SESSION 1: INTRODUCTION TO DOT

INTRODUCTION

In this 2-hour session, participants will learn the current scope of TB in the United States and in their own states and local jurisdictions. The objectives and process of TB case management will be reviewed, as well as the importance of patient adherence. Directly Observed Therapy (DOT) will be thoroughly defined and its major tasks described.

LEARNING OBJECTIVES

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

1. Describe the populations at risk for TB in the United States, and in their own states and local jurisdictions
2. State a working definition of case management
3. Explain why patient adherence is so important to successful TB control outcomes
4. Provide a working definition of DOT
5. Describe the four tasks involved in DOT
6. Describe who can deliver DOT and where it can be delivered
7. Name four groups that must receive DOT

Material in this session is adapted from:

- CDC TB Surveillance Slides for 2000. (http://www.cdc.gov/nchstp/tb/)
- *Self-Study Modules on Tuberculosis: Module 9, Patient Adherence to Tuberculosis Treatment.* Atlanta: Centers for Disease Control and Prevention; 1999.
- *TB Frontline: Satellite Primer Continued: Modules 6 – 9, "Patient Adherence,"* broadcast on February 10, 2000.
- *Tuberculosis Outreach Worker's Course.* Presented by the Francis J. Curry National Tuberculosis Center on July 20 – 21, 2000, in San Francisco, California.

I. EPIDEMIOLOGY OF TUBERCULOSIS

A. Worldwide

1. Approximately 8 million new cases of active TB are diagnosed each year

2. World Health Organization (WHO) estimates 2 – 3 million deaths from TB annually

3. One in every three persons is infected with *Mycobacterium tuberculosis (M.tb)*

B. United States

1. Historically, the U.S. TB epidemic peaked in the late 1800s, followed by a steady decline until 1985

2. Between 1985 and 1992, the incidence of TB increased by 20% nationwide

   a. Factors contributing to the increase:
      - increased immigration from countries with high incidence of TB
      - HIV infection
      - increasing numbers of people living in homeless shelters and correctional institutions, facilitating transmission of *M.tb*
      - decreased funding of TB control programs

   b. Characteristics of the increase:
      - 92% of nation's total increase occurred in five states: New York, California, New Jersey, Florida, and Texas
      - urban case rates rose 10%; nonurban rates fell from 54% to 46%
      - African-American case rates increased 38%; White case rates decreased 11%
      - foreign-born cases increased
      - age group was young (25 – 45 years)

3. TB control from 1992 to the present

   a. Between 1992 and 2000, the number of cases decreased by 45%

   b. 2000 was the eighth straight year of declining numbers of cases and had the lowest case rate recorded since 1953, when national surveillance began

   c. 2000: 16,377 cases were reported (5.8 per 100,000)
      The following factors contributed to the decline:
      - more government funding made available for TB control
      - improved laboratory methods for prompt identification of *M.tb*
      - infection control in institutions, resulting in decreased transmission
      - expanded treatment of LTBI in high-risk groups
      - stronger efforts to ensure completion of therapy
      - DOT programs

d. Drug resistance
   - MDR-TB (resistance to isoniazid [INH] and rifampin) remains uncommon in U.S. (approximately 1% of cases diagnosed in 2000)
   - INH resistance is approximately 8% of cases nationwide

e. Race/ethnicity and U.S. born vs. foreign-born
   - between 1992 and 2000, there was a sharp increase in the percentage of cases occurring in foreign-born persons; the number of cases in foreign-born persons remained stable (approximately 7500 per year), whereas the number of cases in U.S. born persons decreased from more than 19,000 in 1992 to fewer than 9,000 in 2000
   - in 2000, approximately 75% of all reported TB cases occurred in racial and ethnic minorities
   - African-Americans account for almost 1 out of every 3 cases
   - in 2000, most foreign-born TB cases came from Mexico (almost 1/4 of all TB cases), Philippines, Vietnam, India, China, Haiti, and South Korea
   - approximately half of all foreign-born TB cases occur within 5 years after arrival in the U.S.

f. Other high-risk groups (2000)
   - alcohol: 15% of cases have excess alcohol use
   - injection drugs: 2.5% of cases are injection drug users
   - homeless: 6.1% of cases are homeless persons
   - occupation: 56.8% of cases were unemployed

The CDC listing of cases and case rates by state for 2000 and 2001 can be found at http://www.cdc.gov/nchstp/tb/surv/Surv.htm.

C. Local TB Statistics

► ACTIVITY

What's Your TB I.Q.?

1. What proportion of the world's population is infected with *Mycobacterium tuberculosis?*
   a. 1 of 20
   b. 1 of 10
   c. 1 of 5
   d. 1 of 3

2. After decades of steady decline, when did TB begin to peak again in the U.S.?
   a. 1945–1950
   b. 1960–1967
   c. 1985–1992
   d. 1993–1998

3. Name one factor that led to the increase of TB in the U.S.

4. Name another factor that led to the increase of TB in the U.S.

5. Name one factor that led to the decrease of TB case rates since 1993.

6. Name another factor that led to the decrease of TB case rates since 1993.

7. Which of the following is NOT true?
   a. In the U.S., 1 of every 3 TB patients is African-American
   b. In 2000, 20% of TB cases in the U.S. occurred in the foreign-born
   c. Almost half of all foreign-born TB cases occur within 5 years of arrival in the U.S.
   d. The HIV epidemic contributed to the rise in TB cases during the late 1980s.

