

National Tuberculosis
Indicators Project (NTIP)

COMPANION FOR DATA MANAGERS 2015



**Centers for Disease
Control and Prevention**
National Center for HIV/AIDS,
Viral Hepatitis, STD, and
TB Prevention

National Tuberculosis Indicators Project (NTIP) Companion for Data Managers

2015

This NTIP Companion for Data Managers provides comprehensive technical guidance in the calculation of indicators and data definitions.

For future updates and the most current edition of this companion, please access <http://www.cdc.gov/tb/programs/evaluation/pdf/companionfordatamanagers.pdf>

The National Tuberculosis Indicators Project (NTIP) User Guide can be accessed at <http://www.cdc.gov/tb/programs/evaluation/pdf/ntipuserguide.pdf>

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I. Introduction

The National TB Indicators Project (NTIP) is a performance monitoring system developed by the Division of Tuberculosis Elimination (DTBE) in collaboration with local TB partners.

The goal of NTIP is to help TB program officials and staff members:

- Use data they have already collected and submitted for surveillance to report progress;
- Monitor achievements toward national objectives;
- Work with community partners and local program staff to inform decisions on program planning, evaluation, and resource allocation.

NTIP provides standardized indicators calculated using data reported to the CDC through four different systems:

1. **National Tuberculosis Surveillance System (NTSS)** for monitoring TB incidence rates, indicators for case management and treatment, and indicators for laboratory reporting
2. **TB Genotyping Information Management System (TB GIMS)** for monitoring the indicator on universal genotyping
3. **Electronic Disease Notification (EDN) System** for monitoring indicators on the examination of immigrants and refugees requiring follow-up after their arrival in the United States
4. **Aggregate Reports for Tuberculosis Program Evaluation (ARPE)** for monitoring the indicators on the examination and treatment of individuals who are close contacts to TB patients with positive acid-fast bacillus (AFB) sputum-smear results

This companion is written for TB Data Managers who are responsible for the collection, management, reporting and dissemination of TB data. This manual provides the specific data fields and sample SAS code for calculating indicators provided in the NTIP system. TB Data Managers can use this document as a reference in helping them understand how indicators are calculated and identify incomplete or inaccurate data.

The SAS code provided in this companion is provided for training purposes and does not reflect the actual codes used by CDC or those used to calculate NTIP indicators. The sample SAS code uses pseudo variable names with reference to the data sources indicated. Users should replace these variable names with codes specific to their programs and those matched with their database structure.

II. Calculations for Indicators using Data from the National TB Surveillance System (NTSS)

Data used in the calculation of TB incidence rates, indicators for case management and treatment, and indicators for laboratory reporting are collected in the Report of Verified Case of Tuberculosis (RVCT) and reported to CDC through the National TB Surveillance System (NTSS).

The cohort of cases included in these three sets of indicators have been counted by reporting jurisdictions and meet the CDC TB surveillance definition and case verification criteria. Tuberculosis case definitions and recommendations for reporting and counting tuberculosis cases are outlined in **appendices A and B of the CDC Tuberculosis Surveillance Data Training, Report of Verified Case of Tuberculosis (RVCT): Instruction Manual, June 2009**. This section summarizes major criteria used for defining verified counted TB cases for the purposes of calculating indicators. TB program personnel should refer to updates on surveillance definitions found in the most recent publication of **Reported Tuberculosis in the United States** on the CDC website.

Verified Counted TB Cases

Case Verification

Tuberculosis cases can be verified through laboratory diagnostic tests, clinical case confirmation, or provider diagnosis.

LABORATORY DIAGNOSTIC TESTS

- Positive culture – Isolation of *M. tuberculosis* complex from a clinical specimen, or
- Positive nucleic acid amplification (NAA) test – Demonstration of *M. tuberculosis* complex from a clinical specimen by nucleic acid amplification test, or
- Positive smear – Demonstration of acid-fast bacilli in a clinical specimen when a culture has not been or cannot be obtained or is falsely negative or contaminated

CLINICAL CASE CONFIRMATION

- Positive tuberculosis skin test or positive interferon gamma release assay for *M. tuberculosis*, and
- Treatment with two or more anti-TB medications, and
- One of the following:
 - Other signs and symptoms compatible with tuberculosis, such as abnormal chest X-ray, abnormal chest CT scan or other chest imaging study, or
 - Clinical evidence of current disease

PROVIDER DIAGNOSIS

When a TB case is diagnosed but does not meet the standard laboratory or clinical case definition, TB program officials have the option to verify the case based on provider diagnosis.

CASE VERIFICATION CRITERIA (“VERCRIT”) DEFINITION

The assignment of case verification (Vercrit) follows the criteria below in hierarchical order:

1. Positive culture
2. Positive nucleic acid amplification (NAA) test
3. Positive acid-fast bacilli test
4. Clinical case confirmation
5. Provider diagnosis

NOTE: *A record that satisfies the criteria for more than one case verification method will be classified in the verification level that appears first in the hierarchy. For example, a record that meets the criteria for both positive culture and clinical case definition will be classified as being verified by positive culture.*

Resources

CDC. Reported Tuberculosis in the United States, 2013. Appendices A and B.
<http://www.cdc.gov/tb/statistics/reports/2013/default.htm>

DATA SOURCES

- National Tuberculosis Surveillance System (NTSS)
 - Report of Verified Case of Tuberculosis (RVCT) fields:
 - 5 (Count Status)
 - 6 (Date Counted)
 - 16 (Site of TB Disease)
 - 17 (Sputum Smear)
 - 18 (Sputum Culture)
 - 19 (Smear/Pathology/Cytology of Tissue and Other Body Fluids)
 - 20 (Culture of Tissue and Other Body Fluids)
 - 21 (Nucleic Acid Amplification Test Result)
 - 22A (Initial Chest Radiography)
 - 22B (Initial Chest CT Scan or Other Chest Imaging Study)
 - 23 (Tuberculin Skin Test at Diagnosis)
 - 24 (Interferon Gamma Release Assay for Mycobacterium tuberculosis at Diagnosis)
 - 37 (Initial Drug Regimen)
 - 44 (Reason Therapy Stopped or Never Started)

Case verification criteria (Vercrit) in hierarchical order:

1. POSITIVE CULTURE (vercrit = 'Positive Culture')

A case is verified by culture if either of the RVCT items Sputum Culture or Culture of Tissue and Other Body Fluids is reported as 'Positive' as illustrated below.

Sputum Culture is Positive [spcult = 'POS']

18. Sputum Culture (<i>select one</i>) <input checked="" type="checkbox"/> Positive <input type="checkbox"/> Not Done <input type="checkbox"/> Negative <input type="checkbox"/> Unknown	Date Collected:		Date Result Reported:		
	Month	Day	Year	Month	Day
Reporting Laboratory Type (<i>select one</i>): <input type="checkbox"/> Public Health Laboratory <input type="checkbox"/> Commercial Laboratory <input type="checkbox"/> Other					

–OR–

Culture of Tissue and Other Body Fluids is Positive [cultothr = 'POS']

20. Culture of Tissue and Other Body Fluids (<i>select one</i>) <input checked="" type="checkbox"/> Positive <input type="checkbox"/> Not Done <input type="checkbox"/> Negative <input type="checkbox"/> Unknown	Date Collected:		Enter anatomic code (<i>see list</i>):	Date Result Reported:		
	Month	Day	Year		Month	Day
Reporting Laboratory Type (<i>select one</i>): <input type="checkbox"/> Public Health Laboratory <input type="checkbox"/> Commercial Laboratory <input type="checkbox"/> Other						

If spcult = 'POS' or cultothr = 'POS' then vercrit = 'Positive Culture';

2. POSITIVE NAA (vercrit = 'Positive NAA test')

Positive nucleic acid amplification test result is used to verify a case if Sputum Culture and Culture of Tissue and Other Body Fluids are not positive.

The record is assigned as 'Positive NAA' if:

Nucleic Acid Amplification Test Result is Positive [naatest = 'POS']

21. Nucleic Acid Amplification Test Result (select one)

- Positive Not Done
 Negative Unknown
 Indeterminate

Date Collected:

Month Day Year

Date Result Reported:

Month Day Year

Enter specimen type: Sputum

OR

If not Sputum, enter anatomic code (see list):

Reporting Laboratory Type (select one):

- Public Health Laboratory Commercial Laboratory Other

If naatest = 'POS' then vercrit = 'Positive NAA test';

3. POSITIVE SMEAR/TISSUE (vercrit = 'Positive Smear')

Positive smear results for Sputum Smear or Smear/Pathology/Cytology of Tissue and Other Body Fluids is used to verify a case if Sputum Culture and Culture of Tissue and Other Body Fluids are either 'Not Done' or 'Unknown,' and Nucleic Acid Amplification Test results are 'Not Done,' 'Unknown,' or 'Indeterminate.'

The record is assigned a 'Positive Smear' for vercrit if:

Sputum Culture is either Not Done or Unknown [spcult in ('NOT', 'UNK')]

18. Sputum Culture (select one) <input type="checkbox"/> Positive <input checked="" type="checkbox"/> Not Done <input type="checkbox"/> Negative <input checked="" type="checkbox"/> Unknown	Date Collected:	Date Result Reported:
	Month Day Year [][] [][] [][][][]	Month Day Year [][] [][] [][][][]
	Reporting Laboratory Type (select one): <input type="checkbox"/> Public Health Laboratory <input type="checkbox"/> Commercial Laboratory <input type="checkbox"/> Other	

-and-

Culture of Tissue and Other Body Fluids is either Not Done or Unknown [culttothr in ('NOT', 'UNK')]

20. Culture of Tissue and Other Body Fluids (select one) <input type="checkbox"/> Positive <input checked="" type="checkbox"/> Not Done <input type="checkbox"/> Negative <input checked="" type="checkbox"/> Unknown	Date Collected:	Enter anatomic code (see list):	Date Result Reported:
	Month Day Year [][] [][] [][][][]	[][]	Month Day Year [][] [][] [][][][]
	Reporting Laboratory Type (select one): <input type="checkbox"/> Public Health Laboratory <input type="checkbox"/> Commercial Laboratory <input type="checkbox"/> Other		

-AND-

Nucleic Acid Amplification Test Result is either Not Done, Unknown, or Indeterminate [naatest in ('NOT', 'UNK', 'IND')]

21. Nucleic Acid Amplification Test Result (select one) <input type="checkbox"/> Positive <input checked="" type="checkbox"/> Not Done <input type="checkbox"/> Negative <input checked="" type="checkbox"/> Unknown <input checked="" type="checkbox"/> Indeterminate	Date Collected:	Date Result Reported:
	Month Day Year [][] [][] [][][][]	Month Day Year [][] [][] [][][][]
	Enter specimen type: <input type="checkbox"/> Sputum OR If not Sputum, enter anatomic code (see list): [][]	Reporting Laboratory Type (select one): <input type="checkbox"/> Public Health Laboratory <input type="checkbox"/> Commercial Laboratory <input type="checkbox"/> Other

-AND-

Sputum Smear is Positive [spsmear = 'POS']

17. Sputum Smear (select one)	Date Collected:
<input checked="" type="checkbox"/> Positive <input type="checkbox"/> Not Done	Month Day Year
<input type="checkbox"/> Negative <input type="checkbox"/> Unknown	<input type="text"/>

–or–

Smear/Pathology/Cytology of Tissue and Other Body Fluids is Positive
[micrexam = 'POS']

19. Smear/Pathology/Cytology of Tissue and Other Body Fluids (select one)	Date Collected:	Enter anatomic code (see list):	Type of exam (select all that apply):
<input checked="" type="checkbox"/> Positive <input type="checkbox"/> Not Done	Month Day Year	<input type="text"/> <input type="text"/>	<input type="checkbox"/> Smear <input type="checkbox"/> Pathology/Cytology
<input type="checkbox"/> Negative <input type="checkbox"/> Unknown	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>		

If spcult in ('NOT', 'UNK') and cultothr in ('NOT', 'UNK') and naatest in ('NOT', 'UNK', 'IND') and (spsmear = 'POS' or micrexam = 'POS') then vercrit = 'Positive Smear';

4. CLINICAL CASE DEFINITION (vercrit = 'Clinical Case')

If a case cannot be verified by culture, NAA test, or smear results, it can be classified as a case under 'Clinical Case Definition.'

The record is assigned as 'Clinical Case' for vercrit if all of the following are true:

Sputum Culture is Negative, Not Done, or Unknown
[spcult in ('NEG', 'NOT', 'UNK')]

18. Sputum Culture (select one) <input type="checkbox"/> Positive <input checked="" type="checkbox"/> Not Done <input checked="" type="checkbox"/> Negative <input checked="" type="checkbox"/> Unknown	Date Collected:	Date Result Reported:
	Month Day Year	Month Day Year
	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>
Reporting Laboratory Type (select one): <input type="checkbox"/> Public Health Laboratory <input type="checkbox"/> Commercial Laboratory <input type="checkbox"/> Other		

–and–

Culture of Tissue and Other Body Fluids is Negative, Not Done, or Unknown
[cultothr in ('NEG', 'NOT', 'UNK')]

20. Culture of Tissue and Other Body Fluids (select one) <input type="checkbox"/> Positive <input checked="" type="checkbox"/> Not Done <input checked="" type="checkbox"/> Negative <input checked="" type="checkbox"/> Unknown	Date Collected:	Enter anatomic code (see list):	Date Result Reported:
	Month Day Year	<input type="text"/> <input type="text"/>	Month Day Year
	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>
Reporting Laboratory Type (select one): <input type="checkbox"/> Public Health Laboratory <input type="checkbox"/> Commercial Laboratory <input type="checkbox"/> Other			

–AND–

Nucleic Acid Amplification Test Result is Negative, Not Done, Unknown, or Indeterminate
[naatest in ('NEG', 'NOT', 'UNK', or 'IND')]

21. Nucleic Acid Amplification Test Result (select one) <input type="checkbox"/> Positive <input checked="" type="checkbox"/> Not Done <input checked="" type="checkbox"/> Negative <input checked="" type="checkbox"/> Unknown <input checked="" type="checkbox"/> Indeterminate	Date Collected:	Date Result Reported:
	Month Day Year	Month Day Year
	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>
Enter specimen type: <input type="checkbox"/> Sputum OR If not Sputum, enter anatomic code (see list): <input type="text"/> <input type="text"/>		Reporting Laboratory Type (select one): <input type="checkbox"/> Public Health Laboratory <input type="checkbox"/> Commercial Laboratory <input type="checkbox"/> Other

–AND–

Site of TB Disease for Pulmonary, Pleural, or Lymphatic: Intrathoracic is 'Yes'
 [sitepulmonary = 'Y' or sitepleural = 'Y' or sitelymphaticintra= 'Y']

16. Site of TB Disease (select all that apply)

<input checked="" type="checkbox"/> Pulmonary	<input type="checkbox"/> Bone and/or Joint
<input checked="" type="checkbox"/> Pleural	<input type="checkbox"/> Genitourinary
<input type="checkbox"/> Lymphatic: Cervical	<input type="checkbox"/> Meningeal
<input checked="" type="checkbox"/> Lymphatic: Intrathoracic	<input type="checkbox"/> Peritoneal
<input type="checkbox"/> Lymphatic: Axillary	<input type="checkbox"/> Other: Enter anatomic code(s) (see list):
<input type="checkbox"/> Lymphatic: Other	<input type="checkbox"/> Site not stated
<input type="checkbox"/> Lymphatic: Unknown	
<input type="checkbox"/> Laryngeal	

1		
2		
3		

-AND-

A. Initial Chest Radiograph is Abnormal [xray = 'ABN']

Initial Chest Radiograph and Other Chest Imaging Study

22A. Initial Chest Radiograph (select one) Normal Abnormal* (consistent with TB) Not Done Unknown

* For ABNORMAL Initial Chest Radiograph: Evidence of a cavity (select one): Yes No Unknown
 Evidence of miliary TB (select one): Yes No Unknown

-OR-

B. Initial Chest CT Scan or Other Chest Imaging Study is Abnormal [ctscan = 'ABN']

22B. Initial Chest CT Scan or Other Chest Imaging Study (select one) Normal Abnormal* (consistent with TB) Not Done Unknown

* For ABNORMAL Initial Chest CT Scan or Other Chest Imaging Study: Evidence of a cavity (select one): Yes No Unknown
 Evidence of miliary TB (select one): Yes No Unknown

-OR-

Site of TB Disease for Lymphatic: Cervical, Lymphatic: Axillary, Lymphatic: Other, Lymphatic: Unknown, Laryngeal, Bone and Joint, Genitourinary, Miliary, Meningeal, Peritoneal, or Other Site of Disease is 'Yes'

[(sitelymphaticcerv = 'Y' or sitelymphaticaxil = 'Y' or sitelymphaticoth = 'Y' or sitelymphaticunk = 'Y' or sitelaryn = 'Y' or sitebone = 'Y' or sitegenit = 'Y' or sitemili = 'Y' or sitemenin = 'Y' or siteperit = 'Y' or siteoth = 'Y')]

16. Site of TB Disease (select all that apply)

<input type="checkbox"/> Pulmonary	<input checked="" type="checkbox"/> Bone and/or Joint
<input type="checkbox"/> Pleural	<input checked="" type="checkbox"/> Genitourinary
<input checked="" type="checkbox"/> Lymphatic: Cervical	<input checked="" type="checkbox"/> Meningeal
<input type="checkbox"/> Lymphatic: Intrathoracic	<input checked="" type="checkbox"/> Peritoneal
<input checked="" type="checkbox"/> Lymphatic: Axillary	<input checked="" type="checkbox"/> Other: Enter anatomic code(s) (see list):
<input checked="" type="checkbox"/> Lymphatic: Other	<input type="checkbox"/> Site not stated
<input checked="" type="checkbox"/> Lymphatic: Unknown	
<input checked="" type="checkbox"/> Laryngeal	

1		
2		
3		

Note: Miliary site of TB disease is recorded in the current RVCT form under abnormal Chest X-ray or CT scan, thus not shown on the Site of Disease (field 16). For cases reported using the RVCT form prior to 2009, miliary TB is included based on the Site of Disease field.

-AND-

Tuberculin (Mantoux) Skin Test at Diagnosis is Positive [tbtest = 'POS']

23. Tuberculin (Mantoux) Skin Test at Diagnosis (select one)

Positive Not Done
 Negative Unknown

Date Tuberculin Skin Test (TST) Placed: Millimeters (mm) of induration:

Month	Day	Year		
<input type="text"/>				

<input type="text"/>	<input type="text"/>

-OR-

Interferon Gamma Release Assay for *Mycobacterium tuberculosis* at Diagnosis is Positive [intfgtest = 'POS']

24. Interferon Gamma Release Assay for *Mycobacterium tuberculosis* at Diagnosis (select one)

Positive Not Done
 Negative Unknown
 Indeterminate

Date Collected:

Month	Day	Year
<input type="text"/>	<input type="text"/>	<input type="text"/>

Test type:
Specify _____

- AND -

Initial Drug Regimen has at least two drugs marked Yes

NOTE: the drug regimen can consist of ANY two or more drugs.

For example: initinh = 'Y' and initrif = 'Y'

37. Initial Drug Regimen (select one option for each drug)

	No	Yes	Unk		No	Yes	Unk		No	Yes	Unk
Isoniazid	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Ethionamide	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Moxifloxacin	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Rifampin	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Amikacin	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Cycloserine	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pyrazinamide	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Kanamycin	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Para-Amino Salicylic Acid	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ethambutol	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Capreomycin	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Streptomycin	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Ciprofloxacin	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Specify _____			
Rifabutin	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Levofloxacin	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Rifapentine	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Ofloxacin	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Specify _____			

If spcult in ('NEG', 'NOT', 'UNK') and cultothr in ('NEG', 'NOT', 'UNK') and naatest in ('NEG', 'NOT', 'UNK', 'IND');

If ((sitepulmonary = 'Y' or sitepleural = 'Y' or sitelymphaticintra = 'Y') and (xray = 'ABN' or ctscan = 'ABN')) or (sitelymphaticcerv = 'Y' or sitelymphaticaxil = 'Y' or sitelymphaticoth = 'Y' or sitelymphaticunk = 'Y' or sitelarynx = 'Y' or sitebone = 'Y' or sitegenit = 'Y' or sitemili = 'Y' or sitemenin = 'Y' or siteperit = 'Y' or siteoth = 'Y');

If tbtest = 'POS' or intfgtest = 'POS';

If initinh = 'Y' and initrif = 'Y'

then vercrit = 'Clinical Case';

5. Provider Diagnosis (vercrit = 'Provider Diagnosis')

If criteria to satisfy any of the previous case verifications are not met, a case can be verified under 'Provider Diagnosis.' In such a case, the state public health officials can manually assign 'Provider Diagnosis' as the verification criteria.

6. Not a Case (vercrit = 'Not a Case')

A record is not a verified case if:

Reason Therapy Stopped or Never Started is Not TB [stopreas = 'NOTTB']

44. Reason Therapy Stopped or Never Started (select one)

- | | | | |
|---|--|--|--|
| <input type="checkbox"/> Completed Therapy | <input checked="" type="checkbox"/> Not TB | If DIED, indicate cause of death (select one): | |
| <input type="checkbox"/> Lost | <input type="checkbox"/> Died | <input type="checkbox"/> Related to TB disease | <input type="checkbox"/> Unrelated to TB disease |
| <input type="checkbox"/> Uncooperative or Refused | <input type="checkbox"/> Other | <input type="checkbox"/> Related to TB therapy | <input type="checkbox"/> Unknown |
| <input type="checkbox"/> Adverse Treatment Event | <input type="checkbox"/> Unknown | | |

If stopreas = 'NOTTB' then vercrit = 'Not a Case';

Verified Counted TB Cases (vercase = 'Y')

Only verified TB cases that have met the laboratory, clinical, or provider diagnosis criteria are counted. Cases should not be counted by more than one reporting jurisdiction, or have had a previous episode of tuberculosis within the last 12 months.

A case is counted if:

Date Counted is between year-month and year-month
(cntdate ge 'YYYYMM' and cntdate le 'YYYYMM')

Month		Day		Year			
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

–and–

Countable TB Case in the jurisdiction of interest (vercount = 'Y')

5. Count Status (select one)	
Countable TB Case	
<input checked="" type="checkbox"/>	Count as a TB case
<hr/>	
Noncountable TB Case	
<input type="checkbox"/>	Verified Case: Counted by another U.S. area (e.g., county, state)
<input type="checkbox"/>	Verified Case: TB treatment initiated in another country Specify _____
<input type="checkbox"/>	Verified Case: Recurrent TB within 12 months after completion of therapy

–AND–

Verified by Positive Culture, Positive NAA, Positive Smear, Clinical Case Definition, or Provider Diagnosis (see pages 5-12).

[vercrit in ('Positive Culture', 'Positive NAA', 'Positive Smear', 'Clinical Case', 'Provider Diagnosis')]

If cntdate ge 'YYYYMM' and cntdate le 'YYYYMM';
If vercrit in ('Positive Culture', 'Positive NAA', 'Positive Smear', 'Clinical Case', 'Provider Diagnosis') and vercount = 'Y'
then vercase = 'Y';

TB Incidence Rate

Indicator

Number of TB cases per 100,000 per year

DATA SOURCES

- National Tuberculosis Surveillance System (NTSS)
 - Report of Verified Case of Tuberculosis (RVCT)
- U.S. Census Bureau
 - Population Estimate (see Appendix A)
Or
 - American Community Survey (see Appendix B)

CALCULATION

Cases Per 100,000	n/N
Numerator (n)	Number of verified counted TB cases
Denominator (N)	Population in the Program Area and year of interest

1. Obtain denominator

Total population in the program area and in the year of interest [rate_case_pop]

NTIP uses population estimates from the U.S. Census Bureau's Population Estimate for the overall population. ***This overall population estimate is consistent with those reported in the American Community Survey.*** The procedure on how the population estimate is obtained for Program Areas is outlined in **Appendix A** for the U.S. Census Population Estimate and **Appendix B** for the American Community Survey.

