TB NURSE CASE MANAGEMENT CLINICAL PATHWAY

Purpose:

The TB Nurse Case Management Clinical Pathway (NCMCP) provides a sequential list of tasks, decisions, and interventions performed during the care of a presumptive or confirmed TB case that will:

- Reduce missed opportunities for improving care
- Ensure interventions remain within the current standard of care
- Assist in prioritizing numerous competing interventions
- Improve TB outcomes

This tool has information and links you should find helpful. Taking advantage of the NCMCP electronic links to forms, guidance, and directives, associated with specific steps can only be done if used electronically. In addition to its electronic format the NCMCP can be printed and used as a checklist. **This does not replace documentation of work performed. All progress notes should continue to be robust but concise.**

Instructions:

1. In print form, there are many underlined titles, words, and citations. These are hyperlinks to documents, protocols, and supporting information that refer to specific steps of the NCM process.
2. If you would like to review a protocol or process or print a form, view the NCMCP electronically. You may want to download the tool and save on your desktop for quick and easy use.
3. You can retrieve resources two ways:
    a. Put your cursor on the underlined words then control/click and the document will open up for you to view.
    b. Right click the underlined words and in the drop down list select "open hyperlink."
4. This pathway includes items that may not apply to your specific case. However, it serves as a reminder that a step should be considered even if it does not apply to the current situation. Here are two examples:
    a. *Initial Report box*: 3rd statement is "Arrange to visit client while hospitalized." If the case is home, it is obvious this wouldn't apply.
    b. *Day 1 box:* 10th statement "Place a TST or draw an Interferon Gamma Release Assay if not done." If a result is documented, no repeat is needed. This would not apply.
5. Each row in the NCMCP tool is a core component of TB NCM and should be thought of as a necessary step unless determined otherwise. If you are unsure, speak to your supervisor or call TB control to speak with one of the nurse consultants.
6. The *"how to make it happen"* steps are determined locally. If you are unsure or unaware of how to get something accomplished contact your nursing supervisor, district medical director or other recognized authority located in your district.
7. Of course, if the state office can be of assistance in any way, never hesitate to call (804) 864-7906.

TB NURSE CASE MANAGEMENT CLINICAL PATHWAY

	TB Nurse Case Management Directives	Done
Initial Notification (Initial report)	Document on the Active TB Case Summary. Review information from the reporting source. Request medical records that provide the information needed to complete the Active TB Case Summary.	
	Provide guidance to reporting source regarding Airborne Infection Isolation precautions (AII). Presumptive and confirmed TB clients should be in AII if inpatient until standards for release from isolation are met. Estimate potential infectiousness (site of disease, bacteriology, symptoms).	
	Arrange to visit the client in the hospital, their home or any other location within one workday. If in a healthcare facility, contact the infection control nurse **and** the unit nurse in addition to the client to arrange the visit.	
	Initiate the discharge plan if hospitalized. If discharge is imminent ensure the TB Treatment/ Discharge Plan has been completed by the hospital provider, reviewed and signed by the district health director or other designated person (often TBNCM) before discharge	
	Use weight given during intake to calculate TB medication dosages "Treatment of Drug Susceptible Tuberculosis," 2016, Pg5 and 26 (You will reweigh the client as soon as possible)	
Day 1	Perform the initial client interview; confirm client medical/psychosocial/demographic information, complete the TB and Newcomer Health History, discuss public health coordination with clients clinician	
	Notify TB control through REDCap of reported presumptive/confirmed case if not already done	
	Provide and review literacy and language appropriate TB educational materials: TB educational materials	
	Provide an overview of the TB treatment plan including: monthly nursing/clinician visits. Provide contact information for clinic/NCM and TB medication fact sheets	
	Obtain signatures on HIPAA required forms - Notice of privacy practices, Authorization to Release PHI	
	Read, explain and obtain signature on the Patient Isolation Instructions	
	Read, explain and obtain signature for Directly Observed Therapy Agreement. Arrange for time and place for DOT. Notify the Outreach Worker	
	Use a drug interaction checker to determine any drug/drug interactions with TB treatment regimen. After obtaining a list of current medications. Give drug interaction report to clinician for review. Document all medications on the Medication List.	
	Elicit contact information if appropriate determine the need for a contact investigation	
	Place TST, draw an Interferon Gamma Release Assay (IGRA) if not done and M.tb not confirmed	
	Do baseline diagnostic testing: Ishihara and Snellen for vision. Audiometry and Rhomberg testing is not needed if initiating standard RIPE treatment, needed for second line drugs only	
	Do: AST, ALT, bilirubin, alkaline phosphatase, platelet count, creatinine, HIV, if not done within the last month "Treatment of Drug Susceptible Tuberculosis", 2016, pg.7. Document results on Lab Flow Sheet	
	Do HgbA1c, whether the client has a history of diabetes or not, if not done in the prior 3 months	
	Do Hepatitis B and Hepatitis C screening if client has risk factors (IV drug use, birth in Asia or Africa, HIV +)	
	Collect observed #1 sputum specimen. Assure GeneXpert (NAAT) on all initial smear positive specimens Recommended sputum sample collection schedule. Provide sputum containers for collection over next two days or schedule an induction if needed. Provide instructions for how to collect a sputum. Induce if necessary. Document date collected on Bacteriology Flow sheet.	

