X. Selected Resources

A. Charges for Services

G. S. 130A-144(e) specifies that "the local health department shall provide, **at no cost to the patient**, the examination and treatment for tuberculosis disease and infection and for sexually transmitted diseases. . . "

1. TST Fees

a. A patient may not be charged for a TST if state-supplied PPD is used.

b. The patient may be charged for a TST as a single service using privately purchased PPD for:
- Employment requirement;
- Residential requirement;
- Immigration or citizenship requirement; and
- Physical exam for college entry, insurance, sports activity or marriage.

c. The patient may be charged for completion of Record of Tuberculosis Screening (DHHS 3405).

d. A fee per TST or an hourly rate contract may be established with other agencies, institutions or businesses for the health department to provide TST using privately purchased PPD. **No fee** may be charged for a TST for:
- Contact investigation;
- HIV positive individuals as required by Rule .0202;
- Epidemiologic investigations to identify a source case; and/or
- Tuberculosis suspects.

2. Chest X-ray patient fees

a. No fee may be charged for chest X-rays on newly identified TST or IGRA positive individuals, suspected or confirmed TB cases, and their contacts

b. The patient may **not** be charged by private facilities that provide contractual X-ray services for the health department.

3. Third-Party Billing

a. The Medicaid Interagency Agreement allows health departments:
- To bill for services provided to cases, suspected cases being evaluated to diagnose or rule out disease, contacts and reactors.
- For information about billing Medicaid for TB services see https://files.nc.gov/ncdma/documents/files/1d3.pdf

b. Health departments may bill private insurers using CPT codes. Private facilities that provide contractual X-ray services for the health department may bill private insurers and/or other third-party payers.

c. Address questions regarding billing to the administrative consultant that serves your county.

B. Education and Resources

1. The NC TB Control Program offers a three-day Introduction to TB Management Course twice a year. This course is designed for health department TB staff and TB back-up staff. The primary TB nurse for each health department must complete this course. Note: Medicaid cannot be billed for TB services unless the primary TB nurse has completed this course.
2. The primary TB nurse for each county and the TB back-up nurse must complete the Basic and TB in NCEDSS course. This is offered in Raleigh monthly.
3. The NC TB Control Program hosts an annual Tuberculosis and Respiratory Institute annually. The primary TB nurse and the local TB medical provider are encouraged to attend this conference, but it is not required.
4. Audiovisual and educational materials available from NC TB Control

   Artificial Arms for TST Reading -The two arms will help you teach health professionals how to read a TST. Each arm has a card indicating the mm induration. Please clean both arms before returning. See mm answers for each arm and cleaning instructions inside the box. **These are only available to health department staff. Call 919-755-3184.**

5. The requisition for NC Tuberculosis Control Materials (DHHS 2407) can be found at: https://epi.publichealth.nc.gov/cd/tb/docs/dhhs_2407.pdf

6. The CDC TB Materials Order Form can be found at: https://www.cdc.gov/tb/publications/default.htm#ordering

7. The following is a list of excellent TB resources:

   NC TB Control website
   http://epi.publichealth.nc.gov/cd/tb/lhds.html
   Annual Reports: http://epi.publichealth.nc.gov/cd/tb/figures.html#summary
   Upcoming Educational events:
   http://epi.publichealth.nc.gov/cd/tb/lhds.html#alerts
   Access to TB Control Policy Manual:
   http://epi.publichealth.nc.gov/cd/lhds/manuals/tb/toc.html
   Download TB forms: http://epi.publichealth.nc.gov/cd/tb/lhds.html#forms
   Links to other TB related websites:
   http://epi.publichealth.nc.gov/cd/tb/lhds.html#tools
   Download patient education materials:
   http://epi.publichealth.nc.gov/cd/tb/lhds.html#manuals

ALA incentive and housing fund applications:
http://epi.publichealth.nc.gov/cd/lhds/manuals/tb/Chapter_IX_2015.pdf
Access to ***NC TB Statistics*** and other Data Reports:
http://epi.publichealth.nc.gov/cd/tb/figures.html

Find TB Resources
http://www.findtbresources.org
Connects you to a worldwide library of online resources, training, and educational materials
Get information about TB organizations
Find out about upcoming events
Sign up for TB-related list serves and digests
Locate TB images, education materials and TB related web links
Submit TB materials for inclusion in the database
Find out how to order TB materials
View the E-Newsletter
Locate funding opportunities