8. Name a group at high-risk for TB in the U.S.

9. Name a high-risk population for TB in your local jurisdiction.

10. What does LTBI stand for?

II. OVERVIEW OF TB CASE MANAGEMENT PROCESS AND OBJECTIVES

A. Definition of case management

1. Primary responsibility for coordination of patient care to ensure that patients' medical, psychological, and social needs are met
2. The assignment of an individual or team of people to be primarily responsible for care of patients with TB disease

B. Goals of a TB case management program

1. To make the patient noninfectious
2. To ensure that effective treatment is promptly started
3. To prevent the disease from getting worse (including drug resistance)
4. To identify and remove challenges to adherence
5. To provide the client with information on TB and its treatment
6. To identify those individuals who may have been exposed to the case and are at risk for TB infection
7. To identify and address other health and related needs

C. The role and primary responsibility of the case manager is to ensure that:

1. Each newly diagnosed client is educated about TB and its treatment
2. Therapy is appropriate, continuous, and completed
3. The client's ongoing status and response to therapy are monitored until treatment is complete
4. Contacts are identified, evaluated, referred, and monitored
5. Other urgent health and social needs of the patient are addressed
6. All staff involved with the patient have adequate knowledge and skills, and a professional, caring attitude
7. Communication is maintained among all health and social service providers

D. Where does DOT fit into the case management process?

1. DOT is a component of case management that helps to ensure that patients receive effective treatment and adhere to it
2. DOT is the most effective strategy for making sure patients take their medicines
3. In many health departments, DOT is the standard of care; that is, it is their goal to place all patients on DOT regardless of the patient's circumstances because it has been shown to be such an important treatment tool. The American Thoracic Society and the Centers for Disease Control and Prevention recommend that every TB patient be considered for DOT

III. ADHERENCE

A. Definition of adherence

Adherence to treatment means following the recommended course of treatment by taking all the prescribed medications for the entire length of time necessary.

B. The possible consequences of TB patients not adhering to treatment can be severe:

1. Increases the development of drug-resistant TB
2. Contributes to ongoing transmission of TB infection
3. Leads to prolonged illness, disability, and possibly death from TB

► ACTIVITY

Why is adherence so challenging?

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____
13. _____

IV. DEFINITION OF DOT AND DOT TASKS

A. Definition of DOT

DOT means that a health care worker or other designated individual (excluding a family member) watches the patient swallow every dose of the prescribed TB drugs ("supervised swallowing"). The American Thoracic Society and the Centers for Disease Control and Prevention recommend that every TB patient be considered for DOT. Some jurisdictions mandate that *all* patients be placed on DOT.

B. DOT tasks

1. Deliver medication
2. Check for side effects
3. Verify medication
4. Watch patient take pills
5. Document the visit

C. DOT staff may also assist in:

1. Helping patients keep appointments
2. Providing patient education
3. Offering incentives and/or enablers to encourage adherence
4. Connecting patients with social services/transportation
5. Drawing upon their familiarity with the client's home environment to identify household contacts

D. Who can deliver DOT?

1. Usually: TB clinic personnel, such as a nurse or other health care worker
2. Staff at other health care settings, such as outpatient treatment centers
3. Other responsible persons (school personnel, employer, clergy)
4. *Not* family members

► **ACTIVITY**

Where is DOT delivered?

1. _____

2. _____

3. _____

4. _____

E. Can we reliably predict who will be nonadherent to their treatment?

No! Anyone can be nonadherent, regardless of social class, educational background, age group, gender, or ethnicity.

► **ACTIVITY**

Which patients *must* have DOT?

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

8. _____

9. _____

10. _____

11. _____

F. DOT counseling: contracts and agreements

It may be useful to develop a letter of agreement or acknowledgment between the patient and the DOT worker providing DOT services. Some jurisdictions have successfully used these as a method of ensuring adherence to therapy.

The DOT worker and the patient negotiate dates, places, and times for DOT services to be provided and both sign a document stating such agreements. Included in the agreement could be language specifying what consequences may result in the event that the client violates the terms of the contract. Two examples are shown as attachments (see pages 1-11 and 1-12).

► ACTIVITY

Video: A Day in the Life of the San Francisco DOT Program

1. What DOT tasks and skills were demonstrated in the video?

2. Why were some patients in the video at high risk for nonadherence?

3. What are some other types of patients at high priority for DOT?

4. How did the DOT workers in the video build a positive relationship with their patients?

REVIEW QUESTIONS

1) Name three populations at risk for TB in the U.S.

a. _____

b. _____

c. _____

2) Name a population that is at particular risk in your local jurisdiction.

_____

_____

3) What is TB case management?

_____

_____

4) What are two negative consequences that can occur if a patient is nonadherent?

a. _____

b. _____

5) What is DOT?

