

MARYLAND GUIDELINES FOR THE TUBERCULOSIS COHORT REVIEW



Maryland Department of Health and Mental Hygiene
Infectious Disease and Environmental Health Administration
Center for Tuberculosis Control and Prevention

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COHORT REVIEW MATERIALS CD

- Cohort Review Epidemiology Template
- Instructions for Using Cohort Review Epidemiology Template
- Cohort Review Presentation Form
- LHD Cohort Review Checklist
- Contact Investigation Worksheet
- Cohort Review Agenda Template
- Sign-in Sheet Template

1. INTRODUCTION

What is a TB “cohort review”?

Cohort review is a systematic retrospective assessment of the management of patients with tuberculosis (TB) disease and their contacts. A “cohort” is a group of TB cases counted from a specific jurisdiction(s) over a defined period of time. Details of each case and associated contacts are reviewed in a group setting, according to specific standard outcomes as determined by the Centers for Disease Control and Prevention (CDC) National TB Indicators Project (NTIP).

Why is it done?

The cohort review process increases program and individual staff accountability for patient treatment and contact investigation outcomes, reveals program weaknesses that need to be corrected (e.g., clinic policies that impede patient ability to schedule appointments, training and education needs of staff), and identifies program strengths and best practices that should be shared with others. Evidence from TB programs nationwide suggests that conducting cohort reviews results in better patient outcomes, more complete contact investigations, and ultimately stronger local and state TB prevention and control programs.

Who participates?

Five distinct roles are required for the cohort review process. However, the number of persons involved and their specific roles can vary depending on the needs and circumstances of the TB program. Sometimes one staff person may fulfill multiple roles. Brief descriptions of each role are included below:

1. *CR Program Manager*: Initiates and manages the cohort review process.
2. *Medical Reviewer*: Ensures that all aspects of case management adhere to health department policies and procedures as well as state and national standards of care for TB patients, specifically those that are medically related.
3. *Data Analyst*: Compiles and summarizes case and contact data prior to, during, and after each cohort review session.
4. *Case Manager(s)*: Prepares and presents a brief summary of each case and their associated contacts, using a standardized format.
5. *Supervisor*: Supervises and assists case management and contact investigation staff in following protocols for the review, assembling required data, and ensuring readiness of participants.

How is it done?

The specific logistics of conducting cohort reviews depend on the structure of the TB program, TB morbidity in the area, and various other factors. Please refer to this guide for information on how cohort reviews are conducted in Maryland.

2. COHORT REVIEW IN MARYLAND

Background

All local TB programs must participate in the cohort review process as a requirement of the CDC cooperative agreement (Federal grant). The Center for TB Control and Prevention (CTBCP) will assist local health departments (LHD) with development and initiation of this program, which began in 2010 (see Health Officer Memo, Appendix A).

Program Objectives

Cohort review offers an opportunity to monitor progress towards achieving program objectives relevant to case management and contact investigation. At the national level, objectives for both case management and contact investigation outcomes are provided by CDC through the National TB Indicators Project (NTIP). The NTIP indicators that may be assessed through the cohort review process are listed in Table 1.

Table 1. NTIP Indicators Related to Cohort Review

OBJECTIVE CATEGORIES	OBJECTIVE and PERFORMANCE TARGETS for 2015
Completion of Therapy	For patients with newly diagnosed TB for whom 12 months or less of treatment is indicated, increase the proportion of patients who complete treatment within 12 months to 93.0%.
Contact Investigation <ul style="list-style-type: none"> • Contact Elicitation • Evaluation • Treatment Initiation • Treatment Completion 	Increase the proportion of TB patients with positive acid-fast bacillus (AFB) sputum-smear results who have contacts elicited to 100.0 % Increase the proportion of contacts to sputum AFB smear-positive TB patients who are evaluated for infection and disease to 93.0%. Increase the proportion of contacts to sputum AFB smear-positive TB patients with newly diagnosed latent TB infection (LTBI) who start treatment to 88.0%. For contacts to sputum AFB smear-positive TB patients who have started treatment for the newly diagnosed LTBI, increase the proportion who complete treatment to 79.0%.
Known HIV Status	Increase the proportion of TB cases with positive or negative HIV test result reported to 88.7%.

For a complete list of National NTIP indicators, see Appendix B.

