BlueCross BlueShield of Illinois

If a conflict arises between a Clinical Payment and Coding Policy ("CPCP") and any plan document under which a member is entitled to Covered Services, the plan document will govern. If a conflict arises between a CPCP and any provider contract pursuant to which a provider participates in and/or provides Covered Services to eligible member(s) and/or plans, the provider contract will govern. "Plan documents" include, but are not limited to, Certificates of Health Care Benefits, benefit booklets, Summary Plan Descriptions, and other coverage documents. BCBSIL may use reasonable discretion interpreting and applying this policy to services being delivered in a particular case. BCBSIL has full and final discretionary authority for their interpretation and application to the extent provided under any applicable plan documents.

Providers are responsible for submission of accurate documentation of services performed. Providers are expected to submit claims for services rendered using valid code combinations from Health Insurance Portability and Accountability Act ("HIPAA") approved code sets. Claims should be coded appropriately according to industry standard coding guidelines including, but not limited to: Uniform Billing ("UB") Editor, American Medical Association ("AMA"), Current Procedural Terminology ("CPT®"), CPT® Assistant, Healthcare Common Procedure Coding System ("HCPCS"), ICD-10 CM and PCS, National Drug Codes ("NDC"), Diagnosis Related Group ("DRG") guidelines, Centers for Medicare and Medicaid Services ("CMS") National Correct Coding Initiative ("NCCI") Policy Manual, CCI table edits and other CMS guidelines.

Claims are subject to the code edit protocols for services/procedures billed. Claim submissions are subject to claim review including but not limited to, any terms of benefit coverage, provider contract language, medical policies, clinical payment and coding policies as well as coding software logic. Upon request, the provider is urged to submit any additional documentation.

Testing for Diagnosis of Active or Latent Tuberculosis

Policy Number: CPCPLAB027

Version 1.0

Enterprise Medical Policy Committee Approval Date: January 25, 2022

Plan Effective Date: May 1, 2022

Description

BCBSIL has implemented certain lab management reimbursement criteria. Not all requirements apply to each product. Providers are urged to review Plan documents for eligible coverage for services rendered.

Reimbursement Information:

1. An interferon gamma release assay (IGRA) **may be reimbursable** to diagnose or screen for latent tuberculosis infection in:
    a. Individuals who are at risk for infection with *Mtb* based on clinical presentation or risk factors noted on screening evaluation.
    b. Individuals who are unlikely to be infected with *Mtb* when screening is obliged by law.

2. Acid fast bacilli (AFB) smear/stain **may be reimbursable** for all suspected tuberculosis infections.

3. Culture and culture-based drug susceptibility testing of *Mycobacteria spp*. m**ay be reimbursable** for all suspected tuberculosis infections.

4. Direct probe or amplified probe nucleic acid-based testing, including PCR, for the following **may be reimbursable**:
    a. *Mycobacteria spp*
    b. M. tuberculosis
    c. *M. avium intracellulare*

5. Repeat drug susceptibility testing **may be reimbursable** in the following situations:
    a. When sputum cultures remain positive after 3 months of treatment.
    b. When there is bacteriological reversion from negative to positive.

6. Cell counts, protein, glucose, and lactate dehydrogenase (LDH) concentrations of cerebrospinal, pleural, peritoneal, pericardial, and other fluids **may be reimbursable** in patients with pleural effusion, pericardial effusion, or ascites and suspected tuberculosis infection, respectively.

7. Urine-based detection of mycobacterial cell wall glycolipid lipoarabinomannan (LAM) **may be reimbursable** in HIV-infected patients with CD4 cell counts ≤100 cells/microL who have signs and symptoms of tuberculosis.

8. Gamma Interferon blood test **is not reimbursable** for patients with active tuberculosis.

9. The technique for quantification of nucleic acid includes both amplification and direct probes; therefore, simultaneous coding for both amplification or direct probes **is not reimbursable**.

10. Quantitative nucleic acid testing for *Mycobacterium spp, M. tuberculosis,* and *M. avium intracellulare* **is not reimbursable**.

11. Adenosine deaminase (ADA) and interferon-gamma (IFN- γ) levels in cerebrospinal, pleural, peritoneal, pericardial, and other fluids for the diagnosis of extrapulmonary TB **are not reimbursable**.

12. Serum protein biomarkers or panels of biomarkers for the detection and diagnosis of TB disease **are not reimbursable.**

Procedure Codes

Codes
81099, 82945, 83520, 83615, 84157, 84311, 86480, 86481, 87070, 87077, 87116, 87149, 87150, 87153, 87181, 87184, 87185, 87186, 87187, 87188, 87190, 87206, 87550, 87551, 87552, 87555, 87556, 87557, 87560, 87561, 87562

References:

AAP. (2021). *Red Book® 2021-2024: Report of the Committee on Infectious Diseases, 32nd Edition*.

Adams, S., Ehrlich, R., Baatjies, R., Dendukuri, N., Wang, Z., & Dheda, K. (2019). Evaluating Latent Tuberculosis Infection Test Performance Using Latent Class Analysis in a TB and HIV Endemic Setting. Int J Environ Res Public Health, 16(16). doi:10.3390/ijerph16162912

ATS. (2000). Targeted tuberculin testing and treatment of latent tuberculosis infection. Am J Respir Crit Care Med, 161(4 Pt 2), S221-247. doi:10.1164/ajrccm.161.supplement_3.ats600

Auguste, P., Tsertsvadze, A., Pink, J., Court, R., McCarthy, N., Sutcliffe, P., & Clarke, A. (2017). Comparing interferon-gamma release assays with tuberculin skin test for identifying latent tuberculosis infection that progresses to active tuberculosis: systematic review and meta-analysis. BMC Infect Dis, 17(1), 200. doi:10.1186/s12879-017-2301-4

Barry, C. E., 3rd, Boshoff, H. I., Dartois, V., Dick, T., Ehrt, S., Flynn, J., . . . Young, D. (2009). The spectrum of latent tuberculosis: rethinking the biology and intervention strategies. Nat Rev Microbiol, 7(12), 845-855. doi:10.1038/nrmicro2236

Bernardo, J. (2021, June 1). Diagnosis of pulmonary tuberculosis in adults - UpToDate. In E. Baron (Ed.), UpToDate. Retrieved from https://www.uptodate.com/contents/diagnosis-of-pulmonary-tuberculosis-in-adults

Bibbins-Domingo, K., Grossman, D. C., Curry, S. J., Bauman, L., Davidson, K. W., Epling, J. W., Jr., . . . Pignone, M. P. (2016). Screening for Latent Tuberculosis Infection in Adults: US Preventive Services Task Force Recommendation Statement. Jama, 316(9), 962-969. doi:10.1001/jama.2016.11046

Bourgi, K., Patel, J., Samuel, L., Kieca, A., Johnson, L., & Alangaden, G. (2017). Clinical Impact of Nucleic Acid Amplification Testing in the Diagnosis of Mycobacterium Tuberculosis: A 10-Year Longitudinal Study. Open Forum Infect Dis, 4(2), ofx045. doi:10.1093/ofid/ofx045

CDC. (2009). Updated guidelines for the use of nucleic acid amplification tests in the diagnosis of tuberculosis. MMWR Morb Mortal Wkly Rep, 58(1), 7-10. Retrieved from http://dx.doi.org/

Cruciani, M., Scarparo, C., Malena, M., Bosco, O., Serpelloni, G., & Mengoli, C. (2004). Meta-analysis of BACTEC MGIT 960 and BACTEC 460 TB, with or without solid media, for detection of mycobacteria. J Clin Microbiol, 42(5), 2321-2325. Retrieved from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC404614/

Daniel, T. M. (1980). The immunology of tuberculosis. Clin Chest Med, 1(2), 189-201. Retrieved from http://dx.doi.org/

De Groote, M. A., Sterling, D. G., Hraha, T., Russell, T. M., Green, L. S., Wall, K., . . . Ochsner, U. A. (2017). Discovery and Validation of a Six-Marker Serum Protein Signature for the Diagnosis of Active Pulmonary Tuberculosis. J Clin Microbiol, 55(10), 3057-3071. doi:10.1128/jcm.00467-17

Dheda, K., Gumbo, T., Gandhi, N. R., Murray, M., Theron, G., Udwadia, Z., . . . Warren, R. (2014). Global control of tuberculosis: from extensively drug-resistant to untreatable tuberculosis. Lancet Respir Med, 2(4), 321-338. doi:10.1016/s2213-2600(14)70031-1

Dheda, K., Schwander, S. K., Zhu, B., van Zyl-Smit, R. N., & Zhang, Y. (2010). The immunology of tuberculosis: from bench to bedside. Respirology, 15(3), 433-450. doi:10.1111/j.1440-1843.2010.01739.x

Diel, R., Loddenkemper, R., & Nienhaus, A. (2012). Predictive value of interferon-gamma release assays and tuberculin skin testing for progression from latent TB infection to disease state: a meta-analysis. Chest, 142(1), 63-75. doi:10.1378/chest.11-3157

ERS/ECDC. (2017). ERS/ECDC Statement: European Union Standards for Tuberculosis Care - 2017 update Retrieved from https://erj.ersjournals.com/content/erj/early/2018/04/05/13993003.02678-2017.full.pdf

Fenton, M. J., Vermeulen, M. W., Kim, S., Burdick, M., Strieter, R. M., & Kornfeld, H. (1997). Induction of gamma interferon production in human alveolar macrophages by Mycobacterium tuberculosis. Infect Immun, 65(12), 5149-5156. Retrieved from http://dx.doi.org/

Francis, J., Seiler, R. J., Wilkie, I. W., O'Boyle, D., Lumsden, M. J., & Frost, A. J. (1978). The sensitivity and specificity of various tuberculin tests using bovine PPD and other tuberculins. Vet Rec, 103(19), 420-425. Retrieved from http://dx.doi.org/

Gordin, F., & Slutkin, G. (1990). The validity of acid-fast smears in the diagnosis of pulmonary tuberculosis. Arch Pathol Lab Med, 114(10), 1025-1027. Retrieved from http://dx.doi.org/

Greco, S., Girardi, E., Navarra, A., & Saltini, C. (2006). Current evidence on diagnostic accuracy of commercially based nucleic acid amplification tests for the diagnosis of pulmonary tuberculosis. Thorax, 61(9), 783-790. doi:10.1136/thx.2005.054908

Gupta-Wright, A., Corbett, E. L., van Oosterhout, J. J., Wilson, D., Grint, D., Alufandika-Moyo, M., . . . Fielding, K. (2018). Rapid urine-based screening for tuberculosis in HIV-positive patients admitted to hospital in Africa (STAMP): a pragmatic, multicentre, parallel-group, double-blind, randomised controlled trial. Lancet, 392(10144), 292-301. doi:10.1016/s0140-6736(18)31267-4

Heemskerk, D., Caws, M., Marais, B., & Farrar, J. (2015). Clinical Manifestations. In Tuberculosis in Adults and Children: Springer.

Institute, C. a. L. S. (2018). Laboratory Detection and Identification of Mycobacteria, 2nd Edition. In M48. Wayne, PA: Clinical and Laboratory Standards Institute.

Jain, J., Jadhao, P., Banait, S., & Salunkhe, P. (2021). Diagnostic accuracy of GeneXpert MTB/RIF assay for detection of tubercular pleural effusion. *PLoS One, 16*(6), e0251618. doi:10.1371/journal.pone.0251618

Karthek, V., Bhilare, P., Hadgaonkar, S., Kothari, A., Shyam, A., Sancheti, P., & Aiyer, S. N. (2021). Gene Xpert/MTB RIF assay for spinal tuberculosis-sensitivity, specificity and clinical utility. *J Clin Orthop Trauma, 16*, 233-238. doi:10.1016/j.jcot.2021.02.006

Katial, R. K., Hershey, J., Purohit-Seth, T., Belisle, J. T., Brennan, P. J., Spencer, J. S., & Engler, R. J. M. (2001). Cell-Mediated Immune Response to Tuberculosis Antigens: Comparison of Skin Testing and Measurement of In Vitro Gamma Interferon Production in Whole-Blood Culture. Clin Diagn Lab Immunol, 8(2), 339-345. doi:10.1128/cdli.8.2.339-345.2001

Landry, J., & Menzies, D. (2008). Preventive chemotherapy. Where has it got us? Where to go next? Int J Tuberc Lung Dis, 12(12), 1352-1364. Retrieved from http://dx.doi.org/

Lein, A. D., & Von Reyn, C. F. (1997). In vitro cellular and cytokine responses to mycobacterial antigens: application to diagnosis of tuberculosis infection and assessment of response to mycobacterial vaccines. Am J Med Sci, 313(6), 364-371. Retrieved from http://dx.doi.org/

Lewinsohn, D. M., Leonard, M. K., LoBue, P. A., Cohn, D. L., Daley, C. L., Desmond, E., . . . Woods, G. L. (2017). Official American Thoracic Society/Infectious Diseases Society of America/Centers for Disease Control and Prevention Clinical Practice Guidelines: Diagnosis of Tuberculosis in Adults and Children. Clin Infect Dis, 64(2), 111-115. doi:10.1093/cid/ciw778

Ling, D. I., Flores, L. L., Riley, L. W., & Pai, M. (2008). Commercial nucleic-acid amplification tests for diagnosis of pulmonary tuberculosis in respiratory specimens: meta-analysis and meta-regression. PLoS One, 3(2), e1536. doi:10.1371/journal.pone.0001536

Mase, S. R., Ramsay, A., Ng, V., Henry, M., Hopewell, P. C., Cunningham, J., . . . Pai, M. (2007). Yield of serial sputum specimen examinations in the diagnosis of pulmonary tuberculosis: a systematic review. Int J Tuberc Lung Dis, 11(5), 485-495. Retrieved from http://dx.doi.org/

Menzies, D. (2021, February 2). Interferon-gamma release assays for diagnosis of latent tuberculosis infection. *UpToDate.* Retrieved from https://www.uptodate.com/contents/use-of-interferon-gamma-release-assays-for-diagnosis-of-latent-tuberculosis-infection-tuberculosis-screening-in-adults

Menzies, D., Pai, M., & Comstock, G. (2007). Meta-analysis: new tests for the diagnosis of latent tuberculosis infection: areas of uncertainty and recommendations for research. Ann Intern Med, 146(5), 340-354. Retrieved from http://dx.doi.org/

Miller, J. M., Binnicker, M. J., Campbell, S., Carroll, K. C., Chapin, K. C., Gilligan, P. H., . . . Yao, J. D. (2018). A Guide to Utilization of the Microbiology Laboratory for Diagnosis of Infectious Diseases: 2018 Update by the Infectious Diseases Society of America and the American Society for Microbiology. Clinical Infectious Diseases, ciy381-ciy381. doi:10.1093/cid/ciy381

Nahid, P., Mase, S. R., Migliori, G. B., Sotgiu, G., Bothamley, G. H., Brozek, J. L., . . . Seaworth, B. (2019). Treatment of Drug-Resistant Tuberculosis. An Official ATS/CDC/ERS/IDSA Clinical Practice Guideline. Am J Respir Crit Care Med, 200(10), e93-e142. doi:10.1164/rccm.201909-1874ST

Nakiyingi, L., Moodley, V. M., Manabe, Y. C., Nicol, M. P., Holshouser, M., Armstrong, D. T., . . . Dorman, S. E. (2014). Diagnostic accuracy of a rapid urine lipoarabinomannan test for tuberculosis in HIV-infected adults. J Acquir Immune Defic Syndr, 66(3), 270-279. doi:10.1097/qai.0000000000000151

Nasiri, M. J., Pormohammad, A., Goudarzi, H., Mardani, M., Zamani, S., Migliori, G. B., & Sotgiu, G. (2019). Latent tuberculosis infection in transplant candidates: a systematic review and meta-analysis on TST and IGRA. Infection, 47(3), 353-361. doi:10.1007/s15010-019-01285-7

NICE. (2019). Tuberculosis. Retrieved from https://www.nice.org.uk/guidance/ng33/chapter/Recommendations#latent-tb

NIH. (2019). Mycobacterium tuberculosis Infection and Disease. Retrieved from https://aidsinfo.nih.gov/guidelines/html/4/adult-and-adolescent-oi-prevention-and-treatment-guidelines/325/tb

NSTC. (2021, February 5). Testing and Treatment of Latent Tuberculosis Infection in the United States: Clinical Recommendations. Retrieved from http://www.tbcontrollers.org/docs/resources/tb-infection/LTBI_Clinical_Recommendations_Version_002052021.pdf

Pai, M., Denkinger, C. M., Kik, S. V., Rangaka, M. X., Zwerling, A., Oxlade, O., . . . Banaei, N. (2014). Gamma interferon release assays for detection of Mycobacterium tuberculosis infection. Clin Microbiol Rev, 27(1), 3-20. doi:10.1128/cmr.00034-13

Pai, M., Flores, L. L., Hubbard, A., Riley, L. W., & Colford, J. M., Jr. (2004). Nucleic acid amplification tests in the diagnosis of tuberculous pleuritis: a systematic review and meta-analysis. BMC Infect Dis, 4, 6. doi:10.1186/1471-2334-4-6

Pai, M., Nicol, M. P., & Boehme, C. C. (2016). Tuberculosis Diagnostics: State of the Art and Future Directions. Microbiol Spectr, 4(5). doi:10.1128/microbiolspec.TBTB2-0019-2016

Peto, H. M., Pratt, R. H., Harrington, T. A., LoBue, P. A., & Armstrong, L. R. (2009). Epidemiology of extrapulmonary tuberculosis in the United States, 1993-2006. Clin Infect Dis, 49(9), 1350-1357. doi:10.1086/605559

RBS. (2015). TB Breathalyser - TB Breath Test. Retrieved from http://www.rapidbiosensor.com/tbbreathalyser.asp

Ruan, Q., Zhang, S., Ai, J., Shao, L., & Zhang, W. (2016). Screening of latent tuberculosis infection by interferon-gamma release assays in rheumatic patients: a systemic review and meta-analysis. Clin Rheumatol, 35(2), 417-425. doi:10.1007/s10067-014-2817-6

Shah, M., Hanrahan, C., Wang, Z. Y., Dendukuri, N., Lawn, S. D., Denkinger, C. M., & Steingart, K. R. (2016). Lateral flow urine lipoarabinomannan assay for detecting active tuberculosis in HIV-positive adults. Cochrane Database Syst Rev(5), Cd011420. doi:10.1002/14651858.CD011420.pub2

Shah, M., Martinson, N. A., Chaisson, R. E., Martin, D. J., Variava, E., & Dorman, S. E. (2010). Quantitative analysis of a urine-based assay for detection of lipoarabinomannan in patients with tuberculosis. J Clin Microbiol, 48(8), 2972-2974. doi:10.1128/jcm.00363-10

Snider, D. E., Jr. (1982). The tuberculin skin test. Am Rev Respir Dis, 125(3 Pt 2), 108-118. doi:10.1164/arrd.1982.125.3P2.108

Steingart, K. R., Henry, M., Ng, V., Hopewell, P. C., Ramsay, A., Cunningham, J., . . . Pai, M. (2006). Fluorescence versus conventional sputum smear microscopy for tuberculosis: a systematic review. Lancet Infect Dis, 6(9), 570-581. doi:10.1016/s1473-3099(06)70578-3

Steingart, K. R., Ng, V., Henry, M., Hopewell, P. C., Ramsay, A., Cunningham, J., . . . Pai, M. (2006). Sputum processing methods to improve the sensitivity of smear microscopy for tuberculosis: a systematic review. Lancet Infect Dis, 6(10), 664-674. doi:10.1016/s1473-3099(06)70602-8

Taylor, Z., Nolan, C. M., & Blumberg, H. M. (2005). Controlling tuberculosis in the United States. Recommendations from the American Thoracic Society, CDC, and the Infectious Diseases Society of America. MMWR Recomm Rep, 54(Rr-12), 1-81. Retrieved from http://dx.doi.org/

Ustinova, V. V., Smirnova, T. G., Sochivko, D. G., Varlamov, D. A., Larionova, E. E., Andreevskaya, S. N., . . . Ergeshov, A. (2019). New assay to diagnose and differentiate between Mycobacterium tuberculosis complex and nontuberculous mycobacteria. Tuberculosis (Edinb), 114, 17-23. doi:10.1016/j.tube.2018.10.004

WHO. (2015a). Guidelines on the Management of Latent Tuberculosis Infection. In: World Health Organization.

WHO. (2015b). IMPLEMENTING TUBERCULOSIS DIAGNOSTICS. Retrieved from https://apps.who.int/iris/bitstream/handle/10665/162712/9789241508612_eng.pdf?sequence=1

WHO. (2018). Latent TB Infection: Updated and consolidated guidelines for programmatic management. WHO. Retrieved from https://www.who.int/tb/publications/2018/latent-tuberculosis-infection/en/

WHO. (2020a). Global tuberculosis report 2020. WHO. Retrieved from https://apps.who.int/iris/bitstream/handle/10665/336069/9789240013131-eng.pdf

WHO. (2020b). WHO consolidated guidelines on tuberculosis: module 1: prevention: tuberculosis preventive treatment. Retrieved from https://www.who.int/publications/i/item/who-operational-handbook-on-tuberculosis-module-1-prevention-tuberculosis-preventive-treatment

WHO. (2021, July 7). WHO consolidated guidelines on tuberculosis. Module 3: Diagnosis - Rapid diagnostics for tuberculosis detection, 2021 update. Retrieved from https://www.who.int/publications/i/item/9789240029415

Woods, G. L., Lin, S.-Y. G., & Desmond, E. P. (2015). Susceptibility Test Methods: Mycobacteria, Nocardia, and Other Actinomycetes. In Manual of Clinical Microbiology, Eleventh Edition. Washington, DC: ASM.

Yajko, D. M., Nassos, P. S., Sanders, C. A., Madej, J. J., & Hadley, W. K. (1994). High predictive value of the acid-fast smear for Mycobacterium tuberculosis despite the high prevalence of Mycobacterium avium complex in respiratory specimens. Clin Infect Dis, 19(2), 334-336. Retrieved from http://dx.doi.org/

Policy Update History:

5/1/2022	New policy