7: Data Timeliness

Section	Page

Definitions

Term	Definition
Data timeliness	Prompt reporting of surveillance data to health authorities.
Final TB Case Count	Reporting jurisdiction's final TB case count transmitted in April. It includes the RVCT; Follow-up 1 Report (Initial Drug Susceptibility Report); and Follow-up 2 Report (Case Completion Report for previous 2 years). For example: RVCT 2012, Follow-up 1 2012, Follow-up 2 2011). Only countable cases are included.
Provisional TB Case Count	Reporting jurisdiction's final total TB case count for the preceding year transmitted to CDC for the World TB Day Morbidity and Mortality Weekly Report (MMWR) publication in March of each year. Cases must meet case verification criteria for counting as a case. This includes countable cases only.
Steps in a TB surveillance system	Steps are suspecting TB disease, reporting to the local health department, verifying the TB case, counting the case, identification of trends or outbreaks, or the effect of prevention and control measures.
Timeliness measure	The time interval linking any of the steps in TB surveillance.
Verbal TB Case Count	Reporting jurisdiction's total TB cases to date (reported and counted cases) provided to CDC verbally from September of the current year to March of the following year.

Quality Assurance Process for Data Timeliness

Primary Purpose

This section provides a quality assurance (QA) process to ensure that data are current and available on time.

QA Process for Data Timeliness

Data timeliness is essential for TB program planning and for appropriate distribution of resources. The CDC Cooperative Agreements (CoAg) requirement for ensuring data timeliness includes reporting all newly diagnosed cases of TB to CDC according to schedule, submitting complete RVCT reports according to schedule, analyzing TB surveillance data at least quarterly, and evaluating programmatic performance by using TB surveillance data at least annually.

Chapter 9: Quality Assurance Cross-cutting Systems and Process provides additional tools and systems (i.e., the National Tuberculosis Indicators Project [NTIP]; Tuberculosis Genotyping System [TB GIMS]; and Cohort Review) that can be used for improving data timeliness.

Table 7.1 includes a table format for the surveillance section of CoAg requirements for data timeliness and possible data sources.

Table 7.1
Data Timeliness Quality Assurance Process
CoAg Requirements

Note: The requirements are based on the fiscal year 2014 CoAg, and may need to be updated when the CoAg is updated. The CoAg is reformatted into the following tables with an addition of possible data sources and activities.

CoAg Requirements	Description	Possible Data Sources and Activities
Report all newly diagnosed cases of TB to CDC according to schedule.	**Report all newly diagnosed cases of TB to CDC** • According to a schedule agreed upon each year, generally monthly, and at least quarterly.	Submit RVCT reports.
Submit complete RVCT reports according to schedule.	**The RVCT Initial Case Reports should be** • Submitted generally monthly and at least quarterly.	Submit RVCT Initial Case Reports.
	Follow Up Report–1 should be • Completed only for TB cases with positive culture results. • Completed and submitted within 2 months after the initial RVCT was submitted, or when drug susceptibility results are available, whichever is later.	Submit completed RVCT Follow Up Report–1 (Initial Drug Susceptibility Report).
	The Follow Up Report–2 should • Be submitted for all cases in which the patient was alive at diagnosis. • Have data entered as they become available. • Be completed when the case is closed. • Be completed within 2 years of initial case reporting. (Note: Completion of reports may be longer than 2 years for drug-resistant TB [MDR and XDR] cases.)	Submit completed RVCT Follow Up Report–2 (Case Completion Report).
Analyze TB surveillance data at least quarterly.	**At least quarterly, analyze TB surveillance data to** • Monitor trends. • Detect potential outbreaks. • Define high-risk groups. • Produce and disseminate at least an annual report summarizing current data and trends.	Review surveillance database.

CoAg Requirements	Description	Possible Data Sources and Activities
Evaluate programmatic performance by using TB surveillance data at least annually.	**At least annually, evaluate programmatic performance by using TB surveillance data to** • Assist in compiling supporting evidence to determine the extent to which program objectives are being met. • Assist in developing strategies for improvement.	Review NTIP reports.

