Dear Colleague:

The increasing emphasis on cohort reviews and the requirement for cohort review in the 2010 cooperative agreement announcement for funds in 2010 through 2015 has generated many questions from the field. Attached is a short document that we hope will answer most of those questions.

The cohort review process has proven to be a very useful tool for ensuring accountability, educating staff about protocols and goals, and improving case management and prevention. Case managers and other staff know that their day-to-day efforts will be reflected in a cohort review several months later and that they will be held accountable for the services that they provided. They are responsible for ensuring that patients who are started on treatment finish treatment. As a result, patients are less likely to “fall between the cracks” and receive inadequate care.

Some of you may already conduct cohort reviews. This guidance defines the difference between cohort reviews, case reviews and other terminology and provides requirements and gives examples of methods that CDC will find acceptable as a cohort review process. The concept of cohort review builds on many current practices but adds quantitative measures to program review and examination of treatment outcomes. It is a management process that will motivate staff, reveal program strengths and weaknesses, identify staff training and professional education needs, increase staff accountability for completion of treatment for both disease and latent TB infection, and improve TB case management and the identification of contacts. All TB programs will be required to conduct at least one cohort review process during 2010.

We developed the attached guidance to assist you in understanding and applying the cohort review process and meeting our expectations under the 2010 cooperative agreement announcement. In addition, the Global TB Institute will be conducting a webinar in the near future to assist you in the implementation of the cohort review process. Each Regional Training and Medical Consultation Center (RTMCC) will offer standardized cohort review training base on the same guidance.
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We wish you success in implementing the cohort review process in your TB program. The improved program evaluation data will allow you to efficiently apply your program resources and maintain ongoing TB control.

Sincerely,

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The 2010 TB Cooperative Agreement (COAG) outlines that all TB Programs receiving COAG funds should conduct cohort reviews as part of program evaluation activities.

The language states:

- To improve TB case management and program accountability and feedback, the grantees should hold quarterly cohort reviews at the state or local levels or both. Cohort reviews are integral to TB control and provide a systematic review of the management of cases and contact investigations.

- Instructions on cohort reviews, definitions, roles of staff, timelines, core elements, and guidance on tailoring the process to your program are published in the CDC document, "Understanding the TB Cohort Review Process: Instruction Guide". It can be accessed on the Internet:

  Understanding the TB Cohort Review Process: Instruction Guide 2006
  http://www.cdc.gov/tb/education/cohort.htm

  Also refer to International Journal of Tuberculosis and Lung Disease, 2006 October, 10(10) 1133-9; Title “Ensuring accountability: the contribution of the cohort review method to TB control in NYC”, New York City Department of Health and Mental Hygiene, New York, New York, 10007 USA.

- Grantees should report the progress on conducting cohort reviews, including number of cases discussed, key issues identified during these cohort reviews, and recommendations provided. Additionally, progress on implementing these recommendations should also be included in the progress reports.

Definitions
To ensure that all TB programs have an understanding of the expectation for conducting cohort reviews, definitions for cohort review and case review are provided below.

**Cohort Review**
A cohort review is a systematic review of the management of patients with TB disease and their contacts. A “cohort” is a group of TB cases counted over a specific period of time and the review occurs after the cases are counted. Cohort review is used as a tool to review patient outcomes and to monitor and evaluate program performance. At a cohort review, cases presented by case managers are examined for the patient’s clinical status, the adequacy of the medication regimen, treatment adherence or completion, and the results of contact investigation. Cohort review is currently used in countries around the world and in several U.S. cities and county jurisdictions.
Case Review
A case review is a systematic regular review of individual patient progress presented by
the health department employee who is primarily responsible for managing that case.
Case review is a fundamental component of case management and thus is an ongoing
process for each patient. Plans are made to immediately address any treatment and
patient management concerns identified through a case review.

The Difference between Cohort Reviews and Case Reviews
Case reviews are **not** cohort reviews.

Case reviews are real-time, ongoing, and provide an opportunity to review individual
patient specific care. They allow for immediate analysis of a patient's progress and plans
to address any needed changes to treatment and management.

