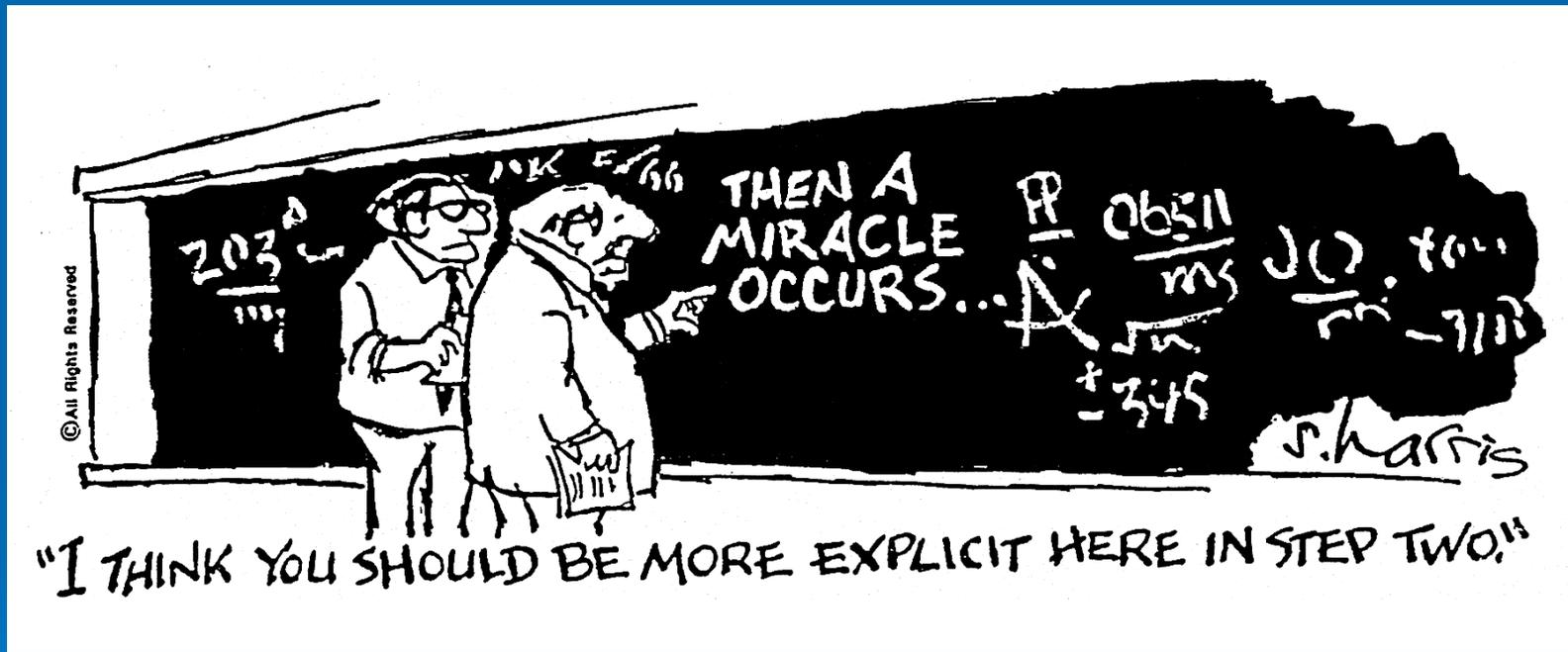


TB Case Management

A TB Case From Start to Finish



Brenda Mayes, RN & Jane Moore, RN, MHSA

Tuberculosis Control Priorities

- Identification, evaluation and treatment of new cases
- Identification, evaluation and treatment of contacts
- Identification and treatment of high risk infected people

Case Management



Definition

- Primary responsibility for coordination of client care to ensure that the client's medical and psychosocial needs are met through appropriate utilization of resources

Responsible and Accountable to Ensure:

➤ The case

- Completes a course of therapy
- Is educated about TB and its treatment
- Has documented culture conversion
- Has a contact investigation completed, if appropriate

Primary Goals of Case Management

- Render the client non-infectious by ensuring treatment
 - Prevent TB transmission and development of disease
 - Identify and remove barriers to adherence
 - Identify and address other urgent health needs
- 

I got a
new
case!!!

What do I
do now?



