Key Activities and Roles in the TB Cohort Review Process

January 20, 2011

Provided by Global Tuberculosis Institute

Objectives

Upon completion of this seminar, participants will be able to:

- Describe the activities that key personnel do in preparing, conducting, and following up a TB cohort review
- Outline steps for implementing cohort reviews with available staff and resources
- Discuss strategies for identifying and orienting or training appropriate staff for these key activities
Faculty (1)

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Director of Education and Training, Charles P. Felton National TB Center
Assistant Clinical Professor, Heilbrunn Department of Population & Family Health, Mailman School of Public Health, Columbia University

Kim Field, RN, MSN
Section Manager, Tuberculosis Services
Washington State Department of Health

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Medical Director, Ben Franklin TB Clinic
TB Consultant, Ohio Department of Health
Assistant Professor, Infectious Diseases, Ohio State University

Faculty (2)

Christina Dogbey, MPH
Epidemiologist
Tuberculosis Control Program
Philadelphia Department of Public Health

Mary Katie Sisk, RN, CIC
Supervisory Nurse Coordinator
Bureau of Tuberculosis Control
District of Columbia Department of Health
Agenda

- Introduction, housekeeping – **Bill Bower**
- Key activities and Roles – **Bill Bower**
- Program Manager – **Kim Field**
- Medical Reviewer – **Shu-Hua Wang**
- Epidemiologist/Data Analyst – **Christina Dogbey**
- Nurse Case Manager/Supervisor – **Katie Sisk**
- Planning and Staffing – **Bill Bower**
- Questions and Answers
- Wrap up

Key Activities and Roles

**Bill L. Bower, MPH**
Definitions

**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.

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Cohort vs. Case Reviews

**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.
Background Resources

www.cdc.gov/tb/education/cohort.htm

Activities and Roles

Activities of staff are detailed in p. 4-9 of the CDC Instruction Guide
What do people do during the Cohort Review Process:

- Preparation
- Presentation
- Follow up

Cohort Review Process: Activities of the Program Manager

Kim Field, RN, MSN
Washington State Department of Health
Section Manager, Tuberculosis Services
Preparing for a Cohort Review

- Demonstrate commitment
- Explain reasons for undertaking cohort reviews
- Develop tools and train staff

Conducting the Cohort Review Presentation

- Foster safe and productive atmosphere
- Listen to all case presentations to identify strengths and weaknesses
- Ask questions to clarify
- Use case experience to teach knowledge and skills for effective TB control
Following Up After Cohort Review

- Address issues raised
- Continue staff education

Tips for Getting Started (1)

- Many programs have adapted the principles of cohort review to their staffing, resources and political realities – learn from them
- Break the implementation into steps so it is not too overwhelming
- Emphasize that staff are already doing most of the work anyway – this will just add a systematic way of summarizing and learning
Tips for Getting Started (2)

- You may have to ‘think outside the box’ to identify people who can do the needed activities, given scarce resources.

- No surprises – make it very clear what performance measures you will be looking at and where the program stands on these.
Preparation to Develop a Cohort Review Process (1)

Program Manager

#1

DOUBLE FACEPALM
FOR WHEN ONE FACEPALM DOESN'T CUT IT

Photo courtesy of Dr. Stan Martin

Preparation to Develop Cohort Review Process (2)

Cohort Review ≠ Case Review
Cohort Review ≠ Contact Investigation

Administrative reviews of cases and contacts

Quantitative difference to program review and treatment outcome!
Preparation Prior to Cohort Review (1)

- Demonstrate commitment to the cohort review process
- Ensure staff at all levels understand the reasons for undertaking cohort reviews

Preparation Prior to Cohort Review (2)

“The fundamental concept of a cohort review is accountability. Staff are accountable to supervisors and to the program for how well they are caring for patients... and the program is accountable to patients and to the public for controlling TB.”