RTMCC's (*Regional Training and Medical Consultation Centers*)
Southeastern National TB Center (Gainesville, Florida)
http://sntc.medicine.ufl.edu/
Heartland National TB Center (San Antonio, NM) http://www.heartlandntbc.org/
Francis J. Curry National TB Center (San Francisco, CA)
http://www.currytbcenter.ucsf.edu/
New Jersey Medical School Global Tuberculosis Institute (Newark, NJ)
http://www.umdnj.edu

MDR Drug Information – Provider and nursing information about each drug
http://www.currytbcenter.ucsf.edu/drtb/drtb_ch4.cfm

Ishihara Color Blindness screen
http://www.toledo-bend.com/colorblind/Ishihara.asp

Memorial Sloan-Kettering Cancer Center – Herbs and Botanicals
http://www.mskcc.org/cancer-care/integrative-medicine/about-herbs

Florida Department of Health:
www.doh.state.fl.us/disease_ctrl/tb/Educational-Materials/edmat.html

Minnesota Department of Health:
www.health.state.mn.us/divs/idepc/diseases/tb/index.html
http://www.health.state.mn.us/divs/idepc/diseases/tb/ed/index.html#patients

Texas Department of Health:
http://www.dshs.state.tx.us/idcu/disease/tb/

International Union Against Tuberculosis & Lung Disease ("The Union"):
http://www.theunion.org/

World Health Organization, Tuberculosis:
http://www.who.int/topics/tuberculosis/en/

CDC websites:
http://www.cdc.gov/tb/

CDC, National Prevention Information Network (NPIN):
http://www.cdcnpin.org/

CDC National Center for HIV/AIDS, Viral Hepatitis, STD and TB Prevention:
http://www.cdc.gov/nchhstp/Default.htm

American Thoracic Society:
http://www.thoracic.org/

Infectious Diseases Society of America:
http://www.idsociety.org/Organism/

BCG World Atlas information about BCG administration in other countries
http://www.bcgatlas.org/

Stop TB Partnership New Diagnostic Working group
http://tbevidence.org/guidelines-for-tuberculosis-diagnosis/

Translated TB information from Toronto, Canada
http://www.toronto.ca/health/tb_prevention/languages_physicians.htm

National TB Controllers and National TB Nurse Coalition
http://www.tbcontrollers.org/

C. New TB Nurse Orientation Checklist

Goal	Given instruction	Observed	Competent
Is knowledgeable about N.C. TB Control Policies as set forth in manual			
Is knowledgeable about local TB control policies			
Demonstrates correct use of TB control forms:			
• Tuberculosis Drug Record- DHHS 1391			
• Tuberculosis Flow Sheet- DHHS 2810			
• Tuberculosis Epidemiological Record- DHHS 1030			
• Nursing record of Tuberculosis Contacts – DHHS 1662			
• Understands how to proceed when a Refugee Notification of Arrival notice is received in NCEDSS.			
• Record of Tuberculosis Screening – DHHS 3405			
Demonstrates knowledge of TB case management:			
• Organizes and prioritizes workload.			
• Works with private or health department provider to develop a treatment plan and obtain physician's orders.			
• Makes initial hospital and/or home assessment and subsequent home visits as required.			
• Is knowledgeable about cultural/language barriers including reading ability and obtains the services of an interpreter when needed.			
• Provides or arranges for DOT.			
• Directs and supervises a contact investigation (CI) for laryngeal, pleural, and pulmonary TB cases.			
• Obtains sputum specimens and completes requisition.			
• Provides follow-up care for TB cases/suspects/TLTBI in a timely manner.			
• Is knowledgeable about policy on clients that are lost to follow-up			
• Is able to correctly place and read a PPD			
• Is knowledgeable about Interferon Gamma Release Assays (IGRA).			
Has read and understands the General Statutes for the control measures for communicable disease GS 130A-144 and NC Administrative Code 15 A NCAC 19A.0205.			
Is knowledgeable about how to initiate a TB Treatment Agreement and /or an Isolation Order.			
Is knowledgeable on how to use NCEDSS to manage TB using the workflows for reports, such as, the reporting tool, RVCT, follow-up one and two reports, reviewing labs, and reporting about contacts and class B immigrants			
Is knowledgeable about incarceration procedures for health law violators.			
Administers intramuscular injections properly.			
Performs venipunctures correctly.			

