Developing a TB Patient Care Plan

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Introduction to TB Nurse Case Management Online
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San Antonio, Texas / Online Course

Jacquline Maldonado, DNP, RN has the following disclosures to make:

- No conflict of interests
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What is a Care Plan?

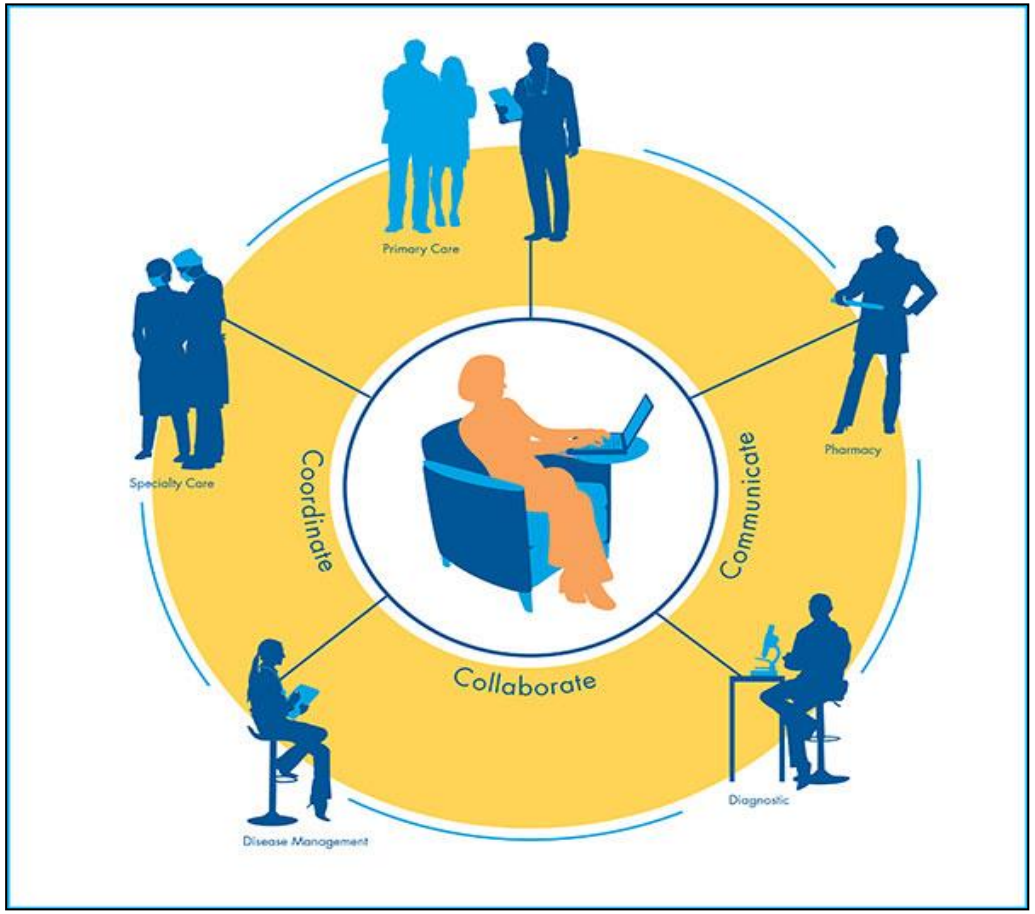
1. A formal process that

- provides direction
- helps to identify existing needs
- recognize potential needs or risks.

2. Main focus

- facilitate standardized, evidence-based and holistic care.

3. Provide a means of communication to achieve health care outcomes.



Objective: Have TB Nurse Case Manager develop a TB Patient Care Plan

- By understanding the following:
  - ✓Description of treatment regimen
  - ✓Methods of monitoring for adverse reactions
  - ✓Methods of assessing and ensuring adherence to treatment
  - ✓Methods for evaluating treatment response

TB Treatment Goals:

1. Cure the patient
2. Prevent death, disability or drug resistance
3. Prevent further transmission

Patient-Centered Care

"Patient-centered care is providing care that is respectful of and responsive to individual patient preferences, needs and values, and ensuring that patient values guide all clinical decisions."

- Institute of Medicine (IOM)

