TREATMENT ADHERENCE AND COMPLETION

LEARNING OBJECTIVES
Upon completion of this session, participants will be able to:

1. Provide strategies for dose counting
2. Provide strategies for management of treatment interruptions
3. Identify clinical assessment tools to ensure successful treatment completion

INDEX OF MATERIALS

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<tr>
<td>1. Treatment adherence and completion – slide outline</td>
<td>1-12</td>
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Presented by: Lana Kay Tyer, RN, MSN

SUPPLEMENTAL MATERIALS
None
### ADDITIONAL REFERENCES


- **Moonan PK, Quitugua TN, Pogoda JM et al.** Does directly observed therapy (DOT) reduce drug-resistant tuberculosis? *BMC Public Health.* 2011; 11(1):19


- **U.S. Department of Health and Human Services Centers for Disease Control and Prevention:** The Report of a Verified Case of Tuberculosis (RVCT) Instructions and Self-Study Modules. 2009


Treatment Adherence and Completion

Lana Kay Tyer, RN MSN
TB Nurse Consultant
WA State Department of Health

Objectives

• Provide strategies for dose counting
• Provide strategies for management of treatment interruptions
• Identify clinical assessment tools to ensure successful treatment completion
What is the responsibility of the case manager?

- Ensure the patient adheres to appropriate and adequate treatment
- Ensure patient receives essential medical evaluations, including routine clinical monitoring
- Ensure patients response to treatment is evaluated regularly
- Serve as a source of information to patient and family

Treatment Adherence

- Define adherence vs compliance
- How is it demonstrated by the patient?
- How is it assessed?
How is Treatment Completion Determined?

- Completion of treatment =
  - Positive response to treatment
  - Negative sputum/specimen culture
  - Improved chest radiograph
  - Diminished or resolved symptoms
  - Weight gain
- AND total number of doses taken in recommended timeframe

ATS Treatment of TB Guideline Update

Clinical Infectious Diseases Advance Access published August 19, 2015


The American Thoracic Society, Centers for Disease Control and Prevention, and Infectious Diseases Society of America jointly sponsored the development of this guideline for the treatment of drug-susceptible tuberculosis, which is also endorsed by the European Respiratory Society and the National Tuberculosis Controllers Association.
ATS Treatment of TB Guideline Update

• Recommendation 2: We suggest using directly observed therapy (DOT) rather than self-administered therapy for routine treatment of patients with all forms of tuberculosis.

ATS Treatment of TB Guideline Update

may be considered as meeting the definition of “daily” dosing. There are alternative regimens that are variations of the preferred regimen, which may be acceptable in certain clinical and/or public health situations (see “Other Regimens” and “Treatment in Special Situations” in the full-text version of the guideline).

PICQ Question 3: Does intermittent dosing in the intensive phase have similar outcomes compared to daily dosing in the intensive phase for treatment of drug-susceptible pulmonary tuberculosis? Recommendation 3a: We recommend the use of daily rather than intermittent dosing in the intensive phase of therapy for drug-susceptible pulmonary tuberculosis (strong recommendation; moderate certainty in the evidence).

Recommendation 3b: Use of thrice-weekly therapy in the intensive phase (with or without an initial 2 weeks of daily therapy) may be considered in patients who are not HIV-infected and are also at low risk of relapse (pulmonary tuberculosis caused by drug-susceptible organisms, that at the start of treatment is noncavitary and/or smear negative) (conditional recommendation; low certainty in the evidence).

Recommendation 3c: In situations where daily or thrice-weekly DOT therapy is difficult to achieve, use of twice-weekly therapy after an initial 2 weeks of daily therapy may be considered for patients who are not HIV-infected and are also at low risk of relapse (pulmonary tuberculosis caused by drug-susceptible organisms, that at the start of treatment is noncavitary and/or smear negative) (conditional recommendation; very low certainty in the evidence). Note: If doses are missed in a regimen using twice-weekly dosing, then therapy is equivalent to once weekly, which is inferior (see PICQ Question 4).
Appropriate Intervals

<table>
<thead>
<tr>
<th>Regimen</th>
<th>Drug*</th>
<th>Interval and Dose** (Minimum Duration)</th>
<th>Drugs</th>
<th>Interval and Dose*** (Minimum Duration)</th>
<th>Range of Total Doses</th>
<th>Comments**#</th>
<th>Regimen Effectiveness</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>INH, RIF, PZA, EMB</td>
<td>7 dvwk for 56 doses (8 wk), or 5 dvwk for 60 doses (9 wk)</td>
<td>INH, RIF</td>
<td>7 dvwk for 126 doses (18 wk), or 5 dvwk for 90 doses (13 wk)</td>
<td>182-130</td>
<td>This is the preferred regimen for patients with newly diagnosed pulmonary tuberculosis.</td>
<td>Greater</td>
</tr>
<tr>
<td>2</td>
<td>INH, RIF, PZA, EMB</td>
<td>7 dvwk for 56 doses (8 wk), or 5 dvwk for 60 doses (9 wk)</td>
<td>INH, RIF</td>
<td>3 times weekly for 54 doses (18 wk)</td>
<td>110-94</td>
<td>Preferred alternative regimen in situations in which more frequent DOT during continuation phase is difficult to achieve.</td>
<td>Lesser</td>
</tr>
<tr>
<td>3</td>
<td>INH, RIF, PZA, EMB</td>
<td>3 times weekly for 24 doses (8 wk)</td>
<td>INH, RIF</td>
<td>3 times weekly for 54 doses (18 wk)</td>
<td>78</td>
<td>Use regimen with caution in patients with HIV and/or cavitary disease. Missed doses can lead to treatment failure, relapse, and acquired drug resistance.</td>
<td>Lesser</td>
</tr>
<tr>
<td>4</td>
<td>INH, RIF, PZA, EMB</td>
<td>7 dvwk for 14 doses then twice weekly for 12 doses*</td>
<td>INH, RIF</td>
<td>Twice weekly for 36 doses (18 wk)</td>
<td>62</td>
<td>Do not use twice-weekly regimens in HIV-infected patients or patients with smear-positive and/or cavitary disease. If doses are missed, then therapy is equivalent to once weekly, which is inferior.</td>
<td>Lesser</td>
</tr>
</tbody>
</table>