2. Obtain numerator

Total number of all cases included in the analysis [tbcase_ct]

A case is included in the analysis if:

Verified and counted in the year of interest [vercase = 'Y']
See definition and calculation for Verified Counted TB Cases.

If cntdate ge 'YYYYMM' and cntdate le 'YYYYMM';
If vercase = 'Y' then tbcase_ct + 1;

3. Calculate rate

Number of verified counted TB cases per 100,000 population [rate_case]

```
rate_case = (tbcase_ct / rate_case_pop) * 100000;
```

TB Incidence Rate for U.S.-Born Persons

Indicator

Number of TB cases in U.S.-born persons per 100,000 per year

DATA SOURCES

- National Tuberculosis Surveillance System (NTSS)
 - Report of Verified Case of Tuberculosis (RVCT) field:
 - 12 (Country of Birth)
 - 12 (Country of Birth: Specify)
- U.S. Census Bureau
 - American Community Survey (see Appendix B)

CALCULATION

Cases Per 100,000	n/N
Numerator (n)	Number of verified TB cases in U.S.-born persons
Denominator (N)	Population of U.S.-born persons in the Program Area and year of interest

1. Obtain denominator

Total population for U.S.-born persons in the year of interest [rate_usb_pop]

NTIP uses population estimates from the U.S. Census Bureau's American Community Survey. The procedure on how the population estimate is obtained for Program Areas is outlined in **Appendix B**.

2. Obtain numerator

Total number of verified counted TB cases in U.S.-born persons [rate_usb_ct]

A case is included in the analysis if:

Verified and counted in the year of interest [vercase = 'Y']
See definition and calculation for Verified Counted TB Cases.

–AND–

Country of Birth is YES for “U.S.-born” [usborn = 'Y']

<p>12. Country of Birth “U.S.-born” (or born abroad to a parent who was a U.S. citizen) (select one) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Country of birth: Specify _____</p>

–OR–

If Country of Birth is NO for “U.S.-born” [usborn = 'N'] and Country of birth: Specify is American Samoa, Federated States of Micronesia, Guam, Northern Mariana Islands, Puerto Rico, Republic of Marshall Islands, Republic of Palau, Virgin Islands, Midway Island, U.S. Minor Outlying Islands, U.S. Miscellaneous Pacific Islands [country in ('ASM', 'FSM', 'GUM', 'MNP', 'PRI', 'MHL', 'PLW', 'VIR', 'MIUM', 'UMI', 'PUUM')]

<p>12. Country of Birth “U.S.-born” (or born abroad to a parent who was a U.S. citizen) (select one) <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Country of birth: Specify _____ X</p>
--

If cntdate ge 'YYYYMM' and cntdate le 'YYYYMM';
If vercase = 'Y';
If usborn = 'Y' or (usborn = 'N' and country in ('ASM', 'FSM', 'GUM', 'MNP', 'PRI', 'MHL', 'PLW', 'VIR', 'MIUM', 'UMI', 'PUUM')) then rate_usb_ct + 1;

3. Calculate rate

Number of TB cases in U.S.-born persons per 100,000 [rate_usb]

rate_usb = (rate_usb_ct / rate_usb_pop) * 100000;

TB Incidence Rate for Foreign-Born Persons

Indicator

Number of TB cases in foreign-born persons per 100,000 per year

DATA SOURCES

- National Tuberculosis Surveillance System (NTSS)
 - Report of Verified Case of Tuberculosis (RVCT) field:
 - 12 (Country of Birth)
 - 12 (Country of Birth: Specify)
- U.S. Census Bureau
 - American Community Survey (see Appendix B)

CALCULATION

Cases Per 100,000	n/N
Numerator (n)	Number of verified counted TB cases in foreign-born persons
Denominator (N)	Population of foreign-born persons in the Program Area and year of interest

1. Obtain denominator

Total population for foreign-born persons in the year of interest [rate_fb_pop]

NTIP uses population estimates from the U.S. Census Bureau's American Community Survey. The procedure on how the population estimate is obtained for Program Areas is outlined in **Appendix B**.

TB Incidence Rate for U.S.-Born Non-Hispanic Blacks or African Americans

Indicator

Number of TB cases in U.S.-born non-Hispanic blacks or African Americans per 100,000 per year

DATA SOURCES

- National Tuberculosis Surveillance System (NTSS)
 - Report of Verified Case of Tuberculosis (RVCT) fields:
 - 10 (Ethnicity)
 - 11 (Race)
 - 12 (Country of Birth)
 - 12 (Country of Birth: Specify)
- U.S. Census Bureau
 - American Community Survey (see Appendix B)

CALCULATION

Cases Per 100,000	n/N
Numerator (n)	Number of verified counted TB cases in U.S.-born non-Hispanic blacks or African Americans
Denominator (N)	Population of U.S.-born non-Hispanic blacks or African Americans in the Program Area and year of interest

1. Obtain denominator

Total population for U.S.-born non-Hispanic blacks or African Americans in the year of interest [rate_usbnh_pop]

NTIP uses population estimates from the U.S. Census Bureau’s American Community Survey. The procedure on how the population estimate is obtained for Program Areas is outlined in **Appendix B**.

2. Obtain numerator

Total number of verified counted TB cases in U.S.-born non-Hispanic blacks or African Americans [rate_usbnh_ct]

A case is included in the analysis if:

Verified and counted in the year of interest [vercase = ‘Y’]
 See definition and calculation for Verified Counted TB Cases.

–AND–

Country of Birth is YES for “U.S.-born” [usborn = ‘Y’]

12. Country of Birth
“U.S.-born” (or born abroad to a parent who was a U.S. citizen)
(select one) Yes No
Country of birth: Specify _____

–or–

Country of Birth is NO for “U.S.-born” [usborn = ‘N’] and Country of birth: Specify is American Samoa, Federated States of Micronesia, Guam, Northern Mariana Islands, Puerto Rico, Republic of Marshall Islands, Republic of Palau, Virgin Islands, Midway Island, U.S. Minor Outlying Islands, U.S. Miscellaneous Pacific Islands [country in (‘ASM’, ‘FSM’, ‘GUM’, ‘MNP’, ‘PRI’, ‘MHL’, ‘PLW’, ‘VIR’, ‘MIUM’, ‘UMI’, ‘PUUM’)]

12. Country of Birth
“U.S.-born” (or born abroad to a parent who was a U.S. citizen)
(select one) Yes No
Country of birth: Specify _____ X

–AND–

Ethnicity is Not Hispanic or Latino [ethnic = ‘NOHISP’]

10. Ethnicity (select one)
 Hispanic or Latino
 Not Hispanic or Latino

–and–

Race is Black or African American [race = ‘BLACK’]

11. Race (select one or more)
 American Indian or Alaska Native
 Asian: Specify _____
 Black or African American
 Native Hawaiian or Other Pacific Islander: Specify _____
 White

If cntdate ge ‘YYYYMM’ and cntdate le ‘YYYYMM’;
If vercase = ‘Y’;
If usborn = ‘Y’ or (usborn = ‘N’ and country in (‘ASM’, ‘FSM’, ‘GUM’, ‘MNP’, ‘PRI’, ‘MHL’, ‘PLW’, ‘VIR’, ‘MIUM’, ‘UMI’, ‘PUUM’));
If ethnic = ‘NOHISP’ and race = ‘BLACK’ then rate_usbnh_ct + 1;

3. Calculate rate

Number of cases in U.S.-born non-Hispanic blacks or African Americans per 100,000
[rate_usbnh]

```
rate_usbnh = (rate_usbnh_ct / rate_usbnh_pop) * 100000;
```

TB Incidence Rate for Children Younger than 5 Years of Age

Indicator

Number of TB cases in children younger than 5 years of age per 100,000 per year

DATA SOURCES

- National Tuberculosis Surveillance System (NTSS)
 - Report of Verified Case of Tuberculosis (RVCT) fields:
 - 1 (Date Reported)
 - 8 (Date of Birth)
- U.S. Census Bureau
 - American Community Survey (see Appendix B)

CALCULATION

Cases Per 100,000	n/N
Numerator (n)	Number of verified counted TB cases in children younger than 5 years of age
Denominator (N)	Population of children younger than 5 years of age in the Program Area and year of interest

1. Obtain denominator

Total population for children under 5 years of age in the year of interest [rate_ped_pop]

NTIP uses population estimates from the U.S. Census Bureau's American Community Survey. The procedure on how the population estimate is obtained for Program Areas is outlined in **Appendix B**.

2. Obtain numerator

Total number of verified counted TB cases in children younger than 5 years of age [rate_ped_ct]

A case is included in the analysis if:

Verified and counted in the year of interest [vercase = 'Y']
See definition and calculation for Verified Counted TB Cases.

–AND–

Age [Date Reported – Date of Birth] is greater than or equal to 0 and less than 5
[age = reportdate – datebirth], [0 ≤ age < 5]

1. Date Reported	8. Date of Birth
Month Day Year	Month Day Year
X X X X X X X X	X X X X X X X X

NOTE: If either the Date Reported or Date of Birth is incomplete or missing, the AGE is unknown, this person will be excluded from the numerator. Age is expressed in years.

If cntdate ge 'YYYYMM' and cntdate le 'YYYYMM';
If vercase = 'Y';
age = reportdate – datebirth;
If 0 ≤ age < 5
then rate_ped_ct + 1;

3. Calculate rate

Number of cases in children younger than 5 years of age per 100,000 [rate_ped]

rate_ped = (rate_ped_ct / rate_ped_pop) * 100000;

Indicator

Percent of TB patients with HIV test result reported as positive or negative

DATA SOURCES

- National Tuberculosis Surveillance System (NTSS)
 - Report of Verified Case of Tuberculosis (RVCT) field:
 - 15 (Status at TB Diagnosis)
 - 26 (HIV Status at Time of Diagnosis)

CALCULATION

Percent (%)	$n/N \times 100$
Numerator (n)	Number of TB patients with HIV test result reported as positive or negative
Denominator (N)	Number of TB patients alive at diagnosis, counted in the cohort period of interest

1. Obtain denominator

Total number of TB patients alive at diagnosis, counted in the cohort period of interest
[hivcase_total]

A case is included in the analysis if:

Verified and counted in the cohort period of interest [vercase = 'Y']
See definition and calculation for Verified Counted TB Cases.

-AND-

Status at TB Diagnosis is not DEAD [status NE 'DEAD']

15. Status at TB Diagnosis (select one)

Alive Dead

Month Day Year

If DEAD, enter date of death:

If DEAD, was TB a cause of death? (select one)

Yes No Unknown

If cntdate ge 'YYYYMM' and cntdate le 'YYYYMM';
If status NE 'DEAD';
If vercase = 'Y'
then hivcase_total + 1;

2. Obtain numerator

Total number of patients with HIV test result reported as positive or negative [hiv_yes]

The record is given credit for known HIV status if:

HIV Status at Time of Diagnosis is Positive OR Negative.
[hivstat in ('NEG','POS')]

26. HIV Status at Time of Diagnosis (select one)									
<input checked="" type="checkbox"/> Negative	<input type="checkbox"/> Indeterminate	<input type="checkbox"/> Not Offered	<input type="checkbox"/> Unknown						
<input checked="" type="checkbox"/> Positive	<input type="checkbox"/> Refused	<input type="checkbox"/> Test Done, Results Unknown							
If POSITIVE, enter:									
State HIV/AIDS Patient Number:					City/County HIV/AIDS Patient Number:				
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

If hivstat in ('NEG','POS') then hiv_yes + 1;

3. Calculate percent

Percent of TB patients with HIV test result reported as positive or negative [hiv_pct]

$hiv_pct = (hiv_yes / hivcase_total) * 100;$

Indicator

Percent of TB patients with positive Acid-fast Bacillus (AFB) sputum-smear result who initiated treatment within 7 days of specimen collection

NOTE: Indicator implemented for cases reported in 2009 and after.

DATA SOURCES

- National Tuberculosis Surveillance System (NTSS)
 - Report of Verified Case of Tuberculosis (RVCT) fields:
 - 15 (Status at TB Diagnosis)
 - 17 (Sputum Smear)
 - ◆ Date Collected
 - 36 (Date Therapy Started)
 - 37 (Initial Drug Regimen)

CALCULATION

Percent (%)	$n/N \times 100$
Numerator (n)	Number of TB patients who initiated treatment within 7 days of specimen collection
Denominator (N)	Number of TB patients with positive AFB sputum-smear results, alive at diagnosis, counted in the cohort period of interest

1. Obtain denominator

Total TB patients with positive AFB sputum-smear results who are alive at diagnosis and counted in the cohort period of interest [rx_i_total]

A case is included in the analysis if:

Verified and counted in the cohort period of interest [vercase = 'Y']
 See definition and calculation for Verified Counted TB Cases.

–AND–

Status at TB Diagnosis is ALIVE [status = 'ALIVE']

15. Status at TB Diagnosis (select one)

Alive Dead

Month Day Year

If DEAD, enter date of death:

If DEAD, was TB a cause of death? (select one)

Yes No Unknown

–AND–

Sputum Smear is POSITIVE [spsmear = 'POS']

17. Sputum Smear (select one)	Date Collected:
<input checked="" type="checkbox"/> Positive <input type="checkbox"/> Not Done	Month Day Year
<input type="checkbox"/> Negative <input type="checkbox"/> Unknown	<input type="text"/>

If cntdate ge 'YYYYMM' and cntdate le 'YYYYMM';
If vercase = 'Y';
If status = 'ALIVE';
If spsmear = 'POS'
then rxi_total + 1;

2. Obtain numerator

Total number of TB patients with positive AFB sputum-smear results who are alive at diagnosis and initiated treatment within 7 days of specimen collection [rxi_yes]

The record is given credit for having initiated treatment within 7 day of specimen collection if:

Sputum Smear Date Collected is not equal to 'Incomplete' or 'Missing'
[spsmrcol NE .]

17. Sputum Smear (select one)	Date Collected:
<input type="checkbox"/> Positive <input type="checkbox"/> Not Done	Month Day Year
<input type="checkbox"/> Negative <input type="checkbox"/> Unknown	<input type="text"/> <input type="text"/> <input checked="" type="text"/>

-AND-

Start Therapy Date is not equal to 'Incomplete' or 'Missing'
[rxdatestart NE .]

36. Date Therapy Started							
Month	Day	Year					
<input checked="" type="text"/> <input checked="" type="text"/>							

-AND-

Initial Drug Regimen has AT LEAST ONE DRUG Checked 'YES'

[initinh = 'Y' or initrif = 'Y' or initpza = 'Y' or initemb = 'Y' or initism = 'Y' or initrib = 'Y' or initrpt = 'Y' or initeth = 'Y' or initam = 'Y' or initkan = 'Y' or initcap = 'Y' or initcip = 'Y' or initlevo = 'Y' or initofl = 'Y' or initmoxi = 'Y' or initcyc = 'Y' or initpas = 'Y' or initoth1 = 'Y' or initoth2 = 'Y']

37. Initial Drug Regimen (select one option for each drug)											
	No	Yes	Unk		No	Yes	Unk		No	Yes	Unk
Isoniazid	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Ethionamide	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Moxifloxacin	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Rifampin	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Amikacin	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Cycloserine	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Pyrazinamide	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Kanamycin	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Para-Amino Salicylic Acid	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Ethambutol	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Capreomycin	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Other	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Streptomycin	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Ciprofloxacin	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Specify _____			
Rifabutin	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Levofloxacin	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Other	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Rifapentine	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Ofloxacin	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Specify _____			

-AND-

Date Therapy Started – Sputum Smear Date Collected is less than or equal to 7 days, or is a “negative” number of days

[(rxdatestart – spsmrcol) ≤ 7]

36. Date Therapy Started											
Month		Day		Year							
<input checked="" type="checkbox"/>											

17. Sputum Smear (select one)				Date Collected:								
		Month		Day		Year						
<input type="checkbox"/>	Positive	<input type="checkbox"/>	Not Done	<input checked="" type="checkbox"/>								
<input type="checkbox"/>	Negative	<input type="checkbox"/>	Unknown									

NOTE: If either the Date Therapy Started or Sputum Smear Date Collected is incomplete or missing, the record will not be given credit for meeting objective.

If a patient has initiated treatment before sputum smear is collected, the record will be credited for having met the objective.

```
If spsmrcol NE . and rxdatestart NE .;  
If initinh = 'Y' or initrif = 'Y' or initpza = 'Y' or initemb = 'Y' or initsm = 'Y'  
or initrib = 'Y' or initrpt = 'Y' or initeth = 'Y' or initam = 'Y' or initkan = 'Y'  
or initcap = 'Y' or initcip = 'Y' or initlevo = 'Y' or initofl = 'Y' or initmoxi = 'Y'  
or initcyc = 'Y' or initpas = 'Y' or initoth1 = 'Y' or initoth2 = 'Y';  
If (rxdatestart - spsmrcol) le 7 then rxi_yes + 1;
```

3. Calculate percent

Percent of TB patients with positive AFB sputum-smear results who initiated treatment within 7 days of specimen collection [rxi_pct]

```
rxi_pct = (rxi_yes / rxi_total) * 100;
```

Indicator

Percent of TB patients with initial drug regimen reported who are started on the recommended initial 4-drug regimen

DATA SOURCES

- National Tuberculosis Surveillance System (NTSS)
 - Report of Verified Case of Tuberculosis (RVCT) fields:
 - 15 (Status at TB Diagnosis)
 - 37 (Initial Drug Regimen)

CALCULATION

Percent (%)	$n/N \times 100$
Numerator (n)	Number of TB patients who are started on the recommended initial 4-drug regimen
Denominator (N)	Number of TB patients with initial drug regimen reported, alive at diagnosis, counted in the cohort period of interest

1. Obtain denominator

Total TB patients with initial drug regimen reported, alive at diagnosis, counted in the cohort period of interest [rit_total]

A case is included in the analytical cohort if:

Verified and counted in the cohort period of interest [vercase = 'Y']
See definition and calculation for Verified Counted TB Cases.

– AND –

Initial Drug Regimen has AT LEAST ONE DRUG Checked 'YES'

[initinh = 'Y' or initrif = 'Y' or initpza = 'Y' or initemb = 'Y' or initsm = 'Y'
 or initrib = 'Y' or initrpt = 'Y' or initeth = 'Y' or initam = 'Y' or initkan = 'Y'
 or initcap = 'Y' or initcip = 'Y' or initlevo = 'Y' or initofl = 'Y' or initmoxi = 'Y'
 or initcyc = 'Y' or initpas = 'Y' or initoth1 = 'Y' or initoth2 = 'Y']

37. Initial Drug Regimen (select one option for each drug)

	No	Yes	Unk		No	Yes	Unk		No	Yes	Unk
Isoniazid	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Ethionamide	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Moxifloxacin	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Rifampin	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Amikacin	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Cycloserine	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Pyrazinamide	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Kanamycin	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Para-Amino Salicylic Acid	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Ethambutol	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Capreomycin	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Other	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Streptomycin	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Ciprofloxacin	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Specify _____			
Rifabutin	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Levofloxacin	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Other	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Rifapentine	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Ofloxacin	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Specify _____			

-AND-

Status at TB Diagnosis is Alive [status = 'ALIVE']

15. Status at TB Diagnosis (select one)

Alive Dead

If DEAD, enter date of death: Month Day Year

 | | | | | | | |

If DEAD, was TB a cause of death? (select one)

Yes No Unknown

If cntdate ge 'YYYYMM' and cntdate le 'YYYYMM';

If vercase = 'Y';

If if initinh = 'Y' or initrif = 'Y' or initpza = 'Y' or initemb = 'Y' or initsm = 'Y'
 or initrib = 'Y' or initrpt = 'Y' or initeth = 'Y' or initam = 'Y' or initkan = 'Y'
 or initcap = 'Y' or initcip = 'Y' or initlevo = 'Y' or initofl = 'Y' or initmoxi = 'Y'
 or initcyc = 'Y' or initpas = 'Y' or initoth1 = 'Y' or initoth2 = 'Y';

If status = 'ALIVE' then rit_total + 1;

2. Obtain numerator

Total number of TB patients who are started on the recommended initial 4-drug regimen (i.e., isoniazid (INH), rifampin (RIF) or rifabutin (RIB), pyrazinamide (PZA), and ethambutol (EMB)) [rit_yes]

A case is given credit for being on the recommended 4-drug regimen if:

Initial Drug Regimen-INH is YES [initinh = 'Y'] and (RIF is YES [initrif = 'Y'] or RIB is YES [initrib = 'Y']) and PZA is YES [initpza = 'Y'] and EMB is YES [initemb = 'Y']

37. Initial Drug Regimen (select one option for each drug)

	No	Yes	Unk		No	Yes	Unk		No	Yes	Unk
Isoniazid	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Ethionamide	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Moxifloxacin	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Rifampin	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Amikacin	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Cycloserine	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pyrazinamide	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Kanamycin	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Para-Amino Salicylic Acid	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ethambutol	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Capreomycin	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Streptomycin	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Ciprofloxacin	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Specify _____			
Rifabutin	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Levofloxacin	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Rifapentine	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Ofloxacin	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Specify _____			

NOTE: Other drugs prescribed in addition to these drugs are counted as appropriate treatment.

If initinh = 'Y' and (initrif = 'Y' or initrib = 'Y') and initpza = 'Y' and initemb = 'Y' then rit_yes + 1;

3. Calculate percent

Percent of TB patients who are started on the recommended initial 4-drug regimen [rit_pct]

$$\text{rit_pct} = (\text{rit_yes} / \text{rit_total}) * 100;$$

Sputum Culture Result Reported

Indicator

Percent of TB patients ages 12 years or older with a pleural or respiratory site of disease who have sputum culture result reported

DATA SOURCES

- National Tuberculosis Surveillance System (NTSS)
 - Report of Verified Case of Tuberculosis (RVCT) fields:
 - 1 (Date Reported)
 - 8 (Date of Birth)
 - 15 (Status at TB Diagnosis)
 - 16 (Site of TB Disease)
 - 18 (Sputum Culture)

CALCULATION

Percent (%)	$n/N \times 100$
Numerator (n)	Number of TB patients with sputum culture results reported
Denominator (N)	Number of TB patients ages 12 years or older with a pleural or respiratory (i.e., pulmonary and laryngeal) site of disease, alive at diagnosis, counted in the cohort period of interest

1. Obtain denominator

Total TB patients ages 12 years or older with a pleural, pulmonary or laryngeal site of disease, alive at diagnosis, counted in the cohort period of interest [spcr_total]

A case is included in the analytical cohort if:

Verified and counted in the cohort period of interest [vercase = 'Y']
See definition and calculation for Verified Counted TB Cases.