TB NURSE CASE MANAGEMENT CLINICAL PATHWAY

		Done
	Request a CXR if recent exam is not available	
	Ensure client has a medical exam if not done to date	
	Plan source for TB meds based on cost effectiveness	
	Prepare the Directly observed therapy log	
	If the client is hospitalized, arrange for the home assessment	
	Develop plan to address potential barriers to adherence.	
	If housing/ food support is anticipated access all local avenues for assistance before submitting a request for AHIP funds. Requests should be submitted through REDCap.	
Day 2	Revisit incomplete steps from Day 1	
	Continue gathering health information from reporting site	
	Prioritize contacts and transmission locations identified and initiate contact evaluation (CI) plan. Notify a Nurse Consultant if a special setting is identified (school, work site, etc) and may lead to media attention. For environmental assessment assistance, contact the surveillance team.	
	Collect #2 sputum specimen today. If unable, induce with clinician order. Document date of collection on Bacteriology Flow Sheet.	
	Continue DOT	
Day 3	Revisit or continue incomplete steps from Day 1 and Day 2	
	GeneXpert results should be available by the end of the day	
	Review lab test results and share with treating clinician (TST/IGRA, sputum smear and NAAT, blood work, etc)	
	Estimate the infectious period. Continue planning and coordinating CI plan. Sputum AFB smear negative respiratory site of disease requires a contact investigation plan, particularly if the client was symptomatic or had cavitary disease.	
	Assess home environment for transmission potential and additional contacts	
	Collect #3 sputum specimen today. If unable, induce with clinician order. Document date of collection on Bacteriology Flow Sheet (The next sputum will be collected in 7 – 10 days) Recommended sputum sample collection schedule	
	Continue DOT	
	Ensure client has a medical exam if not done to date	
Day 4	Revisit incomplete steps from Day 1,2 and Day 3	
	Notify TB control of reported presumptive/confirmed case if not already done electronically through REDCap on day 1	
	Initiate Report of Verified Case of Tuberculosis (RVCT) in the Virginia Electronic Disease Surveillance System (VEDSS), Page 1 - 3	
	Continue executing CI plan – re-interview the patient. Must notify TB Nurse Consultant if possible media attention.	
	Read and record TST results two to 3 days after placement, If T-Spot, download results from “Snap client portal”, If QuantiFERON done, look for results from Fairfax or LabCorps	
	Continue DOT	
Within 1 week of notification	Sputum smear results should be available by this time on the 3 initial sputum collected. Record results on Bacteriology Flow Sheet. Smear positive/negative clients with a respiratory site of disease, clinical symptoms of TB and/or cavitary disease should have a (CI) plan.	
	Carry out CI plan for high priority contacts (TST or IGRA, CXR, sputum, medical exam). Do not delay the CXR for children <4 and immune suppressed individuals while awaiting results of TST/IGRA (Standard of care for completion is 1 week)	