Thomas Frieden, MD, MPH
Director of CDC
Former New York City Commissioner of Health
Photo by David Lubarsky
http://www.governing.com/poy/thomas-frieden.html
## Preparation Prior to Cohort Review (3)

### Know the program’s objectives:

<table>
<thead>
<tr>
<th>CDC National TB Program Objectives</th>
<th>State level objectives for TB Control</th>
<th>Local level objectives for TB Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>At least 90% of confirmed TB patients will complete treatment within 365 days.</td>
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<tr>
<td>At least 90% of TB patients with positive AFB sputum-smear results will have contacts identified.</td>
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<tr>
<td>At least 95% of contacts to TB patients with positive AFB sputum-smear results will be evaluated.</td>
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<tr>
<td>At least 85% of infected contacts who are started on treatment for LTBI will complete treatment within 365 days.</td>
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## During Cohort Review Presentations (1)

- Listen carefully to all case presentations
- Review available support documents
  - TB registry, case management forms, medical records
- Ensure that all aspects of case management adhere to department of health policies and procedures
During Cohort Review Presentations (2)

- Review of cases:
  - Activities are complete in a timely manner
    - Date case was assigned
    - Date case interviewed
  - Data are complete
    - Date of birth,
    - Entry to US,
    - HIV status

During cohort review presentations (3)

- Review case, diagnosis and treatment:
  - Pulmonary or extrapulmonary
  - Culture confirmed or clinical case
  - Tuberculin skin test, interferon gamma release assays
  - Nucleic acid amplification tests
  - AFB smear/culture result
  - Drug regimen is appropriate
  - Drug susceptibility results are obtained
  - Drug regimens are adjusted if necessary
  - Sputum conversions are documented
  - Treatment completions are documented
During cohort review presentations (4)

• Review contact investigations
  ○ Number of contacts identified
  ○ Number of contacts evaluated
  ○ Number diagnosed with active TB disease or latent TB infection (LTBI)
  ○ Number started on LTBI treatment
  ○ Number completing LTBI treatment

• Reasons why contacts not evaluated or LTBI treatment not completed

During cohort review presentations (5)

• Ask questions of clarification to make sure policies and procedures were followed and the outcome is satisfactory. Clarify:
  ○ Lapses in following protocols
  ○ Missing or incorrect information
  ○ Action taken to prevent their occurrence in future reviews
During cohort review presentations (6)

- Assess outcomes
- Use teachable moments to illustrate important lessons in effective TB control
  - Use specific cases as examples of how certain problems should be handled
  - Give feedback to staff and
  - Update staff on policies, protocols, and scientific changes

Follow up after cohort review (1)

- Ensure that medical management issues and programmatic problems are addressed
  - Provide medical consultation for any problems identified
- Ensure that ongoing follow-up staff education includes
  - Program strengths and weaknesses identified during cohort review
Successful cohort review

The medical reviewer assists in…

• Improving patient care
• Improving TB control program
• Improving public health

…first steps toward TB elimination

Thank you!

Ben Franklin TB Control Program Staff
Activities of the Epidemiologist in the Cohort Review Process

M. Christina Dogbey, MPH
Philadelphia Department of Public Health
Tuberculosis Control Program

The Philadelphia Experience

- Conducting cohort reviews since 2005
- Expected and anticipated part of our program
  - Staff looks forward to it
- From an epi/ data analyst perspective, makes writing annual reports and fulfilling data requests easier
- We have been able to modify pieces of cohort to fit our program objectives and what we want to measure
Epidemiologist or Data Analyst is responsible for:

- Before Cohort
  - Preparing and distributing the list of cases for review
  - Collecting demographic information about the cohort for presentation
  - Preparing and pre-populating the spreadsheet with data

Line List of Patients for Cohort
Epidemiologist or Data Analyst is responsible for:

- During Cohort
  - Presenting information on the demographic and clinical characteristics of the cohort as a whole
  - Listening to each case presentation and updating information on the spreadsheet for each patient
  - Recording issues that arise regarding individual patients and overall program policies
  - Calculating rates for completion of therapy, contacts, etc.
  - Reporting the results of the cohort back to the team and comparing them to goals and objectives

Cohort Spreadsheet 1
Cohort Spreadsheet 2: Disposition and Contacts

<table>
<thead>
<tr>
<th>DISPOSITION</th>
<th>CONTACTS</th>
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<tbody>
<tr>
<td></td>
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</table>

Cohort Spreadsheet 3: Calculations Page, Pt. 1

<table>
<thead>
<tr>
<th># Counted</th>
<th>% Completion at the time of the cohort</th>
<th>Employed</th>
<th>% Completion at the time of the cohort without meds</th>
<th>111.1%</th>
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<table>
<thead>
<tr>
<th>Counted by Other</th>
<th>Percent on DOT</th>
<th>Median Time on DOT</th>
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<tbody>
<tr>
<td>manual</td>
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<td></td>
<td>18</td>
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<table>
<thead>
<tr>
<th>Spinal Dose Positive Cases</th>
<th>Median Good Months on DOT</th>
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<td>5</td>
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<tr>
<th>% Total Cohort Failure Rate</th>
<th>Median % Total Cohort Failure Rate</th>
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<td>9.1%</td>
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<tr>
<th>Median Time to Interview</th>
<th>Median Good Months on DOT</th>
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<tr>
<td>3</td>
<td>64%</td>
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<td>4</td>
<td>56%</td>
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<td>6</td>
<td>39%</td>
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<th>% Median Time to Interview</th>
<th>Median % Total Cohort Failure Rate</th>
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<td>34%</td>
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<td>44%</td>
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<td>54%</td>
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<td>74%</td>
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Cohort Spreadsheet 4: Calculations Page, Pt. 2

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<td>25</td>
<td>Time to interview (hrs)</td>
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<td>26</td>
<td>Interviewed (4+ days)</td>
<td>2</td>
<td>100%</td>
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<tr>
<td>27</td>
<td>Not interviewed</td>
<td>2</td>
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<tr>
<td>28</td>
<td>Average time to interview</td>
<td>4</td>
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**Epidemiologist or Data Analyst** is responsible for:

- After cohort
  - Summarizing results and disseminating them to the team
  - Beginning the process of following up on issues
  - Preparing the list of cases for the next cohort review
Why it works

• Simple and straightforward
  - Process is easy to master
  - “Buildable”- once you start, build on previous cohorts
  - Calculations can be done by hand or in Excel
• Adaptable to different program models
• Everyone leaves the meeting knowing exactly how the program performed

Case Management and Cohort Review
Mary Katie Sisk, RN, CIC
Nursing Supervisor
Bureau of TB Control, Washington DC
1/20/11
Objectives

- Identify means of translating daily work activities to the cohort review process
- Define pre-cohort review preparation steps for case managers and supervisor
- Identify means to facilitate staff buy in

First Things First

- Development of cohort sheets – make them work for you
- Have clear documented definitions for terms used on cohort sheets
- **Cohort review should not be burdensome** – It is not additional work but a summation of all work done on a case; information should be easily obtained from your case report and clinic records
Steps to Cohort Review

- Step One: Preparation
- Step Two: Practice and Review
- Step Three: Cohort Review
- Step Four: Aftermath or Follow-up Cohort Review

Step One: Preparation

- Selection of patient group to be reviewed
- Notification of staff:
  1. Staff / patient selection
  2. Cohort practice time and location
  3. Cohort review time and location
- Preparation of cohort sheets
Selection of Patients

- Define patient cohort group as determined by program case numbers and/or needs (number of patients / months / quarters)

- Define staff who were responsible for case work; this will vary program to program

Notification of Staff

- Adequate notification – Currently the DC program sends out next cohort notice within 2 weeks of preceding cohort

- Notification is via email using a line listing; designates which staff member will be responsible for reporting during the cohort review
Preparation of Cohort Sheets

TB programs basically collect the same information; our processes might be different but the information needed should be available.