–AND–

Site of TB Disease for Pulmonary, Pleural, or Laryngeal is 'Yes'
 [sitepulmonary = 'Y' or sitepleural = 'Y' or sitelaryngeal = 'Y']

16. Site of TB Disease (select all that apply)

<input checked="" type="checkbox"/> Pulmonary	<input type="checkbox"/> Bone and/or Joint
<input checked="" type="checkbox"/> Pleural	<input type="checkbox"/> Genitourinary
<input type="checkbox"/> Lymphatic: Cervical	<input type="checkbox"/> Meningeal
<input type="checkbox"/> Lymphatic: Intrathoracic	<input type="checkbox"/> Peritoneal
<input type="checkbox"/> Lymphatic: Axillary	<input type="checkbox"/> Other: Enter anatomic code(s) (see list):
<input type="checkbox"/> Lymphatic: Other	<input type="checkbox"/> Site not stated
<input type="checkbox"/> Lymphatic: Unknown	
<input checked="" type="checkbox"/> Laryngeal	

1		
2		
3		

-AND-

Age (Date Reported – Date of Birth) is greater than or equal to 12 years or is missing.
 [(reportdate – dateofbirth) ge 12 or (reportdate – dateofbirth) = .]

<p>1. Date Reported</p> <table border="0"> <tr> <td style="text-align: center;">Month</td> <td style="text-align: center;">Day</td> <td style="text-align: center;">Year</td> </tr> <tr> <td style="border: 1px solid black; text-align: center;">X X</td> <td style="border: 1px solid black; text-align: center;">X X</td> <td style="border: 1px solid black; text-align: center;">X X X X</td> </tr> </table>	Month	Day	Year	X X	X X	X X X X	<p>8. Date of Birth</p> <table border="0"> <tr> <td style="text-align: center;">Month</td> <td style="text-align: center;">Day</td> <td style="text-align: center;">Year</td> </tr> <tr> <td style="border: 1px solid black; text-align: center;">X X</td> <td style="border: 1px solid black; text-align: center;">X X</td> <td style="border: 1px solid black; text-align: center;">X X X X</td> </tr> </table>	Month	Day	Year	X X	X X	X X X X
Month	Day	Year											
X X	X X	X X X X											
Month	Day	Year											
X X	X X	X X X X											

NOTE: If either the Date Reported or Date of Birth is incomplete or missing, then the AGE cannot be determined; this case is included in the analytical cohort. Age is expressed in years.

-AND-

Status at TB Diagnosis is Alive [status = 'ALIVE']

15. Status at TB Diagnosis (select one)

Alive Dead

If DEAD, enter date of death:

 /

 /

If DEAD, was TB a cause of death? (select one)

Yes No Unknown

If cntdate ge 'YYYYMM' and cntdate le 'YYYYMM';
 If vercase = 'Y';
 If sitepulmonary = 'Y' or sitepleural = 'Y' or sitelaryngeal = 'Y';
 If (reportdate – dateofbirth) ge 12 or (reportdate – dateofbirth) = . ;
 If status = 'ALIVE'
 then spcr_total + 1;

Note: Age (reportdate – dateofbirth) is expressed in years.

2. Obtain numerator

Total number of TB patients with a pleural, pulmonary, or laryngeal site of disease in patients aged 12 years or older with sputum-culture results reported [socr_yes]

The record is given credit for having sputum-culture results reported if:

Sputum Culture is Positive or Negative [socrult in ('POS','NEG')]

18. Sputum Culture (select one)	Date Collected:	Date Result Reported:
<input checked="" type="checkbox"/> Positive <input type="checkbox"/> Not Done	Month Day Year	Month Day Year
<input checked="" type="checkbox"/> Negative <input type="checkbox"/> Unknown	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>
	Reporting Laboratory Type (select one):	<input type="checkbox"/> Public Health Laboratory <input type="checkbox"/> Commercial Laboratory <input type="checkbox"/> Other

If socrult in ('POS','NEG') then socr_yes + 1;

3. Calculate percent

Percentage of TB patients ages 12 years or older with a pleural, pulmonary, or laryngeal site of disease, who have sputum culture result reported [socr_pct]

$socr_pct = (socr_yes / socr_total) * 100;$

Indicator

Percent of TB patients with positive sputum culture results who have documented conversion to sputum culture-negative within 60 days of treatment initiation

DATA SOURCES

- National Tuberculosis Surveillance System (NTSS)
 - Report of Verified Case of Tuberculosis (RVCT) fields:
 - 15 (Status at TB Diagnosis)
 - 18 (Sputum Culture)
 - 36 (Date Therapy Started)
 - 37 (Initial Drug Regimen)
 - 41 (Sputum Culture Conversion Documented)
 - ◆ Yes/No/Unknown
 - ◆ Date specimen collected
 - 42 (Moved)
 - 43 (Date Therapy Stopped)
 - 44 (Reason Therapy Stopped or Never Started)

CALCULATION

Percent (%)	$n/N \times 100$
Numerator (n)	Number of TB patients who have documented conversion to sputum culture-negative within 60 days of treatment initiation
Denominator (N)	Number of TB patients with positive sputum culture results, alive at diagnosis, who have initiated treatment, counted in the cohort period of interest. Patients who died within 60 days of initiating treatment are excluded. For cohort 2009 onward, patients who moved out of the country within 60 days of initiating treatment are also excluded

1. Obtain denominator

Total TB patients with positive sputum culture results, alive at diagnosis, initiated treatment, counted in the cohort period of interest. Patients who died or moved out of the country within 60 days of initiating treatment are excluded [cc_total]

A case is included in the analytical cohort if:

Verified and counted in the cohort period of interest [vercase = 'Y']
See definition and calculation for Verified Counted TB Cases.

-AND-

Sputum Culture is Positive [spcult = 'POS']

18. Sputum Culture (select one)	Date Collected:	Date Result Reported:
<input checked="" type="checkbox"/> Positive <input type="checkbox"/> Not Done	Month Day Year	Month Day Year
<input type="checkbox"/> Negative <input type="checkbox"/> Unknown	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>
	Reporting Laboratory Type (select one):	<input type="checkbox"/> Public Health Laboratory <input type="checkbox"/> Commercial Laboratory <input type="checkbox"/> Other

-AND-

Status at TB Diagnosis is Alive [status = 'ALIVE']

15. Status at TB Diagnosis (select one)
<input checked="" type="checkbox"/> Alive <input type="checkbox"/> Dead
If DEAD, enter date of death: Month Day Year
<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>
If DEAD, was TB a cause of death? (select one)
<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown

-AND-

Initial Drug Regimen has AT LEAST ONE DRUG Checked 'YES'

[initinh = 'Y' or initrif = 'Y' or initpza = 'Y' or initemb = 'Y' or initsm = 'Y'
or initrib = 'Y' or initrpt = 'Y' or initeth = 'Y' or initam = 'Y' or initkan = 'Y'
or initcap = 'Y' or initcip = 'Y' or initlevo = 'Y' or initofl = 'Y' or initmoxi = 'Y'
or initcyc = 'Y' or initpas = 'Y' or initoth1 = 'Y' or initoth2 = 'Y']

37. Initial Drug Regimen (select one option for each drug)											
	No	Yes	Unk		No	Yes	Unk		No	Yes	Unk
Isoniazid	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Ethionamide	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Moxifloxacin	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Rifampin	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Amikacin	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Cycloserine	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Pyrazinamide	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Kanamycin	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Para-Amino Salicylic Acid	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Ethambutol	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Capreomycin	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Other	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Streptomycin	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Ciprofloxacin	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Specify _____			
Rifabutin	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Levofloxacin	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Other	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Rifapentine	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Ofloxacin	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Specify _____			

-AND-

A. Reason Therapy Stopped or Never Started is not equal to Died
 [stopreas NE 'DIED']

44. Reason Therapy Stopped or Never Started (select one)

<input type="checkbox"/> Completed Therapy	<input type="checkbox"/> Not TB	If DIED, indicate cause of death (select one):	
<input type="checkbox"/> Lost	<input checked="" type="checkbox"/> Died	<input type="checkbox"/> Related to TB disease	<input type="checkbox"/> Unrelated to TB disease
<input type="checkbox"/> Uncooperative or Refused	<input type="checkbox"/> Other	<input type="checkbox"/> Related to TB therapy	<input type="checkbox"/> Unknown
<input type="checkbox"/> Adverse Treatment Event	<input type="checkbox"/> Unknown		

–OR–

B. If Reason Therapy Stopped or Never Started is Died
 [stopreas = 'DIED']

44. Reason Therapy Stopped or Never Started (select one)

<input type="checkbox"/> Completed Therapy	<input type="checkbox"/> Not TB	If DIED, indicate cause of death (select one):	
<input type="checkbox"/> Lost	<input checked="" type="checkbox"/> Died	<input type="checkbox"/> Related to TB disease	<input type="checkbox"/> Unrelated to TB disease
<input type="checkbox"/> Uncooperative or Refused	<input type="checkbox"/> Other	<input type="checkbox"/> Related to TB therapy	<input type="checkbox"/> Unknown
<input type="checkbox"/> Adverse Treatment Event	<input type="checkbox"/> Unknown		

–and–

Treatment duration (Date Therapy Stopped – Date Therapy Started) is greater than 60 days, or is missing, or is a “negative” number of days.

[(rxdatestop – rxdatestart) gt 60 or (rxdatestop – rxdatestart) = . or (rxdatestop – rxdatestart) lt 0]

43. Date Therapy Stopped

Month	Day	Year
<input type="text" value="X"/> <input type="text" value="X"/>	<input type="text" value="X"/> <input type="text" value="X"/>	<input type="text" value="X"/> <input type="text" value="X"/> <input type="text" value="X"/> <input type="text" value="X"/>

36. Date Therapy Started

Month	Day	Year
<input type="text" value="X"/> <input type="text" value="X"/>	<input type="text" value="X"/> <input type="text" value="X"/>	<input type="text" value="X"/> <input type="text" value="X"/> <input type="text" value="X"/> <input type="text" value="X"/>

NOTE: If either the Date Therapy Started or Date Therapy Stopped is incomplete or missing, then death within 60 days cannot be determined; the case is included in the analytic cohort. In SAS, missing numerical data is treated as a value less than zero.

–AND–

A. Moved not equal to Yes [moved NE 'Y']

42. Moved

Did the patient move during TB therapy? (select one) No Yes

If YES, moved to where (select all that apply):

In state, out of jurisdiction (enter city/county) Specify _____ Specify _____

Out of state (enter state) Specify _____ Specify _____

Out of the U.S. (enter country) Specify _____ Specify _____

If moved out of the U.S., transnational referral? (select one) No Yes

-OR-

B. If Moved equal to Yes AND Out of the U.S. not equal to Yes
[moved = 'Y' and movedoutUS NE 'Y']

42. Moved

Did the patient move during TB therapy? (select one) No Yes

If YES, moved to where (select all that apply):

In state, out of jurisdiction (enter city/county) Specify _____ Specify _____

Out of state (enter state) Specify _____ Specify _____

Out of the U.S. (enter country) Specify _____ Specify _____

If moved out of the U.S., transnational referral? (select one) No Yes

-OR-

C. If Moved equal to Yes AND Out of the U.S. equal to Yes AND
Time to conversion = Date Sputum Culture Conversion - Date Therapy Started
[cc_time = cnegdate - rxdatestart] is less than or equal to 60 days, or is "negative"
number of days [cc_time ≤ 60] and is NOT Unknown or Missing [cc_time NE .]

42. Moved

Did the patient move during TB therapy? (select one) No Yes

If YES, moved to where (select all that apply):

In state, out of jurisdiction (enter city/county) Specify _____ Specify _____

Out of state (enter state) Specify _____ Specify _____

Out of the U.S. (enter country) Specify _____ Specify _____

If moved out of the U.S., transnational referral? (select one) No Yes

36. Date Therapy Started

Month		Day		Year			
X	X	X	X	X	X	X	X

41. Sputum Culture Conversion Documented (select one) No Yes Unknown

If YES, enter date specimen collected for FIRST consistently negative sputum culture:

Month		Day		Year			
X	X	X	X	X	X	X	X

If NO, enter reason for not documenting sputum culture conversion (select one):

No Follow-up Sputum Despite Induction Patient Refused Patient Lost to Follow-Up

No Follow-up Sputum and No Induction Other Specify _____

Died Unknown

NOTE: Patients who moved out of the country within 60 days of initiating treatment and who also have sputum culture conversion documented within 60 days are retain in the cohort and given credit for meeting this objective.

-OR-(continue next page)

D. If Moved equal to Yes AND Out of the U.S. equal to Yes AND Reason Therapy Stopped NOT Equal (Completed or Died)
(those who moved out of the US and Reason Therapy Stopped Not Updated)
 [moved = 'Y' and movedoutus = 'Y' and ((stopreas NE 'COMPLETED') and (stopreas NE 'DIED'))]

42. Moved

Did the patient move during TB therapy? (select one) No Yes

If YES, moved to where (select all that apply):

In state, out of jurisdiction (enter city/county) Specify _____ Specify _____

Out of state (enter state) Specify _____ Specify _____

Out of the U.S. (enter country) Specify _____ Specify _____

If moved out of the U.S., transnational referral? (select one) No Yes

44. Reason Therapy Stopped or Never Started (select one)

Completed Therapy Not TB Lost Died Uncooperative or Refused Other Adverse Treatment Event Unknown

If DIED, indicate cause of death (select one):

Related to TB disease Unrelated to TB disease

Related to TB therapy Unknown

-and-

Treatment duration (Date Therapy Stopped - Date Therapy Started) is greater than 60 days, or is missing, or is a "negative" number of days.
 [(rxdatestop - rxdatestart) gt 60 or (rxdatestop - rxdatestart) = . or (rxdatestop - rxdatestart) lt 0]

36. Date Therapy Started

Month		Day		Year			
X	X	X	X	X	X	X	X

43. Date Therapy Stopped

Month		Day		Year			
X	X	X	X	X	X	X	X

-OR-(continue next page)

E. If Moved equal to Yes AND Out of the U.S. equal to Yes AND Reason Therapy Stopped equals to (Completed or Died)

(those who moved out of the US and Reason Therapy Stopped is Updated),

[moved = 'Y' and movedoutus = 'Y' and ((stopreas = 'COMPLETED') or (stopreas = 'DIED'))]

42. Moved

Did the patient move during TB therapy? (select one) No Yes

If YES, moved to where (select all that apply):

In state, out of jurisdiction (enter city/county) Specify _____ Specify _____

Out of state (enter state) Specify _____ Specify _____

Out of the U.S. (enter country) Specify _____ Specify _____

If moved out of the U.S., transnational referral? (select one) No Yes

44. Reason Therapy Stopped or Never Started (select one)

Completed Therapy Not TB If DIED, indicate cause of death (select one):

Lost Died Related to TB disease Unrelated to TB disease

Uncooperative or Refused Other Related to TB therapy Unknown

Adverse Treatment Event Unknown

-and-

Treatment duration (Date Therapy Stopped - Date Therapy Started) is missing or is a “negative” number of days.

[(rxdatestop – rxdatestart) = . or (rxdatestop – rxdatestart) lt 0]

36. Date Therapy Started

Month		Day		Year			
X	X	X	X	X	X	X	X

43. Date Therapy Stopped

Month		Day		Year			
X	X	X	X	X	X	X	X

NOTES:

- If either the Date Therapy Started or Date Therapy Stopped is incomplete or missing, then moved out of the country within 60 days cannot be determined; the case is included in the analytic cohort. In SAS, missing numerical data is treated as a value less than zero.
- If Date Therapy Stopped is incorrectly entered as before the Date Therapy Started, these cases are included in the cohort.
- Exclusions for moved applied to cases reported in 2009 onward.

```
If cntdate ge 'YYYYMM'and cntdate le 'YYYYMM';
If vercase = 'Y';
If status = 'ALIVE' and spcult = 'POS';
If initinh = 'Y' or inirif = 'Y' or initpza = 'Y' or initemb = 'Y' or initsm = 'Y'
or initrib = 'Y' or initrpt = 'Y' or initeth = 'Y' or initam = 'Y' or initkan = 'Y'
or initcap = 'Y' or initcip = 'Y' or initlevo = 'Y' or initofl = 'Y' or initmoxi = 'Y'
or initcyc = 'Y' or initpas = 'Y' or initoth1 = 'Y' or initoth2 = 'Y';
If stopreas NE 'DIED' or (stopreas = 'DIED' and ((rxdatestop - rxdatestart) gt 60
or (rxdatestop - rxdatestart) = . or (rxdatestop - rxdatestart) lt 0));
If moved NE 'Y' or (moved = 'Y' and movedoutUS NE 'Y')
or (moved = 'Y' and movedoutus = 'Y' and (cc_time le 60 and cc_time NE .)
or (stopreas NOT IN ('COMPLETED','DIED') and ((rxdatestop - rxdatestart) gt 60
or (rxdatestop - rxdatestart) lt 0 or (rxdatestop - rxdatestart) = .)
or (stopreas IN ('COMPLETED','DIED') and (rxdatestop - rxdatestart) lt 0
or (rxdatestop - rxdatestart) = .))) then cc_total + 1
```

2. Obtain numerator

Total number of TB patients with positive sputum culture results who have documented conversion to sputum culture-negative within 60 days of treatment initiation [cc_yes]

A case is given credit for having converted within 60 days of initiating treatment if:

Sputum Culture Conversion Documented is YES [convert = 'Y']

41. Sputum Culture Conversion Documented (select one) <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes <input type="checkbox"/> Unknown	
If YES, enter date specimen collected for FIRST consistently negative sputum culture:	If NO, enter reason for not documenting sputum culture conversion (select one):
Month Day Year <input type="text"/> <input type="text"/>	<input type="checkbox"/> No Follow-up Sputum Despite Induction <input type="checkbox"/> Patient Refused <input type="checkbox"/> Patient Lost to Follow-Up <input type="checkbox"/> No Follow-up Sputum and No Induction <input type="checkbox"/> Other Specify _____ <input type="checkbox"/> Died <input type="checkbox"/> Unknown

–AND–

Time to conversion = Date specimen collected - Date Therapy Started
 [cc_time = cnegdate – rxdatestart]

Time to conversion is less than or equal to 60 days, or is “negative” number of days
 [cc_time le 60] and is NOT Unknown or Missing [cc_time NE .]

36. Date Therapy Started			
Month	Day	Year	
<input checked="" type="text"/>	<input checked="" type="text"/>	<input checked="" type="text"/>	<input checked="" type="text"/>

41. Sputum Culture Conversion Documented (select one) <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> Unknown	
If YES, enter date specimen collected for FIRST consistently negative sputum culture:	If NO, enter reason for not documenting sputum culture conversion (select one):
Month Day Year <input checked="" type="text"/> <input checked="" type="text"/>	<input type="checkbox"/> No Follow-up Sputum Despite Induction <input type="checkbox"/> Patient Refused <input type="checkbox"/> Patient Lost to Follow-Up <input type="checkbox"/> No Follow-up Sputum and No Induction <input type="checkbox"/> Other Specify _____ <input type="checkbox"/> Died <input type="checkbox"/> Unknown

NOTE:

- *If either the Date Therapy Started or the Specimen Collection Date for first consistently negative sputum culture is incomplete or missing, the record will not be credited for having met the objective.*
- *Sputum culture may convert to a negative result before a patient initiate treatment. Calculation with negative sputum culture conversion time is given credit for having met the objective.*

cc_time = cnegdate - rxdatestart;
 If convert = 'Y' and cc_time le 60 and cc_time NE .
 then cc_yes + 1;

3. Calculate percent

Percentage of TB patients with positive sputum culture results who have documented conversion to sputum culture-negative within 60 days of treatment initiation
[cc_pct]

$$\text{cc_pct} = (\text{cc_yes} / \text{cc_total}) * 100;$$

Completion of Therapy

Indicator

Percent of patients with newly diagnosed TB disease for whom treatment for 12 months or less is indicated who completed treatment within 12 months (366 days)

DATA SOURCES

- National Tuberculosis Surveillance System (NTSS)
 - Report of Verified Case of Tuberculosis (RVCT) fields:
 - 1 (Date Reported)
 - 8 (Date of Birth)
 - 15 (Status at TB Diagnosis)
 - 16 (Site of TB Disease)
 - 20 (Culture of Tissue and Other Body Fluids)
 - ◆ Anatomic code
 - ◇ Blood
 - 21 (Nucleic Acid Amplification Test Result)
 - ◆ Anatomic code
 - ◇ Blood
 - 22 (Initial Chest Radiograph and Other Chest Imaging Study)
 - 36 (Date Therapy Started)
 - 37 (Initial Drug Regimen)
 - 40 (Initial Drug Susceptibility Results)
 - 42 (Moved)
 - 43 (Date Therapy Stopped)
 - 44 (Reason Therapy Stopped or Never Started)

CALCULATION

Percent (%)	$n/N \times 100$
Numerator (n)	Number of TB patients who complete treatment in less than or equal to 366 days
Denominator (N)	Number of TB patients who are eligible ¹ to complete treatment within 12 months, alive at diagnosis, and have started treatment. Patients who died within 366 days of initiating treatment are excluded. For cohort 2009 onward, patients who moved out of the country ² within 366 days of initiating treatment are also excluded

¹Conditions that require patients to have an extended treatment and thus not eligible to complete treatment within 12 months are excluded from this cohort. These conditions include

- Meningeal TB
- TB in the central nervous system
- TB in bone or joint and the skeletal system
- Initial drug-susceptibility reported as resistant to rifampin
- Cases ages 0–14 years with disseminated TB
 - Disseminated TB is defined as—
 - Evidence of miliary TB on chest radiograph or chest CT scan, or
 - A positive result from culture of blood specimen
 - A positive result of NAA testing from blood specimen

All other patients are included in this calculation (i.e., those with culture-negative disease, those with an unknown culture status, and those with culture-positive disease but unknown initial drug-susceptibility test results).

²Patients who moved out of country within 366 days of initiating treatment are excluded for cases reported in 2009 onward.

Patients who moved out of the country are defined as those –

- Reported as “Yes” on the question “Did the patient move during TB therapy?” in the RVCT data item “MOVED”

And

- Have the box checked for “Out of the U.S.”

For cases that moved out of the U.S., “Reason Therapy Stopped” is reported as “Other.” The “Date Therapy Stopped” reflects the date medication was last ingested by the patient prior to moving, or the date the patient moved outside of the country.

Treatment outcome data (i.e., “Reason Therapy Stopped” and “Date Therapy Stopped”) for patients who moved outside of the U.S. is updated when available. For these cases, the “Reason Therapy Stopped” may reflect “Completed” or “Died.” The “Date Therapy Stopped” reflects the actual date when treatment was completed or the date patient died.

1. Obtain denominator

Total number of patients who are expected or eligible to complete treatment within 12 months [cot_total]

A case is included in the analytical cohort if:

Verified and counted in the cohort period of interest [vercase = 'Y']
See definition and calculation for Verified Counted TB Cases.