Factors Affecting Timeliness

The time interval usually considered first in TB surveillance is the amount of time between the onset of TB disease and the reporting of that event to the local health department responsible for instituting control and prevention measures. There are a number of factors that can affect the time involved during this interval (Table 7.2).

Table 7.2
Factors Affecting the Time Between
Diagnosing a Case of TB and Reporting it to the Local Health Department

Factors
• Patient recognizing TB symptoms and seeking medical care
• Attending physician's diagnosing TB or submitting a laboratory test
• Laboratory staff reporting test results back to the physician and/or to a public health agency
• Physician reporting the case to a public health agency

Another aspect of timeliness is the time required for the identification of trends or outbreaks, or the effect of control and prevention measures.

Factors that influence the identification process can include the

• Severity and communicability of the health-related event
• Staffing of the responsible public health agency
• Communication among involved health agencies and organizations.

The timeliness of a TB surveillance system should be evaluated in terms of availability of information for control of TB disease, including immediate control efforts, prevention of continued exposure, or program planning. The increasing use of electronic data collection from reporting sources (e.g., an electronic laboratory-based surveillance system) and via the Internet (a web-based system), as well as the increasing use of electronic data interchange by surveillance systems, might promote timeliness.

Health departments should follow their state law on timely reporting of suspected or confirmed case of TB (e.g. within 1 week). In some health departments, the initial report usually includes the

- Name and address of the patient and
- Basic demographics including date of birth.

Example: Process for TB Case Count and Final RVCT Data Submission to CDC

Purpose

This section provides a process to ensure timely and accurate reporting of TB cases and final data submission to CDC during September to March.

Timeline and Documentation for Reporting Countable TB Cases to CDC

This section provides an overview of the process used by CDC to communicate with the reporting jurisdictions each year. This process may be adapted to your setting when communicating with local counties or districts to meet the CDC deadlines.

For a diagnosis to be counted as a TB case, it must meet general criteria listed in Table 7.3.

Table 7.3
General Criteria for Counting a TB Case

Countable TB Case

For a diagnosis to be counted as a TB case, it must meet the following general criteria:
    1. Is a verified case of TB (see Case Definition for Tuberculosis below)
 	
    2. Confirmed that it is **NOT** counted by another area
 	
    3. Meets surveillance definition and is **NOT** a recurrent case
       (within 12 months of completion of therapy) of TB

There are three TB Case Count Reports that jurisdictions provide to CDC. These reports do **not** include noncountable cases.

- **Verbal TB Case Count:** Reporting jurisdiction's total TB cases to date (reported and counted cases) provided to CDC verbally from September of the current year to March of the following year.
- **Provisional TB Case Count:** Reporting jurisdiction's final total TB case count for the preceding year transmitted to CDC for the World TB Day Morbidity and Mortality Weekly Report **(**MMWR) publication in March of each year. Cases must meet case verification criteria for counting as a case. This includes countable cases only.
- **Final TB Case Count:** Reporting jurisdiction's final TB case count transmitted in April. It includes the RVCT; Follow-up 1 Report (Initial Drug Susceptibility Report); and Follow-up 2 Report (Case Completion Report for previous 2 years). For example: RVCT 2012, Follow-up 1 2012, Follow-up 2 2011). Only countable cases are included.

Timeliness at the jurisdiction level impacts timeliness at the national level for important deadlines. For example: **Meeting the CDC deadlines for these reports is crucial so that the data are available to prepare the MMWR TB surveillance article published each year, on or before World TB Day, March 24.** The consequences of data **not** being received in time include

- Inaccurate TB case counts
- No MMWR article on surveillance for World TB Day.

Figure 7.1 provides an overview for jurisdictions reporting Verbal and Provisional TB Case Counts and Final TB Data Transmissions to CDC. This figure is also available as Timeliness Tool–4 for jurisdictions to use in their setting.