Cohort reviews provide an opportunity to review case data to address systemic
programmatic concerns regarding the overall management of TB patients in order to
improve patient care and programmatic performance and to promote efficiency.
A “cohort” is a group of TB cases counted over a specific period of time, usually 3
months. The cohort cases are reviewed approximately 6-9 months after they are
counted. Therefore, many of the cohort cases have completed or are at near completion
of treatment.

Conducting Cohort Reviews
Each TB program will be expected to start conducting cohort reviews in 2010 with the guidance
provided below.

Cohort Review Models
There are three accepted models for conducting a TB cohort review as determined by
CDC DTBE. The three models are:
- face-to-face
- teleconference
- hybrid approach

Descriptions of the models are provided in Table 1: Cohort Review Models.

All models consist of a retrospective interactive meeting to review all TB cases reported
in a program area in a given timeframe. Additionally, each model allows for the delivery
of concise, standardized presentations by front line staff to program directors and
clinicians. This allows for accountability, immediate feedback, teaching, and systematic
follow-up.

The face-to-face and teleconference cohort review models incorporate the analysis of
outcomes at the end of the cohort review meetings. The hybrid approach allows for the
outcome analysis to be conducted at a later date.
<table>
<thead>
<tr>
<th>Cohort Review Models</th>
<th>Description</th>
<th>Benefits</th>
<th>Challenges</th>
</tr>
</thead>
</table>
| **Face-to-Face**     | Face-to-face interactive meeting to review all TB cases reported in city or county in a given time-frame. Outcomes are analyzed at the end of the meeting. *(More feasible in higher incidence areas)* | • Data analyzed at meeting  
• Immediate feedback  
• Teaching opportunity  
• Ensures accountability  
• Systematic follow-up plan  
• Immediate analysis of outcomes  
• Promotes team-building | • Large meeting room may be required  
• Staff may have to travel |
| **Teleconference**   | Teleconference using phone, internet, or other networking mechanism to conduct a remote real-time interactive meeting. Outcomes are analyzed at the end of the meeting. *(More feasible in lower incidence program areas)* | • Data analyzed at meeting  
• Immediate feedback  
• Teaching opportunity  
• Ensures accountability  
• Systematic follow-up plan  
• Immediate analysis of outcomes | • Requires good internet, telephone, or network connections  
• Communication medium may diminish staff interaction  
• More subject to interruptions |
| **Hybrid Series Approach** | The hybrid approach allows for all TB cases reported in a TB program in a given time-frame (cohort) to be conducted in a series of meetings. Some TB staff participate in the face-to-face cohort meeting while other staff teleconference into the meeting. Because the hybrid approach is a series of meetings outcomes are analyzed at a later date. *(Appropriate for low or medium-incidence state)* | • Immediate feedback  
• Teaching opportunity  
• Ensures accountability  
• Systematic follow-up plan | • Delayed analysis of outcomes may mask systemic and program problems and solutions  
• Requires good internet, telephone, or network connections.  
• Communication medium may diminish staff interaction |
**Cohort Review Participants**

The cohort review process relies on the participation of various members involved in TB control at the program level. A cohort review should include the following participants:

1) TB Program Manager  
2) Medical Reviewer  
3) Data Analyst  
4) Case manager and/or DOT worker  
5) Supervisor

Additional participants can include social workers, clinicians from major reporting hospitals, lab personnel, and even staff from other agencies (CBOs, shelters, corrections, etc) if they play an important role in patient management.

**Case Presentation Core Elements**

At a cohort review, case managers should present the following core elements listed below for each of their TB cases.