- Begin completing the form as you begin working the case, it saves time
- Most of the case information will be complete or near completion at time of the review
- It allows for a final review of case
- It should take approximately 10 minutes to complete a review sheet
Notes, Definitions and Special Cases

1. If patient is taking medication for HIV or any other medical condition, specify yes or no.

2. Report positive sputum smear regardless of the culture's result.

3. A disease is in the respiratory system if it involves the airways.

4. Use this section to present the following cases that do not meet the 2a or 2b criteria: culture negative, negative, respiratory culture positive, no sputum smear done, and pediatric cases (cases under 5 years old at TB diagnosis). For culture negative cases without a positive sputum smear or culture chest x-ray, see Cohort Presentation II: Classically Confirmed or Extra-pulmonary.

5. Chest x-rays are reported chest, non-chest, or normal. Do not report x-ray dates or results of follow-up x-rays.

6. If patient is not likely to complete medication within 12 months, be prepared to explain.

7. Do not list medications. However, be prepared to discuss if case is MDR, rifampin resistant, taking a protease inhibitor/NRTI or if regimen is unusual.

8. A case can only be closed as cured if an interview has been done.

9. If adherence for any period has been below 80%, state so and be prepared to explain.

10. For patients on self-administered treatment, present a review of pharmacy records to assess treatment adherence.

11. Be prepared to present the source case and associate contact investigation, including whether this child was listed as a contact in the contact investigations for the source case.

12. Contacts identified include all true contacts with legitimate names and addresses.

13. Contacts inappropriate for evaluation will be stricken from the contacts identified to determine the number appropriate for evaluation.

14. Contacts appropriate for evaluation include all legitimate contacts identified who were not counted as "died prior to testing."

15. "Evaluation" is defined as: 1) TST positive, CXR completed, and sputum collected (indicated). 2) TST placed and read after the end of the window period; or 3) contact with documentation of previous diagnosed disease or LTBI – even if no further tests and exams are done. If previous LTBI starts on treatment, do not include these contacts under "appropriate for treatment of extrapulmonary TB infection" section. Report only the number evaluated. Do not report the number of contacts who were TLT, who moved more than 50 days after being identified and were not evaluated, or who refused. These explanations may come up in discussion, but are not part of the standard format. Post-window period testing is only required for TST-negative contacts.

16. All suspects must be reclassified to either "infected with disease" or "infected without disease" within four months of the initiation of treatment.

17. Contacts appropriate for treatment of LTBI infection include all TST+ contacts recommended for medical follow-up for whom treatment is medically indicated. Patients identified during a contact investigation who need treatment, but were TST negative or prior TST- will be excluded from this number. Be prepared to explain.

18. Report the number who started treatment for LTBI. Do not report the number of people who did not start treatment for LTBI. However, be prepared to explain. Do report people who were found not to have latent TB infection. Provide updated information on those contacts who share treatment for LTBI.

19. It is important to be familiar with:
   a. Patient's adherence history, latest DOT status, dates of DOT requests/outcomes
   b. Patient's occupation and residence settings, particularly if patient is homeless
   c. Where contact with others occurred and how often
   d. When contacts were evaluated in relation to patient's last positive smear
   e. If source case investigation was conducted and results, including relationship of this to any other known cases
   f. Evaluations of skin-needle-sharing partners of HIV-positive patient, and how long any HIV-positive contacts
   g. Status of treatment for LTBI when appropriate, including window prophylaxis
   h. If all those involved are treated and results of investigation

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**COHORT PRESENTATION 1: PULMONARY or LARYNGEAL TB**