Figure 7.1
Timeliness Tool–4
**Timeline for Reporting Annual TB Surveillance Data to CDC**
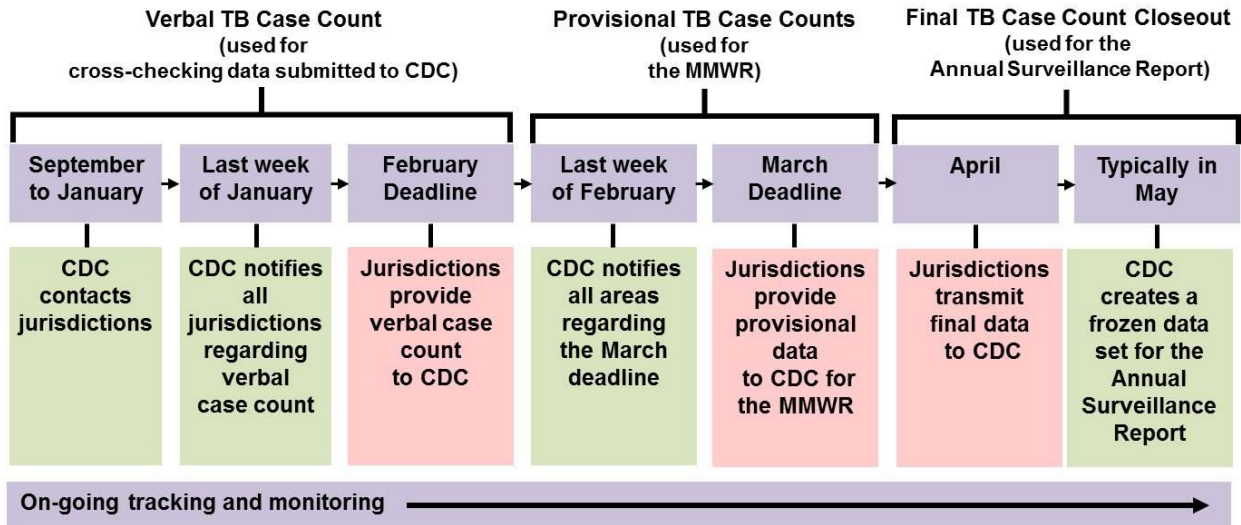
System data transmissions vary by jurisdictions. The system must be structured to meet these deadlines. Also, final data may be submitted prior to the deadlines.

CDC develops an Excel spreadsheet (Figure 7.2) to determine the discrepancies between the Verbal and Provisional Case Counts with comments on technical or transmission issues. The spread sheet is available as Timeliness Tool–6 for jurisdictions to adapt to their setting. CDC follows this process when TB case counts are received:

Figure 7.2
Timeliness Tool–6
Example of 2012 Verbal Case Count and Provisional TB Data Transmitted to CDC

Jurisdiction	Jurisdictions' Verbal Case Count	Date	CDC's 2012 Case Counts	CDC 2012 % Jurisdiction Verbal Case Counts	Date Provisional TB Data Transmitted to CDC	Comments
State A	140	1/21/2012	140	100.00%		Case count matches CDC
State B	52	2/4/2012	40	76.92%		Case count discrepancy: State 52, CDC 40
State C	76	3/9/2012	77	101.32%		Case count change from CDC 77, to State 76

#	Summary of Jurisdictions Reporting
3	Total Number of Jurisdictions Reporting Verbal Case Count
268	Total Number of Verbal Case Counts Reported by Jurisdictions
1	Number of Jurisdictions whose Verbal Count Matches CDC Count (in this example it is State A)
	Jurisdictions' Report Date for Provisional TB Data Transmission
	Jurisdictions' Revised Case Count