Performs vision screening test for acuity and colorblindness.			
Is able to perform basic audiometry tests for hearing acuity.			
Knowledgeable of baseline testing requirements.			
Knowledgeable about infection control measures, including how to use a N-95 respirator, elements of a tuberculosis infection control policy and risk classifications.			
Is knowledgeable about X-ray findings that may indicate TB.			
Is knowledgeable about how to order TB medications through N.C. TB Control.			
Is knowledgeable about TB medications including side effects; drug interactions, especially with HIV/AIDS medications, mental health medications, contraceptives or adverse reactions.			
Teaches client/family/significant others about:			
• Confidentiality			
• DOT for TB cases/suspects/ and some TLTBI			
• Transmission/pathogenesis of infection and disease			
• Concept of infection vs. disease			
• Prevention of spread of TB			
• Process of contact investigation and identification of source case, if child or HIV/AIDS client involved.			
• Purpose and importance of LTBI treatment for contacts.			
• Importance of regular ingestion of TB medications for both active disease and LTBI treatment.			
• Importance of completing full course of treatment to cure.			
• Importance of at least monthly medication and monitoring visits with TB nurse to assess progress, adherence and side effects.			
• Signs/symptoms of TB disease to report to RN including hemoptysis, sputum production, weight loss, fatigue and / or failing to clinically improve.			
• Provides written literature about TB to client (in language client can understand).			
• Teaches client/family/significant others about TB medications and interactions with other medicines.			
• Discusses side effects, such as; fever, GI disturbances, loss of appetite, skin rash/itching, numbness/tingling of hands and feet, and headache.			
• Assesses adherence to medications on each visit.			
• Counsels patient on the importance of HIV testing and performs test with patient consent. Refers patient for appropriate follow-up if HIV positive and obtains CD4 count.			
Knowledgeable about appropriate resources for patients, such as ALA incentive and housing funds.			

D. North Carolina TB Control Guidelines for the Management of TB Suspects/Cases in Correctional and Detention Facilities

1. TB Evaluation and Diagnosis

a. Each correctional facility, camp or center that has a suspected case of TB should promptly notify their local county health department TB program, as soon as they begin evaluation, diagnosis, or treatment of any inmate suspected of having TB.
b. TB airborne precautions should be initiated for any inmate who has signs or symptoms of TB disease and should remain in effect until TB is ruled out, or the inmate has documentation of three consecutive negative sputum smears.
c. Local TB nurses are available to assist the correctional facility as requested with the evaluation and diagnosis of inmates suspected of having TB in their county.
d. Local health department TB nurses are available to provide direct TB evaluation to inmates at detention centers that do not have access to nursing care.
e. The correctional facility or other detention facility may request sputum specimen containers from the local health department to assist with the evaluation of an inmate suspected of having TB. However, because ongoing sputum collection may be necessary, the facility should follow the DOC policy and place an order for any additional sputum collection containers with the State Laboratory of Public Health.
f. TB expertise is available from the State TB medical consultant upon request for the diagnosis of TB suspects incarcerated in North Carolina. Dr. Jason Stout may be contacted by calling the Duke University operator at 919-684-8111and have the physician paged.

2. TB Suspect/Case Notification

a. Once an inmate is considered a TB suspect/case in a correctional or detention facility, the local health department should be notified within 24 hours just as the local health department would be notified by the hospital or any other health care facility when TB is suspected.
b. Local health department nurses will notify their regional TB Nurse Consultant of the incarcerated TB suspect/case using the TB Report Tool/electronic reporting (within seven days) as they would with any other TB suspect.
c. The NC Department of Correction (N.C. DOC) Infection Control Nurse will notify the N.C. TB control nurse consultants when they are notified of a TB suspect within the correctional system as soon as it is brought to their attention by phone call or email.
d. Once the TB nurse consultant has been notified of a suspect case, she can assure the appropriate local health department TB nurse has also been notified of the suspect.