TB NURSE CASE MANAGEMENT CLINICAL PATHWAY

		Done
	Implement interventions for anticipated and known barriers for adherence. Seek assistance from community social service agencies before seeking AHIP assistance	
	Contact TB control nurse consultants for Therapeutic Drug Monitoring (TDM) for all known diabetic clients, those with results of a HgbA1c > 6.5 and HIV positive clients.	
	Continue DOT	
Week 2	Continue TB education of client, and family and friends, if aware of diagnosis	
	Continue DOT. Plan for nurse's home visit in the next 2 weeks.	
	Monitor drug side effects (SE), adverse drug reactions (ADR), and scheduling concerns to assure treatment plan is successfully implemented	
	Continue CI plan and ensure all high priority contacts have begun appropriate window period treatment if TST/IGRA negative. All high priority TST/IGRA positive clients should have completed their evaluation (started treatment for TB infection: MMWR Guidelines for the investigation of contacts of persons with infectious TB (2005) beginning on Pg17)	
	Ensure all medium priority contacts have been evaluated (standard of care for completion is within 14 days)	
	Document the 60th day of treatment on the top left area of the bacteriology form. This date is not the same as the 60th dose. This is the calendar date 60 days from the day treatment began.	
Week 3	Gather information for CI initial 502 electronic submission into REDCap. Report due by Week 4	
	Continue to search for clues regarding contacts, particularly with smear positive clients	
	Assure smear results for all bacteriology specimens collected to date have been recorded on the Bacteriology Flow Sheet	
	Collect sputum for AFB smear and culture, record on Bacteriology Flow Sheet. One sputum will be collected every 7 – 10 days going forward until two consecutive ***cultures*** are negative	
	If clinician visit is scheduled for Week 4, collect sputum, blood work as ordered, and perform other monitoring this week so it is available by clinician visit.	
	Review DOT documentation to assess adherence. Be sure daily observation for signs of non-adherence are reported and documented thoroughly in the client's medical record. Continue DOT.	
Week 4	Monthly clinical assessment by NCM or clinician. Assess client's status; weight, vital signs, visual acuity, TB symptoms, client report, bacteriology, adverse drug events etc.	
	Forward all updated labs to treating clinician for review	
	Discuss option for change to intermittent therapy during the intensive phase with treating clinician (thrice weekly over twice weekly is preferred) Caution: clients with an initial high burden of disease should have shown a significant response to therapy to consider intermittent therapy this early in treatment	
	Clients at high risk for hepatotoxicity may require lab work. Check with treating clinician	
	Contact lab for most up to date results on AFB specimens (May take 6 weeks for culture results to be final from DCLS)	
	Collect sputum for AFB smear and culture. If smears have converted to negative plan for release from isolation if: (1) likelihood of resistance is low, (2) at least 2 weeks of TB treatment has been completed, (3) the clinical picture has improved, and (4) smear positivity is improved. *Must have 3 negative smears to return to congregate setting.* (MMWR Controlling TB in the US – 2005; Box 3)	
	Continue to identify contacts. CI plan: ensure all high priority contacts have begun window period treatment, if prescribed. MMWR Guidelines for the investigation of contacts of persons with infectious TB (2005) beginning on Pg17	

TB NURSE CASE MANAGEMENT CLINICAL PATHWAY

		Done
	Submit CI initial 502 information to REDCap if not already done	
	If not already started, begin window period treatment on TST/IGRA negative high priority contacts (children <4, immune compromised)	
	Share all updated orders, recommendations, case management strategies with ORW	
	Continue DOT	
Week 5 - 7	Final culture results should be available by 6 weeks after collection	
	Critical action – if culture conversion has not occurred and a client had cavitary evidence on their initial radiography, one sputum must be collected before the 60th day after treatment began. If this applies, plan now for one sputum collection between the 57-59 day. Note this on the DOT record in the comment section. (Treatment of Drug-Susceptible Tuberculosis – Pg21)	
	Susceptibility results should be available within 2 weeks after final culture is received	
	If client is slow to respond to treatment, (smears not improving, no clinical improvement) re-evaluate adherence, consider TDM	
	If client is pansensitive – discuss discontinuing Ethambutol with the treating clinician	
	CI – Ensure adherence to LTBI treatment for contacts on window period treatment or those with LTBI. Consult with ORW to locate those who are non- adherent. Continue with evaluations on newly identified contacts, if any	
	In preparation for 8 week visit with clinician do weight, vital signs, visual acuity, labs if ordered	
	If client is a clinical case (culture negative) repeat CXR and request comparison with initial imaging	
	Continue DOT	
	Begin planning for repeat TST/IGRA on contacts over the next month. Each contact who had a negative TST/IGRA is tested a second time a minimum of 10 weeks after the date of last exposure to the infectious case.	
Week 8	**This is a critical juncture in case management.** Several activities occur that determine case confirmation, treatment changes, length of treatment, future monitoring, and the CI. *This is also when an unexpected TB drug resistant case will be discovered*	
	"Hit the wall" behavior - Common time for adherence issues to arise. Most clients are now smear negative, no longer in isolation and feeling better.	
	Sputum collection between the 57-59 day of treatment if culture conversion has not occurred and the client had cavitary evidence on radiography.	
	If clinical or bacteriological improvement is not evident by 60 days of treatment, discuss with treating clinician: Evaluate adherence, consider TDM. Continue to collect 1 sputum every 7 – 10 days	
	Calculate the number of doses taken during the initial phase. When 8 weeks of Pyrazinamide (PZA) have been taken, discuss discontinuing PZA with the treating clinician only if sensitivities are available. **Do not stop PZA** unless you have carefully counted doses. When less than 8 weeks of PZA is taken, treatment will need to be extended.	
	Monthly clinical assessment - RN or clinician	
	Labs, if needed, weight, and vital signs	
	Discuss change to intermittent regimen with treating clinician. *Daily or thrice weekly only (not twice weekly) for HIV positive patients, diabetic patients and others who are immune suppressed.*	
	Continue DOT - Document changes in medication and dosages on the DOT sheet with new dosages. Discuss changes with ORW	
	Verify if suspect should or should not be counted as a case of TB (consult RVCT instructions) The clinician will base the decision to stop or continue treatment using historical and current information (sputum, imaging, clinical improvement, etc.).	