Regionalization

Significant differences exist among Maryland jurisdictions with regards to TB epidemiology and morbidity. High- and medium-incidence counties include and/or surround the major metropolitan areas. Low-incidence jurisdictions may not have large numbers of reported TB cases, but still engage in contact investigations and preventative treatment for populations at high-risk for TB disease. Due to varying degrees of TB morbidity, limited availability of LHD TB medical experts, and geographic proximity, all Maryland counties and Baltimore City were divided into five regions (Table 2). Each of these defined regions is expected to conduct its own cohort review sessions, with initial supervision provided by CTBCP.

These cohort review regions differ from other state-defined regions. The three jurisdictions with highest TB-incidence, including Montgomery County, Prince George's County, and combined Baltimore County and Baltimore City, will conduct individual cohort review sessions. The remaining medium- and low-incidence counties have been divided into two cohort review regions. The Northwest Region includes Allegany, Carroll, Cecil, Frederick, Garrett, Harford, Howard, and Washington Counties. The Southeast Region includes Anne Arundel, Calvert, Caroline, Charles, Dorchester, Kent, Queen Anne's, St. Mary's, Somerset, Talbot, Wicomico, and Worcester Counties.

For the Northwest and Southeast regions, designated locations have been identified as host sites for the cohort review sessions. Participating counties have the option to attend the reviews via teleconference or video conference if they are unable to attend in-person. Case managers and/or supervisors must present their cases and are encouraged to remain for the entire meeting.

Table 2. Maryland Regions for Cohort Review

REGION	COUNTY	PARTICIPATION MODE
Montgomery	Montgomery	In-person
Prince George's	Prince George's	In-person
Baltimore	Baltimore County/ Baltimore City	In-person
Northwest	Allegany Carroll Cecil Frederick Garrett Harford Howard Washington	In-person with teleconference or video conference
Southeast	Anne Arundel Calvert Caroline Charles Dorchester Kent Queen Anne's St. Mary's Somerset Talbot Wicomico Worcester	In-person with teleconference or video conference

For a detailed 2012 Statewide TB Cohort Review Schedule, see Appendix C.

Timeline

Cohort reviews are conducted every 6-9 months after initial case counting (as recorded in NEDSS, the National Electronic Data Surveillance System used to report TB cases and treatment). This defined timeframe allows for most patients with TB disease to complete treatment, and for the majority of contacts to be identified, evaluated, and started on treatment for latent TB infection (LTBI), if indicated, before the cohort review.

In some cases, contacts with LTBI will not have completed therapy by the time of cohort review because of time gaps in patient reporting, testing, and duration of standard regimen; however, contacts on treatment should be tracked through to completion on contact investigation worksheets, which are updated and submitted to CTBCP on a quarterly basis.

Each region will conduct its own cohort review 2-4 times a year. The session dates and cohort timeframe for each session are shown in Table 3. The cohort review schedule is intended to replicate itself each year with few changes. However, minor adjustments may occur from time to time. CTBCP will work with LHD TB staff to determine and disseminate cohort review schedules on an annual basis.

Table 3. Maryland Cohort Review Timeline

COUNTY/REGION	FREQUENCY	SESSION DATE	COHORT TIMEFRAME
Montgomery	4	March June September December	April 1 – June 30 (year prior) July 1 – September 30 (year prior) October 1 – December 31 (year prior) January 1 – March 31 (current year)
Prince George's	4	March June September December	April 1 – June 30 (year prior) July 1 – September 30 (year prior) October 1 – December 31 (year prior) January 1 – March 31 (current year)
Baltimore County/ Baltimore City	4	March June September December	April 1 – June 30 (year prior) July 1 – September 30 (year prior) October 1 – December 31 (year prior) January 1 – March 31 (current year)
Southeast Region	2	June December	April 1- September 30 (year prior) October 1 (year prior) –March 31 (current year)
Northwest Region	2	June December	April 1- September 30 (year prior) October 1 (year prior) –March 31 (current year)

For a detailed 2012 Statewide TB Cohort Review Schedule, see Appendix C.

Preparation

Careful preparation involves gathering information that is useful when presenting each case. A ‘Cohort Review Presentation Form’ (Appendix D and Cohort Review Materials CD) developed by CTBCP, ensures that information is presented consistently across all cohort reviews in Maryland. Information on this form includes demographics, site of disease, bacteriology, radiology, treatment regimen, unusual events in monitoring treatment, status of treatment completion, and contact investigation results.

Case managers should prepare to present each of their assigned cases. CTBCP will distribute agenda for the regional cohort review session. The designated CR Program Manager should ensure necessary equipment (i.e., laptop with ‘Epidemiology Template’ and projector) is available during the presentation.