Your guide to case management

➤ The TB Case Management Directive



NURSING DIRECTIVES/GUIDELINES

SUBJECT/TITLE: Tuberculosis Case Management

SECTION: Standards of Care

SUMMARY: Oversight for the management of care for tuberculosis (TB) cases, suspects, contacts and those with latent TB infection (LTBI) in the community setting is the responsibility of the local health district nurse case manager in collaboration with health directors, nurse managers, clinicians, outreach workers and others. Clients may be managed in the private sector, by public health departments, or jointly. In all cases the health department is ultimately responsible for ensuring that adequate, appropriate diagnostic and treatment services are available, and for monitoring the results of therapy.

BRIEF BACKGROUND Case management is the preferred strategy for coordinating TB client care to ensure that the client's medical and psychosocial needs are met through appropriate utilization of resources. The nurse case manager is responsible and accountable to ensure that the client completes a course of therapy; is educated about TB and its treatment; has documented culture conversion; and completes a contact investigation if appropriate. The primary goals of TB case management are to render the client non-infectious by ensuring appropriate treatment; prevent additional transmission and development of additional disease; identify and remove barriers to adherence; and identify and address other urgent health needs. The health department role includes case management, contact investigation, determination of infectiousness (including release from isolation and return to normal activity/locations), and oversight of the treatment plan and outcome.

It is beyond the scope of this document to cover all situations that may arise during the course of treatment or investigation of any one individual or community. All nurses involved in the case management of TB clients should have immediate access to guidelines, policies and procedures published by the Centers for Disease Control and Prevention (CDC) and the Virginia Department of Health, Division of Disease Prevention, TB Control and Prevention program (DDP-tb).

VDH Nursing Directives

- TB Case Management
- DOT
- Tuberculosis Contact Investigation
- Management Of Individuals With LTBI
 - Located On Internal VDH Website
 - Search By Program – Nursing
 - Click On Guidelines
- <http://vdhweb/nursing/documents.asp>

Your second guide to case management

➤ The Tuberculosis Service Plan

<http://www.vdh.virginia.gov/epidemiology/DiseasePrevention/Programs/Tuberculosis/Forms/documents/SPMast.doc>

**Virginia Department of Health
Tuberculosis Service Plan**

Name _____ Web/Voice# _____

DOB _____ ICD9 # _____

Goal: Reduce morbidity and transmission with the community.
Objective: Identified case/suspect will complete recommended treatment plan and follow-up within standard timeframes.

DATE	IDENTIFIED NEEDS/PROB.	PLAN	DATE COMPLETED	PHN SIGNATURE
	Medical diagnosis affecting health status Active tuberculosis disease	<ol style="list-style-type: none"> 1. Assess medical history and risk factors for acquiring TB infection or for progression to active disease. Complete medical and social history. Assess for symptoms compatible with active TB. 2. Evaluate status of diagnostic evaluation. Obtain copies of all pertinent test results and medical records from physicians, hospitals, labs, etc. (TST results, CXR reports, HIV test results, bacteriology reports, treatment information, etc.) 3. In collaboration with medical provider and/or health director, arrange for completion of diagnostic examinations, if needed. 4. If patient hospitalized or incarcerated, ensure completion and approval of TB Treatment/Discharge Plan (2005A-TB-004) prior to release. Assure discharge appropriate for patient and plans in place for continuity of care. Assure that placement is appropriate and no high-risk individuals present in environment. LHD may request 2005A-TB-004 for any TB case/suspect at the health director's discretion. 5. Assess current treatment plan for conformity to ATSCDC/ISDA recommendations. Take immediate action, within local district guidelines, to determine reason for deviation to treatment regimen and resolve issue. Involve health director, if needed. 6. Re-calculate all medication dosages. Review entire medication profile for potential drug-drug, drug-herbal and drug-food interactions. Assess for known drug allergies. 7. Arrange for medical management if no medical home. 8. Perform or arrange for Directly Observed Therapy 		

Initial Steps to the Reported TB Case or Suspect - 1

➤ **Receive the case report**

- **Gather as much info as possible from report source**
- **Intake Form**
 - **Demographics**
 - **Client weight**
 - **Diagnostic work-up to date**
 - **REQUEST COPIES OF EVERYTHING!!!!**
 - **Current treatment, if any**
 - **Risk factors**
 - **Other important facts**
 - **Family/living situation**
 - **Work place/school**

Initial Steps to the Reported TB Case or Suspect - 2

- Local case manager assigned
- Report to VDH TB Control within 1 day
 - Report immediately any case suspected of being XDR TB
 - Any case or suspect that might have media impact (schools, congregate living, etc.)