3. TB Suspect/ Case Reporting

a. People who reside in local, state, federal, or military correctional facilities may frequently be transferred or relocated within and/or between various correctional facilities. TB in those people should be reported to the local health authority and counted by the locality where the diagnosis was made, and treatment plans were initiated.
b. The reporting health department will assume the responsibility of completing the TB RVCT/electronic reporting for case counting of this individual.
c. The correctional facility will provide all TB related medical information requested by local health departments or N.C. TB Control for the reporting and the monitoring of the TB treatment of TB suspects/cases in the correctional system. The N.C. DOC infection control nurse is available to assist the local health departments in obtaining information as needed on inmates housed in the state prison system. At the current time the phone number is 919-733-0800 ext. 587.

4. TB Treatment and Monitoring

a. The treatment of TB cases that are incarcerated will be provided and directly observed by the correctional facility nurse unless the facility does not have access to nursing services. If that is the case, the local health department TB nurse can provide the medication and directly observed therapy (DOT).
b. It is the responsibility of the local health department TB nurse that is reporting or counting the TB case to monitor the treatment provided by the correctional facility nurses to the incarcerated cases (appropriate drugs, appropriate dosages and appropriate length of treatment, appropriate monthly monitoring, lab testing and microbiologic testing).
c. The monthly monitoring for adverse reactions, provision of any necessary lab work and collection of sputum or other specimens for mycobacteriology will be the responsibility of the correctional facility nurse.
d. To monitor treatment, the local health department nurse needs to receive and review at least monthly the inmate's medication administration records and monthly adverse reaction symptom review checklist.
e. One of the TB nurse consultants will routinely review the records of TB suspects/cases housed at N.C. Correctional facilities and will assist in obtaining copies of the medication administration records and the monthly symptom reviews for the inmates housed here.
f. The regional TB nurse consultants as well as the state TB medical consultants are available to assist the local health department nurses in monitoring the appropriateness and adequacy of TB treatment provided by the correctional facility.
g. The correctional facility will keep the TB nurse consultants, the reporting health department, and any other involved health departments advised of the TB case's location.
h. Inmates with M. TB may be moved to other correctional facilities when:
   - Adequate therapy has begun; and

- Pulmonary cases have had two consecutive negative sputum smears; and
- Records, including lab tests and medication administration records have been sent to the new correctional facility, the health department, and if applicable, the DOC infection control nurse.

5. Contact Investigations

   a. The contact investigation within the correctional facility will be conducted by the correctional facility in collaboration with the local health department.
   b. Local health departments and N.C. TB Control will provide assistance in correction facility contact investigations as requested by the correctional facility.
   c. The correctional facility will notify the reporting county health department of ongoing TB contact investigations and provide a list of the released inmates (contacts) needing TB follow-up. This list should include each contact's county of residence, last known address, phone number and/or their emergency contact information. The reporting county health department will oversee the TB follow-up of these contacts.
   d. The reporting county health department TB nurse will notify the other local health department TB nurses of the contacts residing in their counties needing TB follow-up. The appropriate regional TB nurse consultant is available to assist in this notification as needed.
   e. The local health department TB nurse will send a letter to notify each contact residing in their county of their TB contact in the correctional facility and the need for TB follow-up. This letter will advise the contact to bring the letter to their local health department to receive the recommended TB follow-up at no charge.
   f. The local health department TB clinics will provide necessary TB follow-up at no charge to contacts to correctional facility TB cases residing in their counties, including TST, chest X-ray, treatment for latent TB infection (LTBI), mycobacterial testing, HIV testing, or required lab work. Results of the contact's evaluation will be reported back the reporting county health department TB nurse.
   g. Investigation of contacts to correctional cases residing outside of the correctional system will be the responsibility of the local health department TB clinic in their county of residence.
   h. Results of health department's contact investigation will be made available to the correctional facility by the reporting county, so the correctional facility may evaluate their own contact investigation.
   i. The correctional facility will provide the reporting health department with the results of their contact investigation, as the reporting health department is ultimately responsible for overseeing the entire contact investigation.

