

# Counting 'n Dividing, 'n Adding, Oh My?

## How to Calculate TB Treatment Regimens

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[http://www.youtube.com/watch?feature=player\\_detailpage&v=Neck4MwOfel](http://www.youtube.com/watch?feature=player_detailpage&v=Neck4MwOfel)

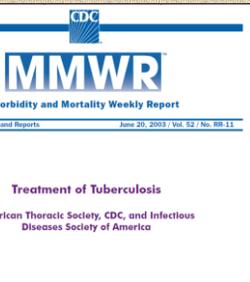
## Definitions

- DOT (Directly Observed Therapy)
  - Every dose observed by HCW
- S/A (Self Administered)
  - Less than 1/2 DOT or all doses self-administered
- DOT & S/A
  - More than 1/2 observed by HCW with remainder self administered
- VET – Video Enhanced Therapy
  - Doses observed via a video camera

## DOT/VET

- Generally only DOT/VET doses will count towards completion of treatment (COT)
  - Count only M-F doses unless DOT on weekend
  - When treatment at another facility, assess:
    - Was it truly DOT? } Required before including in COT calculations
    - If so, obtain the MAR's }
  - Assess SA doses and determination for inclusion in COT

## Steps in counting doses!



### COT based on

- # of doses ingested
- divided by the frequency taken
- Which equals a 'specified time frame'

The specified time frame means the prescribed length of treatment.

- 4 months = 16 weeks
- 6 months = 26 weeks
- 9 months = 39 weeks

## Basis for Guidance

## Timeframes

- All 6-month regimens should be completed within 9 months
  - 26 weeks within 39 weeks
  - Initial 2 month phase within 3 months
  - Continuation 4 month phase within 6 months



## Timeframes

- All 9-month regimens should be completed within 12 months
  - 39 weeks within 52 weeks
  - Initial 2 month phase in 3 months
  - Continuation 7 month phase in 9 months



## Timeframes

- 4 month regimens are reserved for culture negative pulmonary cases (clinical case)
  - 16 weeks
  - There is no specific guidance regarding the maximum length of time required to complete this regimen
  - HIV positive clients who are clinical cases are treated for 6 months, not 4



Frequency per week	Number of weeks	Total doses required to complete the initial phase	
7 (daily)	8	56	If ANY DOSE IS MISSED it will take longer than 8 weeks to complete the initial phase
5 (daily)	8	40	
3 (thrice)	8	24	
5	2	10	
2 (twice)	6	12	

- Initial phase = 8 weeks
  - Number of doses required varies depending on treatment frequency

### About weeks and the initial phase

Frequency per week	Number of weeks	Total doses required to complete the initial phase	
7 (daily)	18	126	If ANY DOSE IS MISSED it will take longer than 18 weeks to complete the continuation phase
5 (daily)	18	90	
3 (thrice)	18	54	
2 (twice)	18	36	

### For 6 months of total treatment

- Continuation phase = 18 weeks
  - Number of doses required varies depending on treatment frequency

### About weeks and the continuation phase

## Tips

- There are no 'phases' if the regimen chosen is not one of the standard 4
- When the frequency changes during the course of treatment
  - The total number of doses needed will not be the same as those listed in the treatment guidelines
  - The only way to determine if treatment is adequate in these situations is to convert to weeks.
  - Example .....NEXT slide..... click!

## When frequencies change

You have completed 8 weeks of RIPE in the initial phase

# of doses	Frequency	Weeks
21	5 x weekly	4.2
24	2 x weekly	12.0
13	7 x weekly	1.8
Total weeks		18.0

### Counting/Dividing/Adding, Oh My!

## Facts about PZA

- Pyrazinamide (PZA) works best during the initial phase
  - bactericidal for semi dormant *M. tuberculosis*
  - improves how other medicines are absorbed, distributed, metabolize and excreted
  - converted by TB bacilli to an active Pyrazinoic acid
- Shortens the length of treatment from 9 months to 6 months, SO.....

If PZA is not included in the treatment regimen or is not continued for the full 8 weeks, treatment must continue for 9 months.