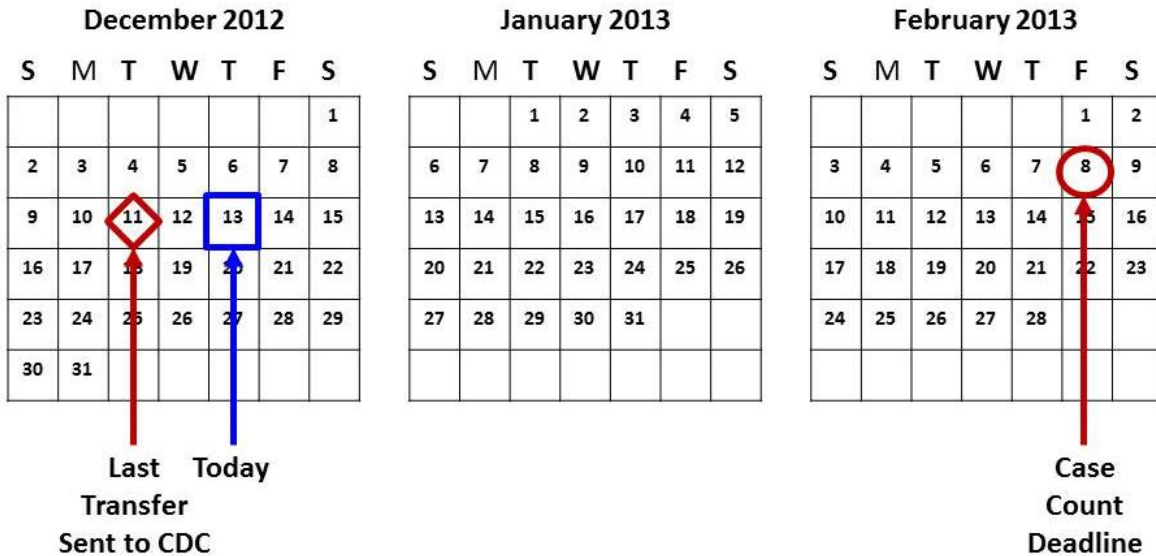**CDC adds these data after Provisional TB Data are transmitted**
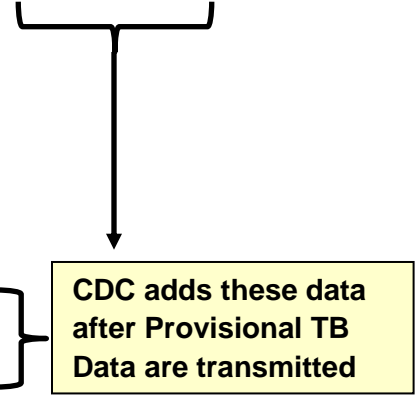
In April, jurisdictions provide the Final TB Data Transmission to CDC. CDC requests the reporting jurisdictions to provide specific information for Final TB Data Submission (Table 7.4).

Table 7.4
Requested Final TB Data Submission Information

Information for Jurisdictions to Provide
• Final TB Data transmission date
• All final TB data submitted
o TB case count
o RVCT
o Follow Up Report–1 (Initial Drug Susceptibility Report)
o Follow Up Report–2 (Case Completion Report) (For example: RVCT 2011, Follow Up Report–1, 2011, Follow Up Report–2, 2009)
• Transmission or technical issues

Exercises 7.1-7.3: Case Count

Use the calendar below to determine the answers for exercises 7.1-7.3.

7.1	State A: Case Count
	Today is Thursday, December 13, 2012. State A received a letter indicating that Friday, February 8, 2013, is the case count deadline. State A transfers data every Tuesday. What is the last possible date for State A to enter data so that it will be transferred to CDC and meet the February 8 Final TB Case Count deadline? Write your answer in the space below.
	Answer:

7.2	State B: Case Count
	State B transfers data every 2 weeks on Tuesday. What is the last possible date for State B to enter data so that it will be transferred to CDC, and meet the Friday, February 8 Final TB Case Count deadline? Write your answer in the space below.
	Answer:

7.3	State C: Case Count
	State C transfers data monthly on the 2nd Tuesday of each month. What is the last possible date for State C to enter data so that it will be transferred to CDC, and meet the Friday, February 8 Final TB Case Count deadline? Write your answer in the space below.
	Answer:

Example: Impact of Timeliness on TB Data Report Availability
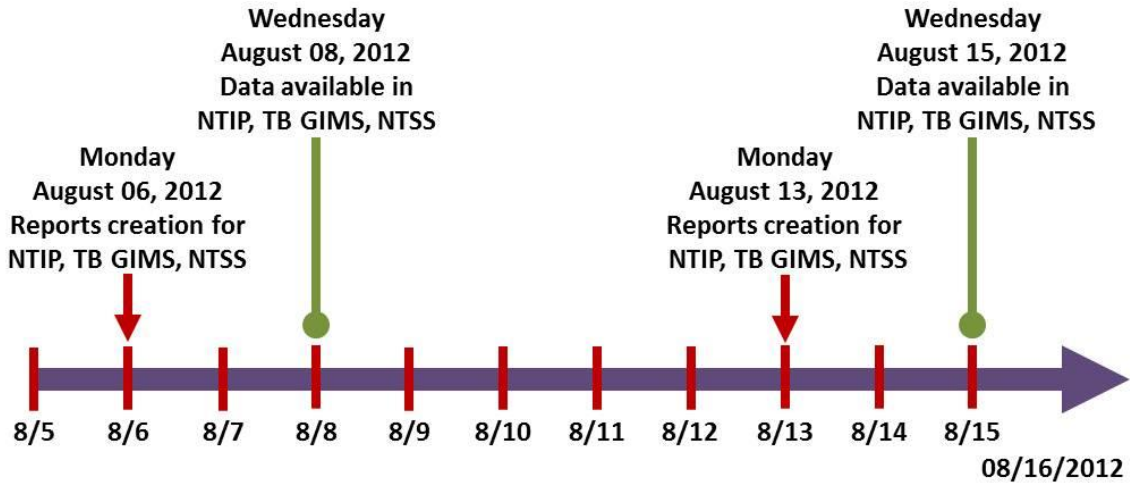
Schedule for TB Data Report Availability

Table 7.5 is a schedule for when TB surveillance data are available. This table is also Timeliness Tool–5.

<div align="center">

Table 7.5
Timeliness Tool–5
Typical Weekly CDC TB Surveillance Data Availability Chart

</div>

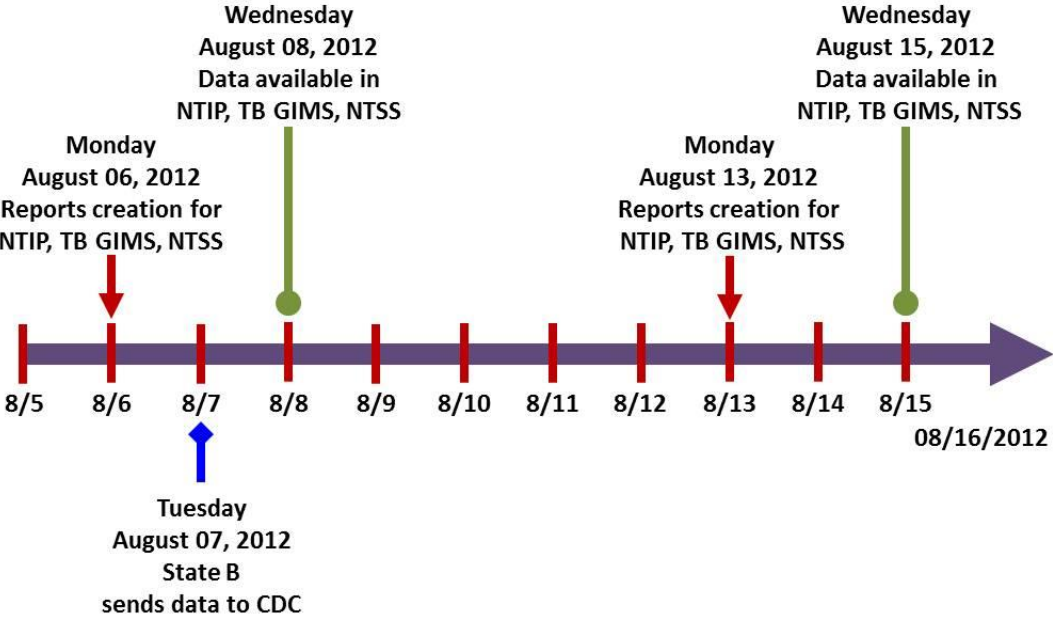| Day	Activities	Data Available
MONDAY	• **Collect data received through SUNDAY** • **Process data through warehouse** • **Analyze and QA data** • **Create SAS table** • **Push data to Staging for NTIP, NTSS, TB GIMS**	**WEDNESDAY of current week**
TUESDAY	• **Collect data received through MONDAY (data received on TUESDAY will be available on WEDNESDAY of the next week)** • **Process data through warehouse** • **Analyze and QA data**	**WEDNESDAY of the next week**
WEDNESDAY	• **Applications pick up data from Staging** • **New data available in NTIP, NTSS, TB GIMS** • **Collect data received through TUESDAY** • **Process data through warehouse** • **Analyze and QA data**	**WEDNESDAY of the next week**
THURSDAY	• **Collect data received through WEDNESDAY** • **Process data through warehouse** • **Analyze and QA data**	**WEDNESDAY of the next week**
FRIDAY	• **Collect data received through THURSDAY** • **Process data through warehouse** • **Analyze and QA data**	**WEDNESDAY of the next week**