6. Continuity of Treatment and Discharge Planning for Individuals with TB Disease Upon Release from Prison

a. To ensure uninterrupted treatment, discharge planning for inmates diagnosed with TB should begin as soon as it is determined that they will not complete their treatment in prison. It is the responsibility of the correctional facility to initiate discharge planning with the local health department.
b. The correctional facility's infection control nurse should notify the N.C. TB Control TB nurse consultant when an inmate with TB will be released prior to the completion of his/her TB treatment.
c. Once it is determined which county the inmate will be residing upon their release the TB nurse consultant will notify that local health department.
d. The correctional facility should forward a copy of the inmate's prior TB treatment and pertinent medical records to the county health department that will be continuing the inmate's TB treatment prior to the inmate's release.
e. Upon the inmate's discharge from the state prison system the correctional facility will complete their referral form (DC 516 N.C. DOC Community TB Referral) and this form will be sent to the county assuming care for the TB case.
f. Upon the inmate's discharge the health department will assume full responsibility for the inmate's TB care management including DOT with appropriate drugs, with appropriate dosages and the appropriate length of treatment, appropriate monthly monitoring, lab testing and microbiological testing.
g. The correctional facility will be responsible for informing the reporting county (if different from the county assuming treatment responsibility) that the inmate has been released from prison and will be completing treatment elsewhere.
h. The county health department that completes the inmate's TB treatment is responsible for completing the RVCT follow-up 2 form and sending it to the reporting county.

7. Continuity of Treatment and Discharge Planning for Individuals Receiving Treatment for LTBI Upon release from Prison

a. To ensure uninterrupted treatment, discharge planning for inmates diagnosed with LTBI should begin as soon as it is determined that they will not complete their treatment in prison.
b. Upon the inmate's discharge from the state prison system the correctional facility will complete their referral form (DC 516 N.C. DOC Community TB Referral) and send this form to the county assuming the inmate's LTBI treatment along with any other records pertinent to the inmate's continued LTBI treatment.
c. The DOC facility nurses, or medical records staff will be available to assist the local health department in acquiring records to assume the LTBI treatment from the correctional facility if necessary. (N.C. DOC Medical Records (919) 715-1570).
d. The health department upon the inmate's discharge will assume full responsibility for the inmate's LTBI treatment and monitoring.

8. Oversight

a. TB nurse consultants will periodically review the records of known TB
b. suspects/cases at N.C. facilities. The DOC infection control nurse will send periodic updates on the TB suspects receiving treatment or evaluation for TB.
c. The N.C. TB Control staff will meet with N.C. DOC infection control staff annually to discuss TB patient care issues.
d. Correctional facility medical staff will be invited to participate in all N.C. TB control educational trainings.
e. One of the TB nurse consultants will be designated to serve as the correctional facility liaison with the N.C. DOC. At the current time (September 2019), this is Lynn Kearney lynn.kearney@dhhs.nc.gov 919-755-3183.

E. North Carolina TB Control Program Hurricane/Disaster Action Plan

Optimizing the continuity of care for patients with active tuberculosis can be challenging in the setting of a natural disaster, which may displace patients, disrupt communications, and interfere with infrastructure essential for drug distribution and dispensing. A coherent but simple action plan is important to deal with problems arising from natural disasters. This action plan is outlined below.

1. Essential points
   - Tuberculosis is rarely an acutely life-threatening problem and missing a small number of medication doses in the setting of a natural disaster is unlikely to cause significant harm to patients or induce drug resistance.
   - A natural disaster has the potential to concentrate large numbers of people in close quarters (e.g. shelters). Tuberculosis usually requires prolonged, close contact for transmission, but potential for transmission exists from infectious cases to people with intense exposure to these cases at close quarters.
   - The top priority for tuberculosis control should therefore be establishing the whereabouts of the most infectious cases (i.e. smear-positive cases), separating these cases from uninfected/susceptible people where possible, and assuring that these cases continue anti-tuberculous treatment (which reduces infectiousness).
   - Second priority for tuberculosis control is to assure continuation of medication for less contagious (i.e. smear-negative) and noncontagious (i.e. extra-pulmonary) tuberculosis cases.
   - People with latent tuberculosis are unlikely to suffer any significant harm from temporarily halting latent tuberculosis treatment in the setting of a natural disaster and should therefore be considered low priority in this setting.

2. Action Plan
   - If a severe weather condition or other disaster is expected, the TB control program nurse consultants should ensure that they have an up-to-date list of active TB cases in their regions.