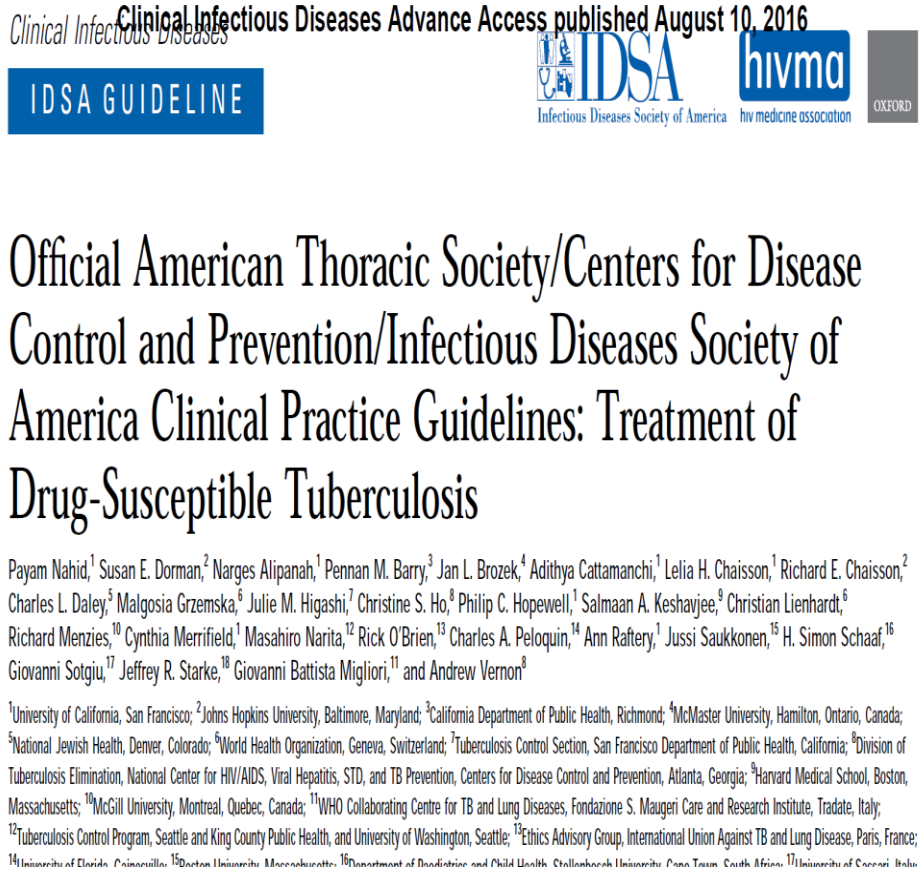
Patient Education Topics:

- TB Disease Process
- What medication should be taken, how much and how often
- Possible adverse reactions to the medications
- When to seek necessary medical attention
- Consequences of not taking their medicine correctly
- TB infection, restriction measures, and isolation precautions

Understand Your Patient

- Patient’s perception & knowledge of TB
- Sociocultural influences
- Home and work habits
- Patient’s support system

TREATMENT REGIMEN



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IDSA GUIDELINE

Official American Thoracic Society/Centers for Disease Control and Prevention/Infectious Diseases Society of America Clinical Practice Guidelines: Treatment of Drug-Susceptible Tuberculosis

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CDC Recommendation for Treatment of Drug-Susceptible TB is a 4 drug regimen, aka **RIPE:**

Rifampin – RIF

Isoniazid – INH

Pyrazinamide – PZA

Ethambutol **-** EMB

Doses are based on weight and age of patient

Dosing Recommendations for Adult Patients with Drug-Susceptible Organisms

Drug	Normal Renal Function	Change in Frequency for Reduced Renal Function?	Creatinine Clearance <30 mL/min[a]
Ethambutol	Standard dose[b]: 15-20 mg/kg once daily	Yes	20-25 mg/kg 3x/weekly (not daily)
Isoniazid	Standard dose: 5 mg/kg daily (max 300 mg) Vitamin B6 daily 25-50 mg Intermittent dose: 15 mg/kg (max 900 mg) High dose therapy: 13-18 mg/kg daily	No	No dose adjustment
Pyrazinamide	Standard dose[b]: 25-35 mg/kg daily	Yes	25-35 mg/kg (maximum 3000 mg) 3x/weekly (not daily)
Rifabutin	Standard dose: 300 mg daily	No	Monitor drug concentrations to avoid toxicity
Rifampin	Standard dose: 10 mg/kg daily	No	No dose adjustment

[a]Including adult patients receiveing hemodialysis
[b]Based on estimated lean body weight. Optimal doses for obese patients are not established.

Please note: Standard doses are given unless there is intolerance; there should be careful monitoring of neurotoxicity; the medications should be given after hemodialysis on the day of hemodialysis; and monitoring of serum drug concentrations should be considered.

Revised 11/4/2020

HEARTLAND
NATIONAL TB CENTER
THE UNIVERSITY OF TEXAS HEALTH SCIENCE CENTER AT TYLER

Tuberculosis Treatment Guidelines

Drug Regimens for Microbiologically Confirmed Pulmonary Tuberculosis Caused by Drug-Susceptible Organisms

Dosing Recommendations for Adult Patients with Drug-Susceptible Organisms

Adapted from the Official American Thoracic Society, Centers for Disease Control and Prevention, Infectious Disease Society of America Clinical Practice Guidelines: Treatment of Drug-Susceptible Tuberculosis
Clinical Infectious Diseases • 2016

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2 Phases of Treatment

Initial Phase + Continuation Phase = Length of Treatment

8 weeks + 18 weeks = 6 months of treatment

8 weeks + 31 weeks = 9 months of treatment

Initial Phase of Treatment

RIPE + B6

24 doses if receiving 3 times/week

40 doses if receiving 5 days/week

56 doses if receiving 7 days/week

8 weeks

This phase must be completed before proceeding to the continuation phase

Continuation Phase of Treatment

RIF + INH + B6

54 doses if receiving 3 days/week

90 doses if receiving 5 days/week

126 doses if receiving 7 days/weeks

18 weeks or 31 weeks

Why Directly Observed Therapy (DOT)?