Initial Steps to the Reported TB Case or Suspect - 3

Consult with medical provider to gather additional information and treatment plan, if needed

➤ Conduct initial interview with client

- Recommend first visit in hospital, if hospitalized
- Recommend home visit early in initial follow-up period
- Assess home environment
 - Space, ventilation, presence of high-risk persons

Initial Steps to the Reported TB Case or Suspect - 4

- Initiate new client TB record
 - VDH TB Control forms
 - Documentation by exception (DBE) forms no longer acceptable

Initial Steps to the Reported TB Case or Suspect - 5

- **Assess completeness of diagnostic work-up**
 - CXR, TST, sputum, histology, HIV, blood work, other
 - Isolate sent to state lab if done by outside source
 - Insure three expectorated specimens are collected
 - Obtain copies of all relevant test results for HD chart
 - Obtain additional hospital records, if applicable
 - Discharge summary
 - MARs
 - Double check susceptibility order immediately
- **Arrange for additional testing/medical care as needed**
 - TST, CXR, sputum, HIV, baseline biochemistry tests
 - Baseline vision, color vision, hearing, etc.

Initial Steps to the Reported TB Case or Suspect - 6

- Assessment of the treatment plan
 - Re-calculate dosages
 - Enough meds?
 - Right meds?
 - Assess for potential drug-drug/food/herbal interactions
 - Follow agency policies and procedures for settlement of treatment plan disputes

Initial Steps to the Reported TB Case or Suspect - 7

- Assessment of infectiousness
 - Sputum reports/collection
 - Determination of period of infectiousness
 - Isolation instructions and agreement
 - Isolation Form

Initial Steps to the Reported TB Case or Suspect - 8

- If infectious, begin additional information gathering and interview for contact investigation
 - Identify and screen/test high priority contacts
 - Household and other close contacts
 - Small children
 - Immune compromised contacts

Initial Steps to the Reported TB Case or Suspect - 9

➤ Initial client education

- Disease vs. Infection
- Transmission, signs & symptoms, treatment and importance of completion, diagnostic procedures, monitoring and follow-up, meaning of test results.
- Role of client in treatment plan, role of case manager, role of health department
- Treatment plan – Direct Observed Therapy (DOT Agreement form)
- Handling side effects, change in symptoms
- Disease of public health significance
 - Consequences for failure to follow treatment plan

Initial Steps to the Reported TB Case or Suspect - 10

- Assess for barriers to care
 - Lack of knowledge
 - Cultural
 - Linguistic
 - Substance abuse
 - Homelessness
 - Payer source for care
- Arrange for resources and make referrals to assist and overcome barriers

Finishing the Job



Elements of CM Process: Ongoing Assessment Activities

- Monitor the clinical response to treatment
- Review the treatment regimen
- Identify positive and negative motivational factors influencing adherence
- Determine the unmet educational needs of the client
- Review the status of the contact investigation

Monitoring & Ongoing Activities

- Continued assurance of adherence
- Adverse reactions and toxicity
- Medication changes
- Clinical/bacteriologic improvement
- Clients without positive cultures
- Susceptibility reports
- Complex case management issues

Monitoring & Ongoing Activities

- Treatment updates
- Change in TB provider
- Continuity of case during relocation
- Continued education
- Psychosocial issues
- Continuation/completion of contact follow-up

Continued Assurance of Adherence



Continued Assurance of Adherence

➤ Obstacles to Adherence

- Unpalatable medication
- Stigma associated with TB
- Family dynamics
- Lack of support system
- Denial of illness by child and family
- Parental attitude toward child's treatment
- Previous history of non-adherence
- Language barriers impeding understanding
- Cultural beliefs about interpretation of tuberculin skin tests when there is a history of BCG vaccine

Continued Assurance of Adherence

➤ Strategies

- Directly Observed Therapy – Standard of care
 - Negotiate DOT, times and if self – monitoring plan
- Counseling and education
- Incentives and enablers
 - Bribery can work !
 - Tailor to individual – transportation, phone cards, fishing license, birthday cake, fabric, grocery gift cards
 - Virginia incentives
 - Homeless Incentive program
 - Drug co-pays & second line drugs
 - Southwest TB Foundation
- Referrals to other agencies and organizations

Continued Assurance of Adherence

➤ Legal strategies

- Increasing severity
- Be proactive by use of DOT agreement and Isolation Instructions, building the case
- Letters from case manager, health director
- Virginia
 - More formal health director orders
 - Emergency detention – Commissioner only
 - Court ordered isolation – involvement of AG
- Documentation critical !