- If an unexpected disaster occurs, the nurse consultants should obtain a list of active TB cases in their regions as soon as possible from the NCEDSS system, focusing on county of residence, site of disease, acid-fast smear status, current TB drugs with doses, and duration of treatment received.
- In the case of a potential/expected disaster, the county TB control staff should be instructed to do the following:
    - Elicit emergency contact information for all their active cases, including location/phone for where the cases plan to go if they need to leave their current location.
    - Provide all active cases with a one-week supply of anti-tuberculous medications for daily self-administration, in case of disruptions that would exclude the possibility of directly observed therapy.
    - Provide their nurse consultant with emergency contact information for key personnel in case of a disaster affecting health department communication infrastructure.
- After an emergency, the nurse consultants should contact the relevant TB nurse/provider in all counties in their region with active cases as soon as possible.
- If disruptions in infrastructure have occurred that limit the ability of a county to provide treatment to patients, the nurse consultant should facilitate communication with nearby, unaffected counties to determine whether these unaffected counties can provide assistance. For example, TB drugs are normally delivered directly to the county by Cardinal. In the case of infrastructure disruptions preventing such delivery, the nurse consultant will communicate with nearby counties to determine whether drugs could temporarily be delivered to a nearby county.
- Nurse consultants will assist the county nurses in finding ways to isolate infectious TB cases from congregate living settings (e.g. shelters). Potential resources to achieve this isolation are as follows:
    - American Lung Association funds to pay for temporary hotel rooms; and
    - Hospitalization at local facilities if absolutely necessary.
- If TB cases are displaced from their home counties, county TB nurses (assisted by N.C. TB nurse consultants if necessary) will communicate with TB control personnel in the new jurisdiction (another county in NC or out of state) to assure continuity of care. If the displacement is expected to last less than one week, an interjurisdictional transfer form should be sent to the new jurisdiction.

F. North Carolina Cohort Review Policies and Procedure

Background

Cohort Review (CR) is a systematic review of tuberculosis cases and their contacts to evaluate treatment outcomes and identify areas for improvement. Implementing CR is part of North Carolina's CDC Cooperative Agreement

Objectives of Cohort Review

1. To ensure that patients with active tuberculosis in North Carolina receive appropriate evaluation and treatment
2. To provide a mechanism for continuous quality improvement for state and local tuberculosis control programs
3. To track progress toward meeting state, local, and national program objectives
4. To provide regular opportunities for real-time, patient-relevant education of local health department staff regarding optimal management of patients with suspected or confirmed tuberculosis disease

Procedures

1. Reviews are conducted annually on all cases and current suspects identified since the previous review that meet the following criteria:
    a. Class b events with TB disease
    b. Drug resistant cases
    c. HIV co-infected
    d. Pediatric cases less than 5 years of age at the time of diagnosis
    e. Cases who took longer than 60 days to convert
    f. People with more than one episode of TB (includes treatment failures, relapses)
    g. People treated for greater than 365 days
    h. Person who had serum drug levels obtained, regardless of the reason
    i. Anyone started on less than or more than the standard 4 drugs
    j. People who are dead at diagnosis or die during therapy
    k. Person with serious drug intolerances
2. Suspects in whom TB was ruled out will not be reviewed even if they received TB treatment. If a case was reviewed before, it is not reviewed again unless there are problems, or the TB nurse has issues to discuss

Timeline of events

1. The nurse consultants coordinate the timing of the reviews with the NC TB Medical Director and the county and set the review schedule several months in advance.
2. If the review will be done by phone, the nurse consultant obtains and distributes the conference call phone number
3. The county TB nurse schedules the room for the review if the review is being done at the LHD. He or she invites local physicians who are prescribing TB treatment to patients whose cases will be reviewed.
4. Three weeks prior to the review, the nurse consultant provides a list of patients to be presented and emails it to the county nurse to be verified.

5. The TB nurse completes the Cohort Review Case Presentation Form. This can be done at any point prior to review, for example, the nurse can start filling it out as soon as the case is confirmed.
6. The nurse consultant may print out all the RVCT forms on the patients to be reviewed. During the review, she can compare what the TB nurse presents to what was entered into NCEDSS; this is a quality control measure.

During the review

1. The TB nurse presents the information in the order that it appears on the Cohort Review Form. Cohort Review differs from a case conference during which there may be detailed discussion about the case's history and family, etc. The TB nurse's cohort review presentation should take about 3 minutes. Those present at the review discuss the case.

After the review

1. The state TB Medical Director or Consultant writes a draft report on the review and sends it to the nurse consultant for review. The TB Medical Consultant then finals the review and sends it to the nurse consultant for distribution to the TB nurses.
2. Copies of the cohort review letters should be sent to TB Epidemiologist for the year end reports.