1. Name: ________________
   TSID ID: __________

2. Date of birth: __________
   Age: __________
   Sex: __________
   Race, Ethnicity: __________
   Year entered as U 5: __________
   Class of U 5: 01, 02, 03: __________
   DOT: __________

3. Date of collection: __________
   Culture negative: __________
   Date: __________
   Date assigned: __________
   Date interviewed: __________
   If > 3 days for interview, state reason: __________

   Date of treatment: __________
   Date of care: __________
   Date of care: __________
   Date of care: __________
   Date of care: __________
   Date of care: __________

4. Treatment outcome at time of report:
   - Completed therapy: __________
   - Had therapy: __________
   - Likely to complete within 12 months: __________
   - Yes: __________
   - No: __________
   - Other: __________
   - Died: __________
   - Other: __________
   - Not known: __________
   - Other: __________
   - Abnormal Non-Cavitary: __________
   - Normal CXR: __________

5. On DOT: Yes: __________
   DOT done: __________
   DOT not done: __________
   Total number of months on DOT: __________
   Number of months on DOT with > 80% compliance: __________
   If DOT, why not: __________
   Compliance: months: __________
   Other reason: __________

6. If lost to a child's care: __________
   TSID: __________

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27
Sa. Contact:
# Identified*1
# Inappropriate for evaluation (Dead prior to end of Window Period)*14
# Appropriate for evaluation*12
# Evaluated*1

Previous status:
# Active TB
# Month's adequacy treated
# LTBI (prior TST+ no disease)

Current status:
# All negative
# Active TB: Name:
# Suspect*6: Name:
# LTBI (new TST+ no disease)

Appropriate for treatment of latent TB infection (LTBI)*15 out of current status LTBI's only. (NO WINDOW PROPERTY)
# Started treatment for LTBI
# Completed treatment for LTBI
# Current to care
# Discontinued treatment for LTBI due to:
  - 6 adverse reactions to medications
  - Died
  - Moved
  - Refused to continue treatment for LTBI
# Lost to follow-up

Sb. Employed: No ☐ Yes ☐ If Yes, Type of Work:

Was an ECI (Exursed Contact Investigation) associated with this case? No ☐ Yes ☐ ECI site and results:

Date

COHORT PRESENTATION II - CLINICALLY CONFIRMED or EXTRAPULMONARY TB CASE

1. Name:

   TMS ID:

   HIV:

   (Defining the disease) Date Aquired:

   Date Interviewed:

   Risk factors:

   Ex. (Drug use, ETOH, homeless, etc.)

   Date when TB Control notified:

   Clinically confirmed, pulmonary, extra-pulmonary, culture positive, culture negative, non-culture?

   Extra pulmonary only: Yes ☐ No ☐

   Past treatment:

   MDR ☐ DOTS ☐ HIV resistant ☐ Rifampicin resistant ☐ Other resistance ☐ Not done

   Treatment Start Date:

   Completed therapy: Yes ☐ No ☐

   Currently taking TB medications:

   Clinical: Has completed calendar months of treatment:

   Extra-pulmonary: Has completed calendar months of treatment:

   Likely to complete therapy within 12 months? Yes ☐ No ☐

   Did not complete therapy:

   Reason patient did not complete: Refused ☐ Lost ☐ Died ☐ Moved ☐

  开工 in months on DOT:

   FINISH DOT: why not:

   Compliance check: done:

   Map resonance: If over 5 years old then the COHORT PRESENTATION FORM is to be used.

2. Intervention:

   Note:

   1. If patient is taking medications for the HIV, such as a protease inhibitor or non-nucleoside reverse transcriptase inhibitors (NNRTI) as medication for any other medical condition, specify the name of the medication.