Figure 7.3 provides an example of when data are available in NTIP, TB GIMS, and NTSS.

Figure 7.3
Timeline for Data Availability

Exercises 7.4-7.5: CDC TB Data Report Availability

7.4	State A: Data Availability
	State A sends data to CDC on Sunday, August 5, 2012. Based on the timeline below, when are the TB data reports available for review by State A? Write your answer in the space below.
	Answer:

7.5	State B: Data Availability
	State B sends data to CDC on Tuesday, August 7, 2012. Based on the timeline below, when are the TB data reports available for review by State B? Write your answer in the space below.
	Answer:

Additional Information

Contact: Tuberculosis Applications Support (TAPS)
Phone: 678-460-7828
Phone: 404-639-8444
ntss@cdc.gov

Data Timeliness Tools

Data Timeliness Tools are listed below (Table 7.6). Examples of the tools are located in Chapter 10: Toolkit for Quality Assurance. To view or download the tools, please visit: http://www.cdc.gov/tb/programs/rvct/default.htm.

Table 7.6
Data Timeliness Tools

Tool #	Tool Name	Description and How to Use	Format	Source Contact
Timeliness–1a	**Building a TB Case: Schedule for Entering Information for a TB Suspect into the RVCT**	Timeline diagram that indicates when RVCT variables should be entered. This example is based on Tennessee policies. This helps field staff know when information should be available and when the State Central Office expects it to be entered. The time frames should be based on your jurisdictional policies and procedures.	Word 1 page	Tennessee TB Elimination Program
Timeliness–1b	**Time Schedule for Entering RVCT Data**	Timeline table similar to Timeliness Tool-1a. It is in a table format rather than the graphic of the building blocks. The time frames should be based on your jurisdictional policies and procedures.	Word 3 pages	CDC/DTBE adapted from Tennessee TB Elimination Program
Timeliness–2	**Quarterly Case Summary – Timeliness Data**	Document that summarizes timeliness measures and objectives for a cohort of TB patients. Pre-defined case outcome objectives are provided for that particular set of TB patients.	Excel 2 pages	Washington State Department of Health Tuberculosis Program
Timeliness–3	**Timeliness Data Dictionary**	Description of the data used to calculate timeliness measures for analysis. These measures are used to determine completion of state objectives.	Word 1 page	CDC/DTBE Adapted from Washington State Department of Health Tuberculosis Program

Tool #	Tool Name	Description and How to Use	Format	Source Contact
Timeliness–4	**Timeline for Reporting Annual TB Surveillance Data to CDC**	Timeline for reporting TB cases and final TB data transmissions to CDC.	Jpg 1 page	CDC/DTBE
Timeliness–5	**Typical Weekly CDC TB Surveillance Data Availability Chart**	Typical weekly data availability by day of the week.	PDF 1 page	CDC/DTBE
Timeliness–6	**Verbal Case Count and Provisional TB Data Transmitted**	Spreadsheet to determine the discrepancies between the Verbal and Provisional Case Counts.	Excel 1 page	CDC/DTBE