_____

_____

6) What are the four main tasks involved in DOT?

a. _____

b. _____

c. _____

d. _____

7) What are three high-risk groups of patients that must receive DOT?

a. _____

b. _____

c. _____

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Direct Observed Therapy Verbal/Written Agreement

I, _____

residing at _____

agree to be at _____

on _____ , at _____ AM / PM for treatment.
(Date) (Time)

If I am unable to be at the site at the time mentioned above, I will call the Health Department at least one (1) hour prior to the time appointed to reschedule. I can expect the same consideration from the health department staff.

I can be reached at:

Phone: _____

Phone: _____

Phone: _____

I can reach the following health department staff at:

_____
(Name) (Phone)

_____
(Name) (Phone)

_____
(Name) (Phone)

Patient Signature Health Department Staff Signature

_____ _____ Date _____

LOCAL HEALTH DEPARTMENT ADDRESS: 1800 Mt. Vernon Ave., Bakersfield, CA 93306

FLORIDA DEPARTMENT OF HEALTH

Name: _____
ID#: _____
Date of birth: _____

NOTICE OF COUNSELING FOR DIRECTLY OBSERVED THERAPY (DOT) FOR TUBERCULOSIS

I, _____, am a client of the _____ County Health Department and I am being treated for tuberculosis. It has been determined by the Health Department that I must participate in Directly Observed Therapy (D.O.T.) in order to treat my tuberculosis. I have been advised of the following:

1. Tuberculosis is an infectious disease that can be fatal if not properly treated.
2. Directly Observed Therapy means that a representative of the Health Department must observe and closely monitor the ingestion of my tuberculosis medicine.
3. A representative of the County Health Department will provide my Directly Observed Therapy on _____ (days), in the morning/afternoon at _____ (location).
4. I understand that my failure to strictly comply with all of the terms and conditions of Directly Observed Therapy may result in more restrictive treatment or my involuntary hospitalization pursuant to Sections 392.55, 392.56, and 392.57, F.S. (1995).

I HAVE READ AND UNDERSTAND THE FOREGOING. I HAVE BEEN FULLY ADVISED AND COUNSELED REGARDING MY TUBERCULOSIS, THE RISK FACTORS AND THE RECOMMENDED TREATMENT.

_____	_____
Client	Date
_____	_____
Health Department Representative/Title	Date
_____	_____
Witness/Interpreter's Signature	Date

DH 1184, 01/98

ADDITIONAL RESOURCES

- *Core Curriculum on Tuberculosis, 4th ed.* Atlanta: Centers for Disease Control and Prevention; 2000.
- New York State Department of Health, Bureau of TB Control: (518) 474-4845; videos and publications
- *Self-Study Modules on Tuberculosis: 1 – 5.* Atlanta: Centers for Disease Control and Prevention; 1995.
- *Self-Study Modules on Tuberculosis: 6 – 9*. Atlanta: Centers for Disease Control and Prevention; 1999.
- http://www.thoracic.org
  American Thoracic Society
- http://www.cdcnpin.org/tb/start/htm
  CDC National Prevention Information Network
- http://www.harlemtbcenter.org
  Charles P. Felton National Tuberculosis Center at Harlem Hospital
- http://www.cdc.gov/nchstp/tb*
  Division of TB Elimination, Centers for Disease Control and Prevention
- http://www.nationaltbcenter.edu
  Francis J. Curry National Tuberculosis Center
- http://www.iuatld.org
  International Union Against Tuberculosis and Lung Disease
- http://www.hopkins-tb.org/index.shtml
  Johns Hopkins Center for Tuberculosis Research
- http://www.njc.org
  National Jewish Medical and Research Center
- http://www.umdnj.edu/ntbcweb
  New Jersey Medical School National TB Center
- http://www.tbinitiative.org/issues.html
  Princeton Project 55 Tuberculosis Initiative
- http://cdcnpin.org/tb/listserv/htm
  TB-EDucate Listserv
- http://www.south-asia.com/ngo-tb
  TB Net – the Global TB Network
- http://www.who.int/gtb
  World Health Organization – Global TB Programme

* Order CDC's educational materials through this website

SESSION EVALUATION FORM

Your feedback about this training session is important. Please read each statement and circle one number to indicate the level of your agreement/disagreement. Include any comments on the lines provided below.

Name _____ Session # _____

Topic _____ Instructor _____

1 = Strongly disagree 2 = Disagree 3 = Neither agree nor disagree 4 = Agree 5 = Strongly agree

1. The topics are covered comprehensively 1 2 3 4 5

2. The session meets its objectives 1 2 3 4 5

3. The session length is appropriate 1 2 3 4 5

4. The information is well organized 1 2 3 4 5

5. The session maintained my interest 1 2 3 4 5

6. The level of the material is appropriate 1 2 3 4 5

7. The printed materials are useful 1 2 3 4 5

8. The delivery of the material was effective 1 2 3 4 5

9. I now feel more prepared to perform my DOT duties 1 2 3 4 5

10. Overall, the session was excellent 1 2 3 4 5

What do you recommend to improve this session? _____

What additional tuberculosis training do you need? _____

Other comments: