---|---|
| | # cases | # cases | # cases |
| 0-18 years old | 115 | 54 | 7 |
| History of TB | 113 | 29 | 13 |
| AIDS | 82 | 35 | 3 |
| Any Substance Abuse (alcohol, IDU, NIDU) | 268 | 106 | 8 |
| Homelessness within past year | 127 | 53 | 2 |
| Diagnosis in a Correctional Facility | 58 | 11 | 1 |
| Diagnosis in a Long-Term Care Facility | 43 | 5 | 4 |

Note: Cases with unknown or missing therapy types are not shown as separate categories in the graph or the table, but are included in the cohort (e.g., “cases for whom DOT recommended” column in the table and the denominators for each group in the bar graph).

# STATE OF CALIFORNIA INDICATOR REPORT

## DISEASE SITE, 2012

**Cases Receiving Both DOT/SAT and SAT Only, by Disease Site***

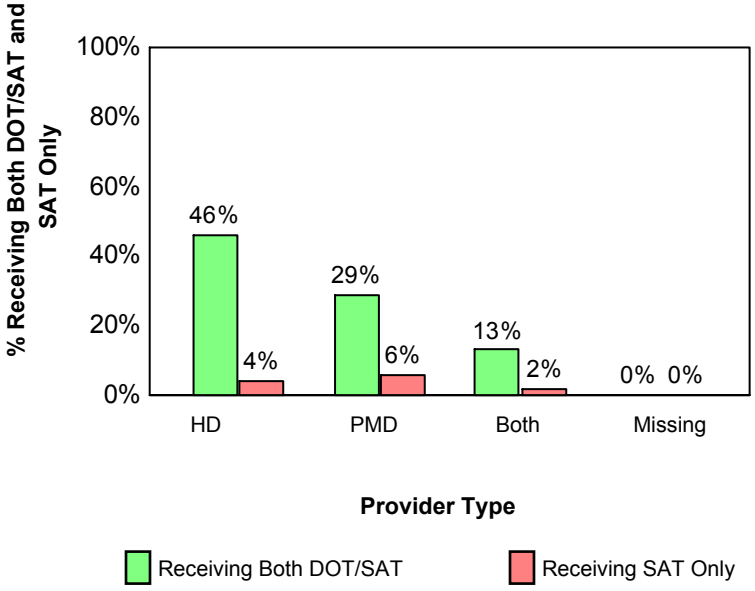



**Disease Site Distribution:**

| | Cases for Whom DOT Recommended | Receiving Both DOT/SAT | Receiving SAT Only |
|---|---|---|---|
| | # cases | # cases | # cases |
| Pulmonary (pTB) | 435 | 154 | 14 |
| Extra-Pulmonary (xpTB) | 91 | 36 | 12 |
| Both pTB & xpTB | 92 | 40 | 5 |
| **Total** | **618** | **230** | **31** |

## PROVIDER TYPE, 2012

**Cases Receiving Both DOT/SAT and SAT Only, by Provider Type***




**Provider Type Distribution:**

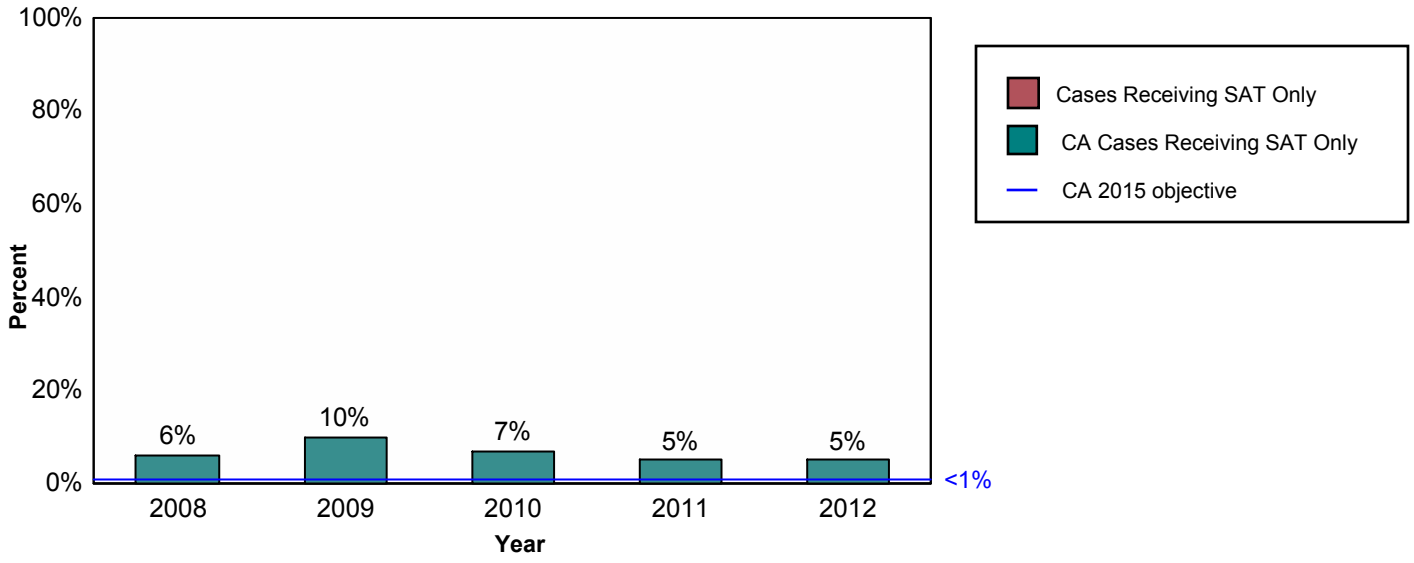
| | Cases for Whom DOT Recommended | Receiving Both DOT/SAT | Receiving SAT Only |
|---|---|---|---|
| | # cases | # cases | # cases |
| Health Dept. | 340 | 120 | 10 |
| Private MD | 210 | 75 | 15 |
| Both | 63 | 35 | 6 |
| Missing | 5 | 0 | 0 |
| **Total** | **618** | **230** | **31** |

* Figures shown as proportions of total cases not receiving recommended DOT, receiving both DOT/SAT and SAT only.

# STATE OF CALIFORNIA INDICATOR REPORT

## Indicator C4-B: Self-Administered Therapy (SAT)
## Proportion of TB cases for whom DOT is recommended who receive SAT throughout the course of treatment

### Performance Trends in SAT; California Objectives




| | 2008 | 2009 | 2010 | 2011 | 2012 |
|---|---|---|---|---|---|
| **# cases for whom DOT is recommended** | 1554 | 1367 | 1385 | 1449 | 1323 |
| **# cases on SAT only (all cases)** | 359 | 366 | 318 | 266 | 277 |
| **# cases on SAT only for whom DOT is recommended** | 99 | 131 | 94 | 70 | 65 |

Note: Cases for whom DOT is recommended with unknown or missing therapy type are considered as not meeting the indicator and are not shown as separate categories in the above table.

## METHODS

*Data Sources:* RVCT (fields # 6, 7, 13, 14, 17, 24, 25, 26, 28, 29, 30, 31), FU-1 (field # 34, 37), FU-2 from initial LHJ (field # 39), and TB/AIDS Registry Match

*Cohort:* All TB cases for whom DOT is particularly recommended, alive at diagnosis and starting treatment, counted in the year of interest. Excludes cases who move during treatment.

*Definitions:* **TB cases for whom DOT is recommended:** < 18 years old; homeless within the past year; resident of correctional facility or a long-term care facility at the time of diagnosis; injection or non-injection drug user; excess alcohol consumption within the past year; history of active TB disease; resistance to INH or RIF; sputum smear-positive; slow to culture convert (> 60 days) among sputum culture-positive cases who are alive for at least 60 days after starting treatment. Drug resistance and slowness in culture conversion may not be recognized initially, but patients should be placed on DOT when this information is available. Therefore, patients with these disease characteristics should not be on SAT throughout the course of treatment, and are included in the cohort for this indicator.
**Use of SAT throughout the course of treatment:** designated "SAT only" on the RVCT. No doses are directly observed.

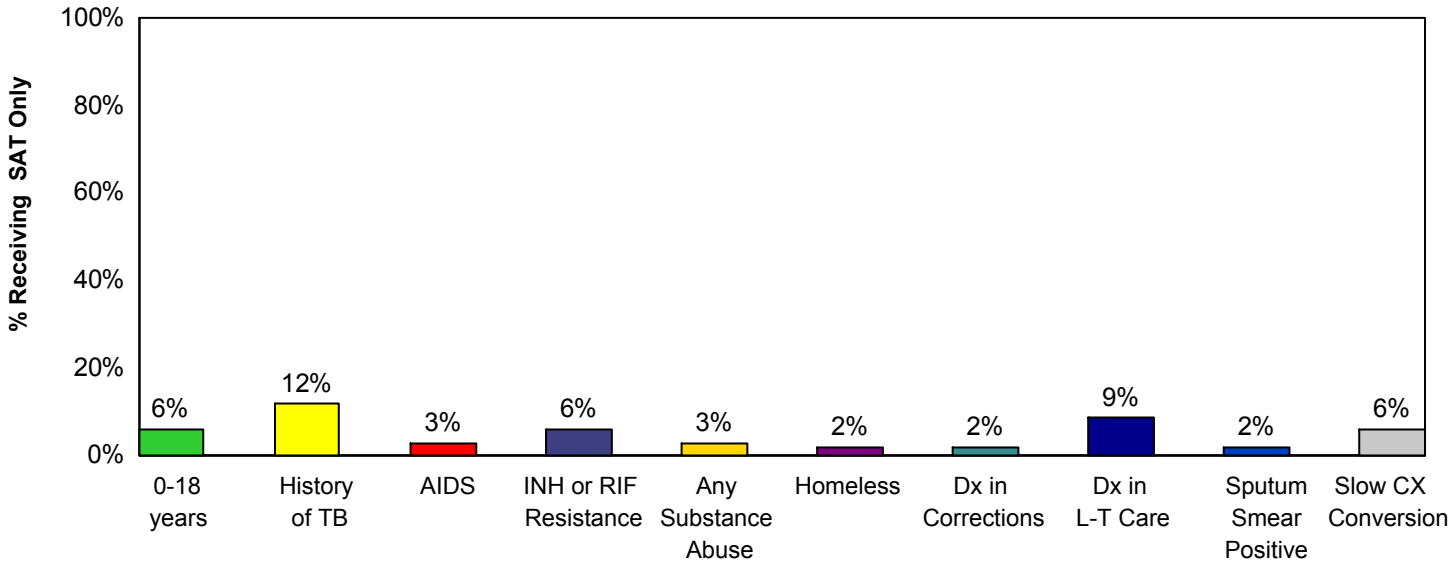
*Calculation:* [(# TB cases for whom DOT is recommended who receive SAT throughout the course of treatment) / (# TB cases for whom DOT is recommended, alive at diagnosis and starting treatment) - (# TB cases that move during treatment)]

*Limitations* This indicator may lack sensitivity because other risk factors for non-adherence may not be captured on RVCT. In excluding cases that move during treatment, these cases who may be at especially high risk for non-adherence and adverse treatment outcomes are excluded from consideration.

# STATE OF CALIFORNIA INDICATOR REPORT

## SELECTED GROUPS FOR WHOM DOT IS RECOMMENDED, 2012

**Cases in Selected Groups for Whom DOT is Recommended, Receiving SAT Only***




* Figures shown as proportion of cases with given risk factor receiving SAT only out of total cases with risk factor.

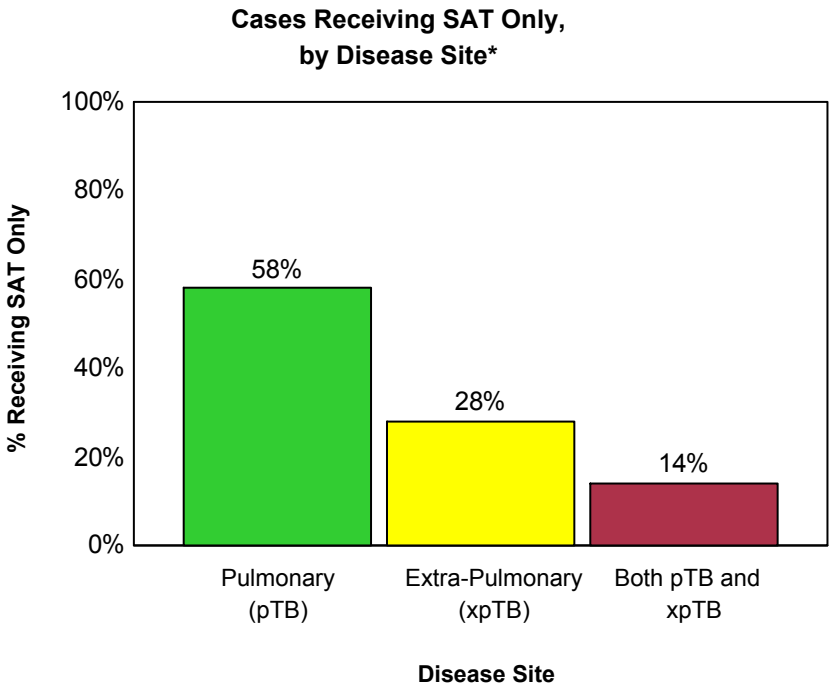
**Distribution of Selected Groups on SAT Only for Whom DOT is Recommended:**

| | TB Cases for Whom DOT Recommended | Receiving SAT Only |
|---|---|---|
| | # cases | # cases |
| 0-18 years old | 115 | 7 |
| History of TB | 113 | 13 |
| AIDS | 86 | 3 |
| INH or RIF Resistance | 175 | 10 |
| Any Substance Abuse (alcohol, IDU, NIDU) | 268 | 8 |
| Homelessness within past year | 127 | 2 |
| Diagnosis in a Correctional Facility | 58 | 1 |
| Diagnosis in a Long-Term Care Facility | 43 | 4 |
| Sputum Smear Positive | 847 | 18 |
| Slow to Culture Convert (>2 months) | 358 | 23 |

Note: Cases with unknown or missing therapy types are not shown as separate categories in the graph or the table, but are included in the cohort (e.g., “cases for whom DOT recommended” column in the table and the denominators for each group in the bar graph).