–AND–

Status at TB Diagnosis is Alive [status = 'ALIVE']

15. Status at TB Diagnosis (select one)

Alive Dead

Month Day Year

If DEAD, enter date of death:

If DEAD, was TB a cause of death? (select one)

Yes No Unknown

–AND–

Initial Drug Regimen has AT LEAST ONE DRUG Checked 'YES'

[initinh = 'Y' or initrif = 'Y' or initpza = 'Y' or initemb = 'Y' or initism = 'Y'
or initrib = 'Y' or initrpt = 'Y' or initeth = 'Y' or initam = 'Y' or initkan = 'Y'
or initcap = 'Y' or initcip = 'Y' or initlevo = 'Y' or initofl = 'Y' or initmoxi = 'Y'
or initcyc = 'Y' or initpas = 'Y' or initoth1 = 'Y' or initoth2 = 'Y']

37. Initial Drug Regimen (select one option for each drug)

	No	Yes	Unk		No	Yes	Unk		No	Yes	Unk
Isoniazid	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Ethionamide	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Moxifloxacin	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Rifampin	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Amikacin	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Cycloserine	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Pyrazinamide	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Kanamycin	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Para-Amino Salicylic Acid	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Ethambutol	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Capreomycin	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Other	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Streptomycin	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Ciprofloxacin	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Specify _____			
Rifabutin	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Levofloxacin	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Other	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Rifapentine	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Ofloxacin	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Specify _____			

–AND–

Reason Therapy Stopped or Never Started is not Died [stopreas NE 'DIED']

44. Reason Therapy Stopped or Never Started (select one)

<input type="checkbox"/> Completed Therapy	<input type="checkbox"/> Not TB	If DIED, indicate cause of death (select one):	
<input type="checkbox"/> Lost	<input checked="" type="checkbox"/> Died	<input type="checkbox"/> Related to TB disease	<input type="checkbox"/> Unrelated to TB disease
<input type="checkbox"/> Uncooperative or Refused	<input type="checkbox"/> Other	<input type="checkbox"/> Related to TB therapy	<input type="checkbox"/> Unknown
<input type="checkbox"/> Adverse Treatment Event	<input type="checkbox"/> Unknown		

–OR–

Reason Therapy Stopped or Never Started is Died
[stopreas = 'DIED']

44. Reason Therapy Stopped or Never Started (select one)

<input type="checkbox"/> Completed Therapy	<input type="checkbox"/> Not TB	If DIED, indicate cause of death (select one):	
<input type="checkbox"/> Lost	<input checked="" type="checkbox"/> Died	<input type="checkbox"/> Related to TB disease	<input type="checkbox"/> Unrelated to TB disease
<input type="checkbox"/> Uncooperative or Refused	<input type="checkbox"/> Other	<input type="checkbox"/> Related to TB therapy	<input type="checkbox"/> Unknown
<input type="checkbox"/> Adverse Treatment Event	<input type="checkbox"/> Unknown		

–and–

Treatment duration (Date Therapy Stopped - Date Therapy Started) is greater than 366 days, or is missing, or is a “negative” number of days.

[(rxdatestop – rxdatestart) gt 366 or (rxdatestop – rxdatestart) lt 0 or (rxdatestop – rxdatestart) = .]

36. Date Therapy Started

Month		Day		Year			
X	X	X	X	X	X	X	X

43. Date Therapy Stopped

Month		Day		Year			
X	X	X	X	X	X	X	X

NOTES:

If either the Date Therapy Started or Date Therapy Stopped is incomplete or missing, then death within 366 days cannot be determined; the case is included in the analytic cohort. In SAS, missing numerical data is treated as a value less than 0.

–AND–

A. Moved not equal to Yes [moved NE 'Y']

42. Moved

Did the patient move during TB therapy? (select one) No Yes

If YES, moved to where (select all that apply):

In state, out of jurisdiction (enter city/county) Specify _____ Specify _____

Out of state (enter state) Specify _____ Specify _____

Out of the U.S. (enter country) Specify _____ Specify _____

If moved out of the U.S., transnational referral? (select one) No Yes

-OR-

B. If Moved equal to Yes AND Out of the U.S. not equal to Yes
[moved = 'Y' and movedoutUS NE 'Y']

42. Moved

Did the patient move during TB therapy? (select one) No Yes

If YES, moved to where (select all that apply):

In state, out of jurisdiction (enter city/county) Specify _____ Specify _____

Out of state (enter state) Specify _____ Specify _____

Out of the U.S. (enter country) Specify _____ Specify _____

If moved out of the U.S., transnational referral? (select one) No Yes

-OR-(continue next page)

- C. If Moved equal to Yes AND Out of the U.S. equal to Yes AND Reason Therapy Stopped NOT Equal to Completed (those who moved out of the US and completed treatment overseas) or Died (those who moved out of the US and later died).
 [moved = 'Y' and movedoutus = 'Y' and ((stopreas NE 'COMPLETED') AND (stopreas NE 'DIED'))]

42. Moved

Did the patient move during TB therapy? (select one) No Yes

If YES, moved to where (select all that apply):

In state, out of jurisdiction (enter city/county) Specify _____ Specify _____

Out of state (enter state) Specify _____ Specify _____

Out of the U.S. (enter country) Specify _____ Specify _____

If moved out of the U.S., transnational referral? (select one) No Yes

44. Reason Therapy Stopped or Never Started (select one)

Completed Therapy Not TB

Lost Died

Uncooperative or Refused Other

Adverse Treatment Event Unknown

If DIED, indicate cause of death (select one):

Related to TB disease Unrelated to TB disease

Related to TB therapy Unknown

-and-

Treatment duration (Date Therapy Stopped - Date Therapy Started) is greater than 366 days, or is missing, or is a "negative" number of days.

[(rxdatestop - rxdatestart) gt 366 or (rxdatestop - rxdatestart) lt 0 or (rxdatestop - rxdatestart) = .]

36. Date Therapy Started

Month		Day		Year			
X	X	X	X	X	X	X	X

43. Date Therapy Stopped

Month		Day		Year			
X	X	X	X	X	X	X	X

-OR- (continue)

D. If Moved equal to Yes AND Out of the U.S. equal to Yes AND Reason Therapy Stopped equal to Completed (those who moved out of the US and completed treatment overseas) or Died (those who moved out of the US and later died), [moved = 'Y' and movedoutus = 'Y' and ((stopreas = 'COMPLETED') OR (stopreas = 'DIED'))]

42. Moved

Did the patient move during TB therapy? (select one) No Yes

If YES, moved to where (select all that apply):

In state, out of jurisdiction (enter city/county) Specify _____ Specify _____

Out of state (enter state) Specify _____ Specify _____

Out of the U.S. (enter country) Specify _____ Specify _____

If moved out of the U.S., transnational referral? (select one) No Yes

44. Reason Therapy Stopped or Never Started (select one)

Completed Therapy Not TB If DIED, indicate cause of death (select one):

Lost Died Related to TB disease Unrelated to TB disease

Uncooperative or Refused Other Related to TB therapy Unknown

Adverse Treatment Event Unknown

-and-

Treatment duration (Date Therapy Stopped - Date Therapy Started) is missing or is a “negative” number of days.

[(rxdatestop – rxdatestart) lt 0 or (rxdatestop – rxdatestart) = .]

36. Date Therapy Started

Month		Day		Year			
X	X	X	X	X	X	X	X

43. Date Therapy Stopped

Month		Day		Year			
X	X	X	X	X	X	X	X

NOTES:

- If either the Date Therapy Started or Date Therapy Stopped is incomplete or missing, then moved out of the country within 366 days cannot be determined; the case is included in the analytic cohort. In SAS, missing numerical data is treated as a value less than 0.
- If Date Therapy Stopped is incorrectly entered as before the Date Therapy Started, these cases are included in the cohort.
- Exclusions for moved applied to cases reported in 2009 onward.

-AND-

Site of TB Disease for Meningeal is not equal to 'Yes'
[sitemeningeal NE 'Y']

16. Site of TB Disease (select all that apply)

<input type="checkbox"/> Pulmonary	<input type="checkbox"/> Bone and/or Joint
<input type="checkbox"/> Pleural	<input type="checkbox"/> Genitourinary
<input type="checkbox"/> Lymphatic: Cervical	<input type="checkbox"/> Meningeal
<input type="checkbox"/> Lymphatic: Intrathoracic	<input type="checkbox"/> Peritoneal
<input type="checkbox"/> Lymphatic: Axillary	<input type="checkbox"/> Other: Enter anatomic code(s)
<input type="checkbox"/> Lymphatic: Other	<input type="checkbox"/> Site not stated
<input type="checkbox"/> Lymphatic: Unknown	
<input type="checkbox"/> Laryngeal	

(see list):

1	<input type="text"/>	<input type="text"/>
2	<input type="text"/>	<input type="text"/>
3	<input type="text"/>	<input type="text"/>

-AND-

Site of TB Disease for Bone and Joint is not equal to 'Yes'
[sitebone NE 'Y']

16. Site of TB Disease (select all that apply)

<input type="checkbox"/> Pulmonary	<input type="checkbox"/> Bone and/or Joint
<input type="checkbox"/> Pleural	<input type="checkbox"/> Genitourinary
<input type="checkbox"/> Lymphatic: Cervical	<input type="checkbox"/> Meningeal
<input type="checkbox"/> Lymphatic: Intrathoracic	<input type="checkbox"/> Peritoneal
<input type="checkbox"/> Lymphatic: Axillary	<input type="checkbox"/> Other: Enter anatomic code(s)
<input type="checkbox"/> Lymphatic: Other	<input type="checkbox"/> Site not stated
<input type="checkbox"/> Lymphatic: Unknown	
<input type="checkbox"/> Laryngeal	

(see list):

1	<input type="text"/>	<input type="text"/>
2	<input type="text"/>	<input type="text"/>
3	<input type="text"/>	<input type="text"/>

-AND-

Site of TB Disease for Other: is not equal to 'Yes' [siteoth NE 'Y']

16. Site of TB Disease (select all that apply)

<input type="checkbox"/> Pulmonary	<input type="checkbox"/> Bone and/or Joint
<input type="checkbox"/> Pleural	<input type="checkbox"/> Genitourinary
<input type="checkbox"/> Lymphatic: Cervical	<input type="checkbox"/> Meningeal
<input type="checkbox"/> Lymphatic: Intrathoracic	<input type="checkbox"/> Peritoneal
<input type="checkbox"/> Lymphatic: Axillary	<input checked="" type="checkbox"/> Other: Enter anatomic code(s)
<input type="checkbox"/> Lymphatic: Other	<input type="checkbox"/> Site not stated
<input type="checkbox"/> Lymphatic: Unknown	
<input type="checkbox"/> Laryngeal	

(see list):

1	<input type="text"/>	<input type="text"/>
2	<input type="text"/>	<input type="text"/>
3	<input type="text"/>	<input type="text"/>

-or-

Site of TB Disease for Other: is equal to 'Yes' and Sites 1, 2 and 3 are not equal to Brain, Spinal Cord, Cranial or Peripheral Nerve
[siteoth = 'Y' AND siteanat1 not in ('BA','SC','CR') AND siteanat2 not in ('BA','SC','CR') AND siteanat3 not in ('BA','SC','CR')]

16. Site of TB Disease (select all that apply)

<input type="checkbox"/> Pulmonary	<input type="checkbox"/> Bone and/or Joint
<input type="checkbox"/> Pleural	<input type="checkbox"/> Genitourinary
<input type="checkbox"/> Lymphatic: Cervical	<input type="checkbox"/> Meningeal
<input type="checkbox"/> Lymphatic: Intrathoracic	<input type="checkbox"/> Peritoneal
<input type="checkbox"/> Lymphatic: Axillary	<input checked="" type="checkbox"/> Other: Enter anatomic code(s)
<input type="checkbox"/> Lymphatic: Other	<input type="checkbox"/> Site not stated
<input type="checkbox"/> Lymphatic: Unknown	
<input type="checkbox"/> Laryngeal	

(see list):

1	<input type="text"/>	<input type="text"/>
2	<input type="text"/>	<input type="text"/>
3	<input type="text"/>	<input type="text"/>

-AND-

A. Sputum Culture is not Positive [spcult NE 'POS'] *and* Culture of Tissue and Other Body Fluids is not Positive [cultothr NE 'POS']

18. Sputum Culture (select one) <input type="checkbox"/> Positive <input type="checkbox"/> Not Done <input type="checkbox"/> Negative <input type="checkbox"/> Unknown	Date Collected:	Date Result Reported:
	Month Day Year <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	Month Day Year <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>
Reporting Laboratory Type (select one): <input type="checkbox"/> Public Health Laboratory <input type="checkbox"/> Commercial Laboratory <input type="checkbox"/> Other		

20. Culture of Tissue and Other Body Fluids (select one) <input type="checkbox"/> Positive <input type="checkbox"/> Not Done <input type="checkbox"/> Negative <input type="checkbox"/> Unknown	Date Collected:	Enter anatomic code (see list):	Date Result Reported:
	Month Day Year <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/>	Month Day Year <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>
Reporting Laboratory Type (select one): <input type="checkbox"/> Public Health Laboratory <input type="checkbox"/> Commercial Laboratory <input type="checkbox"/> Other			

-OR-

B. If Sputum Culture is Positive [spcult = 'POS'] *or* Culture of Tissue and Other Body Fluids is Positive [cultothr = 'POS'],

18. Sputum Culture (select one) <input checked="" type="checkbox"/> Positive <input type="checkbox"/> Not Done <input type="checkbox"/> Negative <input type="checkbox"/> Unknown	Date Collected:	Date Result Reported:
	Month Day Year <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	Month Day Year <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>
Reporting Laboratory Type (select one): <input type="checkbox"/> Public Health Laboratory <input type="checkbox"/> Commercial Laboratory <input type="checkbox"/> Other		

20. Culture of Tissue and Other Body Fluids (select one) <input checked="" type="checkbox"/> Positive <input type="checkbox"/> Not Done <input type="checkbox"/> Negative <input type="checkbox"/> Unknown	Date Collected:	Enter anatomic code (see list):	Date Result Reported:
	Month Day Year <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/>	Month Day Year <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>
Reporting Laboratory Type (select one): <input type="checkbox"/> Public Health Laboratory <input type="checkbox"/> Commercial Laboratory <input type="checkbox"/> Other			

-and-

Initial Drug Susceptibility Testing is not YES [isustest NE 'Y']

39. Initial Drug Susceptibility Testing Was drug susceptibility testing done? (select one) <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes <input type="checkbox"/> Unknown <i>If NO or UNKNOWN, do not complete the rest of Follow Up Report -1</i>	
If YES, enter date FIRST specimen collected on which initial drug susceptibility testing was done: Month Day Year <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	Enter specimen type: <input type="checkbox"/> Sputum OR If not Sputum, enter anatomic code (see list): <input type="text"/> <input type="text"/>

-OR-(continue next page)

C. If Sputum Culture is Positive [spcult = 'POS'] or Culture of Tissue and Other Body Fluids is Positive [cultothr = 'POS']

18. Sputum Culture (select one)

Positive Not Done
 Negative Unknown

Date Collected: Date Result Reported:

Month Day Year Month Day Year

Reporting Laboratory Type (select one): Public Health Laboratory Commercial Laboratory Other

20. Culture of Tissue and Other Body Fluids (select one)

Positive Not Done
 Negative Unknown

Date Collected: Enter anatomic code (see list): Date Result Reported:

Month Day Year Month Day Year

Reporting Laboratory Type (select one): Public Health Laboratory Commercial Laboratory Other

-and-

Initial Drug Susceptibility Testing is YES [isustest = 'Y']

39. Initial Drug Susceptibility Testing

Was drug susceptibility testing done? (select one) No Yes Unknown

If NO or UNKNOWN, do not complete the rest of Follow Up Report -1

If YES, enter date FIRST specimen collected on which initial drug susceptibility testing was done: Enter specimen type: Sputum

Month Day Year OR

 If not Sputum, enter anatomic code (see list):

-and-

Initial Drug Susceptibility Results for Rifampin is Not Resistant [isusrif NE 'R']

40. Initial Drug Susceptibility Results (select one option for each drug)

	Resistant	Susceptible	Not Done	Unknown		Resistant	Susceptible	Not Done	Unknown
Isoniazid	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Capreomycin	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Rifampin	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Ciprofloxacin	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pyrazinamide	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Levofloxacin	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ethambutol	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Ofloxacin	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Streptomycin	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Moxifloxacin	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Rifabutin	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Other Quinolones	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Rifapentine	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Cycloserine	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ethionamide	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Para-Amino Salicylic Acid	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Amikacin	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Kanamycin	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Specify _____				
					Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
					Specify _____				

-and-(continue next page)

Age (Date Reported - Date of Birth) [AGE = reportdate - datebirth]

Age is 15 years or more [AGE ge 15]

1. Date Reported

Month	Day	Year
X X	X X	X X X X

8. Date of Birth

Month	Day	Year
X X	X X	X X X X

-OR-

If Age is greater than or equal to 0 and less than 15 years [0 le AGE lt 15]

-AND-

A. Initial Chest Radiograph is not Abnormal [xray NE 'ABN']

Initial Chest Radiograph and Other Chest Imaging Study

22A. Initial Chest Radiograph (select one) Normal Abnormal* (consistent with TB) Not Done Unknown

* For ABNORMAL Initial Chest Radiograph: Evidence of a cavity (select one): Yes No Unknown
Evidence of military TB (select one): Yes No Unknown

-OR-

If Initial Chest Radiograph is Abnormal [xray = 'ABN'] AND Evidence of military TB is not equal to Yes [xraymilitary NE 'Y']

Initial Chest Radiograph and Other Chest Imaging Study

22A. Initial Chest Radiograph (select one) Normal Abnormal* (consistent with TB) Not Done Unknown

* For ABNORMAL Initial Chest Radiograph: Evidence of a cavity (select one): Yes No Unknown
Evidence of military TB (select one): Yes No Unknown

-AND-

B. Initial Chest CT Scan or Other Chest Imaging Study is not Abnormal [ctscan NE 'ABN']

22B. Initial Chest CT Scan or Other Chest Imaging Study (select one) Normal Abnormal* (consistent with TB) Not Done Unknown

* For ABNORMAL Initial Chest CT Scan or Other Chest Imaging Study: Evidence of a cavity (select one): Yes No Unknown
Evidence of military TB (select one): Yes No Unknown

-OR-

Initial Chest CT Scan is Abnormal [ctscan = 'ABN'] AND Evidence of military TB is not equal to Yes [ctscanmilitary NE 'Y']

22B. Initial Chest CT Scan or Other Chest Imaging Study (select one) Normal Abnormal* (consistent with TB) Not Done Unknown

* For ABNORMAL Initial Chest CT Scan or Other Chest Imaging Study: Evidence of a cavity (select one): Yes No Unknown
Evidence of military TB (select one): Yes No Unknown

Note: A case with military TB is recorded as having 'abnormal' chest radiograph or chest CT scan and "Evidence of military TB" is reported as 'Yes' on the RVCT.


```
If cntdate ge 'YYYYMM' and cntdate le 'YYYYMM';
If vercase = 'Y';
If status = 'ALIVE';
If initinh = 'Y' or initrif = 'Y' or initpza = 'Y' or initemb = 'Y' or initsm = 'Y'
or initrib = 'Y' or initrpt = 'Y' or initeth = 'Y' or initam = 'Y' or initkan = 'Y'
or initcap = 'Y' or initcip = 'Y' or initlevo = 'Y' or initofl = 'Y' or initmoxi = 'Y'
or initcyc = 'Y' or initpas = 'Y' or initoth1 = 'Y' or initoth2 = 'Y';
If stopreas NE 'DIED' or (stopreas = 'DIED' and ((rxdatestop - rxdatestart) gt 366
or (rxdatestop - rxdatestart) lt 0 or (rxdatestop - rxdatestart) = .));
If (moved NE 'Y' or (moved = 'Y' and movedoutUS NE 'Y') or (moved = 'Y' and
movedoutus = 'Y' and (((stopreas NE 'COMPLETED') and (stopreas NE 'DIED')) and
((rxdatestop - rxdatestart) gt 366 or (rxdatestop - rxdatestart) lt 0 or
(rxdatestop - rxdatestart) = .)) or (((stopreas = 'COMPLETED') or
(stopreas = 'DIED')) and ((rxdatestop - rxdatestart) lt 0 or
(rxdatestop - rxdatestart) = .)))));
If sitemeningeal NE 'Y' and sitebone NE 'Y' and (siteoth NE 'Y' or (siteoth = 'Y' and
sitemeat1 not in ('BA','SC','CR') and sitemeat2 not in ('BA','SC','CR') and
sitemeat3 not in ('BA','SC','CR')));
If (spcult NE 'POS' and cultothr NE 'POS') or ((spcult = 'POS' or cultothr = 'POS')
and isustest NE 'Y') or ((spcult = 'POS' or cultothr = 'POS') and
isustest = 'Y' and isusrif NE 'Y');
```

```
AGE = reportdate - datebirth;
```

```
If (AGE ge 15 or ((0 le AGE lt 15) and ((xray NE 'ABN' or
(xray = 'ABN' and xraymiliary NE 'Y')) and (ctscan NE 'ABN' or
(ctscan = 'ABN' and ctscanmiliary NE 'Y'))));
If (cultothr NE 'POS' or (cultothr = 'POS' and cultothrcode NE '06')) and
(NAAtest NE 'POS' or (NAAtest = 'POS' and NAAcode NE '06'))
then cot_total +1;
```

2. Obtain numerator

Total number of expected patients who complete treatment in less than or equal to 366 days (cot_yes)

A case is given credit for completing treatment within 1 year if:

Reason Therapy Stopped or Never Started is Completed Therapy
[stopreas = 'COMPLETED']

44. Reason Therapy Stopped or Never Started (select one)			
<input checked="" type="checkbox"/> Completed Therapy	<input type="checkbox"/> Not TB	If DIED, indicate cause of death (select one):	
<input type="checkbox"/> Lost	<input type="checkbox"/> Died	<input type="checkbox"/> Related to TB disease	<input type="checkbox"/> Unrelated to TB disease
<input type="checkbox"/> Uncooperative or Refused	<input type="checkbox"/> Other	<input type="checkbox"/> Related to TB therapy	<input type="checkbox"/> Unknown
<input type="checkbox"/> Adverse Treatment Event	<input type="checkbox"/> Unknown		

–AND–

A. MONTH, DAY and YEAR (MDY) of both Date Therapy Started and Date Therapy Stopped are not Missing [rxmonth NE . and rxday NE . and rxyear NE . and stopmonth NE . and stopday NE . and stopyear NE .]