Summary of participants' roles and responsibilities

1. County TB nurses: Enter all required information into NCEDSS. Schedule room for cohort review. Complete the Cohort Review Case Presentation Form. Invite providers (if different from the county TB physician) who are prescribing/managing the cohort review patients. Verify the list of patients provided by the nurse consultant for the review. At the review session, verbally present the information. Respond to participants' questions.
2. County TB physician and /or the provider who is prescribing/managing the TB: Participate in review and responds to participants' questions.
3. State tuberculosis medical director: Provides guidance on standards of care, treatment guidelines, monitoring, case management and research. Provides cohort review report to county TB nurses via the state TB nurse consultant the review.
4. State tuberculosis nurse consultant: Assists with cohort review training. Coordinates the review date with the NC TB physicians and the county. Obtains conference call phone number if needed. Provides a list of patients to be presented and emails it to the county TB nurse to be verified. Participates in review. Reviews draft cohort review report. Distributes final report to the TB nurses.

Patient Information:

TB Nurse:_____

Date:_____ County:_____ Provider:_____ NEDSS ID:_____

Patient name:_____ Jurisdiction if not same county as on Line 1:_____

Last First

Age:_____ Sex:____ Foreign born (check one)? ❒Yes ❒ No If yes, birth country: _____

Arrived in USA (date): _____ Circle one: Class A B1 B2 N/A

Race: (Check one or more):

❒ American Indian or Alaska Native ❒ Asian ❒ Black or African American

❒ White ❒ Native Hawaiian or other Pacific Islander (specify):

Ethnicity (Check one): ❒ Hispanic or Latino ❒ Not Hispanic or Latino

HIV status: pos / neg / unknown on _____ (date) If unknown, reason (check one): ❒refused ❒not offered

- If HIV positive, is patient in care? ❒Yes (location:_____)
  ❒No (circle reason): doesn't want care / can't afford care / other_____
- CD4 count: _____ on _____(date) If <200, taking PCP prophylaxis (Septra DS/ Bactrim DS/ trimethoprim sulfamethoxazole; Dapsone; Mepron/atovaquone; aerosolized pentamidine)? Yes No
- Viral load: _____ on _____(date)
- Was pt started on anti-retroviral meds during TB treatment? ❒ Yes ❒ No If yes, list meds on Page 2

TB Information:

Factors associated with increased risk from therapy (Check all that apply):

❒ chronic active Hepatitis B ❒ Hepatitis C ❒ end-stage renal disease

❒ Patient was a contact to a case

Smear & Culture Results

Is this a clinical case of TB (all cultures negative)? ❒ Yes ❒ No

If "Yes," check all that apply: ❒ TST ____mm ❒ IGRA positive ❒ CXR c/w TB
❒ signs/symptoms c/w TB ❒ improved on TB meds

If "No," check one or both: ❒ Pulmonary ❒ Extra-pulmonary

If pulmonary (check specimen source):
❒ sputum ❒ bronch
❒ lung tissue ❒ gastric aspirate

If Extra-pulmonary (check):
❒ pleural ❒ lymphatic ❒ genitourinary
❒ meningeal ❒ peritoneal ❒ laryngeal
❒ bone and/or joint ❒other: _____

Pulmonary smear result collected on_____(date): ❒ Pos ❒ Neg ❒ N/A ❒ Unknown	Extra-pulmonary smear result collected on _____(date): ❒ Pos ❒ Neg ❒ N/A ❒ Unk
Initial pulmonary culture result: ❒ MTB ❒ Neg/NTM ❒ Pending ❒ N/A ***OR*** ❒ PCR positive ❒ PCR negative	Initial extra-pulmonary culture result: ❒ MTB ❒ Neg/NTM ❒ Pending ❒ N/A ***OR*** ❒ PCR positive ❒ PCR negative

Initial susceptibility of pulmonary/extra-pulmonary specimen: ❒ Pansensitive ❒ Resistant to: _____

If positive sputum culture initially, was culture status documented every 2 weeks until culture conversion to negative? (Check one): ❒Yes ❒No ❒Sputum culture has not converted yet

If "No," why not? Check: ❒ lost ❒died ❒moved ❒no sputum despite induction ❒other:_____