# STATE OF CALIFORNIA INDICATOR REPORT

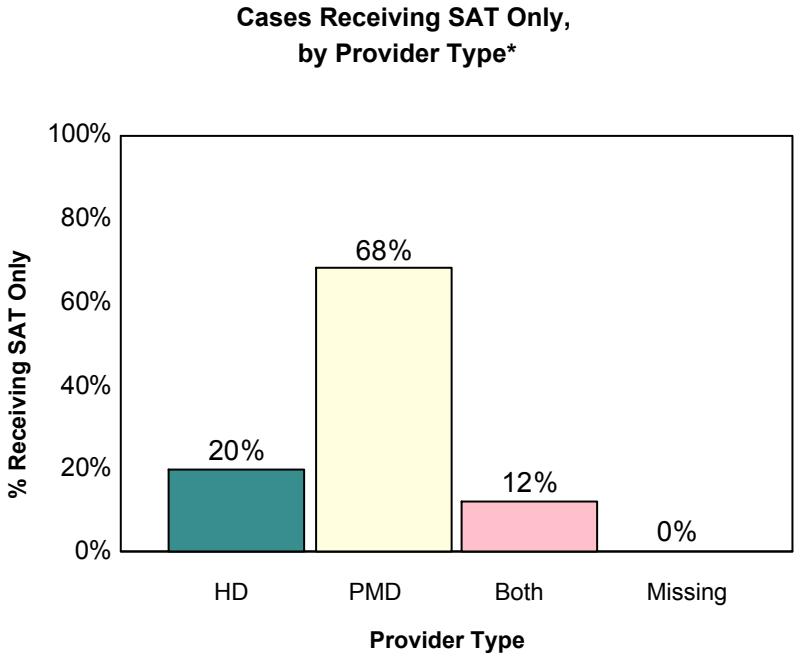
## DISEASE SITE, 2012




**Disease Site Distribution:**

| | Cases for Whom DOT is Recommended | Receiving SAT Only |
|---|---|---|
| | # cases | # cases |
| Pulmonary (pTB) | 1053 | 38 |
| Extra-Pulmonary (xpTB) | 112 | 18 |
| Both pTB & xpTB | 158 | 9 |
| **Total** | **1323** | **65** |

## PROVIDER TYPE, 2012




**Provider Type Distribution:**

| | Cases for Whom DOT is Recommended | Receiving SAT Only |
|---|---|---|
| | # cases | # cases |
| Health Dept. | 770 | 13 |
| Private MD | 417 | 44 |
| Both | 128 | 8 |
| Missing | 8 | 0 |
| **Total** | **1323** | **65** |

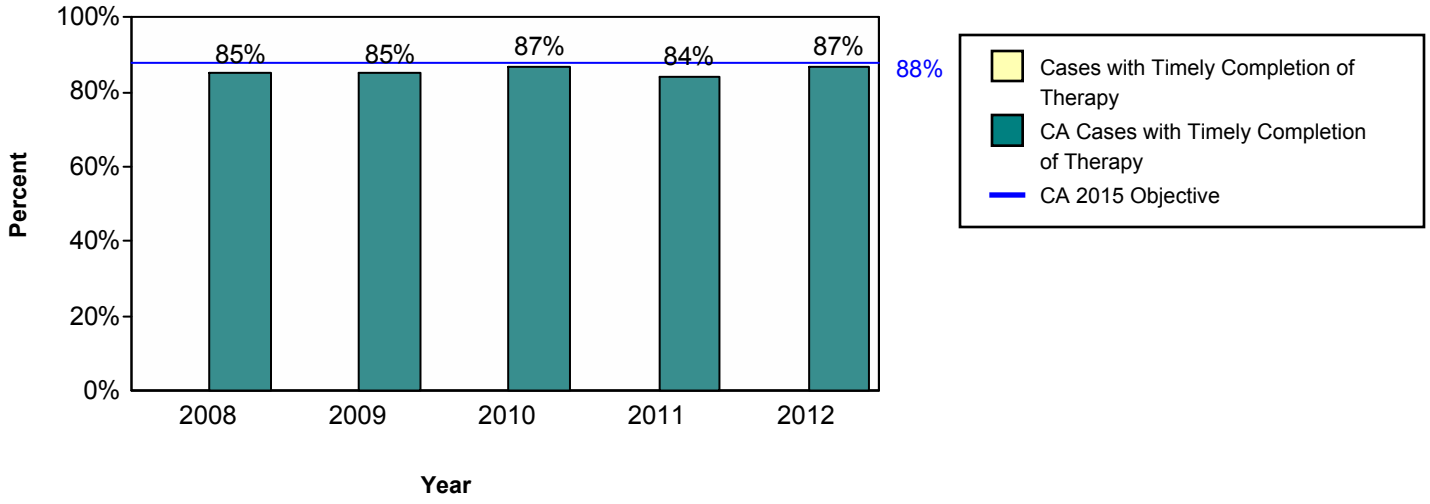
* Figures shown as proportions of total cases for whom DOT is recommended, receiving SAT only.

# STATE OF CALIFORNIA INDICATOR REPORT

## Indicator C5: Timely Completion of Therapy (COT)

**Proportion of TB cases who complete treatment in ≤ 12 months.**

**Performance Trends in Timely COT; California and National Objectives**




| | 2008 | 2009 | 2010 | 2011 | 2012 |
|---|---|---|---|---|---|
| **# cases (total), for whom ≤12 months of therapy is indicated** | 2317 | 2080 | 1957 | 1955 | 1837 |
| **# cases completing therapy (ever)** | 2213 | 1967 | 1878 | 1870 | 1772 |
| **# cases completing Rx ≤12 months** | 1967 | 1768 | 1701 | 1649 | 1590 |

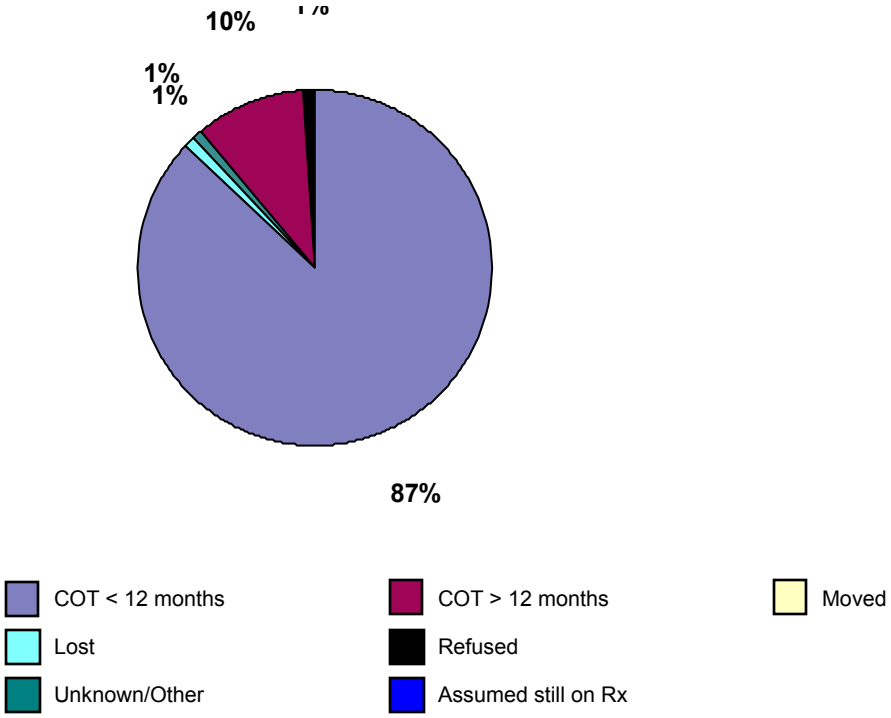
## METHODS

| | |
|---|---|
| *Data Sources:* | RVCT (fields # 6, 7, 13, 15, 16, 28), FU-1 (field # 34), FU-2 from final LHJ (fields # 36, 37) |
| *Cohort:* | All TB cases counted in the year of interest, for whom one year or less of therapy is recommended, alive at diagnosis and starting treatment. Patients with rifampin-resistant or meningeal TB and patients who die during therapy are excluded. |
| *Definitions* | Outcomes will be obtained from the FU-2 of the final LHJ. |
| *Calculation:* | # TB cases who complete treatment <= 365 days) / total # TB cases alive at diagnosis and starting treatment |
| *Limitations:* | 1) For patients that move out of an LHJ during therapy, final therapy status (completed, or not) is given by the receiving jurisdiction. For LHJs calculating this indicator using local TIMS data, discrepancies may arise because FU-2s from the originating jurisdiction are overwritten, at varying intervals, by subsequent FU-2 data.<br>2) The CDC uses a slightly different methodology to calculate this measure, with different exclusion/inclusion criteria for certain rare cases. Discrepancies, where they exist, will be very small. |

# STATE OF CALIFORNIA INDICATOR REPORT

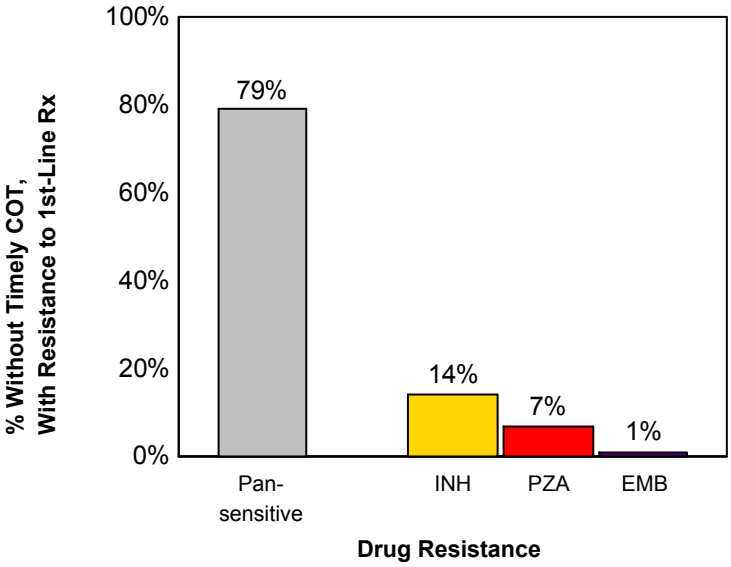
## TREATMENT OUTCOMES, 2012

**All Cases for Whom ≤ 12 Months of Therapy is Indicated ( N= 1837)**




## FIRST-LINE DRUG RESISTANCE, 2012

**Cases Not Completing Therapy in ≤ 12 Months, by First-Line Drug Resistance***




**Drug Susceptibility Patterns:**

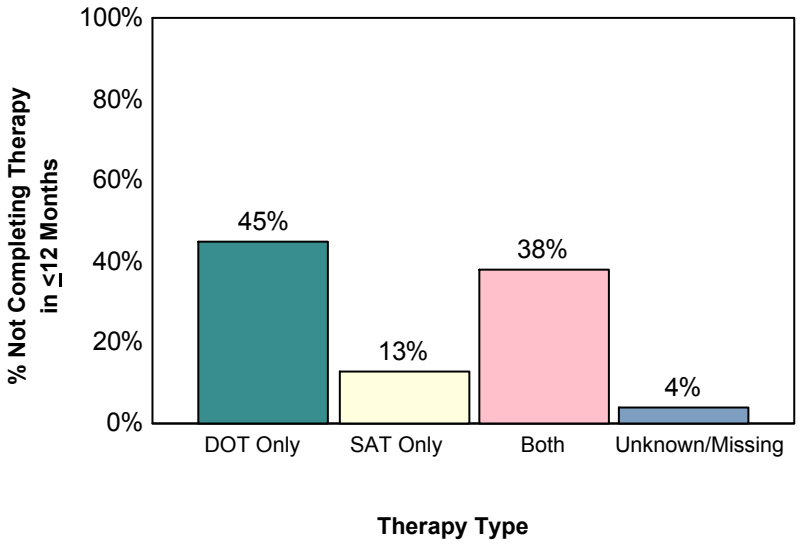
| | TB Cases with Susceptibility Results | Without Timely COT |
|---|---|---|
| | # cases | # cases |
| Pan-sensitive | 1184 | 157 |
| INH | 134 | 30 |
| PZA | 87 | 15 |
| EMB | 6 | 2 |

* Figures shown as proportions of total cases without timely completion of therapy.

# STATE OF CALIFORNIA INDICATOR REPORT

## THERAPY TYPE, 2012

**Cases Not Completing Therapy in ≤ 12 Months, by Therapy Type***

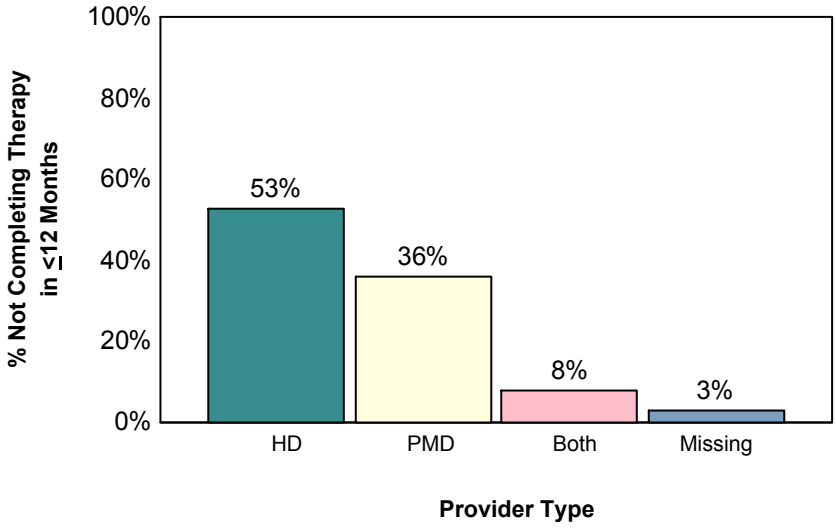



**Therapy Type Distribution:**

| | All TB Cases Alive and Starting Therapy | Without Timely COT |
|---|---|---|
| | # cases | # cases |
| DOT Only | 879 | 111 |
| SAT Only | 256 | 31 |
| Both | 690 | 95 |
| Unk./Missing | 12 | 10 |
| **Total** | **1837** | **247** |

## PROVIDER TYPE, 2012

**Cases Not Completing Therapy in ≤ 12 Months, by Provider Type***




**Provider Type Distribution:**

| | All TB Cases Alive and Starting Therapy | Without Timely COT |
|---|---|---|
| | # cases | # cases |
| Health Dept. | 1065 | 130 |
| Private MD | 597 | 90 |
| Both | 168 | 20 |
| Missing | 7 | 7 |
| **Total** | **1240** | **247** |

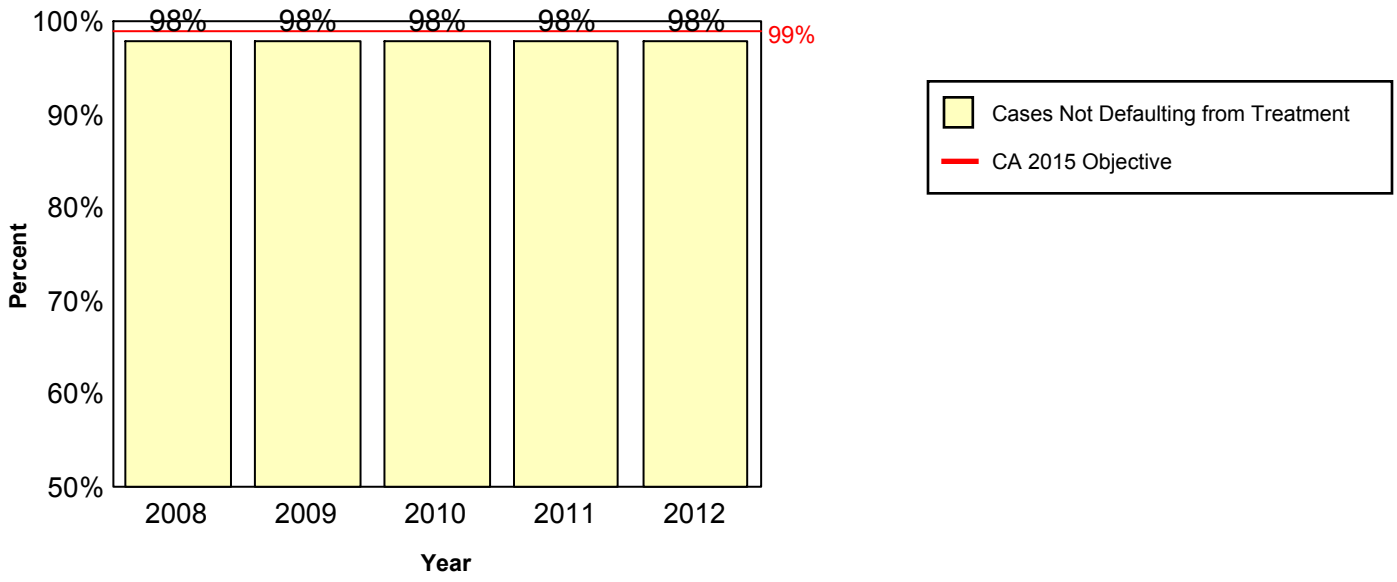
* Figures shown as proportions of total cases without timely completion of therapy

# STATE OF CALIFORNIA INDICATOR REPORT

## Indicator C6: Not Defaulting from Treatment

**Proportion of TB cases who do not default prior to completing treatment**

**Perfomance Trends in TB Cases Not Defaulting from Treatment; California Objective**




| | 2008 | 2009 | 2010 | 2011 | 2012 |
|---|---|---|---|---|---|
| **Total # cases** | 2633 | 2389 | 2251 | 2261 | 2128 |
| **# cases not defaulting from treatment** | 2585 | 2351 | 2202 | 2220 | 2094 |
| **# cases defaulting from treatment** | 48 | 38 | 49 | 41 | 34 |

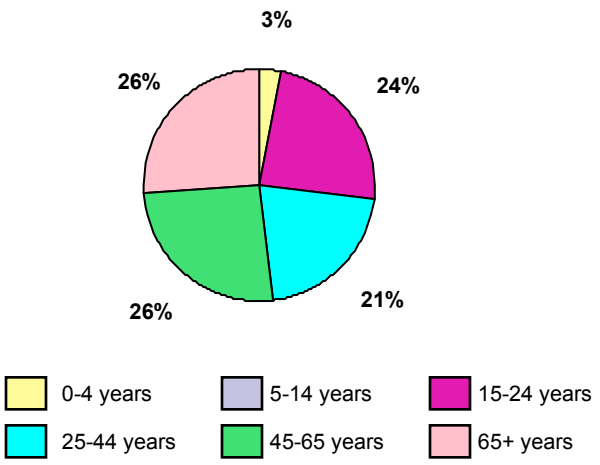
## METHODS

| | |
|---|---|
| *Data Sources:* | RVCT (fields # 13, 28), FU-2 from initial LHJ (field # 37) |
| *Cohort:* | All TB cases counted in the year of interest, alive at diagnosis and starting treatment. |
| *Definitions:* | **TB cases who default:** cases who stop therapy because they are lost or refused further treatment |
| *Calculation:* | (# TB cases who do not stop therapy because they were lost or refused further treatment) / (total # TB cases alive at diagnosis and starting treatment) |
| *Limitations* | Calculations based on incomplete FU-2 data will yield inaccurate results. FU-2 data from TIMS in local jurisdictions may contain data based on outcomes in other jurisdictions. |

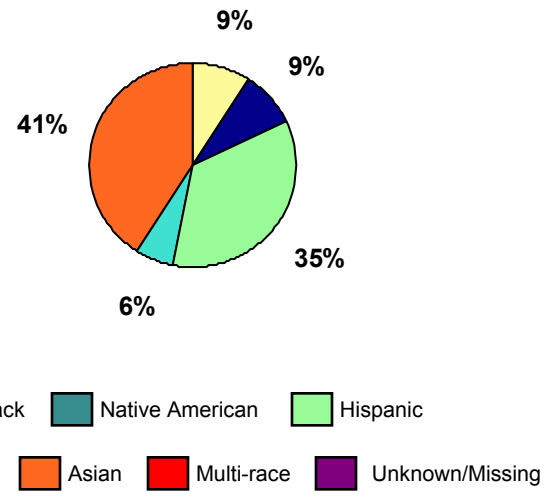
# STATE OF CALIFORNIA INDICATOR REPORT

## DEMOGRAPHICS, 2012

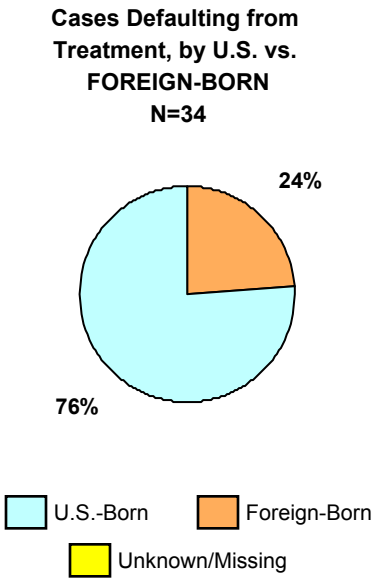
**Cases Defaulting from Treatment, by AGE N=34**



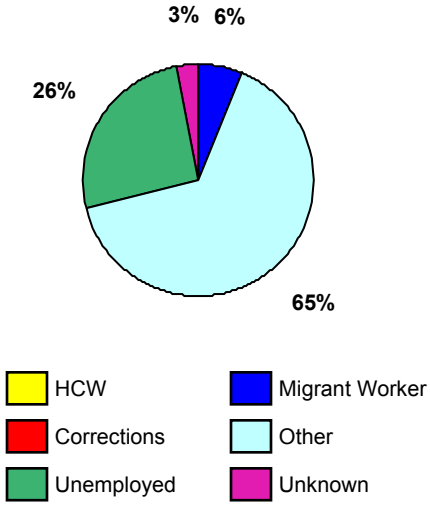

**Cases Defaulting from Treatment, by RACE/ETHNICITY N=34**



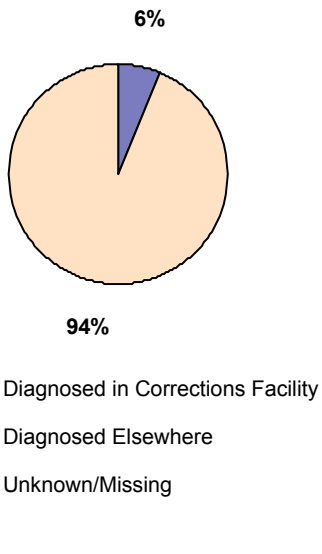

**Cases Defaulting from Treatment, by U.S. vs. FOREIGN-BORN N=34**




**Cases Defaulting from Treatment, by OCCUPATION N=34**




**Cases Defaulting from Treatment, by DX IN CORRECTIONS N=34**

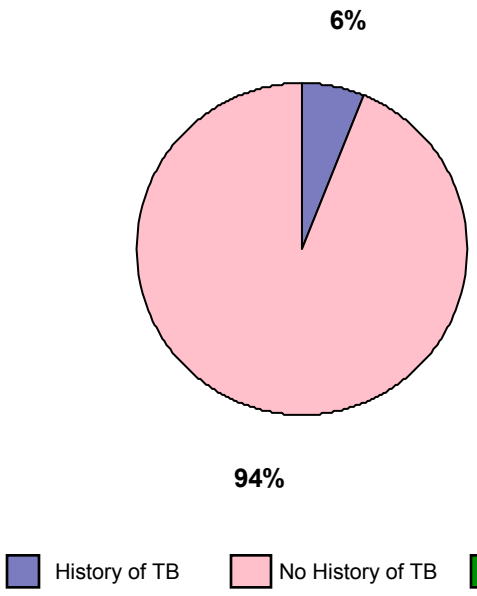



Note: Demographic categories under 1% are not represented in the pie charts.