Continued Assurance of Adherence

- DOT is standard of care
 - In Virginia, the VDH Treatment plan requires physician to accept responsibility for assuring completion and provide written certification to LHD
- Strategies for those not on DOT
 - Pill counts
 - Incentives and enablers
 - Fixed-combination drugs recommended
 - Home visit to confirm supplies
 - Pharmacy checks for refills

Continued Assurance of Adherence

- Resolving Adherence Problems
 - Requires individualized strategies

Continued Assurance of Adherence

➤ Some solutions:

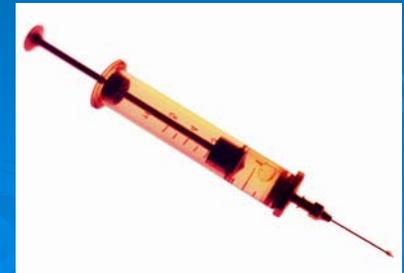
- Mixing the medication with a food the client likes
See AcidFast Blast article:
<http://www.vdh.virginia.gov/epidemiology/DiseasePrevention/Programs/Tuberculosis/blast/January2005.htm#Tips>
- Rearranging the time medication is administered
- Shifting personnel to align with personality preference
- Providing quality, ongoing and appropriate education
- Adherence Strategies at Various Ages, Table, 3, page 9 in Self Study Module 4, Tuberculosis Case Management for Nurses, NJ Medical School National TB Center

Adverse Reactions and Toxicity



Adverse Reactions and Toxicity

- Monitoring during DOT visits
 - Document on DOT sheet – use Progress notes if needed
- Monthly clinical assessment
 - Document in chart - Monthly Assessment form
 - Monthly vision and hearing assessment required for selected drugs
 - Vision – “E” for eyes – ethambutol and ethionamide
 - Hearing – think needles – needed for injectibles!
 - Document in chart
 - Periodic lab work may be needed
 - follow district protocol



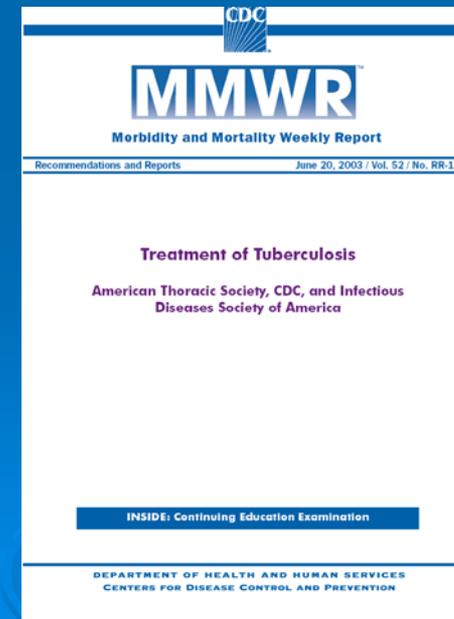
Medication Changes



Medication Changes

➤ Reasons for changes

- Standard treatment regimen adjustment
 - Ethambutol can be stopped once susceptibility to INH and RIF proven
 - PZA – must complete required doses for regimen before stopped
 - Both require physician order
- Side effects and/or toxicity
- Resistance
- Absorption problems
- Increase in client's weight
- Stupidity



Medication Changes

- Assure appropriate dose count, not just time passage before any standard regimen changes
 - Correct number of PZA doses critical for short course regimen
 - Count before you stop !!!!
- Review all changes immediately (within 24 hrs) for appropriateness of drug selection and dosage
- Initiate actions to facilitate appropriate changes within 24 hours
- Initiate action to correct inappropriate changes within 24 hours

Clinical/Bacteriologic Improvement



Clinical/Bacteriologic Improvement - 1

➤ Two important events

- Smear conversion – surrogate for infectiousness
- Culture conversion – test of cure
 - Extremely important to collect specimen at 2 month post initiation of treatment
 - Cases who remain culture positive on 2 month specimen must be reviewed for potential extension of treatment