36. Date Therapy Started											
Month		Day		Year							
X	X	X	X	X	X	X	X				

43. Date Therapy Stopped											
Month		Day		Year							
X	X	X	X	X	X	X	X				

–and–

Treatment duration (Date Therapy Stopped - Date Therapy Started)

Treatment duration is greater than 0 and less than or equal to 366 days

[0 lt (MDY(stopmonth, stopday, stopyear) - MDY(rxmonth, rxday, rxyear)) le 366]

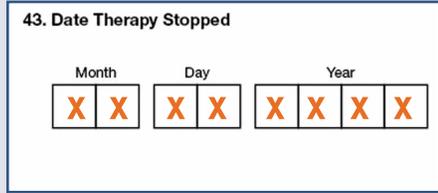
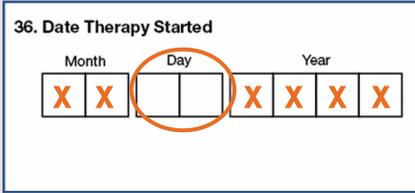
NOTE:

Date Therapy Started = MDY(rxmonth, rxday, rxyear)

Date Therapy Stopped = MDY(stopmonth, stopday, stopyear)

–OR–

B. MONTH and YEAR of Date Therapy Started and MONTH, DAY and YEAR of Date Therapy Stopped are not Missing [rxmonth NE . and rxyear NE . and stopmonth NE . and stopday NE . and stopyear NE .] and the DAY field missing for Date Therapy Started is set to 15 [MDY(rxmonth, 15, rxyear)]

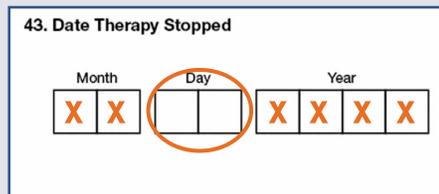
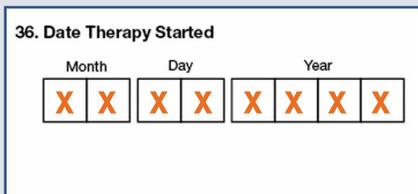


-and-

Treatment duration is greater than 0 and less than or equal to (366 days – 15 days) [O It (MDY(stopmonth, stopday, stopyear) - MDY(rxmonth, 15, rxyear)) le 351]

-OR-

MONTH, DAY and YEAR of Date Therapy Started and MONTH and Year of Date Therapy Stopped are not Missing [rxmonth NE . and rxdays NE . and rxyear NE . and stopmonth NE . and stopyear NE .] and the DAY field missing for Date Therapy Stopped is set to 15 [MDY(stopmonth, 15, stopyear)]

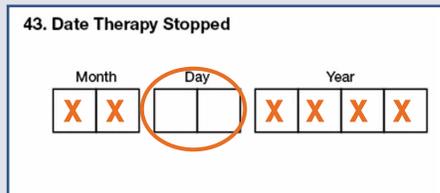
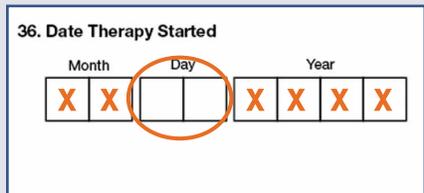


-and-

Treatment duration is greater than 0 and less than or equal to (366 days – 15 days) [O It (MDY(stopmonth, 15, stopyear) - MDY(rxmonth, rxdays, rxyear)) le 351]

-OR-

C. MONTH and YEAR of both Date Therapy Started and Date Therapy Stopped are not Missing
 [rxmonth NE . and rxyear NE . and stopmonth NE . and stopyear NE .] and the DAY fields are missing in BOTH dates, the DAYS are set to 15



-and-

Treatment duration is greater than 0 and less than or equal to (366 days – 30 days)
 [0 lt ((MDY(stopmonth, 15, stopyear) - MDY(rxmonth, 15, rxyear)) le 336]

If stopreas = 'COMPLETED';

If ((rxmonth NE . and rxdays NE . and rxyear NE . and stopmonth NE . and stopday NE . and stopyear NE .) and (0 lt (MDY(stopmonth, stopday, stopyear) - MDY(rxmonth, rxdays, rxyear)) le 366))

-OR-

((rxmonth NE . and rxyear NE . and stopmonth NE . and stopyear NE . and rxdays = . and stopday NE .) and (0 lt (MDY(stopmonth, stopday, stopyear) - MDY(rxmonth, 15, rxyear)) le 351))

-OR-

((rxmonth NE . and rxyear NE . and stopmonth NE . and stopyear NE . and rxdays NE . and stopday = .) and (0 lt (MDY(stopmonth, 15, stopyear) - MDY(rxmonth, rxdays, rxyear)) le 351))

-OR-

((rxmonth NE . and rxyear NE . and stopmonth NE . and stopyear NE . and rxdays = . and stopday = .) and (0 lt (MDY(stopmonth, 15, stopyear) - MDY(rxmonth, 15, rxyear)) le 336))

then cot_yes+1;

3. Calculate percent

Percentage of patients with newly diagnosed TB, for whom treatment for 12 months or less is indicated, who completed treatment within 366 days
[cot_pct]

```
cot_pct = (cot_yes / cot_total) * 100;
```

Laboratory Turnaround Time – Culture

Indicator

Percent of TB patients who have the identification of *M. tuberculosis* complex (MTBC) from culture of respiratory specimens reported within 25 days from the date specimen was collected

NOTE: Indicator implemented for cases reported in 2009 and after.

DATA SOURCES

- National Tuberculosis Surveillance System (NTSS)
 - Report of Verified Case of Tuberculosis (RVCT) fields:
 - 5 (Count Status)
 - 6 (Date Counted)
 - 18 (Sputum Culture)
 - ◆ Result
 - ◆ Date collected
 - ◆ Date result reported
 - 20 (Culture of Tissue and Other Body Fluids)
 - ◆ Result
 - ◆ Date collected
 - ◆ Anatomic code
 - ◇ Upper respiratory fluids or tracheal fluids
 - ◇ Bronchial fluid
 - ◆ Date result reported

CALCULATION

Percent (%)	$n/N \times 100$
Numerator (n)	Number of TB patients who have the identification of MTBC from culture of respiratory specimens reported within 25 days from the date specimen was collected
Denominator (N)	Number of TB patients with positive result for culture in respiratory specimens (i.e., sputum, upper respiratory fluids or tracheal fluids, and bronchial fluids), counted in the cohort period of interest. Patients with positive result for culture in non-respiratory specimen or gastric aspirate are excluded

1. Obtain denominator

Total patients with positive result for culture in respiratory specimens (i.e., sputum, upper respiratory fluids or tracheal fluids, or bronchial fluids), counted in the cohort period of interest [tat_cult_total]

A case is included in the analytical cohort if:

Verified and counted in the cohort period of interest [vercase = 'Y']
See definition and calculation for Verified Counted TB Cases.

–AND–

Sputum culture is positive [spcult = 'POS']

18. Sputum Culture (select one)	Date Collected:	Date Result Reported:
<input checked="" type="checkbox"/> Positive <input type="checkbox"/> Not Done	Month Day Year	Month Day Year
<input type="checkbox"/> Negative <input type="checkbox"/> Unknown	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>
Reporting Laboratory Type (select one):	<input type="checkbox"/> Public Health Laboratory	<input type="checkbox"/> Commercial Laboratory <input type="checkbox"/> Other

–OR–

Culture of Tissues and Other Body Fluids is Positive [cultothr = 'POS'] AND
Anatomic Code is reported as upper respiratory fluids or tracheal fluids (27), bronchial fluid (28)
[cultothrcode in ('27', '28')]

20. Culture of Tissue and Other Body Fluids (select one)	Date Collected:	Enter anatomic code (see list):	Date Result Reported:
<input checked="" type="checkbox"/> Positive <input type="checkbox"/> Not Done	Month Day Year	<input checked="" type="text"/> <input checked="" type="text"/>	Month Day Year
<input type="checkbox"/> Negative <input type="checkbox"/> Unknown	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>		<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>
Reporting Laboratory Type (select one):	<input type="checkbox"/> Public Health Laboratory	<input type="checkbox"/> Commercial Laboratory	<input type="checkbox"/> Other

If cntdate ge 'YYYYMM' and cntdate le 'YYYYMM';
If vercase = 'Y';
If spcult = 'POS' or (cultothr = 'POS' and cultothrcode in ('27', '28'))
then tat_cult_total +1;

2. Obtain numerator

Total number of patients who have the identification of MTBC from culture of respiratory specimens reported within 25 days from the date specimen was collected [tat_cult_yes]

A case is indicated to have met the objective if:

Sputum Culture is positive [spcult = 'POS'] AND Date Result Reported is not Missing [spculrpt NE .]

18. Sputum Culture (select one) <input checked="" type="checkbox"/> Positive <input type="checkbox"/> Not Done <input type="checkbox"/> Negative <input type="checkbox"/> Unknown	Date Collected: Month Day Year <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	Date Result Reported: Month Day Year <input checked="" type="text"/> <input checked="" type="text"/>
	Reporting Laboratory Type (select one): <input type="checkbox"/> Public Health Laboratory <input type="checkbox"/> Commercial Laboratory <input type="checkbox"/> Other	

–or–

Culture of Tissue and Other Fluids is Positive [cultothr = 'POS']
 AND Anatomic Code is reported as upper respiratory fluids or tracheal fluids (27) or bronchial fluid (28) [cultothrcode in ('27', '28')]
 AND Date Result Reported is not Missing [cultrpt NE .]

20. Culture of Tissue and Other Body Fluids (select one) <input checked="" type="checkbox"/> Positive <input type="checkbox"/> Not Done <input type="checkbox"/> Negative <input type="checkbox"/> Unknown	Date Collected: Month Day Year <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	Enter anatomic code (see list): <input type="text"/> <input type="text"/>	Date Result Reported: Month Day Year <input checked="" type="text"/> <input checked="" type="text"/>
	Reporting Laboratory Type (select one): <input type="checkbox"/> Public Health Laboratory <input type="checkbox"/> Commercial Laboratory <input type="checkbox"/> Other		

–AND–

Sputum Culture Date Result Reported is before the Date Result Reported for Culture of Tissue and Other Fluids [spculrpt lt cultrpt]
 then turnaround time is the duration between the
 Sputum Culture Date Result Reported and Date Collected
 [tat_cult_time = spculrpt – spcultcol]

Otherwise

If Date Result Reported for Culture of Tissue and Other Fluids is before
 Sputum Culture Date Result Reported [cultrpt lt spculrpt]
 then turnaround time is the duration between Date Result Reported
 and Date Collected for Culture of Tissue and Other Fluids
 [tat_cult_time = cultrpt – cultcol]

–and–(continue next page)

Turnaround time is greater than or equal to 0 and less than or equal to 25 days
[0 LE tat_cult_time LE 25]

Note: *If sputum culture is not positive or Sputum Culture Date Result Reported is missing, then sputum culture is excluded from the turnaround time calculation. Conversely, if Culture of Tissue and Other Fluids is not positive or Date Result Reported for Culture of Tissue and Other Fluids is missing, then culture of tissue and other fluids is excluded from the turnaround time calculation.*

```
If spcult = 'POS' and spcultrpt NE . or  
((cultothr = 'POS' and cultothrcode in ('27', '28')) and cultrpt NE . ) and spcultrpt lt  
cultrpt) then tat_cult_time = spcultrpt - spcultcol;  
Else  
tat_cult_time = cultothrrpt - cultothrcol;  
If 0 LE tat_cult_time LE 25 then tat_cult_yes +1;
```

3. Calculate percent

Percent of patients with the identification of MTBC reported within 25 days from the date the specimen was collected [tat_cult_pct]

```
tat_cult_pct = (tat_cult_yes / tat_cult_total) * 100;
```

Laboratory Turnaround Time – NAA

Indicator

Percent of TB patients who have the detection of *M. tuberculosis* complex (MTBC) by nucleic acid amplification (NAA) testing from respiratory specimens reported within 6 days from the date specimen was collected

NOTE: Indicator implemented for cases reported in 2009 and after.

DATA SOURCES

- National Tuberculosis Surveillance System (NTSS)
 - Report of Verified Case of Tuberculosis (RVCT) fields:
 - 5 (Count Status)
 - 6 (Date Counted)
 - 21 (Nucleic Acid Amplification Test Result)
 - ◆ Result
 - ◆ Date collected
 - ◆ Anatomic code
 - ◇ Upper respiratory fluids or tracheal fluid,
 - ◇ Bronchial fluid
 - ◆ Date result reported

CALCULATION

Percent (%)	$n/N \times 100$
Numerator (n)	Number of TB patients who have the detection of MTBC reported within 6 days from the date of specimen collection
Denominator (N)	Number of TB patients with positive result for NAA test in respiratory specimens (i.e., sputum, upper respiratory fluids or tracheal fluids, and bronchial fluid), counted in the cohort period of interest. Patients with positive result for NAA test on non-respiratory specimen or gastric aspirate are excluded

1. Obtain denominator

Total patients with positive result for NAA test in respiratory specimens (i.e., sputum, upper respiratory fluids or tracheal fluids, and bronchial fluid), counted in the cohort period of interest [tat_NAA_total]

A case is included in the analytical cohort if:

Verified and counted in the cohort period of interest [vercase = 'Y']
See definition and calculation for Verified Counted TB Cases.

–AND–

Nucleic Acid Amplification Test Result is positive [NAAtest = 'POS'] AND
NAA Specimen is Sputum [NAAAsputum = 'Y'] or upper respiratory fluids or tracheal fluids,
bronchial fluids [NAAcode in ('27', '28')]

21. Nucleic Acid Amplification Test Result (select one)

Positive Not Done
 Negative Unknown
 Indeterminate

Date Collected: Date Result Reported:

Month	Day	Year	Month	Day	Year

Enter specimen type: Sputum
OR
If not Sputum, enter anatomic code (see list):

Reporting Laboratory Type (select one):
 Public Health Laboratory Commercial Laboratory Other

If cntdate ge 'YYYYMM' and cntdate le 'YYYYMM';
If vercase = 'Y';
If (NAAtest = 'POS' and (NAAAsputum = 'Y' or NAAcode in ('27', '28')))
then tat_NAA_total +1;

2. Obtain numerator

Total number patients who have the detection of MTBC reported within 6 days
from the date of specimen collection [tat_NAA_yes]

A case is indicated to have met the objective if:

Turnaround time for NAA (the time between Date Result Reported and Date Collected)
[tat_NAA_time = naarpt – naacol] is greater than or equal to 0 and less than
or equal to 6 days
[0 LE tat_NAA_time LE 6]

21. Nucleic Acid Amplification Test Result (select one)

Positive Not Done
 Negative Unknown
 Indeterminate

Date Collected: Date Result Reported:

Month	Day	Year	Month	Day	Year
X	X	X	X	X	X

Enter specimen type: Sputum
OR
If not Sputum, enter anatomic code (see list):

Reporting Laboratory Type (select one):
 Public Health Laboratory Commercial Laboratory Other

tat_NAA_time = NAArpt – NAacol;
If 0 LE tat_NAA_time LE 6 then tat_NAA_yes +1;

3. Calculate percent

Percent of TB patients who have the detection of MTBC by NAA testing from respiratory specimens reported within 6 days from the date specimen was collected [tat_NAA_pct]

```
tat_NAA_pct = (tat_NAA_yes / tat_NAA_total) * 100;
```

Indicator

Percent of TB patients with positive culture result who have initial drug-susceptibility results reported

DATA SOURCES

- National Tuberculosis Surveillance System (NTSS)
 - Report of Verified Case of Tuberculosis (RVCT) fields:
 - 18 (Sputum Culture)
 - 20 (Culture of Tissue and Other Body Fluid)
 - 39 (Initial Drug Susceptibility Testing)
 - 40 (Initial Drug Susceptibility Results)

CALCULATION

Percent (%)	$n/N \times 100$
Numerator (n)	Number of TB patients with initial drug-susceptibility results reported
Denominator (N)	Number of TB patients with positive culture result, counted in the cohort period of interest

1. Obtain denominator

Total TB patients with positive culture result, counted in the year of interest
[dst_total]

A case is included in the analytical cohort if:

Sputum Culture is Positive [spcult = 'POS']

18. Sputum Culture (select one) <input checked="" type="checkbox"/> Positive <input type="checkbox"/> Not Done <input type="checkbox"/> Negative <input type="checkbox"/> Unknown	Date Collected: Month Day Year <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	Date Result Reported: Month Day Year <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>
Reporting Laboratory Type (select one): <input type="checkbox"/> Public Health Laboratory <input type="checkbox"/> Commercial Laboratory <input type="checkbox"/> Other		

–or–

Culture of Tissue and Other Body Fluids is Positive [cultothr = 'POS']

20. Culture of Tissue and Other Body Fluids (select one) <input checked="" type="checkbox"/> Positive <input type="checkbox"/> Not Done <input type="checkbox"/> Negative <input type="checkbox"/> Unknown	Date Collected: Month Day Year <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	Enter anatomic code (see list): <input type="text"/> <input type="text"/>	Date Result Reported: Month Day Year <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>
Reporting Laboratory Type (select one): <input type="checkbox"/> Public Health Laboratory <input type="checkbox"/> Commercial Laboratory <input type="checkbox"/> Other			

NOTE: *vercrit = 'Positive Culture' can also be used in place of the above. See definition and calculation for Verified Counted TB Cases.*

If cntdate ge 'YYYYMM' and cntdate le 'YYYYMM';
 If vercount = 'Y';
 If spcult = 'POS' or cultothr = 'POS' then dst_total + 1;

2. Obtain numerator

Total number of TB patients with positive culture result with initial drug-susceptibility (DST) results reported [dst_yes]

A case is given credit for having drug susceptibility testing done if:

Initial Drug Susceptibility Testing is YES [isustest = 'Y']

39. Initial Drug Susceptibility Testing

Was drug susceptibility testing done? (select one) No Yes Unknown

If NO or UNKNOWN, do not complete the rest of Follow Up Report -1

If YES, enter date FIRST specimen collected on which initial drug susceptibility testing was done:

Enter specimen type: Sputum
 OR
 If not Sputum, enter anatomic code (see list):

-AND-

Initial Drug Susceptibility Results for Isoniazid is either Resistant or Susceptible [isusinh in ('R','S')]

-and-

Rifampin is either Resistant or Susceptible [isusrif in ('R','S')]

-and-

Ethambutol is either Resistant or Susceptible [isusemb in ('R','S')]

40. Initial Drug Susceptibility Results (select one option for each drug)

	Resistant	Susceptible	Not Done	Unknown		Resistant	Susceptible	Not Done	Unknown
Isoniazid	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Capreomycin	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Rifampin	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Ciprofloxacin	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pyrazinamide	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Levofloxacin	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ethambutol	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Ofloxacin	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Streptomycin	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Moxifloxacin	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Rifabutin	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Other Quinolones	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Rifapentine	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Cycloserine	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ethionamide	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Para-Amino Salicylic Acid	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Amikacin	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Kanamycin	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Specify _____				
					Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
					Specify _____				

NOTE: Initial DST results for ethambutol are included in the indicator calculation for TB cases reported in 2013 and after.

```
If isustest = 'Y' and isusinh in ('R','S') and isusrif in ('R','S') and isusemb in ('R','S')  
then dst_yes + 1;
```

3. Calculate percent

Percentage of culture-positive TB cases with initial drug-susceptibility results reported
[dst_pct]

```
dst_pct = (dst_yes / dst_total) * 100;
```

Universal Genotyping

Indicator

Percent of TB patients with positive culture result who have an isolate submitted for genotyping and linked to the RVCT record

NOTE: Indicator implemented for cases reported in 2005 and after.

DATA SOURCES

- National Tuberculosis Surveillance System (NTSS)
 - Report of Verified Case of Tuberculosis (RVCT) fields:
 - 18 (Sputum Culture)
 - 20 (Culture of Tissue and Other Body Fluid)
- National Tuberculosis Genotyping Information Management System (TB GIMS)

CALCULATION

Percent (%)	$n/N \times 100$
Numerator (n)	Number of TB patients with an isolate submitted for genotyping and linked to the RVCT record
Denominator (N)	Number of TB patients with positive culture result, counted in the cohort period of interest

1. Obtain denominator

Total TB patients with positive culture result, counted in the year of interest

[geno_total]

A case is included in the analytical cohort if:

Sputum Culture is Positive [spcult = 'POS']

18. Sputum Culture (select one)

Positive Not Done
 Negative Unknown

Date Collected: Date Result Reported:

Month Day Year Month Day Year

Reporting Laboratory Type (select one): Public Health Laboratory Commercial Laboratory Other

–or–

Culture of Tissue and Other Body Fluids is Positive [cultothr = 'POS']

20. Culture of Tissue and Other Body Fluids (select one)

Positive Not Done
 Negative Unknown

Date Collected: Enter anatomic code (see list): Date Result Reported:

Month Day Year Month Day Year

Reporting Laboratory Type (select one): Public Health Laboratory Commercial Laboratory Other

NOTE: *vercrit = 'Positive Culture' can also be used in place of the above. See definition and calculation for Verified Counted TB Cases.*

```

If cntdate ge 'YYYYMM' and cntdate le 'YYYYMM';
If vercount = 'Y';
If spcult = 'POS' or cultothr = 'POS'
then geno_total + 1;

```

2. Obtain numerator

Total number of TB patients with culture positive result who have an isolate submitted for genotyping and linked to the RVCT record [geno_yes]

A case receives credit for genotyping if:

The genotyping result for the isolate is linked to a RVCT record.

GIMS ID	State ID	County	Submitter#	Accession#	State Case#	Originating Lab	Date Shipped	Option1
74391	VA		R110710161	11RF2967	XXXXXXXX	VCU Medical Center-Micro	08/11/2011	
74388	VA		R110609585	11RF2964	XXXXXXXX	Alexandria City Health Dept.	08/11/2011	
74300	VA		TB11-1865	11RF1239A	XXXXXXXX	originally from MI	04/11/2011	
73790	VA		R110620233	11RF2740	XXXXXXXX	Quest Diagnostic-Chantilly	07/28/2011	
73789	VA		R110600810	11RF2739	XXXXXXXX	Sentara Norfolk Genreal Hospital-Micro	07/28/2011	
73788	VA		R110600809	11RF2738	XXXXXXXX	Sentara Norfolk Genreal Hospital-Micro	07/28/2011	
73338	VA		R110606772	11RF2584	XXXXXXXX	Quest Diagnostic	07/14/2011	
73271	VA		TB11-4160	11RF2514	XXXXXXXX	Washington Hosp. Cent.	07/13/2011	
73268	VA		TB11-4089	11RF2511	XXXXXXXX	Washington Hosp. Cent.	07/13/2011	
73105	VA		2004 B-32	04RF0884A	XXXXXXXX	originally from TN	06/18/2004	
73104	VA		2004 B-65	04RF1428A	XXXXXXXX	originally from TN	08/13/2004	
73103	VA		N09T007797	10RF0236A	XXXXXXXX	originally from TN	01/26/2010	
73102	VA		2005 A-34	05RF0667A	XXXXXXXX	originally from TN	03/04/2005	
73101	VA		51102R	05RF2277A	XXXXXXXX	originally from TN	07/29/2005	

NOTE: Cases are not given credit if the genotyping results are not linked to a RVCT record with a valid State Case Number. The figure above shows a sample list of cases from TB GIMS' Training Website that have not been linked to the RVCT. The State Case Numbers for these isolates are missing.

```

If linked = 'Y' then geno_yes + 1;

```

3. Calculate percent

Percent of TB patients with positive culture result who have an isolate submitted for genotyping and linked to the RVCT record [geno_pct]

```
geno_pct = (geno_yes / geno_total) * 100;
```

III. Calculation for Indicators using Data from the Electronic Disease Notification (EDN) System

Data used in the calculation for monitoring Examination of Immigrants and Refugees are collected in the Electronic Disease Notification (EDN) System. The system contains immigrant and refugee applicant medical data from the U.S. Department of State. EDN notifies state and local health departments of individuals with TB Class B notification arriving in their jurisdiction to facilitate follow-up. Data on the follow-up of these individuals are collected by local jurisdictions on the TB Follow-up Worksheet and submitted back to CDC through EDN.

The national indicators focuses on the follow-up medical examination of refugees and immigrants arriving in the United States with TB Class B notification, specifically those with abnormal chest X-rays read overseas as suggestive of TB.

Instructions and definitions of data collected in EDN are referenced in the **TB Follow-up Worksheet Guide**.

NOTE: *NTIP indicators are calculated based on the primary jurisdiction of arrival. TB programs can use EDN to electronically notify other jurisdictions of Class B individuals who move to another jurisdiction before completing their Class B examination and treatment.*

Immigrants and Refugees with Abnormal Chest X-Ray Consistent with TB

Immigrants and refugees with abnormal chest X-rays read overseas as consistent with TB are defined as those with “abnormal finding” indicated on chest radiographs (X-rays) and indicated to have conditions that are suggestive of tuberculosis.