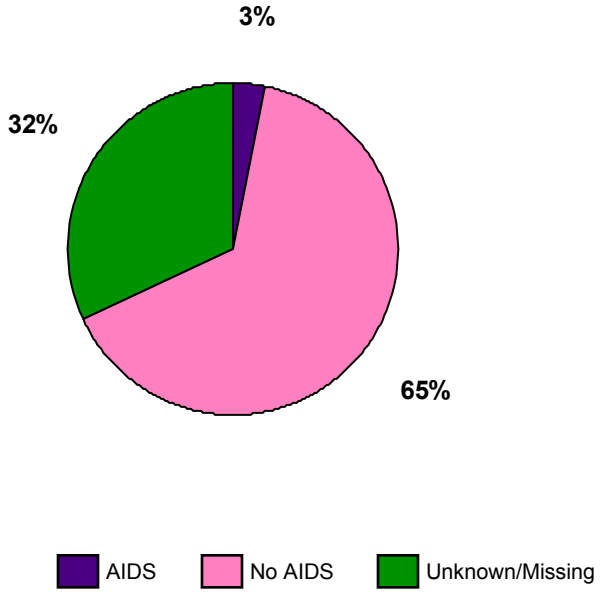
# STATE OF CALIFORNIA INDICATOR REPORT

## CLINICAL INFORMATION, 2012

**Cases Defaulting from Treatment, by HISTORY OF TB N=34**



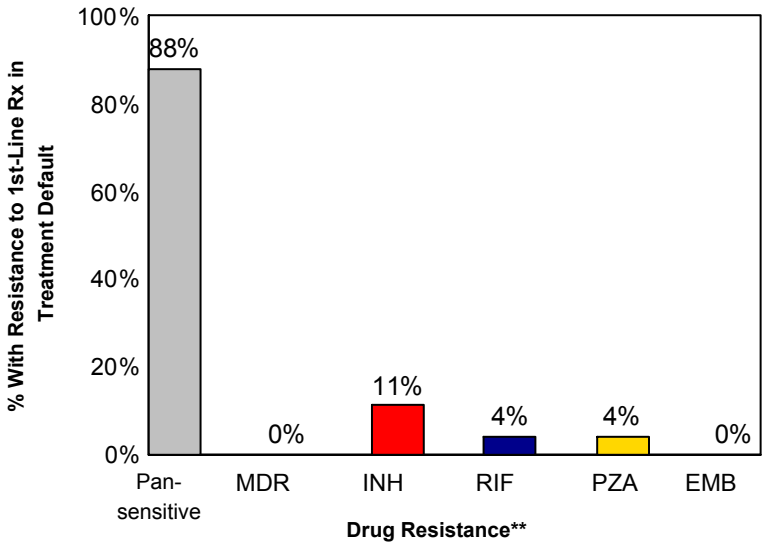

**Cases Defaulting from Treatment, by AIDS STATUS N=34**




Note: Demographic categories under 1% are not represented in the pie charts.

## DRUG RESISTANCE, 2012

**Cases Defaulting from Treatment, by First-Line Drug Resistance***




**Drug Susceptibility Patterns:**

| | All TB Cases with Susceptibility Results | Default from Treatment |
|---|---|---|
| | # cases | # cases |
| Pan-sensitive | 1810 | 22 |
| MDR | 14 | 0 |
| INH | 172 | 3 |
| RIF | 17 | 1 |
| PZA | 115 | 1 |
| EMB | 16 | 0 |

* Figures shown as a proportion of total cases in treatment default

** Categories are not mutually exclusive.

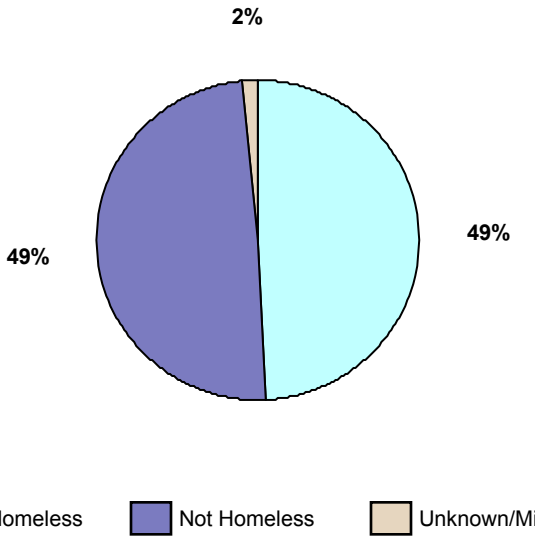


Data File Used: prvctye15 (CA FU-2= 100% complete)

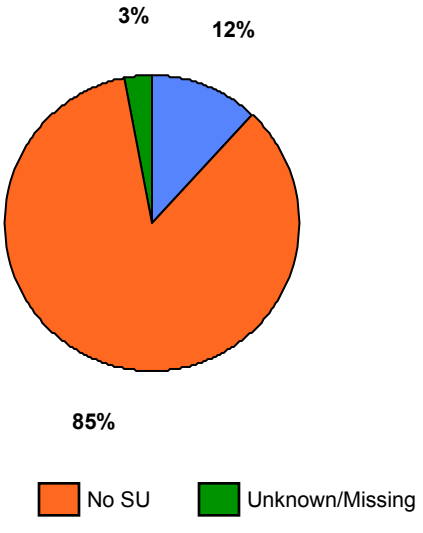
# STATE OF CALIFORNIA INDICATOR REPORT

## RISK FACTORS, 2012

**Cases Defaulting from Treatment, by HOMELESS WITHIN PAST YEAR N=34**



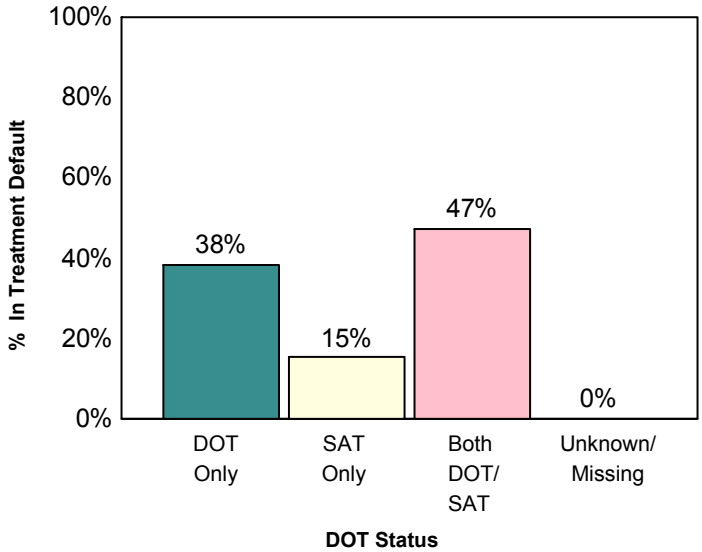

**Cases Defaulting from Treatment, by SUBSTANCE USE WITHIN PAST YEAR N=34**




Note: Demographic categories under 1% are not represented in the pie charts.

## THERAPY TYPE, 2012

**Cases Defaulting from Treatment, by Therapy Type***




**Therapy Type Distribution:**

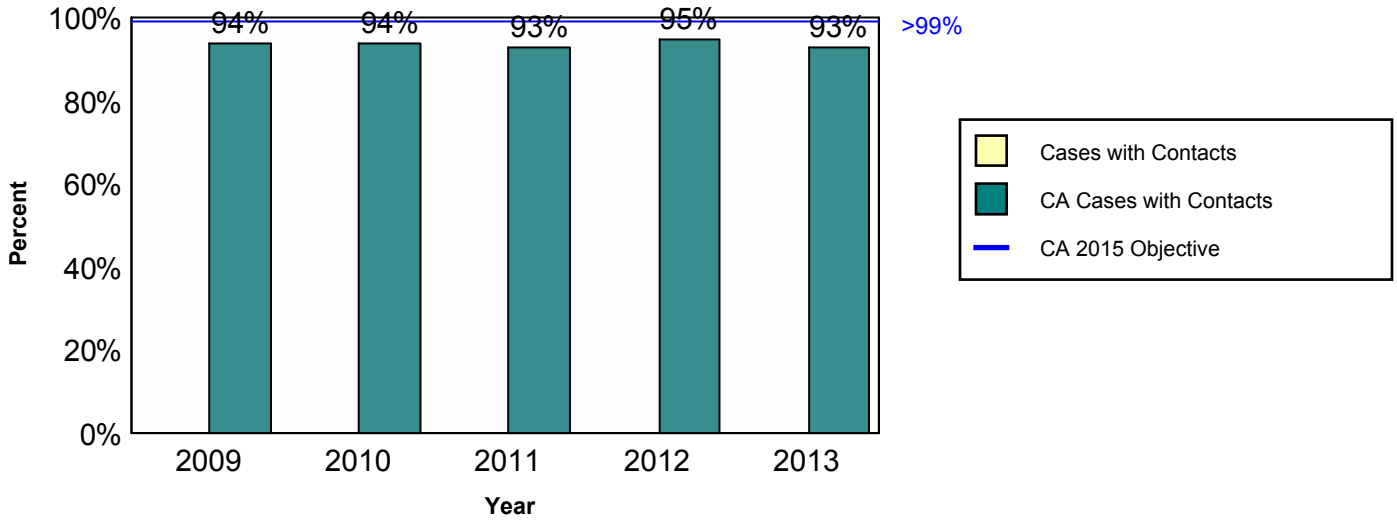
| | All TB Cases | Default from Treatment |
|---|---|---|
| DOT Only | 1063 | 13 |
| SAT Only | 277 | 5 |
| Both DOT/SAT | 771 | 16 |
| Unknown/Missing | 17 | 0 |
| **Total** | **2128** | **34** |

* Figures shown as a proportion of total cases in treatment default

# STATE OF CALIFORNIA INDICATOR REPORT

## Indicator D1: Contact Identification
## Proportion of sputum smear-positive cases with at least one contact identified

### Performance Trends in Contact Identification; California and National Objectives




| | 2009 | 2010 | 2011 | 2012 | 2013 |
|---|---|---|---|---|---|
| **Total # smear (+) cases for investigation** | 925 | 892 | 976 | 851 | 920 |
| **Total # smear (+) cases with contacts identified** | 867 | 838 | 908 | 805 | 853 |

## METHODS

*Data Sources:* ARPE-CI (fields # a1, b1)

*Cohort:* Sputum smear-positive pulmonary/laryngeal cases counted in the year of interest

*Definitions:* **Contact:** a person whom the health department believes was exposed to a TB case and warrants evaluation for TB disease or latent TB infection (LTBI).

**Cohort year:** count year of the case to which the contact is linked. ARPE-CI data collection started with cases counted in July 1999; therefore, data for 1999 are for the half-year July - December cohort only.

**Other Pulmonary:** refers to pulmonary/laryngeal cases who are neither sputum smear-positive nor sputum culture-positive, and to the contacts linked to these cases.

*Calculation:* 1 - (# sputum smear-positive cases with no contacts / # sputum smear-positive cases for investigation)

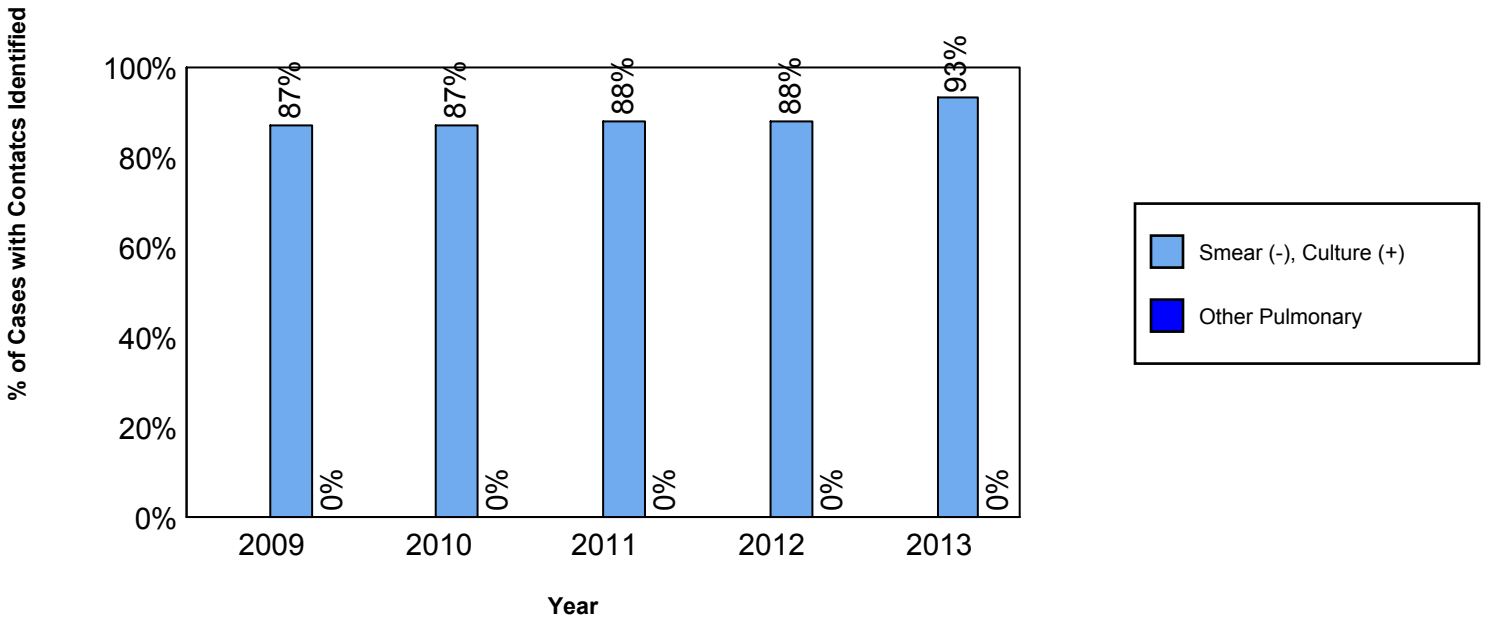
*Limitations:* This indicator does not capture whether all contacts were identified. Data may change from preliminary ARPE-CI report to final report. Preliminary report data are used when the final report is not available.