Clinical/Bacteriologic Improvement - 2

Purpose	Frequency	# of specimens
Initial monitoring for smear conversion	Q 2 weeks starting at week 2	1 – observed by HCW
Imminent conversion	Every few days to weekly	3 samples on different days – at least 1 observed
Culture conversion	Monthly	3 samples on different days – at least 1 observed
After culture conversion	Only if clinically indicated	3 samples on different days – at least 1 observed

Clinical/Bacteriologic Improvement - 3

➤ Practical considerations

- Weekly for smear conversion
 - As soon as 1st negative, immediately collected 2 more
- Monthly for culture conversion
 - Always **collect 3 specimens** on different days
- Anything positive, count starts again
- Consecutive = collected on different days – do not have to be “days in a row”
- Once culture negative – **STOP COLLECTING**
 - no need to continue collection unless drug resistant TB, symptomatic or other medical need

Clinical/Bacteriologic Improvement - 4

- If there is **NO** improvement – TAKE ACTION!
 - Notify treating physician and local health officer
 - Notify state TB program
 - Appropriate steps should be take to determine why
 - Drug resistance
 - **Repeat susceptibilities**
 - **Request assistance for PCR based susceptibilities**
 - Malabsorption
 - **Serum level testing**
- Maintaining appropriate isolation is critical

Infectiousness



Infectiousness

See page 9...



MMWR™

Morbidity and Mortality Weekly Report

Recommendations and Reports

November 4, 2005 / Vol. 54 / No. RR-12

Controlling Tuberculosis in the United States

Recommendations from the American Thoracic Society, CDC, and the Infectious Diseases Society of America



DEPARTMENT OF HEALTH AND HUMAN SERVICES
CENTERS FOR DISEASE CONTROL AND PREVENTION

Vol. 54, PP. 12

November 4, 2005

9

In this special issue, the authors provide a review of the progress made in the United States in the control of tuberculosis (Tb) in the past 10 years.

Impact of Directly Observed Therapy on Tuberculosis

The impact of directly observed therapy (DOT) on the control of tuberculosis (Tb) has been a major focus of research in the past 10 years. This article reviews the impact of DOT on the control of Tb in the United States. The authors discuss the impact of DOT on the control of Tb in the United States, the impact of DOT on the control of Tb in the United States, and the impact of DOT on the control of Tb in the United States.

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DOT: A Review of the Literature on the Impact of Directly Observed Therapy on Tuberculosis

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These authors have been supported by the National Institutes of Health, the Centers for Disease Control and Prevention, and the American Thoracic Society.

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Determining Non-infectiousness

- Client has negligible likelihood of multi-drug resistant TB
- Client has received standard multi-drug anti-TB therapy for 2–3 weeks (5-7 days if smear negative)
- Client has demonstrated complete adherence to treatment (DOT)
- Client has demonstrated evidence of clinical improvement (decreased cough, improving smears)
- All close contacts of clients have been identified, evaluated, advised, and, if indicated, started on treatment for latent TB infection

When Stricter Criteria are Needed

- Clients in a congregate setting (e.g., a homeless shelter or detention facility) should have three consecutive AFB-negative smear results of sputum specimens collected at minimum >8 hours apart before being considered noninfectious
 - Alert TB Control when you have a TB suspect or case in any type of congregate setting

Suspects with Negative Cultures



Suspects with Negative Cultures

- Monitor for receipt of final culture reports
- If client not on treatment
 - Review for signs & symptoms
 - May need to repeat CXR and TST
 - Evaluation for determination of continued follow-up
- If client on treatment
 - CXR **must** be repeated to determine if improved on treatment
 - Repeat TST if prior test negative
 - Evaluation for determination if meets definition of clinical case and need for continued treatment
 - If not active disease – RIF/PZA regimen for LTBI buried in 4 drug trial – assure completes adequate LTBI regimen before meds discontinued

Susceptibility Reports



Susceptibility Reports

- During initial phase – assure susceptibility testing in process or sample isolate sent to state lab
- Monitor for receipt of results
- Advise treating physician immediately of any resistance
- If pansensitive – ethambutol can be discontinued – PZA **MUST** be continued until full number of doses for initial phase of regimen completed
- Drug regimen adjusted within 24 hours

Complex Case Management Issues



Complex Case Management Issues - 1

- Require close supervision and case management
- Careful documentation of interventions and counseling
- Poor adherence
 - DOT failure
 - Slow sputum conversion/delayed clinical improvement
 - Poor acceptance of TB diagnosis
 - Clinical deterioration
 - Appointment failure