For individuals examined using TB Technical Instruction (TI) 1991:

- U.S. Department of State, Chest X-ray and Classification Worksheet DS-3024 published September 2007
 - Chest X-ray Findings: Abnormal Findings
 - Can suggest active TB
 - Can suggest inactive TB

For individuals examined using TB TI 2007:

- U.S. Department of State, Chest X-ray and Classification Worksheet DS-3030 published July 2010
 - Chest X-ray Findings: Abnormal Findings
 - Can suggest Tuberculosis

Or

- U.S. Department of State, Tuberculosis Worksheet DS-3030 published September 2014
 - Chest X-ray Findings: Abnormal Findings
 - Can suggest Tuberculosis

Individuals are included in the analytic cohort if:

Chest X-ray Findings is Abnormal [xrayfinding = 'ABNORMAL']

TI 91: DS-3024 Form or TI 07: DS-3030 Form

2. Chest X-Ray Findings	Date Chest X-Ray Taken (mm-dd-yyyy) _____
<input type="checkbox"/> Normal Findings	
<input checked="" type="checkbox"/> Abnormal Findings (Indicate findings and interpretation, by checking all that apply, and any other in the table below.)	

–AND–

Suggest TB is Can Suggest Active TB, Can Suggest Inactive TB
(or any item(s) checked under *Can Suggest Active TB* and *Can Suggest Inactive TB*
categories)

TI 91: DS-3024 Form (published 09-2007)

<input checked="" type="checkbox"/> Can Suggest ACTIVE TB (Need Smears)	<input checked="" type="checkbox"/> Can Suggest INACTIVE TB (Need Smears if Symptomatic)	<input type="checkbox"/> OTHER X-Ray Findings
<input checked="" type="checkbox"/> Infiltrate or Consolidation <input checked="" type="checkbox"/> Any Cavitory Lesion <input checked="" type="checkbox"/> Nodule with Poorly Defined Margins (Such as Tuberculoma) <input checked="" type="checkbox"/> Pleural Effusion <input checked="" type="checkbox"/> Hilar/Mediastinal Adenopathy <input checked="" type="checkbox"/> Linear, Interstitial Markings <input checked="" type="checkbox"/> Other (Such as Miliary Findings) Remarks	<input checked="" type="checkbox"/> Discrete Fibrotic Scar or Linear Opacity <input checked="" type="checkbox"/> Discrete Nodule(s) without Calcification <input checked="" type="checkbox"/> Discrete Fibrotic Scar with Volume Loss or Retraction <input checked="" type="checkbox"/> Discrete Nodule(s) with Volume Loss or Retraction <input checked="" type="checkbox"/> Other (Such as Bronchiectasis)	<input type="checkbox"/> Follow-Up Needed <input type="checkbox"/> Musculoskeletal <input type="checkbox"/> Cardiac <input type="checkbox"/> Pulmonary <input type="checkbox"/> Other <input type="checkbox"/> No Follow-Up Needed for Pleural thickening, diaphragmatic tenting, blunting costophrenic angle, solitary calcified nodule or granuloma or minor musculoskeletal or cardiac finding

—OR—

Suggest TB is Can Suggest TB (or any item(s) checked under the *Can Suggest TB* category)

TI 07: DS-3030 Form (published 07-2010)

<input checked="" type="checkbox"/> Can Suggest Tuberculosis (Need Smears and Cultures)	<input type="checkbox"/> Other X-Ray Findings
<input checked="" type="checkbox"/> Infiltrate or consolidation <input checked="" type="checkbox"/> Any cavitory lesion <input checked="" type="checkbox"/> Nodule or mass with poorly defined margins (such as tuberculoma) <input checked="" type="checkbox"/> Pleural effusion* <input checked="" type="checkbox"/> Hilar/mediastinal adenopathy with or without atelectasis <input checked="" type="checkbox"/> Other (such as miliary findings) * If unclear whether pleural fluid or thickening, perform lateral or decubitus chest radiograph, or targeted ultrasound.	<input type="checkbox"/> Follow-up needed (Mark as Class B Other) <input type="checkbox"/> Musculoskeletal <input type="checkbox"/> Cardiac <input type="checkbox"/> Pulmonary, non-TB (e.g., emphysema) <input type="checkbox"/> Other <input type="checkbox"/> No follow-up needed for pleural thickening, diaphragmatic tenting, calcified pulmonary nodule(s), calcified lymph node(s), calcified lymph node(s) with calcified pulmonary nodule(s), or minor musculoskeletal findings.

—OR—

Suggest TB is Infiltrate, CavitoryLesion, Nodule, Pleural, HilarAdenopathy, Miliary,
DiscreteLinear, DiscreteNodule, VolumeLoss, Other

TI 07: DS-3030 Form (published 09-2014)

<input checked="" type="checkbox"/> Can Suggest Tuberculosis (Need Smears and Cultures)	
<input checked="" type="checkbox"/> Infiltrate or consolidation	<input checked="" type="checkbox"/> Hilar/mediastinal adenopathy
<input checked="" type="checkbox"/> Cavitory lesion	<input checked="" type="checkbox"/> Miliary findings
<input checked="" type="checkbox"/> Nodule(s) or mass with poorly defined margins (such as tuberculoma)	<input checked="" type="checkbox"/> Discrete linear opacity
<input checked="" type="checkbox"/> Pleural effusion (perform lateral or decubitus radiograph or ultrasound, if needed)	<input checked="" type="checkbox"/> Discrete nodule(s) without calcification
	<input checked="" type="checkbox"/> Volume loss or retraction
	<input checked="" type="checkbox"/> Other

[Suggesttb in ('Suggest ACTIVE', 'Suggest INACTIVE', 'Suggest TB', 'Infiltrate',
'CavitoryLesion', 'Nodule', 'Pleural', 'HilarAdenopathy', 'Miliary', 'DiscreteLinear',
'DiscreteNodule', 'VolumeLoss', 'Other')]

If [xrayfinding = 'ABNORMAL' and Suggesttb in ('Suggest ACTIVE', 'Suggest INACTIVE', 'Suggest TB', 'Infiltrate', 'CavitaryLesion', 'Nodule', 'Pleural', 'HilarAdenopathy', 'Miliary', 'DiscreteLinear', 'DiscreteNodule', 'VolumeLoss', 'Other')]
then rfg = 'ABNX_TB';

NOTE: *All immigrants and refugees including in the cohort are based on the primary jurisdiction of arrival.*

Immigrants and Refugees – Examination Initiation

Indicator

Percent of immigrants and refugees with abnormal chest X-rays read overseas as consistent with TB who initiated medical examination within 30 days of notification

NOTE: Indicator implemented for immigrants and refugees arrived in 2008 and after.

DATA SOURCES

- Electronic Disease Notification (EDN) System
 - TB Follow-up Worksheet fields:
 - A4 (Initial U.S. Entry Date)
 - C1 (Date of Initial U.S. Medical Evaluation)
 - EDN system notification date

CALCULATION

Percent (%)	$n/N \times 100$
Numerator (n)	Number of immigrants and refugees who initiated medical examination within 30 days of notification by EDN
Denominator (N)	Number of immigrants and refugees with abnormal chest X-rays read overseas as consistent with TB who arrived in the cohort period of interest

1. Obtain denominator

Number of immigrants and refugees with abnormal chest X-rays read overseas as consistent with TB, arrived in the cohort period of interest [rfg_abntotal]

A case is included in the analytical cohort if:

Initial U.S. Entry Date is greater than or equal to year-month and less than or equal to year-month
(dateofarrival ge 'YYYYMM' and dateofarrival le 'YYYYMM')

TB Follow-up Worksheet

A4. Initial U.S. Entry Date:

–and–

Record met the cohort criteria for immigrants and refugees with abnormal chest X-ray consistent with TB (if rfg = 'ABNX_TB')

If (dateofarrival ge 'YYYYMM' and dateofarrival le 'YYYYMM') and rfg = 'ABNX_TB'
then rfg_abnxtotal +1

2. Obtain numerator

Number of immigrants and refugees who initiated medical examination within 30 days of notification [rfg_initeval_obj]

A record is given credit for having initiated medical examination within 30 days of notification by EDN if:

Date of initial U.S. medical evaluation is NOT MISSING [dateiniteval NE .]

TB Follow-up Worksheet

C. U.S. Evaluation

C1. Date of initial U.S. medical evaluation: **XX/XX/XXXX**

–and–

Duration from the Date of Notification to the Date of initial U.S. medical evaluation is less than or equal to 30 days [timeiniteval = dateiniteval – datenotification],
[timeiniteval le 30]

NOTE: *The Date of Notification is generated by the EDN system at the time of email is sent to the local jurisdiction.*

```
timeinital = dateinital - dateofnotification;  
If dateinital NE . and timeinital le 30 then rfg_inital_obj +1;
```

3. Calculate percent

Percent of immigrants and refugees with abnormal chest X-rays read overseas as consistent with TB who initiated medical examination within 30 days of notification [rfg_inital_pct]

```
rfg_inital_pct = (rfg_inital_obj / rfg_abnx_tb)*100;
```

Immigrants and Refugees – Examination Completion

Indicator

Percent of immigrants and refugees with abnormal chest X-rays read overseas as consistent with TB who completed medical examination within 90 days of notification

NOTE: Indicator implemented for immigrants and refugees arrived in 2008 and after.

DATA SOURCES

- Electronic Disease Notification (EDN) System
 - TB Follow-up Worksheet fields:
 - A4 (Initial U.S. Entry Date)
 - D1 (Disposition Date)
 - D2 (Evaluation Disposition)
 - ◆ Completed Evaluation
 - ◆ Treatment Recommended
 - D3 (Diagnosis)
 - EDN system notification date

CALCULATION

Percent (%)	$n/N \times 100$
Numerator (n)	Number of immigrants and refugees who completed medical examination within 90 days of notification by EDN
Denominator (N)	Number of immigrants and refugees with abnormal chest X-rays read overseas as consistent with TB who arrived in the cohort period of interest

1. Obtain denominator

Number of immigrants and refugees with abnormal chest X-rays read overseas as consistent with TB, arrived in the cohort period of interest [rfg_abntotal]

A case is included in the analytical cohort if:

Initial U.S. Entry Date is greater than or equal to year-month and less than or equal to year-month
[dateofarrival ge 'YYYYMM' and dateofarrival le 'YYYYMM']

TB Follow-up Worksheet

A4. Initial U.S. Entry Date:

–and–

Record met the cohort criteria for immigrants and refugees with abnormal chest X-ray consistent with TB [rfg = 'ABNX_TB']

If dateofarrival ge 'YYYYMM' and dateofarrival le 'YYYYMM' and rfg = 'ABNX_TB'
then rfg_abntotal +1;

2. Obtain numerator

Number of eligible immigrants and refugees who completed medical examination within 90 days of notification [rfg_comeval_obj]

NOTE: *The Date of Notification is generated by the EDN system at the time of email is sent to the local jurisdiction.*

A case is given credit for having completed medical examination within 90 days of notification
by EDN if:

Evaluation disposition is Completed evaluation [evaldisposition = 'COMPLETED'] and treatment recommended is NOT Missing [txrecc NE .]

TB Follow-up Worksheet (published 2013)

D2. Evaluation disposition:

<input checked="" type="checkbox"/> Completed evaluation <i>If evaluation was completed, was treatment recommended?</i>	<input type="checkbox"/> Initiated Evaluation / Not completed	<input type="checkbox"/> Did not initiate evaluation
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<i>If evaluation was NOT completed, why not?</i>	
<input type="checkbox"/> LTBI <input type="checkbox"/> Active TB	<input type="checkbox"/> Not Located <input type="checkbox"/> Lost to Follow-Up <input type="checkbox"/> Refused Evaluation <input type="checkbox"/> Unknown	<input type="checkbox"/> Moved within U.S., transferred to: <input type="checkbox"/> Moved outside U.S. <input type="checkbox"/> Died <input type="checkbox"/> Other, specify

TB Follow-up Worksheet (published 2007)

D. Disposition		
D1. Disposition Date: ___/___/___		
D2. Evaluation Disposition:		
<input checked="" type="checkbox"/> Completed Evaluation	<input type="checkbox"/> Initiated Evaluation / Not Completed	<input type="checkbox"/> Did Not Initiate Evaluation
<input checked="" type="checkbox"/> Treatment Recommended <input checked="" type="checkbox"/> No Treatment Recommended	<input type="checkbox"/> Moved within U.S. <input type="checkbox"/> Lost to Follow-up <input type="checkbox"/> Returned to Country of Origin <input type="checkbox"/> Refused Evaluation <input type="checkbox"/> Died <input type="checkbox"/> Other, specify _____	<input type="checkbox"/> Not Located <input type="checkbox"/> Moved within U.S. <input type="checkbox"/> Lost to Follow-up <input type="checkbox"/> Returned to Country of Origin <input type="checkbox"/> Refused Evaluation <input type="checkbox"/> Died <input type="checkbox"/> Unknown <input type="checkbox"/> Other, specify

-AND-

Diagnosis is NOT MISSING [diagnosis NE .]

TB Follow-up Worksheet

D3. Diagnosis:

<input checked="" type="checkbox"/> Class 0 - No TB exposure, not infected	<input checked="" type="checkbox"/> Class 1 - TB exposure, no evidence of infection
<input checked="" type="checkbox"/> Class 2 - TB infection, no disease	<input checked="" type="checkbox"/> Class 3 - TB, active disease
<input checked="" type="checkbox"/> Class 4 - TB, inactive disease	<input type="checkbox"/> Pulmonary <input type="checkbox"/> Extrapulmonary <input type="checkbox"/> Both Sites

-AND-

Evaluation Disposition Date is NOT MISSING [datedisposition NE .]

TB Follow-up Worksheet

D. Evaluation Disposition

D1. Evaluation disposition date: **XX/XX/XXXX**

–and–

Duration from the Date of Notification to the Evaluation Disposition date is less than or equal to 90 days [timecomeval = datedisposition – datenotification], [timecomeval le 90]

timecomeval = datedisposition – datenotification;
If evaldisposition = 'COMPLETED' and txrecc NE . and diagnosis NE . and datedisposition NE . and timecomeval le 90 then rfg_comeval_obj +1;

3. Calculate percent

Percent of immigrants and refugees with abnormal chest X-rays read overseas as consistent with TB who completed medical examination within 90 days of notification by the EDN system [rfg_comeval_pct]

$$\text{rfg_comeval_pct} = (\text{rfg_comeval_obj} / \text{rfg_abnx_tb}) * 100;$$

Immigrants and Refugees – Treatment Initiation

Indicator

Percent treatment initiation for immigrants and refugees with abnormal chest X-rays read overseas as consistent with TB who are diagnosed with latent TB infection (LTBI) or have radiographic findings consistent with prior pulmonary TB (ATS/CDC Class 4) and who are recommended for treatment on the basis of examination in the United States

NOTE: Indicator implemented for immigrants and refugees arrived in 2008 and after.

DATA SOURCES

- Electronic Disease Notification (EDN) System
 - TB Follow-up Worksheet fields:
 - A4 (Initial U.S. Entry Date)
 - D2 (Evaluation Disposition)
 - ◆ Completed Evaluation
 - ◆ Treatment recommended
 - D3 (Diagnosis)
 - E1 (U.S. Treatment Initiated)
 - E2 (U.S. Treatment Start Date)

CALCULATION

Percent (%)	$n/N \times 100$
Numerator (n)	Number of immigrants and refugees who started treatment
Denominator (N)	Number of immigrants and refugees with abnormal chest X-rays read overseas as consistent with TB who are diagnosed with latent TB infection or have radiographic findings consistent with prior pulmonary TB (ATS/CDC Class 4) and who are recommended for treatment on the basis of examination in the U. S., arrived in the cohort period of interest

1. Obtain denominator

Total number of immigrants and refugees with abnormal chest X-rays read overseas as consistent with TB who are diagnosed with latent TB infection or have radiographic findings consistent with prior pulmonary TB (ATS/CDC Class 4) and who are recommended for treatment on the basis of examination in the U.S., arrived in the cohort period of interest [rfg_starttx_cohort]

A case is included in the analytical cohort if:

Initial U.S. Entry Date is greater than or equal to year-month and less than or equal to year-month

[dateofarrival ge 'YYYYMM' and dateofarrival le 'YYYYMM']

TB Follow-up Worksheet

A4. Initial U.S. Entry Date:

-and-

Record met the cohort criteria for immigrants and refugees with abnormal chest X-ray consistent with TB [rfg = 'ABNX_TB']

-AND-

Evaluation disposition is Completed evaluation [evaldisposition = 'COMPLETED'] and Treatment recommended equal to 'Yes' [txrecc = 'Yes']

TB Follow-up Worksheet (published 2013)

D2. Evaluation disposition:

Completed evaluation Initiated Evaluation / Not completed Did not initiate evaluation

If evaluation was completed, was treatment recommended? Yes No

If evaluation was NOT completed, why not?

Not Located Moved within U.S., transferred to:

Lost to Follow-Up Moved outside U.S.

Refused Evaluation Died

Unknown Other, specify

LTBI
 Active TB

TB Follow-up Worksheet (published 2007)

D. Disposition		
D1. Disposition Date: ___/___/___		
D2. Evaluation Disposition:		
<input checked="" type="checkbox"/> Completed Evaluation	<input type="checkbox"/> Initiated Evaluation / Not Completed	<input type="checkbox"/> Did Not Initiate Evaluation
<input checked="" type="checkbox"/> Treatment Recommended <input type="checkbox"/> No Treatment Recommended	<input type="checkbox"/> Moved within U.S. <input type="checkbox"/> Lost to Follow-up <input type="checkbox"/> Returned to Country of Origin <input type="checkbox"/> Refused Evaluation <input type="checkbox"/> Died <input type="checkbox"/> Other, specify _____	<input type="checkbox"/> Not Located <input type="checkbox"/> Moved within U.S. <input type="checkbox"/> Lost to Follow-up <input type="checkbox"/> Returned to Country of Origin <input type="checkbox"/> Refused Evaluation <input type="checkbox"/> Died <input type="checkbox"/> Unknown <input type="checkbox"/> Other, specify _____

-AND-

Diagnosis is Class 2 – TB infection, no disease, Class 4 – TB, inactive disease [diagnosis IN ('infection', 'inactivedisease')]

TB Follow-up Worksheet

D3. Diagnosis:

Class 0 - No TB exposure, not infected Class 1 - TB exposure, no evidence of infection

Class 2 - TB infection, no disease Class 3 - TB, active disease

Class 4 - TB, inactive disease Pulmonary Extrapulmonary Both Sites

If dateofarrival ge 'YYYYMM' and dateofarrival le 'YYYYMM' and rfg = 'ABNX_TB';
If evaldisposition = 'COMPLETED' and txrecc = 'Yes' and diagnosis IN ('infection', 'inactivedisease')
then rfg_starttx_cohort +1;

2. Obtain numerator

Total number of immigrants and refugees who started treatment [rfg_starttx_obj]

A patient is given credit for having started treatment if:

U.S. Treatment Initiated is YES for LTBI or TB disease [UStreatmentinit IN ('LTBI', 'TBdisease')] and Treatment Start Date is NOT MISSING [UStreatmentstartdate NE .]

TB Follow-up Worksheet (published 2013)

E. U.S. Treatment	
E1. U.S. treatment initiated: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown	
<i>If NO, specify the reason:</i>	
<input type="checkbox"/> Patient declined against medical advice	<input type="checkbox"/> Lost to follow-up
<input type="checkbox"/> Died	<input type="checkbox"/> Moved outside the U.S.
<input type="checkbox"/> Unknown	<input type="checkbox"/> Moved within U.S, transferred to:
<input type="checkbox"/> Other (specify)	
<i>If YES:</i> <input checked="" type="checkbox"/> TB disease <input checked="" type="checkbox"/> LTBI	
E2. Treatment start date: <u>XX/XX/XXXX</u>	
E3. U.S. treatment completed: <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown	
<i>If NO, specify the reason:</i>	
<input type="checkbox"/> Patient stopped against medical advice	<input type="checkbox"/> Lost to follow-up
<input type="checkbox"/> Provider decision	<input type="checkbox"/> Moved outside the U.S.
<input type="checkbox"/> Died	<input type="checkbox"/> Moved within U.S, transferred to:
<input type="checkbox"/> Unknown <input type="checkbox"/> Other (specify)	
<i>If treatment was completed,</i>	E4. Treatment completion date: <u> / / </u>
<i>If treatment was initiated but NOT completed,</i>	E5. Treatment end date: <u> / / </u>

TB Follow-up Worksheet (published 2007)

E. U.S. Treatment	
E1. U.S. Treatment Initiated:	
<input checked="" type="checkbox"/> Active Disease	E2. Treatment Start Date:
<input checked="" type="checkbox"/> LTBI	<u>XX/XX/XXXX</u>
<input type="checkbox"/> No Treatment	
<input type="checkbox"/> Unknown	
E3. U.S. Treatment Completed:	
<input type="checkbox"/> Yes	E2. Treatment End Date:
<input type="checkbox"/> No	<u> / / </u>
<input type="checkbox"/> Unknown	

NOTE: A record is given credit for having started treatment if either treatment for LTBI or TB disease is marked.

If UStreatmentinit IN ('LTBI', 'TBdisease') and UStreatmentstartdate NE . then
rfg_starttx_obj +1;

3. Calculate percent

Percentage treatment initiation for immigrants and refugees with abnormal chest X-rays read overseas as consistent with TB who are diagnosed with latent TB infection or have radiographic findings consistent with prior pulmonary TB (ATS/CDC Class 4) and who are recommended for treatment on the basis of examination in the U.S.

[rfg_starttx_pct]

```
rfg_starttx_pct = (rfg_starttx_obj/rfg_starttx_cohort) * 100;
```

Immigrants and Refugees – Treatment Completion

Indicator

Percent treatment completion for immigrants and refugees with abnormal chest X-rays read overseas as consistent with TB who are diagnosed with latent TB infection (LTBI) or have radiographic findings consistent with prior pulmonary TB (ATS/CDC Class 4) and recommended for treatment on the basis of examination in the United States, who have started treatment

NOTE: Indicator implemented for immigrants and refugees arrived in 2008 and after.

DATA SOURCES

- Electronic Disease Notification (EDN) System
 - TB Follow-up Worksheet fields:
 - A4 (Initial U.S. Entry Date)
 - D2 (Evaluation Disposition)
 - D3 (Diagnosis)
 - E1 (U.S. Treatment Initiated)
 - E2 (U.S. Treatment Start Date)
 - E3 (U.S. Treatment Completed)
 - E4 (U.S. Treatment End Date)

CALCULATION

Percent (%)	$n/N \times 100$
Numerator (n)	Number of immigrants and refugees who completed treatment
Denominator (N)	Number of immigrants and refugees with abnormal chest X-rays read overseas as consistent with TB who are diagnosed with latent TB infection or have radiographic findings consistent with prior pulmonary TB (ATS/CDC Class 4) and recommended for treatment on the basis of examination in the U. S., who started treatment, arrived in the cohort period of interest

1. Obtain denominator

Number of immigrants and refugees with abnormal chest X-rays read overseas as consistent with TB who are diagnosed with latent TB infection or have radiographic findings consistent with prior pulmonary TB (ATS/CDC Class 4) and recommended for treatment on the basis of examination in the U.S., who started treatment, arrived in the cohort period of interest [rfg_complTBI_cohort]

A patient is included in the analytical cohort if:

The record met the cohort criteria for starting treatment in the U.S.
[rfg_starttx_cohort = 'Y']

–and–

U.S. Treatment Initiated is YES for LTBI or TB disease [UStreatmentinit IN ('LTBI', 'Tbdisease')] and Treatment Start Date is NOT MISSING [UStreatmentstartdate NE .]