Incomplete submission of ARPEs by some LHJs will cause the California average to be incomplete and potentially unrepresentative of the state. Variability in interpretation of ARPE definitions between LHJs affects consistency and comparability of results.

Data collection is currently limited to federally mandated data fields, which are reported in the aggregate. This limits further stratification and analysis of ARPE-based indicators.

# STATE OF CALIFORNIA INDICATOR REPORT

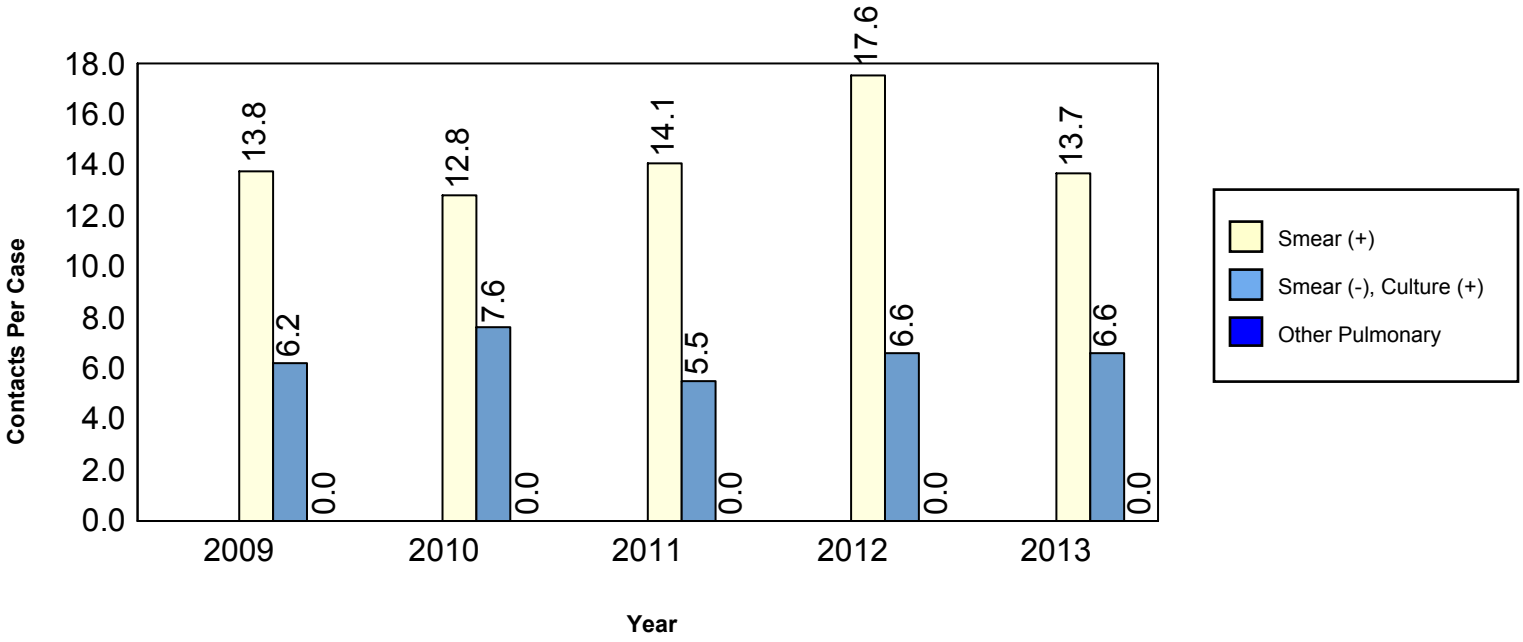
## Cases With Contacts Identified by Index Case Smear and Culture Status




| | 2009 | 2010 | 2011 | 2012 | 2013 |
|---|---|---|---|---|---|
| Total # smear (-), culture (+) cases for investigation | 518 | 504 | 487 | 429 | 470 |
| # smear (-), culture (+) cases with contacts identified | 449 | 440 | 430 | 377 | 438 |
| Total # other pulmonary cases for investigation | 0 | 0 | 0 | 0 | 0 |
| Other pulmonary cases with contacts identified | 0 | 0 | 0 | 0 | 0 |

# STATE OF CALIFORNIA INDICATOR REPORT

## Contacts per Case by Index Case Smear and Culture Status



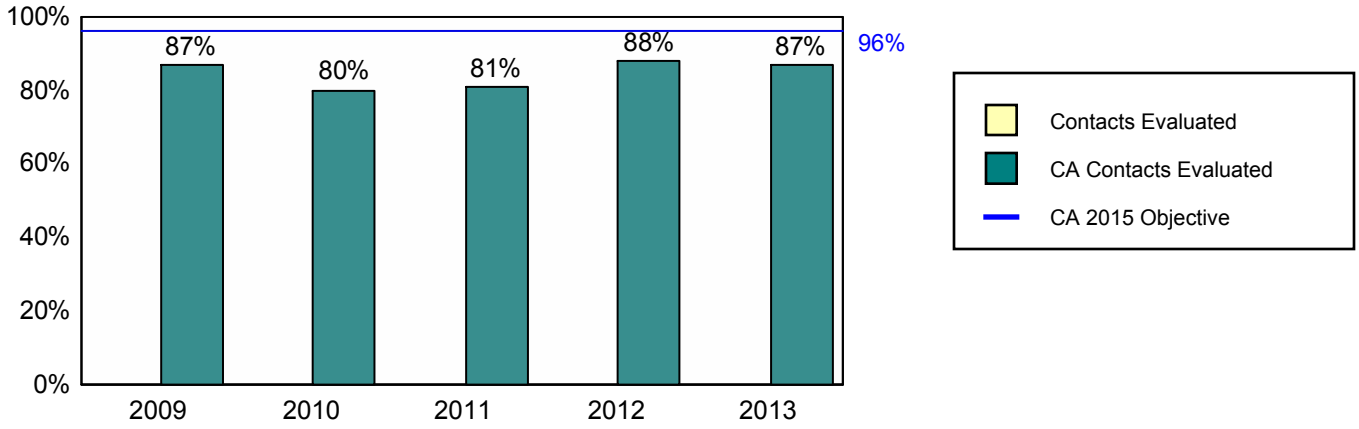

| | 2009 | 2010 | 2011 | 2012 | 2013 |
|---|---|---|---|---|---|
| Total # smear (+) cases for investigation | 925 | 892 | 976 | 851 | 920 |
| # contacts to smear (+) cases identified | 12761 | 11427 | 13724 | 14939 | 12645 |
| Total # smear (-), culture (+) cases for investigation | 518 | 504 | 487 | 429 | 470 |
| # contacts to smear (-), culture (+) cases identified | 3232 | 3834 | 2657 | 2832 | 3094 |
| Total # other pulmonary cases for investigation | 0 | 0 | 0 | 0 | 0 |
| # contacts to other pulmonary cases identified | 1240 | 1396 | 1445 | 1912 | 1295 |

# STATE OF CALIFORNIA INDICATOR REPORT

## Indicator D2: Contact Evaluation

## Proportion of contacts to sputum smear-positive cases who complete evaluation for TB infection or disease

**Performance Trends in Contacts Evaluated; California Objective**




| | 2009 | 2010 | 2011 | 2012 | 2013 |
|---|---|---|---|---|---|
| **# identified contacts to smear (+) cases** | 12761 | 11427 | 13724 | 14939 | 12645 |
| **# evaluated contacts to smear (+) cases** | 11111 | 9187 | 11060 | 13122 | 10953 |

## METHODS

*Data Sources:* ARPE-CI (fields # c1, d1)

*Cohort:* Contacts to sputum smear-positive pulmonary/laryngeal cases identified in the year of interest

*Definitions:*

**Evaluated:** All evaluation steps, as described in the ARPE-CI instructions, are completed to determine whether the contact has newly identified LTBI, TB disease, or neither.

**Cohort year:** count year of the case to which the contact is linked. ARPE-CI data collection started with cases counted in July 1999; therefore, data for 1999 are for the half-year July - December cohort only.

**Other Pulmonary:** refers to pulmonary/laryngeal cases who are neither sputum smear-positive nor sputum culture-positive, and to the contacts linked to these cases.

*Calculation:* (# of contacts to sputum smear-positive cases evaluated) / (# of contacts to sputum smear-positive cases identified)

*Limitations*

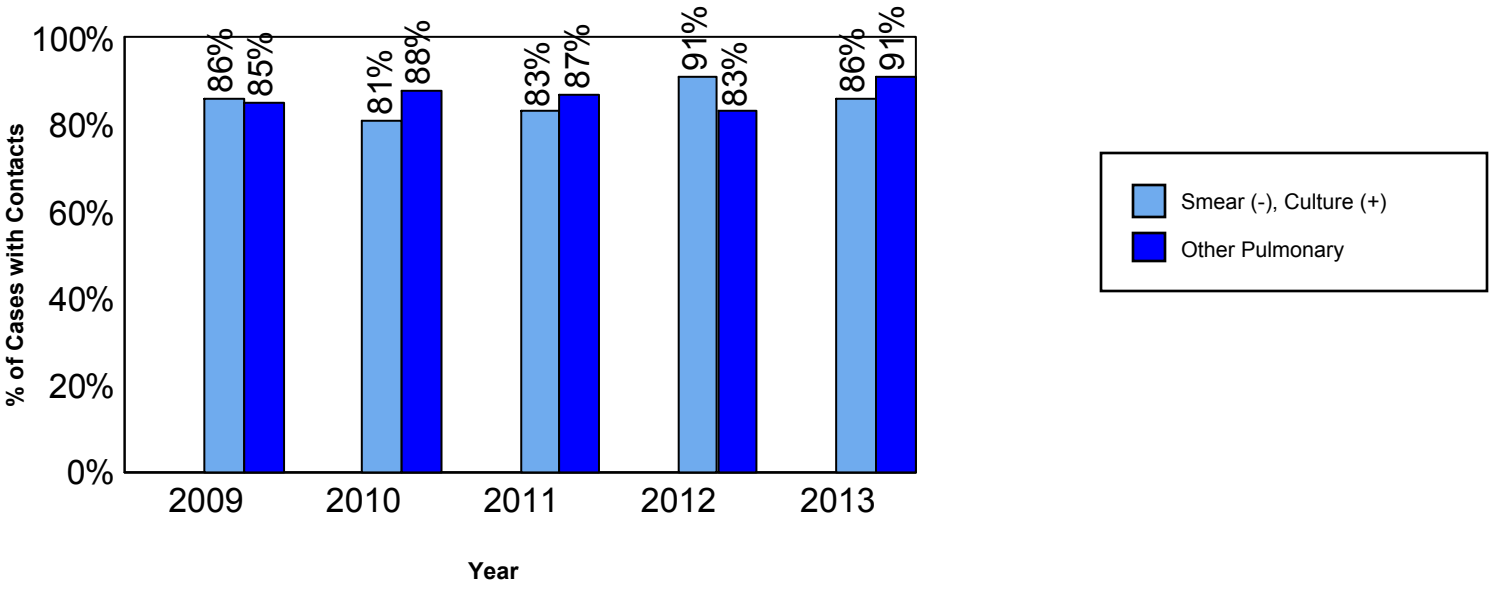
Only contacts completing all evaluation steps are considered to have met the definition of this indicator. The indicator does not identify evaluation steps that were completed (e.g., interview, tuberculin skin test, chest radiograph, or medical evaluation) for contacts not meeting the indicator. Data may change from preliminary ARPE-CI report to final report. Preliminary report data are used when the final report is not available.

Incomplete submission of ARPEs by some LHJs will cause the California average to be incomplete and potentially unrepresentative of the state. Variability in interpretation of ARPE definitions between LHJs affects consistency and comparability of results.

Data collection is limited to federally mandated data fields, which are reported in the aggregate. This limits further stratification and analysis of ARPE-based indicators.