**Table 2. Core Elements for Case Presentations at Cohort Reviews**

<table>
<thead>
<tr>
<th>Case</th>
<th>Contacts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Case number</td>
<td>Number Identified</td>
</tr>
<tr>
<td>Name</td>
<td>Number Evaluated</td>
</tr>
<tr>
<td>Sex</td>
<td>Number Positive/ Negative</td>
</tr>
<tr>
<td>Race</td>
<td>Prior Positive TST</td>
</tr>
<tr>
<td>Foreign-Born</td>
<td>Number Infected without Disease</td>
</tr>
<tr>
<td>Country of Origin</td>
<td>Number Diagnosed with Disease</td>
</tr>
<tr>
<td>Risk/social Factors</td>
<td>Number Eligible for Treatment for LTBI</td>
</tr>
<tr>
<td>HIV Status</td>
<td>Number Started Treatment for LTBI</td>
</tr>
<tr>
<td>Symptoms</td>
<td>Number Completed Treatment for LTBI</td>
</tr>
<tr>
<td>TST or IGRA Result</td>
<td>Number that Discontinued LTBI Treatment</td>
</tr>
<tr>
<td>X-ray Results</td>
<td></td>
</tr>
<tr>
<td>CT Results</td>
<td></td>
</tr>
<tr>
<td>Pulmonary/Extrapulmonary</td>
<td></td>
</tr>
<tr>
<td>Primary Site if extrapulmonary</td>
<td></td>
</tr>
<tr>
<td>Sputum Results</td>
<td></td>
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<tr>
<td>MTD</td>
<td></td>
</tr>
<tr>
<td>Culture Results</td>
<td></td>
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<tr>
<td>DST Results</td>
<td></td>
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<tr>
<td>Drug Resistant</td>
<td></td>
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<tr>
<td>Treatment Regimen</td>
<td></td>
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<tr>
<td>Treatment Plan</td>
<td></td>
</tr>
<tr>
<td>DOT</td>
<td></td>
</tr>
<tr>
<td>Likely to Complete Treatment</td>
<td></td>
</tr>
<tr>
<td>Number of Doses</td>
<td></td>
</tr>
<tr>
<td>Completed Treatment</td>
<td></td>
</tr>
<tr>
<td>Reasons Therapy Not Completed</td>
<td></td>
</tr>
<tr>
<td>Treatment Interruptions</td>
<td></td>
</tr>
</tbody>
</table>
Frequency of Cohort Review

Although, the COAG states that each TB program should be conducting cohort reviews quarterly, CDC DTBE has determined certain programs may not need to conduct cohort reviews as often. The frequency should be determined by the incidence of TB in the program area.

It is recommended that:

- Programs with 0-50 cases reported annually should conduct cohort reviews semi-annually (two cohorts per year)
- Programs with over 50 cases should conduct cohort reviews quarterly (four cohorts per year)

Additionally, for low incidence states or those with 15 or less cases, it is highly encouraged that the program focus on reviews of patients with LTBI and completion of LTBI treatment. Cohort reviews for patients with LTBI should be conducted in a similar manner as a cohort review for active TB cases.

Regional Cohort Reviews

Programs have the option to conduct regional cohort reviews. An agreement should be developed among partners within a region for process, location, cohort review models, and each program’s roles and responsibilities. The frequency of the regional cohort reviews should follow the above guidance.

CDC’s Expectations for 2010

All programs should conduct at least one face-to-face, teleconference, or hybrid approach cohort review in 2010.

TB Program Reporting Requirements for Cohort Review

The reporting requirements for conducting the cohort review process are to be included in the interim and annual progress reports. The following elements should be included:

- Date cohort reviews occurred
- Number of cases in each cohort review
- Type of cohort review model used
- Frequency of cohort reviews (semi-annual or quarterly)
- Indication whether cohort reviews include patients with TB disease and/or LTBI

Additional Information, Resources, and Training Opportunities

CDC is in the process of updating and reprinting the cohort review training materials, “Understanding the TB Cohort Review Process: Instruction Guide”. A few revisions are being made to the training materials to reflect the expanded guidance included above. However, the current materials are still relevant and can be accessed on the Internet:
The TB Regional Training and Medical Consultation Centers (RTMCCs) will be following CDC guidance to develop standardized cohort review trainings using the CDC training materials. Additionally, the RTMCCs will assess TB programs within their region for their specific cohort training needs.

A national webinar will be conducted in Summer 2010 to provide further information on the cohort review process.