Sputum culture conversion date: _____

Did sputum culture convert to negative within 60 days? ❒ Yes ❒ No ❒ Pending ❒ N/A

Initial chest X-ray results (Check one): ❒ normal ❒ abnormal consistent with TB

If abnormal (check): ❒ cavity ❒ miliary ❒ other (specify): _____

For a child with TB, was the source case found? ❒ Yes ❒ No ❒ Pending ❒ N/A

Treatment Information:

If sputum smear-positive, was treatment started within 7 days of specimen collection?	❒ Yes ❒ No ❒ N/A	*If "No," why not? (check):*	❒ lost ❒ died ❒ moved ❒ delay in locating pt ❒ delay in receiving smear report

Medication Regimen: Drug regimen started on (date): _____ Weight _____ lbs/kg
(check): ❒ current ❒ complete Baseline serum creatinine: ____ mg/dL
(check): ❒ initial ❒ continuation

Drug	Daily dose (mg)	Number of weeks of daily DOT	2x/week or 3x/week dose (mg)	Number of weeks of 2x/week or 3x/week DOT	Total number of weeks of DOT received
INH					
RIF					
PZA					
EMB					

Was therapeutic drug monitoring (TDM) done? ❒Yes ❒ No *If "yes," check result:*
❒therapeutic, no dose change ❒sub-therapeutic, dose(s) changed ❒follow-up TDM done: ❒therap ❒sub-ther

Missed doses/treatment interruption? ❒Yes ❒ No
If "yes," number of missed doses _____
If "yes," check reason(s): ❒ vomited ❒held ❒partial dose during reintroduction ❒ lost ❒ moved
❒ refused ❒not home ❒ no show at clinic ❒ drug toxicity/adverse reaction
If drug toxicity/adverse reactions (check all that apply): ❒nausea ❒ vomiting ❒rash ❒itching
❒hepatotoxicity ❒ fever ❒headache ❒ other_____

Was therapy completed within 12 months? ❒ Still on meds ❒ Yes ❒ No *If "No," check all that apply:*
❒ rifampin resistance ❒ non-adherence ❒ clinically indicated ❒ adverse drug reaction ❒ failure ❒ other

Expected therapy completion date: _____
End of treatment CXR & Provider Evaluation (Check one): ❒ scheduled ❒ done

Medications that patient is taking (or new since last review or taken when on TB treatment): _____
_____

Were all of patient's other meds (including OTC & dietary supplements) reviewed & assessed for potential drug interactions between them & TB meds and for increased hepatotoxicity risk? ❒ Yes ❒ No
If yes, describe the interaction(s) and list the meds causing increased hepatotoxicity risk:_____
_____
_____
If yes, describe what was done to avoid/compensate for the interaction(s)/increased hepatotoxicity risk:
_____
_____

Were baseline tests (hepatic function, CBC with platelets, & creatinine) completed? ❒Yes ❒ No
Were baseline labs abnormal? ❒Yes ❒ No
If yes, were follow-up labs done? ❒Yes ❒ No
If follow-up labs were done, what was outcome (check all that apply): ❒Follow-up labs were normal
❒Follow-up labs were abnormal ❒Patient will have monthly labs ❒ Treatment interruption

Contacts (List number of high & medium priority contacts for each category)

In subsequent reviews, update this section since last review.

	High Priority	Medium Priority
Number of contacts identified		
Number of contacts with prior positive TST		
Number of contacts with new positive TST		

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G. Referrals to Other States, Territories and Countries.

The National TB Controllers Association (NTCA) maintains a current list of interjurisdictional contacts for each state and large city. These are public health professionals that oversee the exchange of pertinent information about TB patients and/or TB contacts. The following link will take you to the NTCA website listing:
http://www.tbcontrollers.org/community/statecityterritory/#.VW3awEaqFIw

The NTCA also has the Interjurisdictional forms and instructions on their website. The interjurisdictional form should be used to make referrals to other TB programs. The interjurisdictional form should be sent to the appropriate contact person listed and a copy should also be sent to the NC TB Control Registrar. The following link will take you to NTCA's website where the forms and instructions can be found:

http://www.tbcontrollers.org/resources/interjurisdictional-transfers/#.VW3ZaUaqFIw

The CDC has a list of International contacts and an International TB Referral Form.

https://www.cdc.gov/tb/programs/international/default.htm