# STATE OF CALIFORNIA INDICATOR REPORT

## Cases with Contacts Evaluated by Index Case Smear and Culture Status

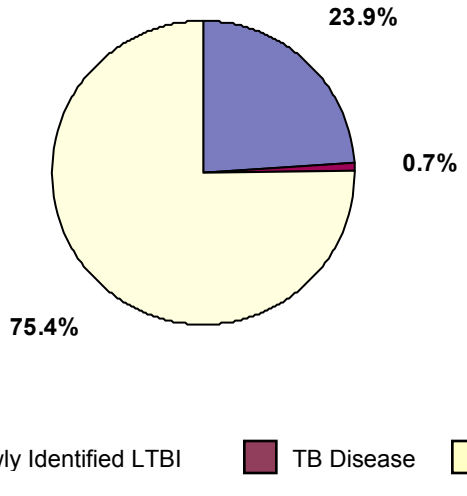



| | 2009 | 2010 | 2011 | 2012 | 2013 |
|---|---|---|---|---|---|
| Total # contacts to smear (-), culture (+) cases identified | 3232 | 3834 | 2657 | 2832 | 3094 |
| # contacts to smear (-), culture (+) cases evaluated | 2782 | 3115 | 2198 | 2588 | 2664 |
| Total # contacts to other pulmonary cases identified | 1240 | 1396 | 1445 | 1912 | 1295 |
| # contacts to other pulmonary cases evaluated | 1048 | 1229 | 1264 | 1596 | 1181 |

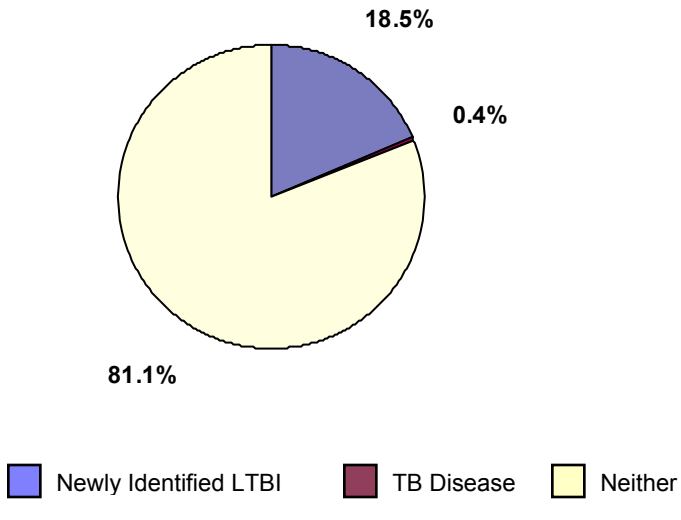
# STATE OF CALIFORNIA INDICATOR REPORT

## EVALUATION RESULTS, 2013

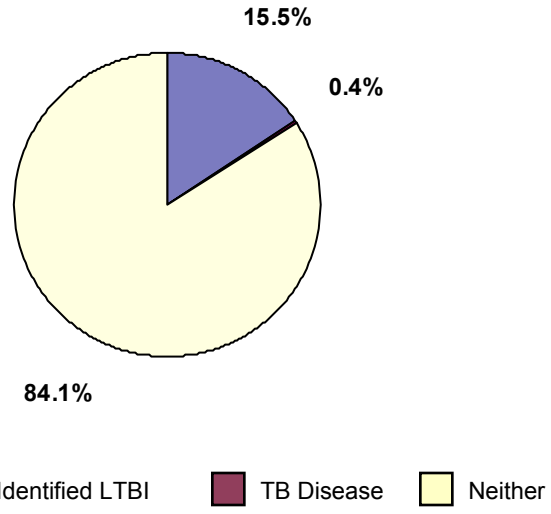
### Contacts to Smear (+) Cases




### Contacts to Smear (-), Culture (+) Cases




### Contacts to Other Pulmonary Cases




## 2013 EVALUATION RESULTS

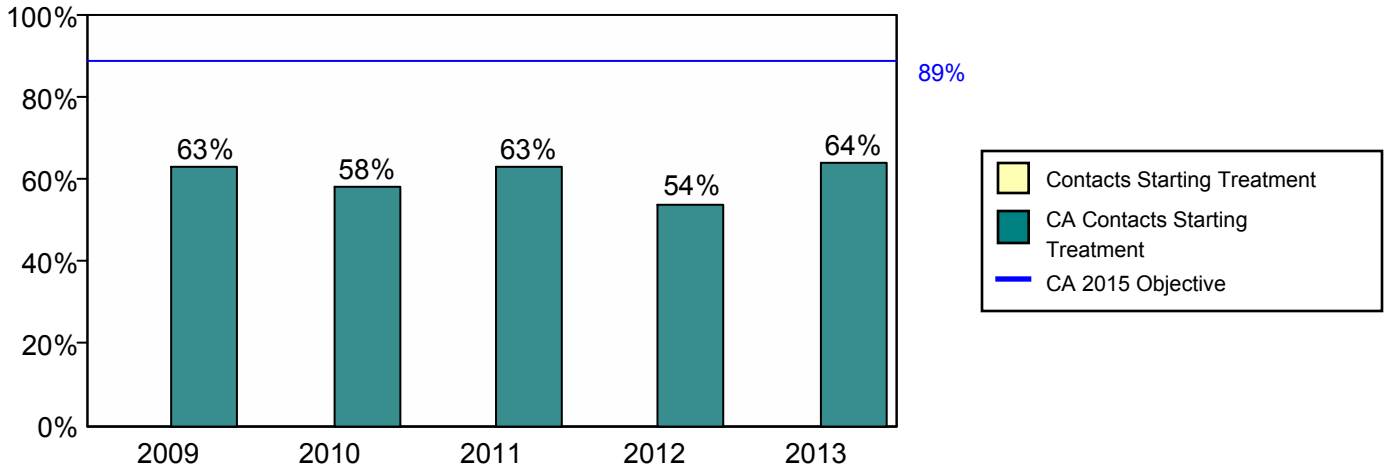
| | Newly Identified LTBI | TB Disease | Neither | Total |
|---|---|---|---|---|
| **Evaluated contacts to smear (+) cases** | 2620 | 73 | 8260 | 10953 |
| **Evaluated contacts to smear (-), culture (+) cases** | 492 | 11 | 2161 | 2664 |
| **Evaluated contacts to other pulmonary cases** | 183 | 5 | 993 | 1181 |

# STATE OF CALIFORNIA INDICATOR REPORT

## Indicator D3: Contact Treatment

## Proportion of contacts with latent TB infection (LTBI) who started treatment for LTBI

### Performance Trends in Contacts Starting Treatment; California Objectives




| | 2009 | 2010 | 2011 | 2012 | 2013 |
|---|---|---|---|---|---|
| **Total # contacts evaluated** | 14941 | 13531 | 14522 | 17306 | 14798 |
| **Total # contacts with LTBI** | 3251 | 3121 | 3340 | 3707 | 3295 |
| **# contacts starting treatment for LTBI** | 2041 | 1795 | 2091 | 2015 | 2114 |

## METHODS

*Data Sources:* ARPE-CI (fields # f1, f2, f, g1, g2, g)

*Cohort:* Infected contacts to pulmonary/laryngeal cases identified in the year of interest

*Definitions:*

**Infected Contacts:** contacts diagnosed with LTBI through current contact investigations. Must have a new positive tuberculin skin test result and active TB disease excluded or be prescribed full-course treatment for suspected LTBI.

**Started Treatment:** the contact took the first dose of a planned full-course treatment for LTBI.

**Cohort year:** count year of the case to which the contact is linked. ARPE-CI data collection started with cases counted in July 1999; therefore, data for 1999 are for the half-year July - December cohort only.

**Other Pulmonary:** refers to pulmonary/laryngeal cases who are neither sputum smear-positive nor sputum culture-positive, and to the contacts linked to these cases.

*Calculation:* (# of infected contacts that started treatment) / (# of infected contacts)

*Limitations:*

Cohort includes contacts with LTBI for whom full-course treatment for LTBI is not recommended (but does exclude contacts who are on short-term "window prophylaxis" until a case determination can be made). Data may change from preliminary ARPE-CI report to final report. Preliminary report data are used when the final report is not available.

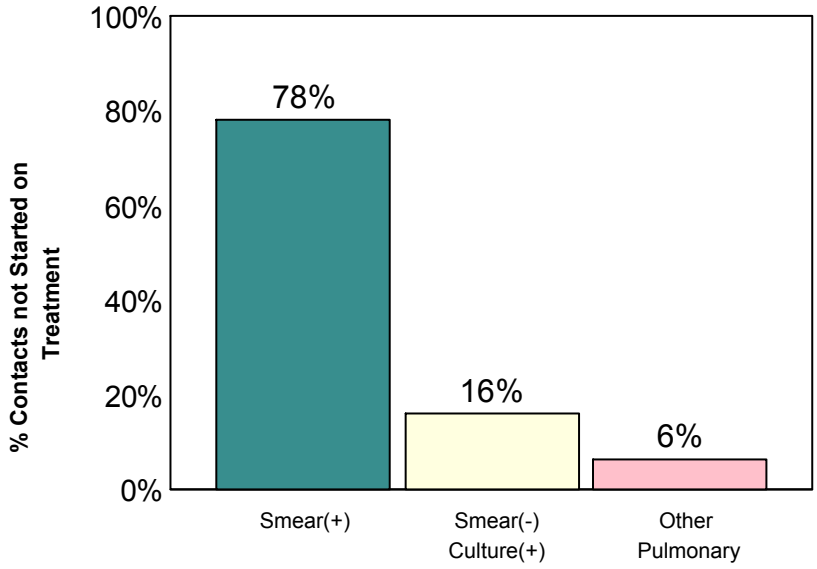
Incomplete submission of ARPEs by some LHJs will cause the California average to be incomplete and potentially unrepresentative of the state. Variability in interpretation of ARPE definitions between LHJs affects consistency and comparability of results.

Data collection is limited to federally mandated data fields, which are reported in the aggregate. This limits further stratification and analysis of ARPE-based indicators.

# STATE OF CALIFORNIA INDICATOR REPORT

## INDEX CASE TYPE, 2013

**Infected Contacts Not Started on Treatment by Index Case Smear and Culture Status*, N = 1181**




**Index Case Smear and Culture Status Distribution:**

| | Infected Contacts | Infected Contacts Not Started on Treatment | % Not Starting Treatment by Case Type | % Total Not Starting Treatment* |
|---|---|---|---|---|
| **Smear (+)** | 2620 | 916 | 35% | 78% |
| **Smear (-), Culture (+)** | 492 | 189 | 38% | 16% |
| **Other Pulmonary** | 183 | 76 | 42% | 6% |
| **Total** | 3295 | 1181 | 36% | 100% |

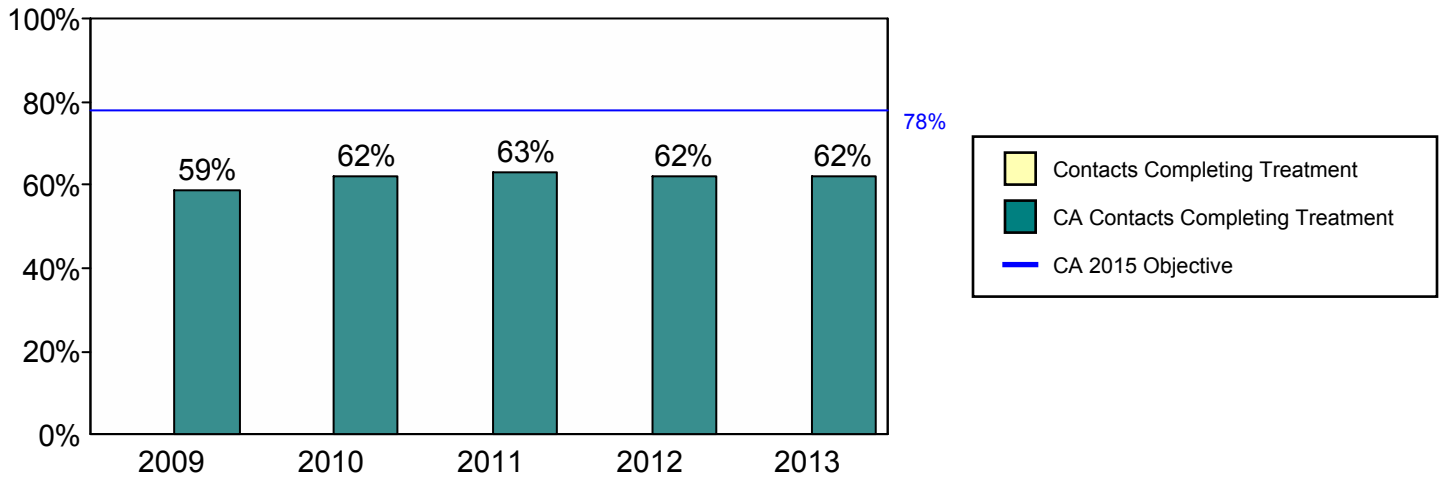
* Case distribution shown as a proportion of total infected contacts who did not start treatment for LTBI

# STATE OF CALIFORNIA INDICATOR REPORT

## Indicator D4: Contact Treatment Completion

**Proportion of infected contacts started on treatment who complete treatment for TB infection.**

### Performance Trends in Contacts who Complete Treatment; California Objectives




| | 2009 | 2010 | 2011 | 2012 | 2013 |
|---|---|---|---|---|---|
| **# contacts with LTBI starting treatment** | 2041 | 1795 | 2091 | 2015 | 2114 |
| **# contacts completing treatment for LTBI** | 1208 | 1111 | 1317 | 1252 | 1305 |

## METHODS

*Data Sources:* ARPE-CI (fields # g1, g2, g ,h1, h2, h)

*Cohort:* Infected contacts who start treatment for LTBI in the vear of interest

*Definitions:* **Infected Contacts:** contacts diagnosed with LTBI through current contact investigations for pulmonary/laryngeal cases. Must have a new positive tuberculin skin test result and active TB disease excluded or be prescribed full-course treatment for suspected LTBI.