The ‘LHD Cohort Review Checklist’ (Appendix E and Cohort Review Materials CD) is a helpful tool to ensure that the necessary tasks are completed prior to the cohort review session. These tasks will vary depending on the size and composition of the TB control program. The checklist is not all inclusive but it is intended to suggest a timeframe for completion of the various tasks.

Presentation

At the beginning of the session, a summary of the current cohort is presented by the Data Analyst, followed by the presentation and review of TB cases in the current cohort. Case managers clearly and concisely present the information on their cases and respond to questions from the cohort review participants. It is necessary for participants to listen to each case presentation, ask questions, and provide feedback and suggestions on ways to improve case management and contact investigations.

As cases are being presented, it may be necessary to update or add information to the ‘Cohort Review Epidemiology Template’ (distributed by CTBCP prior to the cohort review; a blank template is also included on the Cohort Review Materials CD). The data in the template are used to evaluate NTIP indicators and to provide immediate feedback on case management and contact investigations to the cohort review participants.

The cohort review may last about 2-3 hours depending on the number and complexity of the cases. Each case presentation should take about 5-10 minutes. The designated CR Program Manager should ensure that the review is kept on track and case presentations are kept within time limitations.

Follow-up

After the presentation, it is essential for each cohort review team member to follow-up on tasks that are specific to his/her role. Tasks may include, but are not limited to:

- Following through on case management suggestions made by the team during the session
- Ensuring patients and contacts still on treatment complete their treatment
- Identifying staff training/learning needs and programmatic problems
- Providing medical consultation
- Updating the TB case records in NEDSS
- Preparing a summary report of the cohort review session

Cohort Review (CR) Program Manager

MATERIALS NEEDED

- Cohort Review Epidemiology Template (pre-populated by CTBCP; a blank template is also included on the Cohort Review Materials CD).
- Instructions for Using Cohort Review Epidemiology Template (Appendix F and Cohort Review Materials CD).
- Cohort Review Agenda Template (Appendix G and Cohort Review Materials CD).
- Sign-In Sheet Template (Appendix H and Cohort Review Materials CD).

BEFORE THE REVIEW

Montgomery Co., Prince George's Co., and Baltimore City/Baltimore Co. only:

- Receive copies of 'Cohort Review Presentation Forms' from Case Managers and distribute to the Medical Reviewer.
- Populate 'Cohort Review Agenda Template' and distribute to all cohort review participants and the CTBCP.

Southeast and Northwest Regions only:

- Receive completed 'Cohort Review Presentation Forms' from CTBCP Office Secretary and prepare copies to distribute to Medical Reviewer on the day of the review.
- Receive pre-populated agenda from CTBCP and distribute to all review participants.

All counties/regions:

- Ensure that you receive the pre-populated 'Epidemiology Template' from the CTBCP one month prior to the review. If this document is not received, contact CTBCP at 410-767-6698.
- Create a sign-in sheet using the 'Sign-in Sheet Template,' or create your own.

DURING THE REVIEW

- Introduce yourself and explain your role as facilitator of the cohort review.
- Allow participants in the room and on the phone/video call to introduce themselves.
- Pass around the sign-in sheet.
- Provide a brief overview of the purpose of the review and the agenda for the day.
- Instruct the case manager of the first case to begin presenting.
- After the case has been presented, allow time for others to ask questions or give comments.
- Provide feedback as necessary (see below for examples of questions and comments).
- If the conversation is moving off topic or getting too detailed, make sure to bring the conversation back on track.
- Take notes on programmatic concerns as they come up (i.e. regarding areas for improvement or staff training needs).
- Continue with the review by prompting for the next case to be presented.
- After all cases have been presented, allow for a short break. Inform participants of how long the break will last (~15 min.) and at what time they should be ready to continue (including phone and video users).
- Instruct the Data Analyst to present the data analysis.
- At the end of the meeting, summarize topics/issues raised during the case presentations that you noted as requiring follow-up prior to the next cohort review.
- Ask the Medical Reviewer, Supervisor, and Case Manager(s) to report on programmatic concerns they have, including NTIP measures that were not met for the cohort.

CR Program Manager Cont'd

SAMPLE QUESTIONS AND COMMENTS

- What were the barriers you encountered when conducting the contact investigation?
 - How can we overcome these in the future?
- How can we prevent treatment non-adherence in the future?
- “This seems like an important issue, but right now we need to focus on the objectives of our current review. I will take note of this and we can address this after completing this review.”