Target Timeframe

- National Tuberculosis Indicators Project (NTIP)
  - Treatment Initiation- For TB patients with positive acid-fast bacillus (AFB) sputum-smear results, increase the proportion who initiated treatment within 7 days of specimen collection. 97%
  - Completion of Treatment- For patients with newly diagnosed TB disease for whom 12 months or less of treatment is indicated, increase the proportion who complete treatment within 12 months. 95%

What is “Appropriate Treatment”? 

- Drug susceptibility testing
- Drug-o-gram

What is a Countable Dose? 

- DOT & VDOT
- Partial doses during re-challenging
- Interval doses
- Treatment completion counted in weeks
RVCT Manual: DOT

<table>
<thead>
<tr>
<th>Option (select one)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>No, totally self-administered</td>
<td>No doses of medication were given under direct supervision.</td>
</tr>
<tr>
<td>Yes, totally directly observed</td>
<td>Response applies if DOT was used for all doses for a patient who was taking medication 1–5 times a week. Response also applies if the patient was taking medication 7 times a week and DOT was used for at least 5 of those doses (i.e., patient self-administered the dose[s] during weekends and holidays).</td>
</tr>
<tr>
<td>Yes, both directly observed and self-administered</td>
<td>Response applies if the patient self-administered any dose while taking medication 1–5 times a week. Response does not apply if the patient was taking medication 7 times a week and DOT was used for at least 5 of those doses (i.e., patient self-administered the dose[s] during weekends and holidays). Response also applies if patient took several months of self-administered therapy and several months of DOT.</td>
</tr>
<tr>
<td>Unknown</td>
<td>It is not known whether any doses were given under direct supervision.</td>
</tr>
</tbody>
</table>

Total DOT vs. Both DOT and SA

<table>
<thead>
<tr>
<th></th>
<th>Total Direct Observed Therapy (DOT)</th>
<th>Both Direct Observed Therapy + Self-Administration (SA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment 1-5x per week</td>
<td>All treatment DOT</td>
<td>Any treatment is SA</td>
</tr>
<tr>
<td>Treatment 7x per week</td>
<td>DOT at least 5x per week</td>
<td>SA more then 2x per week</td>
</tr>
</tbody>
</table>
RVCT Manual: Counting weeks

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of weeks of</td>
<td>Based on the total number of regimen-appropriate weeks and</td>
<td>The total number of DOT weeks must be less than or equal to the time</td>
</tr>
<tr>
<td>directly observed</td>
<td>directly observed doses ingested under directly observed supervision</td>
<td>between Date Therapy Started (item 36) and Date Therapy Stopped (item 43).</td>
</tr>
<tr>
<td>therapy (DOT)</td>
<td>(e.g., 026)</td>
<td></td>
</tr>
</tbody>
</table>

Lapse in Treatment vs Treatment failure

- Timing of interruption:
  - Intensive phase
  - Continuation phase
- Earlier and longer the duration of interruption the more serious and greater need to restart treatment
- Dangerous interruptions: intensive phase & 3 months or more
- Know when to consult with TB clinician for assessment of non-adherence
Timing of Interruption

- Intensive Phase - Highest bacillary load
  - Drug resistance
- Continuation Phase - lower bacillary burden
  - Effectiveness
  - Possibility of reoccurrence

Interruptions in Treatment

- Intensive phase vs continuation phase
- How extensive is the disease?
  - Cavitary?
  - Grade of smear positivity
  - Drug resistance
  - Do you have culture conversion?
- Assess for measures of response to treatment
  - Gaining weight
  - Resolving symptoms
  - Sputum conversion
  - Chest radiograph improvements
Returning a patient to treatment

- Collect sputum cultures for repeat drug susceptibility
- Obtain new chest radiograph
- Duration of interruption was more or equal to 3 months
  - Continue to complete a full course
  - Positive culture: restart 4-drug treatment regimen while waiting for DST
  - Negative culture: continue therapy to complete regimen within 9 months of original start date
- Duration of interruption was less than 3 months
  - Positive culture: continue with 4 drug while waiting for DST
  - Negative sputum cultures: consider stopping if patient has received a total of 9 months of therapy.
Multi-drug Resistant TB Interruptions

- Once DST reveals resistance regimen is modified
  - What is a countable dose?

In all cases...

- Consult with an expert to manage treatment interruptions-
  - Infectious Disease Specialist
  - TB clinical team
  - State TB program
  - Curry Warm line (877) 390-NOTB
References


Medication Counting Exercises

• 4 months of treatment is 17 weeks
• 6 months of treatment is 26 weeks
• 9 months of treatment is 39 weeks
• 12 months of treatment is 52 weeks