**Completed Treatment:** contacts who start treatment for LTBI and meet all of the following conditions: 1) the prescribing provider, believing that an adequate regimen has been received, discontinues treatment, 2) the contact has taken at least 80% of the prescribed doses in the selected regimen, and 3) the treatment is finished within a period of 150% of the selected duration of therapy.

**Cohort year:** count year of the case to which the contact is linked. ARPE-CI data collection started with cases counted in July 1999; therefore, data for 1999 are for the half-year July - December cohort only.

*Calculation:* (# of infected contacts to pulmonary cases who completed treatment) / (# of infected contacts to pulmonary cases who started treatment)

*Limitations:* The cohort only includes infected contacts who started treatment, and does not include all contacts for whom treatment for LTBI was recommended.

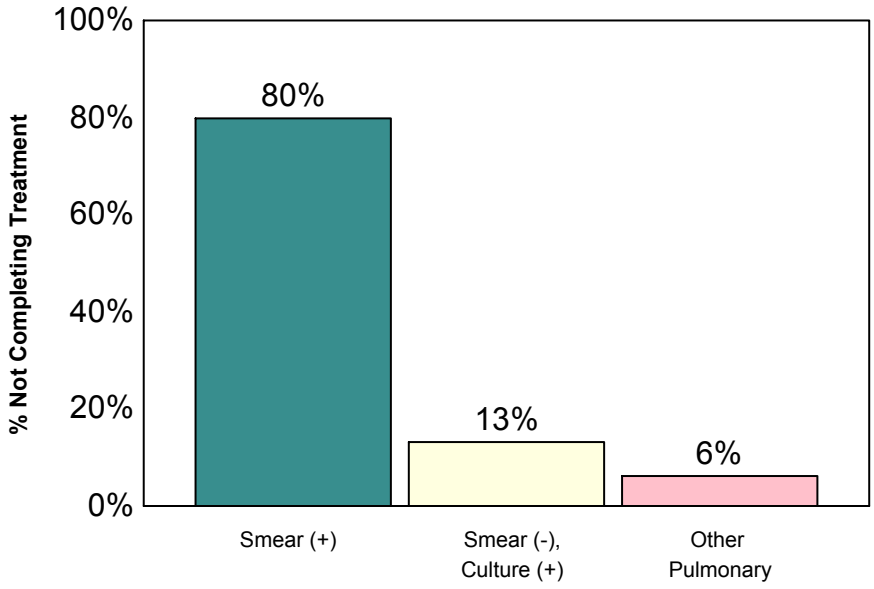
Incomplete submission of ARPEs by some LHJs will cause the California average to be incomplete and potentially unrepresentative of the state. Variability in interpretation of ARPE definitions between LHJs affects consistency and comparability of results.

Data collection is limited to federally mandated data fields, which are reported in the aggregate. This limits further stratification and analysis of ARPE-based indicators.

# STATE OF CALIFORNIA INDICATOR REPORT

## CASE TYPE, 2013

**Contacts Not Completing Treatment**
**by Index Case Smear and Culture Status***




### Index Case Culture and Smear Status Distribution:

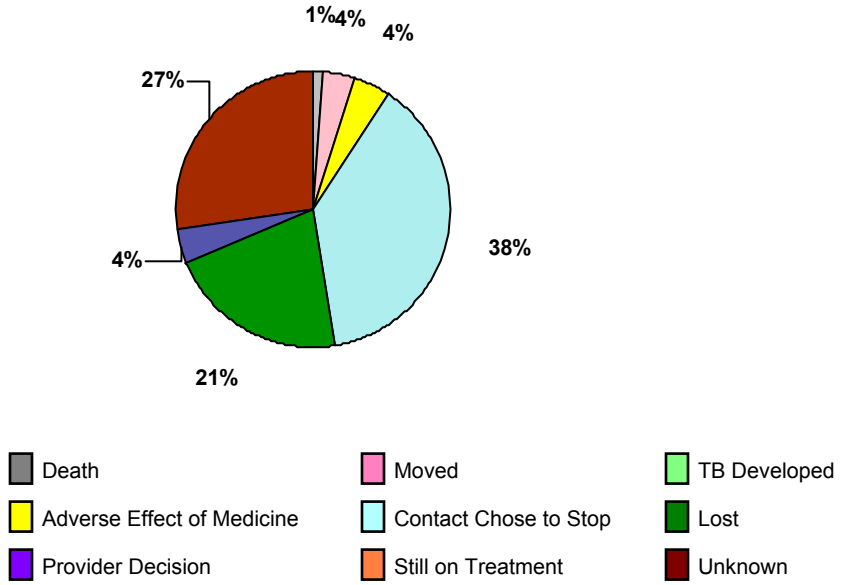
| | Infected Contacts Staring Rx for LTBI | Infected Contacts Not Completing Treatment for LTBI | % Not Completing Treatment by Case Status | % Total Not Completing Treatment * |
|---|---|---|---|---|
| **Smear (+)** | 1704 | 650 | 38% | 80% |
| **Smear (-), Culture (+)** | 303 | 109 | 36% | 13% |
| **Other Pulmonary** | 107 | 50 | 47% | 6% |
| **Total** | 2114 | 809 | 38% | 99% |

* Case distribution shown as a proportion of total infected contacts starting treatment for LTBI who did not complete treatment.

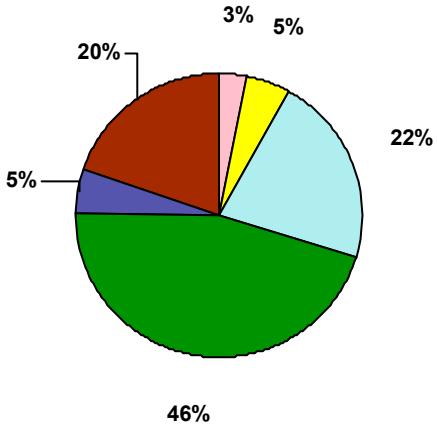
# STATE OF CALIFORNIA INDICATOR REPORT

## TREATMENT OUTCOMES FOR INFECTED CONTACTS NOT COMPLETING THERAPY FOR LTBI, 2013

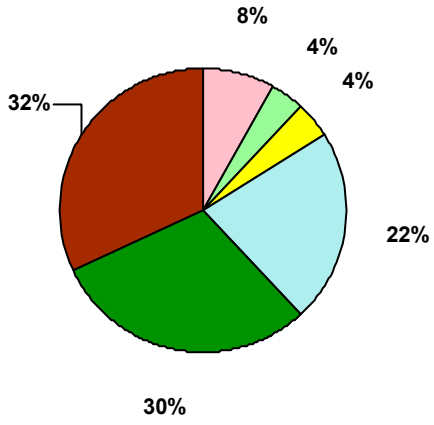
### Contacts to Smear (+) Cases Not Completing Therapy for LTBI




### Contacts to Smear (-), Culture (+) Cases Not Completing Therapy




### Contacts to Other Pulmonary Cases Not Completing Therapy




Note: Treatment outcomes under 1% are not represented in the pie charts.

## TREATMENT OUTCOMES

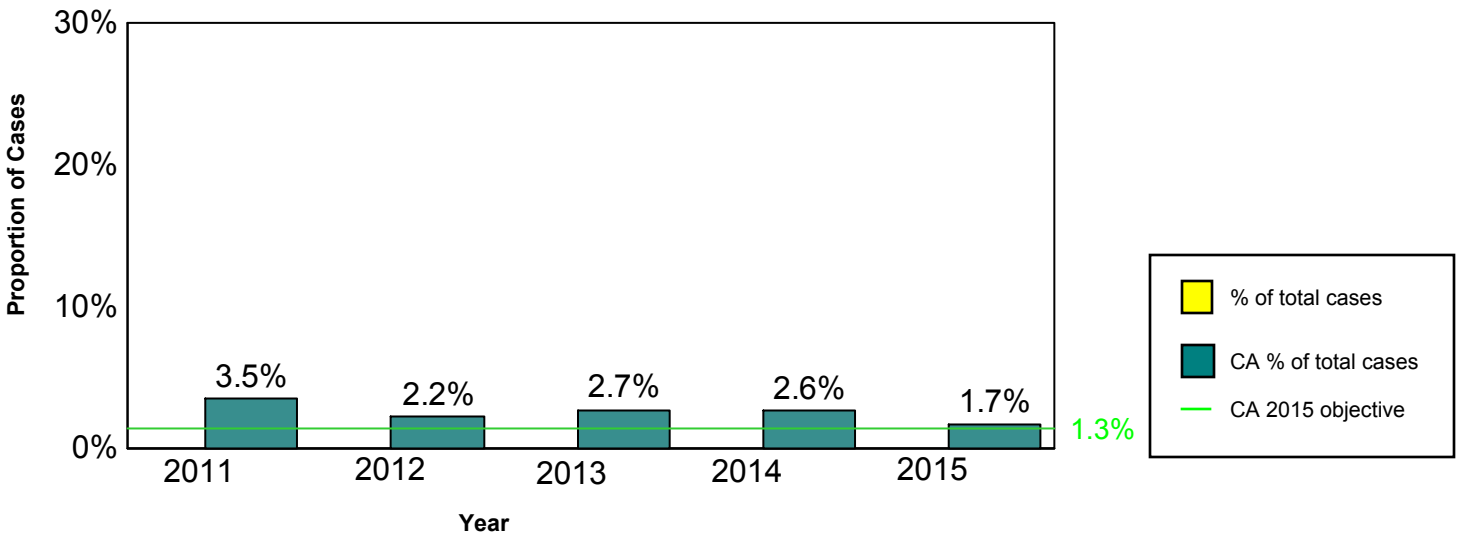
**Infected Contacts to:**

| | Smear (+) Cases | Smear (-), Culture (+) Cases | Other Pulmonary Cases | Total |
|---|---|---|---|---|
| **Death** | 4 | 0 | 0 | 4 |
| **Contact Moved (follow-up unknown)** | 25 | 3 | 4 | 32 |
| **Active TB Developed** | 2 | 0 | 2 | 4 |
| **Adverse Effect of Medicine** | 28 | 5 | 2 | 35 |
| **Contact Chose to Stop** | 248 | 24 | 11 | 283 |
| **Contact is Lost to Follow-up** | 139 | 50 | 15 | 204 |
| **Provider Decision** | 29 | 5 | 0 | 34 |
| **Still On Treatment** | 0 | 0 | 0 | 0 |
| **Unknown** | 175 | 22 | 16 | 213 |
| **Total** | 650 | 109 | 50 | 809 |

# STATE OF CALIFORNIA INDICATOR REPORT

## Indicator SE1: Pediatric TB Cases
## Proportion of TB cases in children 0 - 4 years old

**Trends in Pediatric TB Cases; California Objective**




| | 2011 | 2012 | 2013 | 2014 | 2015 |
|---|---|---|---|---|---|
| **# Pediatric Cases** | 82 | 48 | 58 | 56 | 36 |
| **% of Total Cases** | 3.5% | 2.2% | 2.7% | 2.6% | 1.7% |