TB Follow-up Worksheet (published 2013)

E. U.S. Treatment	
E1. U.S. treatment initiated: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown	
If NO , specify the reason:	
<input type="checkbox"/> Patient declined against medical advice	<input type="checkbox"/> Lost to follow-up
<input type="checkbox"/> Died	<input type="checkbox"/> Moved outside the U.S.
<input type="checkbox"/> Unknown	<input type="checkbox"/> Moved within U.S, transferred to:
	<input type="checkbox"/> Other (specify)
If YES : <input checked="" type="checkbox"/> TB disease <input checked="" type="checkbox"/> LTBI	
E2. Treatment start date: <u>XX / XX / XXXX</u>	
E3. U.S. treatment completed: <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown	
If NO , specify the reason:	
<input type="checkbox"/> Patient stopped against medical advice	<input type="checkbox"/> Lost to follow-up
<input type="checkbox"/> Provider decision	<input type="checkbox"/> Moved outside the U.S.
<input type="checkbox"/> Died	<input type="checkbox"/> Moved within U.S, transferred to:
	<input type="checkbox"/> Unknown <input type="checkbox"/> Other (specify)
If treatment was completed,	E4. Treatment completion date: ___/___/___
If treatment was initiated but NOT completed,	E5. Treatment end date: ___/___/___

TB Follow-up Worksheet (published 2007)

E. U.S. Treatment	
E1. U.S. Treatment Initiated:	
<input checked="" type="checkbox"/> Active Disease	E2. Treatment Start Date: <u>XX / XX / XXXX</u>
<input checked="" type="checkbox"/> LTBI	
<input type="checkbox"/> No Treatment	
<input type="checkbox"/> Unknown	
E3. U.S. Treatment Completed:	
<input type="checkbox"/> Yes	E2. Treatment End Date: ___/___/___
<input type="checkbox"/> No	
<input type="checkbox"/> Unknown	

NOTE: A record is given credit for having completed treatment if either treatment for LTBI or TB disease is completed.

If rfg_starttx_cohort = 'Y' and UStreatmentinit IN ('LTBI', 'Tbdisease') and UStreatmentstartdate NE . then rfg_comptx_cohort +1;

2. Obtain numerator

Number of immigrants and refugees diagnosed who completed treatment
[rfg_completed]

A patient is given credit for having completed treatment if:

U.S. Treatment Completed is YES [UStreatmentcomp = 'Y'] and Treatment completion date (2013) or Treatment end date (2007) is NOT MISSING [UStreatmentenddate NE .]

NOTE: Treatment completion date (2013) and Treatment end date (2007) are represented as one variable name 'UStreatmentenddate'.

TB Follow-up Worksheet (published 2013)

E. U.S. Treatment	
E1. U.S. treatment initiated: <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown	
<i>If NO, specify the reason:</i>	
<input type="checkbox"/> Patient declined against medical advice	<input type="checkbox"/> Lost to follow-up
<input type="checkbox"/> Died	<input type="checkbox"/> Moved outside the U.S.
<input type="checkbox"/> Unknown	<input type="checkbox"/> Moved within U.S, transferred to:
<input type="checkbox"/> Other (specify)	
<i>If YES:</i> <input type="checkbox"/> TB disease <input type="checkbox"/> LTBI	
E2. Treatment start date: ___/___/___	
E3. U.S. treatment completed: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown	
<i>If NO, specify the reason:</i>	
<input type="checkbox"/> Patient stopped against medical advice	<input type="checkbox"/> Lost to follow-up
<input type="checkbox"/> Provider decision	<input type="checkbox"/> Moved outside the U.S.
<input type="checkbox"/> Died	<input type="checkbox"/> Moved within U.S, transferred to:
<input type="checkbox"/> Unknown	<input type="checkbox"/> Other (specify)
<i>If treatment was completed,</i>	E4. Treatment completion date: <u>XX/XX/XXXX</u>
<i>If treatment was initiated but NOT completed,</i>	E5. Treatment end date: ___/___/___

TB Follow-up Worksheet (published 2007)

E. U.S. Treatment	
E1. U.S. Treatment Initiated:	
<input type="checkbox"/> Active Disease	E2. Treatment Start Date: ___/___/___
<input type="checkbox"/> LTBI	
<input type="checkbox"/> No Treatment	
<input type="checkbox"/> Unknown	
E3. U.S. Treatment Completed:	
<input checked="" type="checkbox"/> Yes	E2. Treatment End Date: <u>XX/XX/XXXX</u>
<input type="checkbox"/> No	
<input type="checkbox"/> Unknown	

If UStreatmentcomp = 'Y' and UStreatmentenddate NE . then rfg_completed +1;

3. Calculate percent

Percentage treatment completion for immigrants and refugees with abnormal chest X-rays read overseas as consistent with TB who are diagnosed with latent TB infection or have radiographic findings consistent with prior pulmonary TB (ATS/CDC Class 4) and recommended for treatment on the basis of examination in the U.S., and have started treatment [rfg_comptx_pct]

$$\text{rfg_comptx_pct} = (\text{rfg_completed}/\text{rfg_comptx_cohort}) * 100;$$

IV. Electronic Data Submission for Aggregate Reports for Tuberculosis Program Evaluation (ARPE) on Contact Investigation

NTIP's ARPE online module provides an option for TB programs to submit ARPE - Contact Investigation data to CDC electronically. The State TB Systems Administrator has the authority to grant access to ARPE users who are designated to submit or manage ARPE. The data for the Contact Investigation reports in NTIP are updated immediately upon the submission of ARPE data through this module.

Through this module, users can –

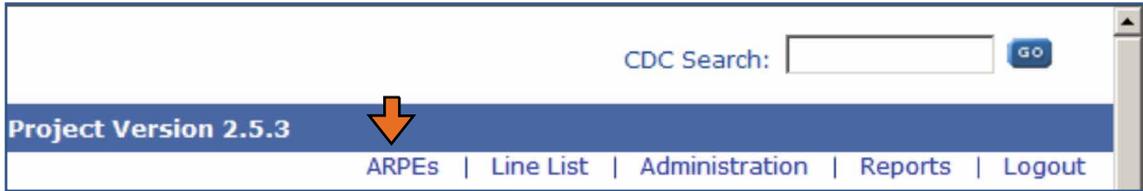
- A Add a new ARPE Form:** To prepare a new ARPE form for submission.
- B Search ARPE Form:** To provide updates or corrections to ARPE data.
- C Upload ARPE Form:** Import ARPE data into NTIP from other electronic formats through a spreadsheet.
- D Export ARPE Form:** Export and download a copy of ARPE data available in NTIP.



Submitting ARPE Data

To prepare an ARPE form for submission:

1. Select “ARPE” from the *NTIP Menu*.



2. On the *ARPE Main Menu* screen, click on the Add ARPE form link. The *Add ARPE Form* screen will be displayed.

A screenshot of the "Add ARPEs Form" screen. The title "Add ARPEs Form" is at the top left. Below it, there are two dropdown menus: "Reporting Area: Please Select Program Area" and "Case Year: Please Select Case Year". At the bottom right of the form area, there are two buttons: "Select" and "Reset".

3. Select a Reporting Area (i.e., Program Area or jurisdiction) for which you would like to submit the ARPE data.
4. Select a Case Year (or cohort period) for reporting.
5. Click “Select” button to generate an *ARPE Form*.
6. Enter data fields on section A and B.
7. Click “Submit” to submit ARPE to CDC.

ARPE Form

The ARPE data submission form mirrors the paper based ARPE form. Instructions on ARPE can be found in the Aggregate Reports for Tuberculosis Program Evaluation (for Contacts): Training Manual and User's Guide, http://www.cdc.gov/tb/publications/PDF/ARPEs_manualsm1.pdf

Aggregate Reports For Tuberculosis Program Evaluation
 Follow-up and Treatment for Contacts to Tuberculosis Cases

Program Area: Sample Jurisdiction

Cohort Year: 2014

Date Report Updated: (Format: MM/DD/YYYY)

Part I. Cases and Contacts

	Types of Cases for Investigation:		
	Sputum Smear +	Sputum Smear - Cult. +	Others
Cases reported in RVCT	73	50	
Cases for Investigation	<input type="text"/> (a1)	<input type="text"/> (a2)	
Cases with No Contacts	<input type="text"/> (b1)	<input type="text"/> (b2)	
Number of Contacts	<input type="text"/> (c1)	<input type="text"/> (c2)	<input type="text"/> (c)
Evaluated	<input type="text"/> (d1)	<input type="text"/> (d2)	<input type="text"/> (d)
TB Disease	<input type="text"/> (e1)	<input type="text"/> (e2)	<input type="text"/> (e)
Latent TB Infection	<input type="text"/> (f1)	<input type="text"/> (f2)	<input type="text"/> (f)
Started Treatment	<input type="text"/> (g1)	<input type="text"/> (g2)	<input type="text"/> (g)
Completed Treatment	<input type="text"/> (h1)	<input type="text"/> (h2)	<input type="text"/> (h)
Reasons Treatment Not Completed:			
Death	<input type="text"/>	<input type="text"/>	<input type="text"/>
Contact Moved(follow-up unknown)	<input type="text"/>	<input type="text"/>	<input type="text"/>
Active TB Developed	<input type="text"/>	<input type="text"/>	<input type="text"/>
Adverse Effect of Medicine	<input type="text"/>	<input type="text"/>	<input type="text"/>
Contact Chose to Stop	<input type="text"/>	<input type="text"/>	<input type="text"/>
Contact is Lost to Follow-up	<input type="text"/>	<input type="text"/>	<input type="text"/>
Provider Decision	<input type="text"/>	<input type="text"/>	<input type="text"/>

Part II. Evaluation Indices

No-Contacts Rate	N/A (b1/a1),%	N/A (b2/a2),%	
Contacts Per Case	N/A (c1/a1)	N/A (c2/a2)	
Evaluation Rate	N/A (d1/c1),%	N/A (d2/c2),%	N/A (d/c),%
Disease Rate	N/A (e1/d1),%	N/A (e2/d2),%	N/A (e/d),%
Latent Infection Rate	N/A (f1/d1),%	N/A (f2/d2),%	N/A (f/d),%
Treatment Rate	N/A (g1/f1),%	N/A (g2/f2),%	N/A (g/f),%
Completion Rate	N/A (h1/g1),%	N/A (h2/g2),%	N/A (h/g),%

A Reporting Area/Cohort year/Date Report Updated: Title information for the report.

B Part I. Case and contacts: This section includes key data elements for contact investigations. References on variable definitions can be found in the ARPE manual.

C Part II. Evaluation Indices: Evaluation indices are automatically calculated based on the data entered in the Case and Contact section. The fields are pre-filled with “N/A” until data are entered into the Case and Contact section. The indicator calculations are listed next to each field.

D Submit/Cancel: Once data are entered, users can click “Submit” to submit the ARPE form or click “Cancel” to erase the data they have entered on the ARPE form.

E Print: ARPE form can be printed using the print button.

Part I. Cases and Contacts Section at a Glance

	Types of Cases for Investigation:		
	Sputum Smear +	Sputum Smear - Cult.+	Others
Cases reported in RVCT	<input type="text" value="73"/> A	<input type="text" value="5"/> B	
Cases for Investigation	<input type="text"/> (e1)	<input type="text"/> (e2)	
Cases with No Contacts	<input type="text"/> (b1)	<input type="text"/> (b2)	
Number of Contacts	<input type="text"/> (c1)	<input type="text"/> (c2)	<input type="text"/> (c)
Evaluated	<input type="text"/> (d1)	<input type="text"/> (d2)	<input type="text"/> (d)
TB Disease	<input type="text"/> (e1)	<input type="text"/> (e2)	<input type="text"/> (e)
Latent TB Infection	<input type="text"/> (f1)	<input type="text"/> (f2)	<input type="text"/> (f)
Started Treatment	<input type="text"/> (g1)	<input type="text"/> (g2)	<input type="text"/> (g)
Completed Treatment	<input type="text"/> (h1)	<input type="text"/> (h2)	<input type="text"/> (h)

A Sputum smear+ cases reported in RVCT: The numbers of cases with positive sputum smear results reported in the RVCT for the cohort period.

B Sputum smear- cult+ cases reported in RVCT: The number of cases with negative sputum smear and positive culture results reported in the RVCT.

NOTE: *These two numbers are provided as references and are not used in the indicator calculation. Users can export a line list of cases and their sputum smear and culture results for their Program Areas through the Line List function in NTIP by selecting "Contact Investigation" as the indicator.*

Editing ARPE Data

Once an ARPE form has been added or submitted to NTIP, users can make updates to the data by searching for and editing an ARPE form.

To update ARPE data:

1. On the *ARPE Main Menu* click on the Search ARPE Form link; the *Search ARPE Form* screen will be displayed.

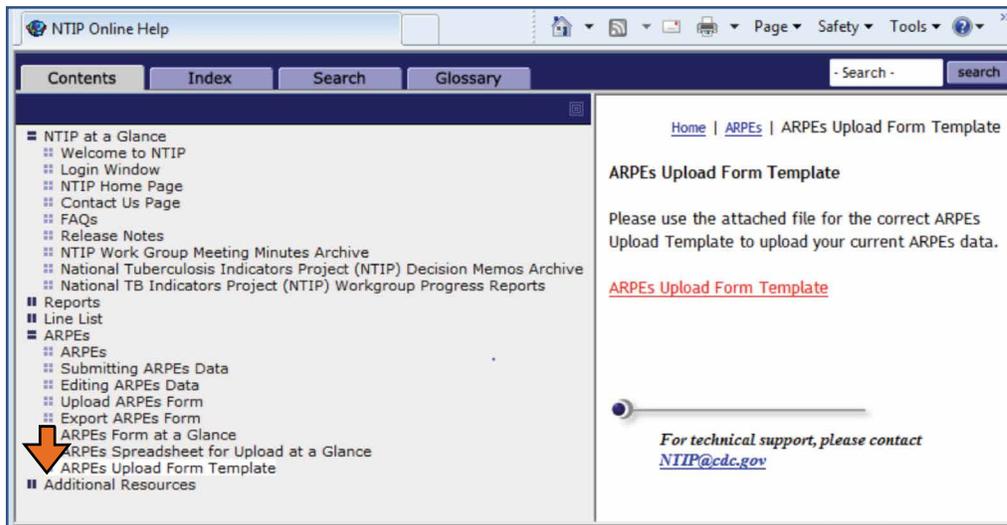


The screenshot shows a web form titled "Search ARPEs Form". It contains two dropdown menus. The first is labeled "Reporting Area:" and has the text "Please Select Program Area" with a downward arrow icon. The second is labeled "Case Year:" and has the text "Please Select Case Year" with a downward arrow icon. Below these dropdowns are two buttons: "Select" and "Reset".

2. Select a Program Area.
3. Select a Year.
4. Click "Select" button.
5. Make changes and click "Update" to save.

Uploading ARPE Form

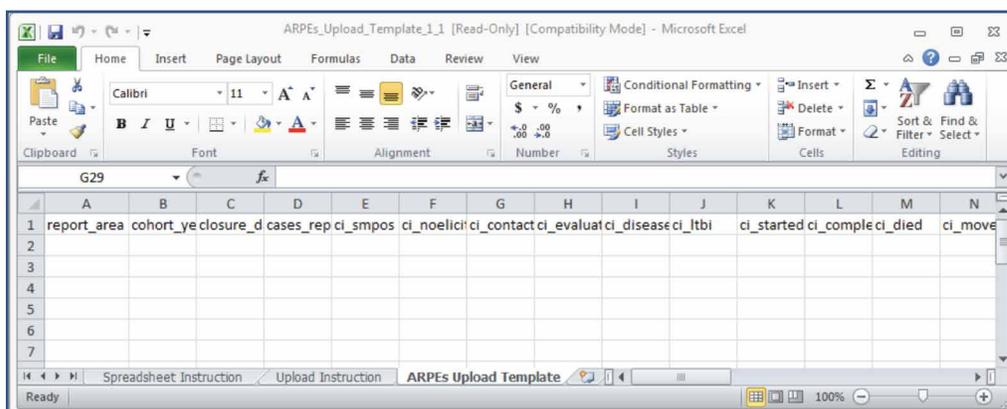
The Upload ARPE Form option allows users to import ARPE data for multiple jurisdictions directly into NTIP. A template spreadsheet customized for ARPE Upload is available for download on the Online Help Section of NTIP.



The ARPE Upload Form Template is an Excel spreadsheet consisting of 3 tabs:

1. Spreadsheet Instruction
2. Upload Instruction
3. ARPE Upload Template

The third tab, ARPE Upload Template, contains the headers of all the variables in the order that they need to be entered.



ARPE Spreadsheet for Upload

A

	A	B	C	D	E	F	G	H	I	J	K	L
1	report_area	cohort_year	closure_date	cases_reported	cl_sympos	cl_molcict	cl_contacts	cl_evaluated	cl_disease	cl_thtai	cl_started	cl_complete
2	CONTRA COSTA [State X]	2009	8/31/2011	47	12	1	95	89	1	5	5	5
3	FRESNO [State X]	2009	8/31/2011	67	29		486	474	2	36	26	11
4	IMPERIAL [State XX]	2009	8/31/2011	36	18		192	189		105	24	13
5	CONTRA COSTA [State X]	2010	8/31/2011	40	23		182	177	1	55	51	26
6	FRESNO [State X]	2010	8/31/2011	32	18		410	401	1	38	31	29
7	IMPERIAL [State XX]	2010	8/31/2011	519	274	26	3763	3733		926	493	208
8												

A Variable names (Row 1): The header must appear as the first row in the ARPE upload layout file (cells A1 to cells AS1). The names of ARPE variables to be imported into the system are listed on this row. Data should be **entered** in the order listed. Download ARPE Upload Template for a complete list of variables.

B Reporting Area: Reporting Areas are also called Program Areas or reporting areas. The complete name of the reporting area must be used; for example, California, not the abbreviation CA should be entered on the spreadsheet. The standard names are listed under Reporting Area on the *Add ARPE Form*. Enter the program area name exactly as it is displayed on the *Add ARPE Form*. For example, Alameda excluding Berkeley [CA], Anchorage [AK], California [Excludes LA - SD - SF], Public Health Area 1 [AL], Washington [Excludes Seattle King County].

C Cohort year: Data can be uploaded for cohort year 2008 and later. Multiple time periods can be loaded in a spreadsheet. Enter the field as a 4-digit number (e.g., 2008).

D Closure date: The “closure_date” field format should be mm/dd/yyyy or m/d/yyyy. For single digit days and months, 10/01/2010 or 10/1/2010 is acceptable; 01/15/2010 and 1/15/2010 are also acceptable.

E Missing data: In fields where data is not entered or is missing, the missing data will be recorded as a blank cell in the NTIP report for Contact Investigation.

NOTE: The “Report_area” and “Cohort_year” are required fields. Both fields must have valid values in order for the upload to be successful. Spreadsheets should be saved as comma delimited (.csv) documents.

To upload ARPE form:

1. On the *ARPE Main Menu* screen click on the Upload ARPE form link; the *Upload ARPE Form* screen will be displayed.



Upload ARPEs Form

Use the browse button to select file for upload

2. Browse to select the file to be uploaded. Only documents with csv or txt file extensions will be accepted.
3. Click “Submit.”

NOTE: *When an error occurs during processing, the entire file is rejected. If an error is encountered, the application will give the user an error message explaining the problem. Once the error has been corrected, please attempt to upload the file again.*

Exporting ARPE Form

ARPE data can be exported by the user for further analysis. Users will only be able to export data for Reporting Areas that they have been granted access to for ARPE.

To export ARPE data:

1. On the *ARPE Main Menu* screen click the Export ARPE Form link; the *Export ARPE Form* screen will be displayed.

Export ARPEs Form

Reporting Area:

- Adams [CO]
- Alabama
- Alameda excluding Berkeley [CA]
- Alaska
- Albany [NY]
- Albany Region [NY]
- Alexandria City [VA]
- Allegheny [PA]
- Allen [IN]

Case Year:

- 2000
- 2001
- 2002
- 2003
- 2004
- 2005
- 2006
- 2007
- 2008

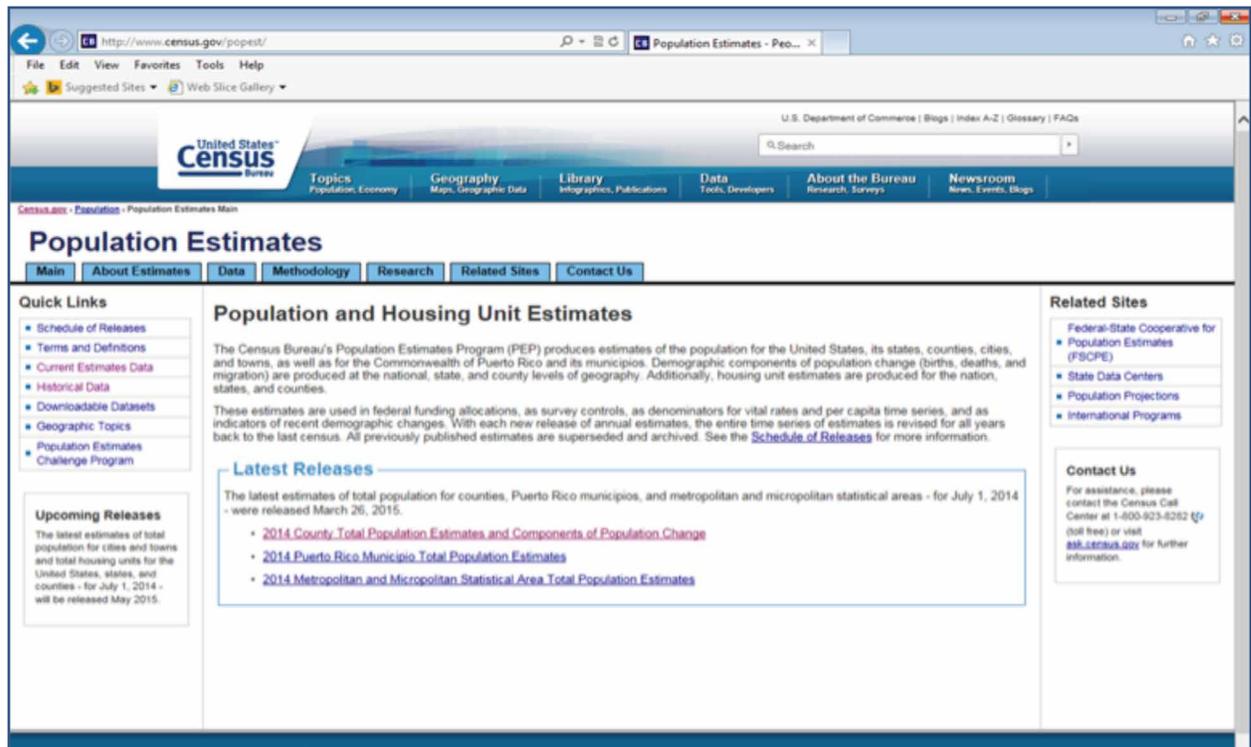
Select Reset

2. Select the Reporting Area(s).
3. Select the Year(s).
4. Click "Select."
5. Once exported, ARPE data can be saved or opened using Microsoft Excel.