TB NURSE CASE MANAGEMENT CLINICAL PATHWAY

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	Critical CI juncture 2nd round testing is due a minimum 10 weeks after a contacts last date of exposure to the case while infectious. Assure treatment initiation for infected contacts and continue follow-up and reminder efforts.	
Week 9 - 11	Continue to collect sputum for AFB smear and culture until culture conversion. Collect 1 sputum every 7-10 days (3 per month)	
	Obtain prescriptions for change of dosages if needed for intermittent therapy	
	Complete information in RVCT VEDSS pages 1 – 3 and follow-up report 1 - drug susceptibility results (if available)	
	Continue DOT	
	CI – continue efforts to assure 2nd round of testing is being performed Evaluate results to determine need to expand investigation to next lower priority level.	
	For contacts on treatment: employ strategies to improve treatment initiation, adherence and completion	
Week 12	Monthly clinical assessment - RN or clinician	
	Labs if needed, weight, vital signs	
	CI – All initial contacts should have been completely evaluated. Contacts identified later should have had their first TST/IGRA. Those identified as high priority contacts should be placed on window period treatment if the initial test is negative and was performed less than 10 weeks from exposure to the TB case while infectious	
	Ensure new orders, recommendations, or case management strategies are shared with the ORW	
	Forward all recent lab results to treating clinician	
	Continue DOT	
	Sputum collection will likely be discontinued at this time. Sputum culture conversion is expected by this time in the treatment. If culture conversion is not evident, notify the treating clinician and TB control for recommendations	
Week 13 – 15	CI – continue activities, monitor contact adherence to treatment	
	Continue DOT	
	Complete information in RVCT, VEDSS pages 1 – 3 and follow-up report 1 - Drug susceptibility results if not already done	
Week 16	Monthly clinical assessment - RN or clinician	
	Labs if needed, weight, vital signs	
	Ensure new orders, recommendations, or case management strategies are shared with the ORW	
	Ensure treating clinician has most recent lab results	
	Continue DOT	
Week 17 – 19	Continue DOT	
	CI – continue activities, monitor contact adherence to treatment	
Week 20	Monthly clinical assessment - RN or clinician	
	Labs if needed, weight, vital signs	
	CI – continue activities, monitor contact adherence to treatment	
	Ensure new orders, recommendations, or case management strategies are shared with the ORW	
	Continue DOT	
	Ensure treating clinician has most recent lab results	
Week 21 - 23	CI – continue activities, monitor contact adherence to treatment	

TB NURSE CASE MANAGEMENT CLINICAL PATHWAY

		Done
	NCM responsibility: Calculate total dosages/ frequency to determine weeks taken during the entire treatment course to ensure the client is on target for completing treatment in the next 4 weeks if treatment course is 26 weeks.	
	Repeat CXR for comparison with prior radiography and documentation of status at treatment completion	
	Schedule client for final visit with clinician as treatment comes to completion	
Week 24 - 26	Final clinic visit with clinician. The treating clinician will confirm treatment completion with assistance from the NCM (weeks taken, culture conversion)	
	Continue DOT until required weeks have been taken. Notify ORW of remaining doses needed to treat to completion.	
	Provide client with a written treatment summary that includes: Health department and treating clinician contact information, diagnosis and site of disease, TST/IGRA results, CXR results, treatment taken (medication, dosage, and number of weeks), final bacteriology, patient education information	
	If client requests (not required), schedule client for follow-up appointment	
Closing the case	Assure all information is complete, DOT sheet, bacteriology, other labs, contact investigation information	
	Complete RVCT Case Completion Report – follow-up 2 in VEDSS, all case information should be complete at this point. If questions contact Surveillance team at (804) 864-7906	
	Complete the TB Case Completion Report and fax to TB control (804) 416-5178	
	Complete final CI 502 information and fax to TB control (804) 416-5178	

Treatment may be extended beyond 26 weeks in the following circumstances

- Resistance or intolerance to PZA
- Less than 8 weeks of PZA taken
- Delayed culture conversion
- Interruptions in treatment (often due to drug intolerance) (Pg21)
- Certain co-morbidities

If this occurs, continue 'Week 20' activities for the remaining weeks and follow week 24 – 26 as completion of treatment approaches.

Call VDH TB Control anytime if questions arise (804) 864-7906