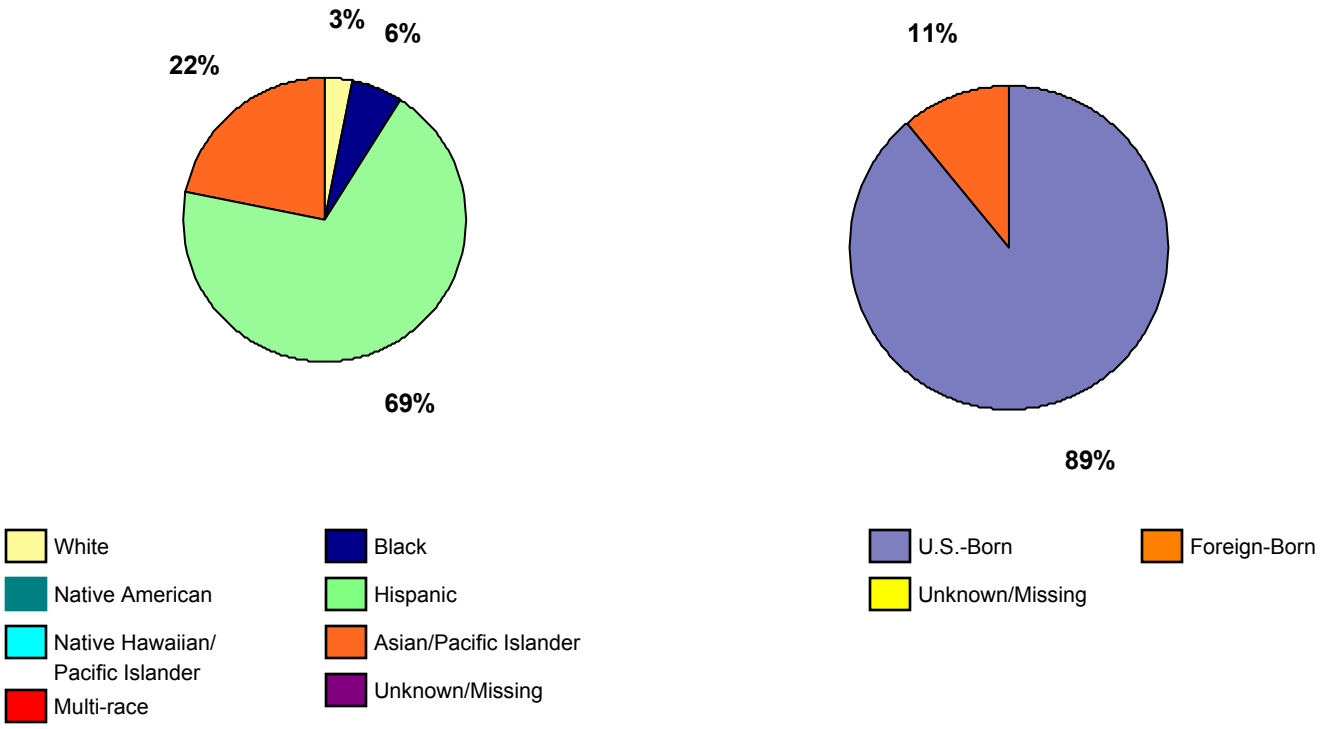
## METHODS

| | |
|---|---|
| *Data Sources:* | RVCT data (fields # 6, 7) |
| *Cohort:* | All TB cases counted in the year of interest. |
| *Definitions:* | See the *Tuberculosis Registry Guidelines* for TB case definition. |
| *Calculation:* | (# TB cases reported in persons < 5 years of age) / (total # TB cases) |
| *Limitations:* | Inclusion of pediatric TB cases resulting from transmission occurring outside of California may make this an inaccurate measure of the performance of TB control programs in California. |

# STATE OF CALIFORNIA INDICATOR REPORT

## DEMOGRAPHICS, 2015

**Pediatric Cases, by RACE/ETHNICITY (N=36)**




**Pediatric Cases, by U.S.- vs. FOREIGN-BORN (N=36)**




Note: Demographic categories under 1% are not represented in the pie charts

## CULTURE INFORMATION, 2015

| | Positive (%) | Negative (%) | Not Done/Unk. |
|---|---|---|---|
| **Culture Status** | 14 (38.9%) | 14 (38.9%) | 8 (22.2%) |

| | Culture(%) | Smear (%) | Clinical Diagnosis (%) | Provider Diagnosis (%) | **Total** |
|---|---|---|---|---|---|
| **Verification Criteria*** | 15 (41.7%) | 0 (0.0%) | 16 (44.4%) | 5 (13.9%) | **36** |

* For more information about case verification criteria, see *Tuberculosis Registry Guidelines*, **Report of Verified Case of Tuberculosisis Form - Completion Instructions**, California Edition, 1999, page 3.

# STATE OF CALIFORNIA INDICATOR REPORT

## PROVIDER TYPE, 2012

| | Heath Dept. (%) | Private MD (%) | Both (%) | Missing (%) |
|---|---|---|---|---|
| **Cases** | 26 (54%) | 18 (38%) | 4 (8%) | 0 (0%) |

## THERAPY TYPE, 2012

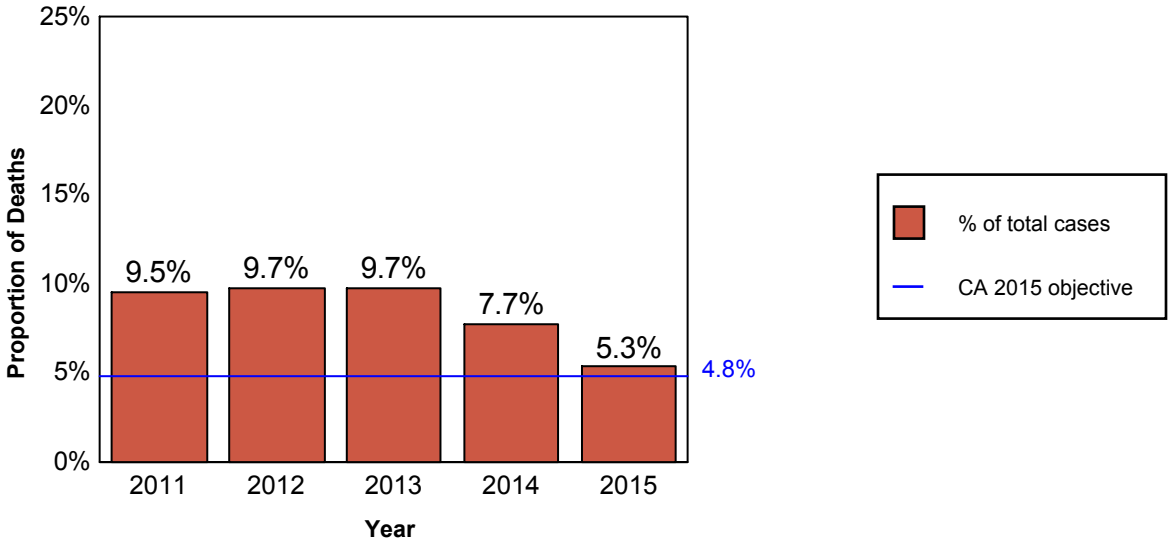
| | DOT Only (%) | Both DOT/SAT (%) | SAT Only (%) | Missing (%) |
|---|---|---|---|---|
| **Cases** | 24 (50%) | 22 (46%) | 2 (4%) | 0 (0%) |

# STATE OF CALIFORNIA INDICATOR REPORT

## Indicator SE2: TB Deaths

### Proportion of persons who die with TB

**Trends in Deaths with TB Over Time; California Objective**




| | 2011 | 2012 | 2013 | 2014 | 2015 |
|---|---|---|---|---|---|
| **Died During Therapy** | | | | | |
| **Number of deaths** | 173 | 168 | - | - | - |
| **Dead at Diagnosis** | | | | | |
| **Number of deaths** | 48 | 44 | 46 | 41 | 43 |
| **All Deaths** | | | | | |
| **Number of deaths** | 221 | 212 | - | - | - |
| **% of all TB cases** | 9.5% | 9.7% | - | - | - |

## METHODS

*Data Sources:* RVCT data (fields # 6, 13), FU-2 from initial LHJ (field # 37)

*Cohort:* All TB cases counted in the year of interest.

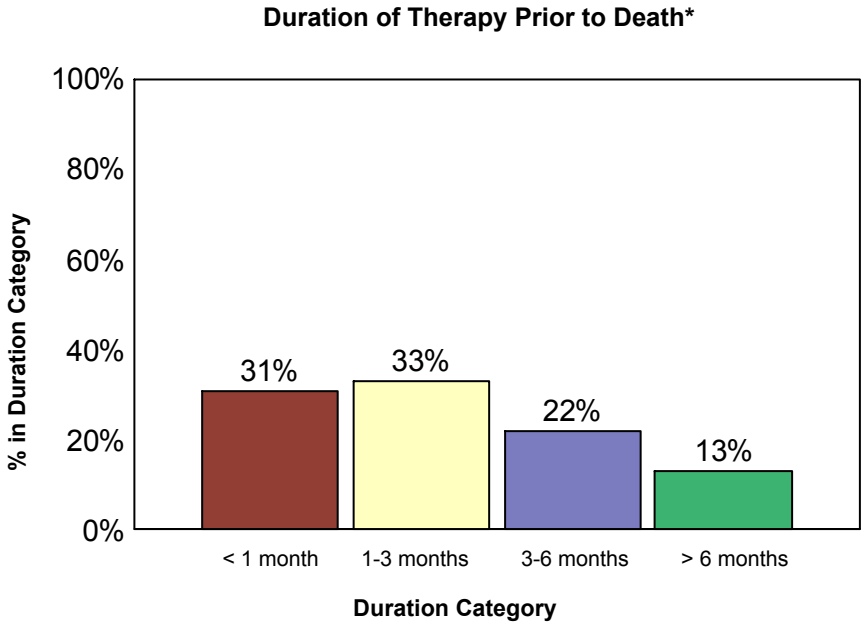
*Definitions:* **Persons who die with TB**: all TB cases who die during therapy for TB, or who are diagnosed with TB after death, regardless of cause of death

*Calculation:* (Total # TB cases diagnosed after death or dying during therapy) / (Total # TB cases)

*Limitations* Data from the RVCT are insufficient to assess TB as a cause of death and the preventability of the death. Specificity of this indicator will depend on the quality of data obtained from record and death certificate review. The determination of "preventable" is complex and not fully established.
Patients who die after being diagnosed with TB, but prior to starting therapy, are not included in this indicator. This is a small but potentially important group of patients. LHJ-specific data about these patients can be obtained from the annual *Report on TB in California*; line-listings of these patients can be obtained from RVCT data.

# STATE OF CALIFORNIA INDICATOR REPORT

## TB DEATHS DURING THERAPY, 2012




| Duration of Therapy | # cases |
|---|---|
| < 1 month | 52 |
| 1-3 months | 55 |
| 3-6 months | 37 |
| > 6 months | 21 |
| **Total** | **165** |

*Figures shown as proportions of total deaths during therapy.

## RISK FACTORS, 2012

| | Cases with Information on Risk Factor | Deaths During Therapy (%)** |
|---|---|---|
| **≥ 65 years old** | 168 | 111 (66%) |
| **AIDS** | 121 | 8 (7%) |
| **MDR / Rifampin resistant** | 156 | 0 (0%) |
| **Homeless < past 12 months** | 168 | 10 (6%) |
| **None of the above** | 114 | 51 (45%) |

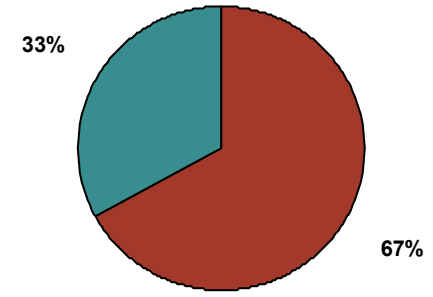
**Proportions are deaths during therapy in each risk group.

# STATE OF CALIFORNIA INDICATOR REPORT

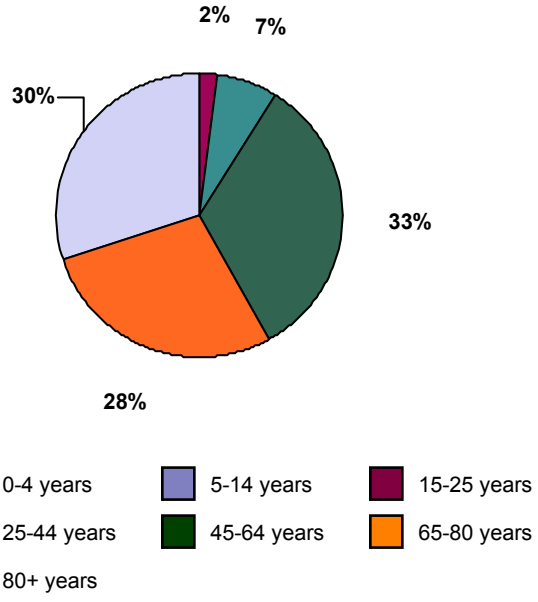
## TB CASES DEAD AT DIAGNOSIS, 2015

## DEMOGRAPHICS, 2015

**Cases Diagnosed at Death, by SEX**
**N = 43**




**Cases Diagnosed at Death, by AGE**
**N = 43**




Note: Demographic categories under 1% are not represented in the pie charts.

## RISK FACTORS, 2015

| | Cases with Risk Factor Data | Dead at Diagnosis (%)* |
|---|---|---|
| **≥ 65 years old** | 43 | 25 (58%) |
| **AIDS** | 14 | 0 (0%) |
| **MDR / Rifampin resistant** | 35 | 1 (3%) |
| **Homeless < past 12 months** | 43 | 1 (2%) |
| **None of the above** | 12 | 18 (150%) |

*Proportions are cases diagnosed at death in each risk group.