Complex Case Management Issues - 2

➤ Medical issues

- Dialysis
- Drug-drug interactions
- Adverse reactions to TB treatment
- Substance abuse
- HIV infection
- Diabetes
- Known Hepatitis B/C clients

Treatment Updates from Private Providers



Updates

- Initiate treatment reviews and updates for clients whose care is outside of health department setting – at least every 2 months
- Evaluate for differences between update and district TB program record
- Updates may be required more frequently in complex/high risk clients
- Updates needed to assure completion of treatment

Updates

- DOT eliminates need for some updates and improves monitoring of privately managed clients
 - Case manager's responsibility to ensure DOT done correctly
- Minimum update information
 - Provider name
 - client name, DOB and current address
 - Date of last appointment, date of next appt.
 - Current treatment regimen and stop dates/medication changes
 - Bacteriology reports including susceptibilities
 - Current radiology reports
 - Current treatment plan
 - Issues, compliance, barriers, etc.

Change in TB Provider



Change in TB Provider

- If client reports new provider
 - Verify change with old and new provider
 - Document findings in chart
 - Obtain new treatment plan from new provider
 - Does not have to be specific form – any written plan okay
 - Assess for appropriateness of plan
 - If inappropriate, initiate corrective action according to local district policies within 1 day

Continuity of Case During Relocation



Continuity of Case During Relocation

- Assurance of continuity of care – responsibility of case manager
- Minimum requirements– Completion of appropriate Interjurisdictional Referral form
 - Interstate
 - International
 - Virginia FAX to 804-371-0248
- Expanded recommended actions- Direct contact with receiving jurisdiction/case manager to facilitate transition

Continuity of Case During Relocation

- Follow-up of referral required to determine final disposition of:
 - Counted cases
 - Referred contacts from investigation

Continued Education



Continued Education

➤ Client education

- Disease/healing process – review natural course of disease
- Treatment plan and importance of completion
- Medication changes
- Required monitoring and follow-up, monthly sputa collection, meaning of test results
- Length of treatment – BE CAREFUL!
- Handling side effects, change in symptoms

➤ Family may have educational needs

Continuation/Completion of Contact Follow-up



Continuation/Completion of Contact Follow-up

- If investigation needed, continue to identify and evaluate high priority contacts
- Retest contacts at appropriate time
 - 10 weeks after contact broken
 - Timeframes for those who remain smear positive and contact not broken
- Decision to expand investigation
- Priority on treatment of infected contacts
 - Fax updated CI forms quarterly to DDP-tb

Documentation



Ongoing Documentation

- Continue to document like your going to court!

Ongoing Documentation

➤ General and TB history

- Update with new diagnoses/information
- Regularly assess for additional medications – check for interactions

➤ Contact investigation

- Complete as new contacts identified and evaluated
- Complete treatment information for all contacts!!!

Ongoing Documentation

➤ Bacteriology

- Document smear and culture conversion
- Monitor for susceptibility results – repeat if needed

➤ Monthly assessment

- Monthly clinical assessment by case manager required!
- Clinic visit may replace a monthly assessment, but document!

Completion of Treatment



Dose Counting?

- DOT
 - Running tally for dose counting
 - Start at “1” again when begin continuation phase
- Do complete dose count **PRIOR TO STOPPING MEDS!**
- Guidelines are available
- If you are having any problems deciding if a complete course of treatment has been accomplished, contact TB Control – we can help dose count

Interruptions in Therapy

- See MMWR Treatment of Tuberculosis page 41
 - Interruptions in Initial Phase
 - More than 14 days restart from beginning
 - Interruptions in Continuation Phase
 - Initially smear negative - If more than 80% received by DOT
 - May not need further treatment
 - Initially smear positive - need to complete
 - If more than 3 months have lapsed, restart from beginning

Interruptions in Therapy

- Request repeat sensitivities
- Consultation with expert recommended
- DOT a must

Completion of Treatment

- Determine if new baseline chest x-ray needed
- Documentation of contact follow up
- Cohort Review
- Record retention
 - Assure that MDR and XDR records are not destroyed

Assistance

- Brenda Mayes, RN
 - 804-864-7968
 - 804-356-3998 - cell
- Jane Moore, RN, MHSA
 - 804-864-7920
 - 804-382-3351 - cell