## Tips

- Count initial and continuation phases separately
  - To use a standard 6 month regimen, PZA must be taken for the full initial phase of 8 weeks
  - At the end of the 8 weeks you might continue all 4 drugs for a bit longer while you await:
    - orders from the clinician or
    - new meds from the pharmacy
    - or, patient status indicates continuing

## Initial phase → Continuation phase

- 8 weeks of PZA marks the end of the initial phase
- The initial phase ends, and the continuation phase begins even if all four drugs continue
- Begin counting the continuation phase at 8 weeks of treatment
- If PZA is not taken – counting the total weeks is very important!

## Tips

- Intolerance = Resistance
  - Regardless of the reason, if one of the first line drugs is removed from the regimen requirements change
  - Losing Rifampin leads to more precarious outcomes than losing INH, EMB or PZA
  - When PZA is removed it means you have 'bought' at least 9 months

## How does PZA effect treatment?

1. Makes treatment more complex
2. Shortens it to 6 months (26wks)
3. Requires DOT
4. Improves adherence



## Summary

- Completion of treatment is based on
  - the number of **doses** ingested within a specified timeframe,
  - at a particular frequency AND
  - Weeks and months matter

**Before you test your skills,  
It's question time!**

# SKILL CHECK



## Calculating reality

Using the 'TB case Completion' report

1. add up the number of doses,
2. divide by the frequency and
3. determine the number of weeks
  - In the initial phase first, then
  - The continuation phase
  - Add both phases to determine the total number of weeks completed
  - Be alert for missing meds and discrepancies

## Case Study 1

What date did the person complete the initial phase of treatment?

1. February 11<sup>th</sup>
2. January 7<sup>th</sup>
3. December 26<sup>th</sup>
4. February 7<sup>th</sup>
5. None of the above



How many total weeks of treatment did the individual receive?

1. 16 weeks
2. 24 weeks
3. 26 weeks
4. 39 weeks
5. 40 weeks
6. 52 weeks



Did the person complete an adequate course of treatment?

1. Yes
2. No



How many extra weeks did the individual receive a 3 or 4 drug treatment regimen?

- 3 weeks
- 4 weeks
- 5 weeks
- 6 weeks
- 7 weeks
- 8 weeks



## Case Study 2

How many countable doses were taken in August

- 6
- 4
- 5
- 3
- None



By the end of September, how many weeks of countable treatment was ingested?

- 3.8
- 5
- 6
- 4.2
- 3.9



Was the initial phase completed by October 24<sup>th</sup> ?

- Yes
- No



How many weeks of treatment were completed by October 24<sup>th</sup> ?

- 8
- 6.6
- 7.2
- 8.4
- 7.8
- 6.9



Month	Countable Doses	Frequency
August	4	7
September	23	7
September	2	5
October	18	5

How did we get there?

$$27 \text{ doses} / 7 = 3.8 \text{ weeks}$$

$$20 \text{ doses} / 5 = \underline{4.0 \text{ weeks}}$$

$$\text{Total} = 7.8 \text{ weeks}$$

How did we get there?

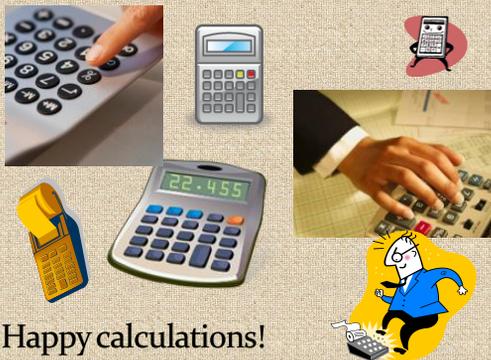
- # doses give @ 7 days a week /7 = weeks
- # doses give @ 5 days a week /5 = weeks
- # doses give @ 3 days a week /3 = weeks
- # doses give @ 2 days a week /2 = weeks
- # doses give @ 1 days a week /1 = weeks

TOTAL = total weeks

Alternative

- Sometime it matters!
- 3 months = 13 weeks
- 6 months = 03 weeks
- 9 months = 39 weeks
- 12 months = 52 weeks

What about months?



Happy calculations!