FOLLOW-UP

- Working with your data analyst, compile your list of programmatic concerns, staff training needs and the lists of concerns from the Medical Reviewer, Supervisor, and Case Manager(s) and record these in the ‘*Cohort Review Notes*’ tab of the completed ‘Epidemiology Template.’ Also, report on the NTIP measures that were not met for the cohort.
- Email the completed ‘Epidemiology Template’ to the CTBCP Office Secretary (twilliams@dhhm.state.md.us) within one week of the cohort review session.
- *Montgomery County, Prince George’s County, and Baltimore City/Baltimore County only:* Enter or correct data in NEDSS that were found to be missing or incorrect during the review (Case managers or data entry staff may also be asked to perform this task).
- Address programmatic concerns and staff training needs that were identified during the review, both in house and with CTBCP.

OTHER CONSIDERATIONS

- Take advantage of teachable moments to illustrate important lessons in effective TB control, but remember this is not a medical case review and time is limited.
- Reiterate important points or best practices as they come up. For example, you can say, “Is everybody clear on why that county _____?”

Medical Reviewer

BEFORE THE REVIEW

- Review case information received from CR Program Manager (e.g. ‘Cohort Review Presentation Forms’).

DURING THE REVIEW

- Listen carefully to each case presentation.
- Make sure that all aspects of case management adhere to standard policies and procedures, to include the following:
 - Activities were completed in a timely manner
 - Data were complete (e.g. date of birth, entry to US, HIV status, etc.)
 - Drug regimens were appropriate (e.g. ask for explanations for nonstandard regimens)
 - Susceptibility results were obtained, drug regimens adjusted if necessary
 - Sputum conversion and completion of treatment were documented
 - Contact investigation activities and outcomes were assessed
- Ask questions or give feedback (see below for examples of questions and comments).
- Take advantage of teachable moments to illustrate important lessons in effective TB control.
- Take notes on programmatic concerns that you have (i.e. regarding areas for improvement or staff training needs). Keep a list of these items so that you can report them to the participants and the CR Program Manager at the end of the review.

SAMPLE QUESTIONS AND COMMENTS

- Why was a nonstandard regimen prescribed for this patient?
- Why is _____ missing from this patient’s information?
- How adherent was this patient to their treatment?
- “Considering the potential infectiousness of this patient and where he works, lives, etc., we need to keep trying to get in touch with the contacts.”

FOLLOW-UP

- Provide the CR Program Manager with the notes you have regarding programmatic issues.
- Review collective data with CR Program Manager and others for specific trends, identified improvements, ongoing concerns, etc.
- Assist CR Program Manager in utilization of data to address other program needs (e.g., lack of improvement due to depletion of resources, improved DOT rates secondary to ability to secure part-time outreach worker, etc.)
- Make sure any identified medical management issues are addressed.

Data Analyst

MATERIALS NEEDED

- Cohort Review Epidemiology Template (pre-populated by CTBCP; a blank template is also included on the Cohort Review Materials CD).
- Instructions for Using Cohort Review Epidemiology Template (Appendix F and Cohort Review Materials CD).

BEFORE THE REVIEW

- Obtain the partially pre-populated ‘Cohort Review Epidemiology Template’ from your county’s TB Program Coordinator or designated CR Program Manager for your region’s cohort review.
- Read the ‘Instructions for Using Cohort Review Epidemiology Template’ to familiarize yourself with the template.
- Prepare a brief summary of the current cohort to present at the beginning of the session by reviewing the ‘*Cohort Summary*’ tab in the ‘Epidemiology Template.’

DURING THE REVIEW

Note: These steps follow the instructions in the “Instructions for Using Cohort Review Epidemiology Template.”

- Before case presentations begin, give a brief summary of the current cohort of cases (use information under the ‘*Line List for County*’ tab and the ‘*Cohort Summary*’ tab of the ‘Epidemiology Template’). A laptop and projector may be used to present the data. A laptop should be used throughout the session so that data can be entered/fixes as needed during case presentations.
- As cases are being presented, add new data on treatment outcomes and enter/fix any missing/incorrect data in the table under the ‘*Tally Sheet*’ tab of the ‘Epidemiology Template.’ Note any issues that need clarification.
- Highlight/mark in red on the ‘Epidemiology Template’ any data that needs to be fixed or added (this is for CTBCP to keep track of changes in NEDSS)
- After all the cases have been presented, enter data into the tables under the ‘*Treatment Indices Rates*’ tab using the data from the ‘*Tally Sheet*’ tab. Also, enter data into the table under the ‘*Contact Investigation Indices*’ tab using the information from the ‘*Tally Sheet*’ tab.
- Present the information from the ‘*Treatment Indices Rates*’ tab and the ‘*Contact Investigation Indices*’ tab at the end of the review.