1. Provides visual evaluation/observation of patient tolerance of medication

2. Provides visual evaluation/observation of patient response to treatment

3. Provides daily opportunity for patient education

Side Effect vs. Adverse Drug Reaction (ADR)

Side Effect:

- a less precise term, often refers to milder, predictable effects of taking a medication.
- Examples:
  - Discolored body fluids from Rifampin
  - Decrease effectiveness of birth control pills/implants from Rifampin

Adverse Drug Reaction (ADR):

- As defined by the World Health Organization (WHO), an Adverse Drug Reaction is a response to a drug that is noxious and unintended and occurs at doses normally used in man for the prophylaxis, diagnosis or therapy of a disease.
- Examples:
  - Hepatitis
  - Rash

MONITORING FOR ADVERSE REACTION

- Patient education
- Daily by DOT Provider
  - Observation
  - Toxicity screen
- Monthly or as ordered by licensed healthcare worker
  - Observation
  - Toxicity assessment
  - Labs

Blood Analysis:

- Baseline
- Monthly
- Complaint or adverse reaction
- Special situations

ADHERENCE TO TB TREATMENT

- Assessing Adherence > daily CM's duty
  - Designated place and time for DOT
  - Appointments met and rescheduled
- Ensuring Adherence > possible challenge
  - Incentives (rewards given to patients to encourage taking DOT or attend clinic appointments, such as food, clothing or personal products)
  - Enablers (ex. helps patient receive treatment, such as transportation vouchers to get to the clinic, appointment reminders and social service assistance)

EVALUATING TREATMENT RESPONSE

- Clinical
- Bacteriological
- Radiographic

Clinical

- Medication tolerance
- TB symptom improvement
- Appetite status
- Activity level
- Affect – mental status

Bacteriological

- AFB Smear
- AFB Culture/Susceptibilities

Texas Department of State Health Services
Tuberculosis Bacteriology Monitoring Log

Name: _____ **DOB**____/____/_____ **MRN/SSN:**_____

Genotype Number: _____

Specimen			Results				Drug Susceptibility Studies										
Date/ Time	Source	Lab No	Smear*	NAA/ PCR	Prelim ID	Final ID	INH	EMB	RIF	SM	PZA	ETH	KM	CAP	RBT	OF	Other

Radiographic Imaging

- After 2 months of TB medication
  - CXR or CT (depending on site of disease)
  - Improved from baseline?
- At end of TB treatment
  - CXR or CT (depending on site of disease)
  - Improved from previous image
- As needed based on patient findings

Indicators of poor response to Treatment

- Clinically - No improvement
- Bacteriologically – minimal to no improvement
- Radiologically – no improvement or worsening

Reasons for Poor Response

- Poor DOT adherence
- Patient vomiting after taking TB medication
- Poor absorption of medications
- Development of Drug Resistance
- Patient “Cheeking” Pills

Patient Centered Care

- Build a relationship with your patient
- Educate your patient and their family
- Provide the Right drugs, Right dosage, and Right number of doses
- Perform Baseline evaluations
- Use logs and graphs to monitor progress
- Document and communicate with the TB team
- Screen regularly for medication side effects and adverse reactions.
- Evaluate for improvement clinically and diagnostically

Questions?

References

- American Thoracic Society, Center for Disease Control and Prevention, Infectious Diseases Society of America Treatment of tuberculosis. MMWR 2003.
- Brenner, Ben. (2017). What is Patient Centered Care and How to Provide It. MedPro Disposal. https://www.medprodisposal.com/practice-management/patient-centered-care-provide/
- Center for Disease Control. (2014). Core Curriculum Chapter 6: Treatment of tuberculosis disease. Division of Tuberculosis Elimination. https://www.cdc.gov/tb/education/corecurr/pdf/chapter6.pdf
- Center for Disease Control. Controlling tuberculosis in the United States: Recommendations from the American Thoracic Society, CDC, and the Infectious Diseases Society of America. MMWR 2005; 54 (No. RR-12). www.cdc.gov/mmwr/preview/mmwrhtml/rr5412a1.htm
- Infectious Disease Society of America. (2016). Official American Thoracic Society/Infectious Diseases Society of America/Centers for Disease Control and Prevention Clinical Practice Guidelines: Diagnosis of Tuberculosis in Adults and Children. https://www.thoracic.org/statements/resources/tb-opi/diagnosis-of-tuberculosis-in-adults-and-children.PDF
- Treatment of Tuberculosis: Guidelines. 4th edition. Geneva: World Health Organization; 2010. 6, Supervision and patient support. Available from: https://www.ncbi.nlm.nih.gov/books/NBK138737/
- Tuberculosis Nursing: A Comprehensive Guide to Patient Care, 2nd Edition, v. 06/13/11.