Appendix A: U.S. Census Population Estimates

This section outlines step-by-step how CDC personnel obtain the population data used to calculate TB incidence rate in NTIP.

The population dataset for Population Estimates can be accessed through the U.S. Census Bureau website at <http://www.census.gov/popest/>



The Current Estimates page provides a table of choices for the population level and type you may be interested in. For the national population estimate, select V2014 (or Vintage 2014) under Total Population for the nation.

Population Estimates

Current Estimates Data

The population and housing unit estimates are released on a flow basis throughout each year. Each new series of data (called vintages) incorporates the latest administrative record data, geographic boundaries, and methodology. Therefore, the entire time series of estimates beginning with the most recent decennial census is revised annually, and estimates from different vintages of data may not be consistent across geography and characteristics detail. When multiple vintages of data are available, the most recent vintage is the preferred data.

The vintage year (e.g., V2013) refers to the final year of the time series. The reference date for all estimates is July 1, unless otherwise specified.

All downloadable datasets by level of geography are available [here](#).

Historical datasets are available [here](#).

Intercensal estimates are available [here](#).

Level of Geography	Level of Detail	Most Current Data	Latest Complete Vintage
Nation	Total population	V2014	V2013
	Population by age, sex, race, and Hispanic origin	V2013	V2013
States	Total population	V2014	V2013
	Population by age, sex, race, and Hispanic origin	V2013	V2013
Counties	Total population	V2014	V2013
	Population by age, sex, race, and Hispanic origin	V2013	V2013
Cities and Towns (Incorporated Places and Minor Civil Divisions)	Total population	V2013	V2013
Metropolitan and Micropolitan Statistical Areas	Total population	V2014	V2013
Puerto Rico Commonwealth	Total population	V2014	V2013
Puerto Rico Municipios	Population by age and sex	V2013	V2013
	Total population	V2014	V2013
Housing Units	Population by age and sex	V2013	V2013
	Total	V2013	V2013

A collection of tables are available under the Vintage 2014 National Totals. Select the Excel (XLS) version of the Annual Estimates of the Resident Population for the United States, Regions, States, and Puerto Rico: April 1, 2010 to July 1, 2014.

Population Estimates

National Totals: Vintage 2014

Tables

Monthly Population Estimates

- Monthly Population Estimates for the United States: April 1, 2010 to December 1, 2015 [\[American FactFinder\]](#)

*Data are updated on a monthly basis.

Population Estimates, Population Change, and Components of Change

- Annual Estimates of the Resident Population for the United States, Regions, States, and Puerto Rico: April 1, 2010 to July 1, 2014 (NST-EST2014-01) [\[XLS - 37k\]](#) | [\[CSV - 6k\]](#) | [\[American FactFinder\]](#)
- Cumulative Estimates of the Resident Population Change for the United States, Regions, States, and Puerto Rico: April 1, 2010 to July 1, 2014 (NST-EST2014-02) [\[XLS - 37k\]](#) | [\[CSV - 6k\]](#)
- Estimates of Resident Population Change for the United States, Regions, States, and Puerto Rico: April 1, 2010 to July 1, 2014 (NST-EST2014-03) [\[XLS - 37k\]](#) | [\[CSV - 6k\]](#)
- Cumulative Estimates of the Components of Resident Population Change for the United States, Regions, States, and Puerto Rico: April 1, 2010 to July 1, 2014 (NST-EST2014-04) [\[XLS - 37k\]](#) | [\[CSV - 6k\]](#) | [\[American FactFinder\]](#)
- Estimates of the Components of Resident Population Change for the United States, Regions, States, and Puerto Rico: April 1, 2010 to July 1, 2014 (NST-EST2014-05) [\[XLS - 37k\]](#) | [\[CSV - 6k\]](#) | [\[American FactFinder\]](#)
- Estimates of the Annual Rates of the Components of Resident Population Change for the United States, Regions, States, and Puerto Rico: April 1, 2010 to July 1, 2014 (NST-EST2014-06) [\[XLS - 37k\]](#) | [\[CSV - 6k\]](#)

Downloadable Datasets

[Population, population change, and estimated components of population change: April 1, 2010 to July 1, 2014 \(NST-EST2014-alldata\)](#)

[Population change and rankings: April 1, 2010 to July 1, 2014 \(NST-EST2014-popchg2010-2014\)](#)

[Population Estimates Methodology \[PDF - 273k\]](#)

A pop-up menu will appear to ask you whether you want to open or save the file. Choose open.

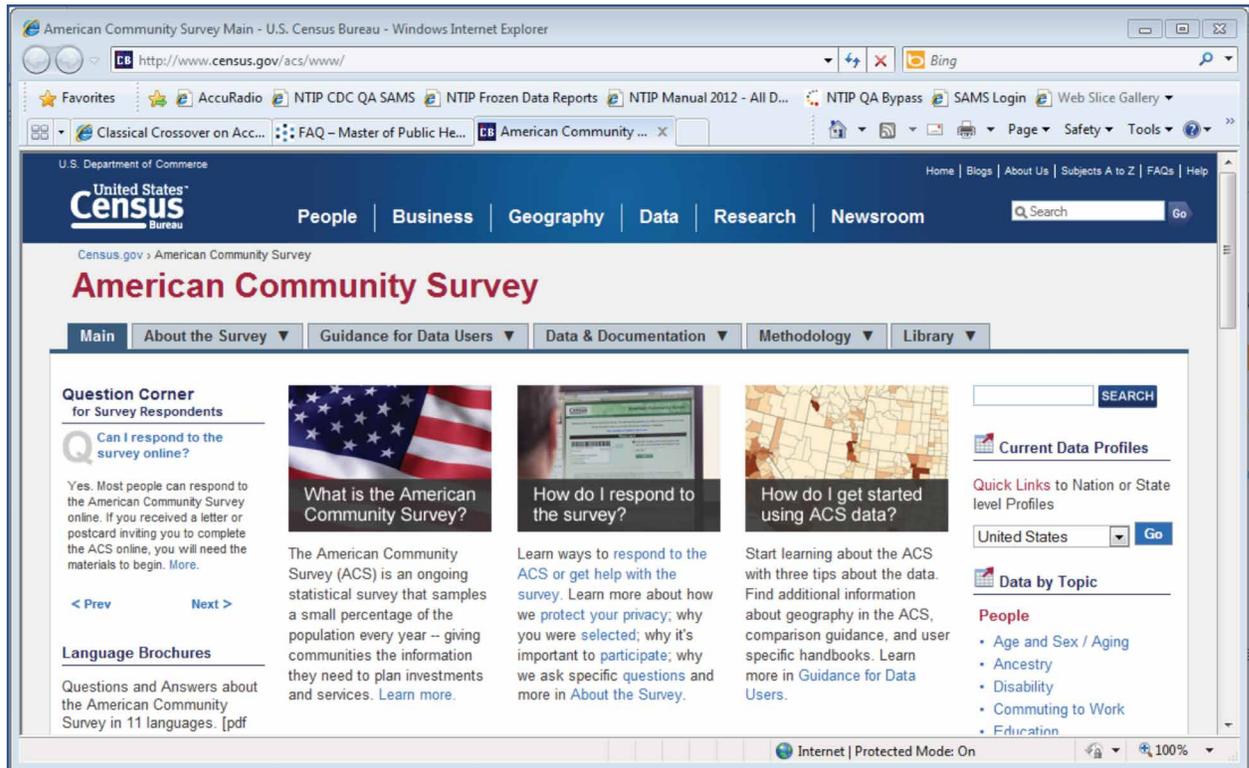
An Excel file will open with population summaries by state, region and national total for Census 2010 and annual estimates for mid-year 2010 through mid-year 2014, the most current data available. The current national population estimate for the United States for 2014 is 318,857,056 persons.

Table 1. Annual Estimates of the Resident Population for the United States, Regions, States, and Puerto Rico: April 1, 2010 to July 1, 2014							
Geographic Area	April 1, 2010		Population Estimate (as of July 1)				
	Census	Estimates Base	2010	2011	2012	2013	2014
United States	308,745,538	308,758,105	309,347,057	311,721,632	314,112,078	316,497,531	318,857,056
Northeast	55,317,240	55,318,348	55,381,690	55,635,670	55,832,038	56,028,220	56,152,333
Midwest	66,927,001	66,929,898	66,972,390	67,149,657	67,331,458	67,567,871	67,745,108
South	114,555,744	114,562,951	114,871,231	116,089,908	117,346,322	118,522,802	119,771,934
West	71,945,553	71,946,908	72,121,746	72,846,397	73,602,260	74,378,638	75,187,681
Alabama	4,779,736	4,780,127	4,785,822	4,801,695	4,817,484	4,833,996	4,849,377
Alaska	710,231	710,249	713,856	722,572	731,081	737,259	736,732
Arizona	6,392,017	6,392,310	6,411,999	6,472,867	6,556,236	6,634,997	6,731,484
Arkansas	2,915,918	2,915,958	2,922,297	2,938,430	2,949,300	2,958,765	2,966,369
California	37,253,956	37,254,503	37,336,011	37,701,901	38,062,780	38,431,393	38,802,500
Colorado	5,029,196	5,029,324	5,048,575	5,119,661	5,191,709	5,272,086	5,355,866
Connecticut	3,574,097	3,574,096	3,579,345	3,590,537	3,594,362	3,599,341	3,596,677
Delaware	897,934	897,936	899,731	907,829	916,881	925,240	935,614
District of Columbia	601,723	601,767	605,210	620,427	635,040	649,111	658,893
Florida	18,801,310	18,804,623	18,852,220	19,107,900	19,355,257	19,600,311	19,893,297
Georgia	9,687,653	9,688,681	9,714,464	9,813,201	9,919,000	9,994,759	10,097,343
Hawaii	1,360,301	1,360,301	1,363,950	1,378,251	1,392,766	1,408,987	1,419,561
Ideho	1,567,582	1,567,652	1,570,639	1,583,780	1,595,590	1,612,843	1,634,464
Illinois	12,830,632	12,831,587	12,840,097	12,858,725	12,873,763	12,890,552	12,880,580
Indiana	6,483,802	6,484,192	6,490,308	6,516,560	6,537,632	6,570,713	6,596,855
Iowa	3,046,355	3,046,869	3,050,295	3,064,904	3,075,935	3,092,341	3,107,126
Kansas	2,853,118	2,853,132	2,858,949	2,869,965	2,885,966	2,895,801	2,904,021
Kentucky	4,339,367	4,339,349	4,349,838	4,370,038	4,383,465	4,399,583	4,413,457
Louisiana	4,533,372	4,533,479	4,545,581	4,575,972	4,604,744	4,629,284	4,649,676
Maine	1,328,361	1,328,361	1,327,361	1,327,930	1,328,592	1,328,702	1,330,089
Maryland	5,773,552	5,773,785	5,788,101	5,843,833	5,891,819	5,938,737	5,976,407
Massachusetts	6,547,629	6,547,817	6,564,073	6,612,270	6,655,829	6,708,874	6,745,408
Michigan	9,883,640	9,884,133	9,876,498	9,875,736	9,884,781	9,898,193	9,909,877
Minnesota	5,303,925	5,303,925	5,310,418	5,340,036	5,380,615	5,422,060	5,457,173
Mississippi	2,967,297	2,968,103	2,970,811	2,978,464	2,986,137	2,992,206	2,994,079
Missouri	5,988,927	5,988,923	5,996,085	6,010,544	6,025,281	6,044,917	6,063,589
Montana	989,415	989,417	990,575	997,661	1,005,163	1,014,864	1,023,579
Nebraska	1,826,341	1,826,341	1,829,865	1,842,232	1,855,487	1,868,969	1,881,503
Nevada	2,700,551	2,700,692	2,703,493	2,718,586	2,755,245	2,791,494	2,839,099
New Hampshire	1,316,470	1,316,466	1,316,517	1,318,109	1,321,297	1,322,616	1,326,813

Appendix B: American Community Survey

This section outlines step-by-step how CDC personnel obtain the population data used to calculate case rates in NTIP.

The population dataset for American Community Survey (ACS) can be accessed through <http://www.census.gov/acs/www/>



Under the Data and Documentation drop-down menu, select Public Use Microdata Sample (PUMS).

The screenshot shows the top navigation bar of the American Community Survey website. The 'Data & Documentation' menu is open, displaying a list of options: Data Releases, Data Product Descriptions, Documentation, Geography, Downloadable data via FTP, Summary File, Public Use Microdata Sample (PUMS), and Custom Tabulations. The 'Public Use Microdata Sample (PUMS)' option is highlighted. Below the navigation bar, there is a 'Question Corner' section with a question 'Do I have to fill out the questionnaire?' and an answer 'Yes. You are legally obligated to answer all the questions, as accurately as you can. More.' To the right of the question corner is a banner for the American Community Survey (ACS) with the text 'What is the American Community Survey?' and 'The American Community Survey (ACS) is an ongoing statistical survey that samples...'. Further right, there is a link to 'ACS or get help with the survey. Learn more about how...'

Under the Public Use Microdata Sample list on the left of the page, select PUMS Data. A list of data available through the American FactFinder website will be listed. Select the latest available 1-year PUMS data for example, 2011 ACS 1-year PUMS.

The screenshot shows the 'PUMS Data' page on the American Community Survey website. The navigation bar is at the top, and the 'Data & Documentation' menu is open. The 'Public Use Microdata Sample (PUMS)' option is selected, and the 'PUMS Data' sub-menu is expanded, showing 'About PUMS', 'PUMS Data', 'PUMS Documentation', 'PUMS on DataFerrett', and 'PUMS FAQs'. The 'PUMS Data' sub-menu is highlighted. Below the navigation bar, there is a section titled 'PUMS Data' with a 'Print' icon and a 'Share this page' button. Below this, there is a section titled 'PUMS Data 2000 - current' with the text 'Available through the American FactFinder website:'. Below this, there is a list of available data products: 2007-2011 ACS 5-year PUMS, 2009-2011 ACS 3-year PUMS, 2011 ACS 1-year PUMS, 2006-2010 ACS 5-year PUMS, 2008-2010 ACS 3-year PUMS, 2010 ACS 1-year PUMS, 2005-2009 ACS 5-year PUMS, 2007-2009 ACS 3-year PUMS, 2009 ACS 1-year PUMS, 2006-2008 ACS 3-year PUMS, 2008 ACS 1-year PUMS, 2005-2007 ACS 3-year PUMS, 2007 ACS 1-year PUMS, 2006 ACS PUMS, and 2005 ACS PUMS. Below the list, there is a section titled 'Available through the FTP site:'.

This selection gives you two options: The 2011 ACS 1-year Public Use Microdata Sample in CSV (comma separated values) format and the 2011 ACS 1-year Public Use Microdata Sample in SAS data set format. Select SAS data set format to run analysis in SAS. Select CSV format for review in Microsoft Excel.

The screenshot shows the American FactFinder interface. At the top, there are navigation tabs for 'GUIDED SEARCH', 'ADVANCED SEARCH', and 'DOWNLOAD OPTIONS'. Below this, there are recommendations for related data. The main section is titled 'Search Results: 1-2 of 2 tables and other products match 'Your Selections''. It includes a search refinement section with a 'GO' button and radio buttons for 'topics', 'race/ancestry', 'industries', and 'occupations'. Below the search results, there is a table with columns for 'ID', 'Table, File or Document Title', 'Dataset', and 'About'. The table contains two rows: 'PUMS-CSV' and 'PUMS-SAS'. The 'PUMS-CSV' row is selected, and its details are shown below the table.

Listed are the available files in CSV format. Select state Population Records of interest.

The screenshot shows the 'Table Viewer' page in American FactFinder. The page is titled 'Advanced Search - Search all data in American FactFinder' and has two tabs: '1 Advanced Search' and '2 Table Viewer'. The 'Table Viewer' tab is active, showing a list of files in CSV format. The files are organized into two columns: 'United States Population Records' and 'United States Housing Unit Records'. Below the list, there is a description of the ACS Public Use Microdata Sample files (PUMS) and a link to the ACS PUMS documentation page.

United States Population Records	United States Housing Unit Records
Alabama Population Records	Alabama Housing Unit Records
Alaska Population Records	Alaska Housing Unit Records
Arizona Population Records	Arizona Housing Unit Records
Arkansas Population Records	Arkansas Housing Unit Records
California Population Records	California Housing Unit Records
Colorado Population Records	Colorado Housing Unit Records
Connecticut Population Records	Connecticut Housing Unit Records
Delaware Population Records	Delaware Housing Unit Records

Below is a sample spreadsheet opened in Excel with a complete list of variables from ACS. Highlighted in yellow are 6 variables needed for determining the population estimates.

	A	B	C	D	E	F	G	H	I	CG	CH	CI	CJ	CK	CL	CM	CS	CT	CU	DG	DH	DI	DJ	DK	DL	DM
1	RT	SERIALNO	SPOORDER	PUMA	ST	ADJINC	PWGTP	AGEP	CIT	ESR	FOD1P	FOD2P	HICOV	HISP	INDP	JWAP	NAICSP	NATIVITY	NOP	QTRBIR	RAC1P	RAC2P	RAC3P	RACAIAN	RACASN	RACBI
2	P	19	1	1400	1	1018237	63	19	1	6				1				1		2	2	2	44	0	0	
3	P	116	1	1800	1	1018237	16	86	1	6				1				1		4	1	1	69	0	0	
4	P	128	1	1800	1	1018237	90	78	1	6				1	8270		6231	1		2	1	1	69	0	0	
5	P	128	2	1800	1	1018237	32	74	1	6				1				1		3	1	1	69	0	0	
6	P	159	1	300	1	1018237	31	57	1	6				1	6680		5171	1		2	1	1	69	0	0	
7	P	192	1	2600	1	1018237	18	63	1	6				1				1		1	1	1	69	0	0	
8	P	256	1	2300	1	1018237	103	85	1	6				1				1		2	1	1	69	0	0	
9	P	279	1	400	1	1018237	72	77	1	6				1				1		4	2	2	44	0	0	
10	P	323	1	905	1	1018237	131	53	1	6				1				1		1	1	1	69	0	0	
11	P	344	1	1500	1	1018237	294	24	1	1				1	7860	90	6111	1		2	1	1	69	0	0	
12	P	344	2	1500	1	1018237	167	19	1	6				1				1		2	1	1	69	0	0	
13	P	344	3	1500	1	1018237	186	17	1	6				1				1	5	4	1	1	69	0	0	
14	P	344	4	1500	1	1018237	399	49	1	1				1	2980	124	332M	1		1	1	1	69	0	0	
15	P	405	1	1300	1	1018237	153	26	1	1	5502			1	8680	190	7222	1		4	1	1	69	0	0	
16	P	405	2	1300	1	1018237	95	21	1	6				1	7870		611M1	1		3	1	1	69	0	0	
17	P	464	1	400	1	1018237	155	64	1	1				1	1480	76	31322	1		4	1	1	69	0	0	
18	P	464	2	400	1	1018237	118	51	1	6				1				1		4	1	1	69	0	0	
19	P	483	1	200	1	1018237	70	64	1	6	6000			1	7870		611M1	1		1	1	1	69	0	0	
20	P	483	2	200	1	1018237	81	57	1	6	6000			1	7860		6111	1		1	1	1	69	0	0	
21	P	508	1	2200	1	1018237	52	55	1	1	5507			1	9480	91	923	1		2	2	2	44	0	0	
22	P	508	2	2200	1	1018237	54	54	1	1				1	9160	112	8131	1		2	2	2	44	0	0	
23	P	508	3	2200	1	1018237	74	24	1	1	6206			1	5180	103	44821	1		2	2	2	44	0	0	
24	P	508	4	2200	1	1018237	74	22	1	3				1	5580		4539	1		4	2	2	44	0	0	
25	P	530	1	901	1	1018237	92	62	1	6				2	1990		3231	1		3	2	2	44	0	0	
26	P	544	1	2400	1	1018237	15	58	1	1				1	3570		88	336M	1		4	1	1	69	0	0
27	P	544	2	2400	1	1018237	18	59	1	3				1	3580		71395	1		3	1	1	69	0	0	
28	P	610	1	500	1	1018237	10	73	1	1				1	4770	107	442	1		3	1	1	69	0	0	
29	P	614	1	2300	1	1018237	26	36	1	1				2	5690	143	45439	1		4	2	2	44	0	0	
30	P	697	1	500	1	1018237	94	71	1	6				1				1		3	1	1	69	0	0	
31	P	719	1	1500	1	1018237	128	62	1	1				1	1870	88	3221	1		4	2	2	44	0	0	
32	P	767	1	400	1	1018237	42	85	1	6				1				1		3	1	1	69	0	0	
33	P	972	1	1400	1	1018237	103	62	1	6	6200			1	2870		332M	1		3	1	1	69	0	0	
34	P	980	1	200	1	1018237	68	43	1	1				1	9470		80	92MP	1		1	2	2	44	0	0
35	P	980	2	200	1	1018237	36	41	2	1	5404			1	8370	84	6241	1		2	2	2	44	0	0	
36	P	980	3	200	1	1018237	38	17	1	6				1				1		1	4	2	2	44	0	0
37	P	980	4	200	1	1018237	36	15	1	6				1				1		1	4	2	2	44	0	0
38	P	1049	1	1500	1	1018237	37	64	1	6				1	9090		8129	1		3	2	2	44	0	0	
39	P	1049	2	1500	1	1018237	50	66	1	6				1				1		3	2	2	44	0	0	

Six variables are extracted in the spreadsheet below.

	A	B	C	D	E	F
1	PUMA	PWGTP	AGEP	HISP	NATIVITY	RAC1P
2	1400	63	19	1	1	2
3	1800	16	86	1	1	1
4	1800	30	78	1	1	1
5	1800	32	74	1	1	1
6	300	31	57	1	1	1
7	2600	18	63	1	1	1
8	2300	103	85	1	1	1
9	400	72	77	1	1	2
10	905	131	53	1	1	1
11	1500	294	24	1	1	1
12	1500	167	19	1	1	1

PUMA (Public use microdata areas) - used to define the geographic area of specific jurisdiction within a state boundary if needed

PWGTP (Person weight) - estimates how many people in the population are represented by each sample record

AGEP - Age of an individual

HISP (Hispanic ethnicity) - 1 = non-Hispanics, 2-24 = Hispanics

NATIVITY - 1 = Native born, 2 = foreign-born

RAC1P (race) - 1 = White alone, 2 = Black or African American alone, 3 = American Indian alone, 4 = Alaska Native alone, 5 = American Indian and Alaska Native tribes specified (or American Indian or Alaska native, not specified and no other races), 6 = Asian alone, 7 = Native Hawaiian and Other Pacific Islander alone, 8 = Some other race alone, and 9 = Two or more major race groups.

Definitions for population estimates

- Total population = sum of all PWGTP (person weight estimates)
- Population of U.S-born persons = sum of all PWGTP where NATIVITY = 1
- Population of foreign-born persons = sum of all PWGTP where NATIVITY = 2
- Population of U.S.-born non-Hispanic blacks or African Americans = sum of all PWGTP where (NATIVITY = 1 and HISP = 1 and RAC1P = 2)
- Population of children younger than 5 years of age = sum of all PWGTP where (0 ≤ AGE ≤ 4)

Resources

The U.S. Census Bureau website

www.census.gov