FOLLOW-UP

- Ensure that any issues noted as needing clarification are addressed.
- Provide the CR Program Manager with the completed ‘Epidemiology Template.’

Case Manager

MATERIALS NEEDED

- Cohort Review Presentation Form(s) (one for each case) (Appendix D and Cohort Review Materials CD).
- Contact Investigation Worksheet, *in lieu of completing Section 5 on the Case Presentation Form* (Appendix I and Cohort Review Materials CD).

BEFORE THE REVIEW

- Participate in periodic case review meetings with your supervisor.
- Obtain the list of cases to be reviewed from your county's TB Program Coordinator (or designated CR Program Manager for your region's cohort review).
- For each case, completely fill out a 'Cohort Review Presentation Form' (either by hand or typed). In lieu of completing Section 5 on the Presentation Form, you may attach the most recent 'Contact Investigation Worksheet.'
 - *Southeast and Northwest regions only:* Fax or email completed forms to the CTBCP Office Secretary one week before the review (fax: 410-383-1762, email: twilliams@dhmh.state.md.us).
 - *Montgomery County, Prince George's County, and Baltimore City/County only:* Fax or email completed forms to your region's designated CR program Manager one week before the review.
- Consult with DOT outreach staff and others as needed to ensure information is complete.
- Ensure you have information to answer any questions you may be asked during the review, especially if the NTIP goals were not met (refer to the CR Program Manager and Medical Reviewer role descriptions for examples of questions you could be asked).
- If you are unable to attend the cohort review, you will need to work with your supervisor to identify another staff member who is available to present your cases.

DURING THE REVIEW

- When your case is called, present your case following the format of the 'Cohort Review Presentation Form.' Be sure to speak loudly and clearly.
- Answer questions from the CR Program Manager, Medical Reviewer, or anyone else present.
- Ask any questions *you* have about patient care issues.
- Ask your fellow case managers or supervisor to fill in any gaps in your presentation if necessary.
- Note any missing information that needs follow up after the review session.
- Take notes on programmatic concerns that you have (i.e. regarding areas for improvement or staff training needs). Keep a list of these items so that you can report them to the participants and the CR Program Manager at the end of the review.

FOLLOW-UP

- Obtain missing information that was identified during the review.
- Inform CR Program Manager about any changes that need to be made in NEDSS (i.e. fix or add information).

Supervisor

**Most TB programs in Maryland will not have a staff member to fill this role. If this is true for your program, the TB Program Coordinator should assist the Case Managers as necessary.*

BEFORE THE REVIEW

- Hold periodic case review meetings with your staff.
- Assist staff with filling out the ‘Cohort Review Presentation Forms’ as needed.
- Consider holding “practice” cohort review sessions with staff prior to the actual session.
- Troubleshoot problems with staff.

DURING THE REVIEW

- Listen to the Case Managers as they present.
- Only add something if more detail or confirmation of the approach or activities is required.
- Take notes on programmatic concerns that you have (i.e. regarding areas for improvement or staff training needs). Keep a list of these items so that you can report them to the participants and the CR Program Manager at the end of the review.

FOLLOW-UP

- Follow-up with staff to make sure any missing information specific to cases is obtained and provided to the CR Program Manager or CTBCP for entry into NEDSS.
- Discuss the outcomes of the review with staff (e.g. what went well and what to improve upon for the next review).
- Provide the CR Program Manager with the notes you have regarding programmatic issues.

4. REFERENCES and ADDITIONAL RESOURCES

- Online text: *Understanding the TB Cohort Review Process Instruction Guide*
 - Cohort review training guide from the CDC – provides a detailed overview of the review process and provided a basis for the Maryland Guidelines for the Tuberculosis Cohort Review.
 - <http://www.cdc.gov/tb/publications/guidestoolkits/cohort/default.htm>

- Webinar: *Best Practices in TB Control #1: Introduction to the TB Cohort Review Process from the New Jersey Medical School Global TB Institute*
 - Good overview of the cohort review process with examples from different states.
 - <http://www.umdnj.edu/globaltb/audioarchives/tbcohort.html>

- Movie: *Understanding the TB Cohort Review Process* (DVD is included)
 - Excellent demonstration of a cohort review session, including the contributions of each role.
 - Included as part of the CDC’s *Understanding the TB Cohort Review Process Instruction Guide*

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