   2. If patient has pulmonary disease and has other positive sputum AFB smear or a cavity chest x-ray then use Cohort Presentation Form I (Exposed to a Lung Tuberculosis):

   3. Do not tell medications. However, be prepared to discuss if care MDR or regimen is unusual.

   4. If the patient is not likely to complete medications within 12 months, be prepared to explain.

   5. If a case can only be closed as cured if the histoculture sample has been done.

   6. For patients on self-administered treatment, present a review of drug records in case treatment adherance.

   7. It is recommended to be familiar with:

   - Adherence history
   - Result from initial sputum examination, particularly if patient is homeless
   - Result from histoculture investigation that any time prior a successful outcome was reached, particularly if any HIV positive contacts were identified.
Step Two: Cohort Practice

- Determine number of practice sessions
- Conduct practice as you would an actual cohort review
- Case managers provide copies of sheets to supervisors prior to 1st practice
- Supervisors review sheets prior to practice for missing or conflicting information
- Practice is conducted 3 weeks prior to actual review

Cohort Practice

- Cases are called in the order listed in notification
- Supervisors act as medical reviewers
- Staff are given 1 week to make changes and return corrected sheets to supervisors
- A 2nd practice session is held 2 weeks prior to actual cohort (if needed)
- 1 week prior to cohort review the sheets are forwarded for data entry
Step Three: Cohort Review

- A formal process
- No drinks, cell phones on mute
- No paperwork other than cohort sheets
- **Remember this is not case management!** It is not the daily management of the patient but a summation of the care provided to index and contacts
- Allow all of staff to participate in discussing data results

Step Four: Aftermath of Cohort

- Post your data
- Obtain or clarify missing information
- Select indicators that need improvement
- Select actions to initiate / implement these actions – What process will you use? How will you evaluate results?
- Document results of implementation – Did you get the desired results?
- Begin prep for next cohort review
Selling Cohort

- Pick several cohort review champions
- Enlist all of staff (interns, clerks, nurses, investigators, registry, etc.)
- Include all staff in training, everyone will then understand where they “fit in”
- Highlight the benefits to program and staff
- Remember not everyone likes change, but change we must!

Planning and Staffing

Bill L. Bower, MPH
Planning

• How to Tailor Cohort Review to Local Program Areas (p 53-57)
  q Establishing Political and Management Commitment
  q Modifying the Elements of the Cohort Review Process

Exercises for Planning and Training (1)

TB Program Self Assessment Exercise can help you identify aspects of your program that may need to be enhanced in order to conduct a cohort review (p.13)
Exercises for Planning and Training (2)

1. TB Program Self Assessment
2. Developing TB Program Objectives
3. Reviewing Case Management Protocols
4. Completing Forms for Cohort Review
5. Practice Presentation and Review of Cases
6. Calculation of Indices/Rates for Treatment of TB Disease
7. Calculation of Indices for Contact Investigation

Implementation Handout

<table>
<thead>
<tr>
<th>ACTION</th>
<th>WHO</th>
<th>WHEN</th>
<th>STATUS</th>
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<tbody>
<tr>
<td>Decide whether to adopt a “plug and play” approach or spend months tailoring the process and forms to your specific program</td>
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<td>Decide on a face-to-face model, opt for distance communication, or a hybrid model</td>
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<td>Have cohort presentation forms and a spreadsheet or database ready</td>
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<td>Train local case managers and supervisors who would make the case presentations</td>
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<td>Make sure the persons responsible for key activities (e.g. roles of program director, medical reviewer, data analyst, supervisor) know what is expected</td>
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<td>Send case managers a list of the cases they will be presenting on a given date</td>
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<td>Provide any supervision, oversight of case management, and/or mock cohort review practice sessions they deem necessary</td>
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<td>Arrange for the time and presence of a clinical reviewer and data analyst/epidemiologist</td>
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<td>Arrange for appropriate meeting space and/or teleconference capability, depending on the model chosen</td>
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<td>Plan how follow-up of issues raised will be tracked</td>
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People

• Staffing
  - Identifying the right people
  - Orienting them to the process
  - Training as needed

Questions & Discussion
Thank you for your participation!!