

Medical Coverage Policy | Multitarget Polymerase Chain Reaction Testing for Diagnosis of Bacterial Vaginosis



EFFECTIVE DATE: 01 | 01 | 2024

POLICY LAST REVIEWED: 01 | 17 | 2024

OVERVIEW

Bacterial vaginosis (BV) is a common medical condition resulting from an imbalance in the normal vaginal flora. Although the identification of *Gardnerella vaginalis* has traditionally been associated with BV, there is no single etiologic agent. Most cases are asymptomatic, and most symptomatic cases can be diagnosed using clinical and microscopic evaluation. Multitarget polymerase chain reaction (PCR) testing is proposed as an alternative to currently available laboratory tests to diagnose BV. This test may improve outcomes if it is a more accurate and reliable method to diagnose BV.

The following tests are addressed in this policy:

- Aptima® BV Assay (Hologic, Inc.) CPT code 81513
- BD MAX™ Vaginal Panel (Becton Dickson and Company) CPT code 81514
- Bridge Women's Health Infectious Disease Detection Test (Bridge Diagnostics) CPT code 0330U
- Xpert® Xpress MVP (Cepheid) CPT code 0352U
- Xpert® CT/NG (Cepheid) CPT code 0353U

MEDICAL CRITERIA

Not applicable

PRIOR AUTHORIZATION

Not applicable

POLICY STATEMENT

Medicare Advantage Plans

The following test(s) are covered without an authorization requirement:

- Xpert® CT/NG (CPT code 0353U)

Commercial Products

The following multitarget PCR test(s) for the diagnosis of bacterial vaginosis is not medically necessary as the evidence is insufficient to determine that the technology results in an improvement in the net health outcome.

- Xpert® CT/NG (CPT code 0353U)

Medicare Advantage Plans and Commercial Products

The following multitarget polymerase chain reaction (PCR) tests for the diagnosis of bacterial vaginosis may be considered medically necessary:

- Aptima® BV Assay (Hologic, Inc.) CPT code 81513
- BD MAX™ Vaginal Panel (Becton Dickson and Company) CPT code 81514
- Xpert® Xpress MVP (Cepheid) CPT code 0352U

The following multitarget PCR test(s) for the diagnosis of bacterial vaginosis is not covered for Medicare Advantage Plans and not medically necessary for Commercial Products, as the evidence is insufficient to determine that the technology results in an improvement in the net health outcome.

- Bridge Women's Health Infectious Disease Detection Test (Bridge Diagnostics) CPT code 0330U

Note: Laboratories are not allowed to obtain clinical authorization or participate in the authorization process on behalf of the ordering physician. Only the ordering physician shall be involved in the authorization, appeal or other administrative processes related to prior authorization/medical necessity.

In no circumstance shall a laboratory or a physician/provider use a representative of a laboratory or anyone with a relationship to a laboratory and/or a third party to obtain authorization on behalf of the ordering physician, to facilitate any portion of the authorization process or any subsequent appeal of a claim where the authorization process was not followed and/or a denial for clinical appropriateness was issued, including any element of the preparation of necessary documentation of clinical appropriateness. If a laboratory or a third party is found to be supporting any portion of the authorization process, BCBSRI will deem the action a violation of this policy and severe action will be taken up to and including termination from the BCBSRI provider network. If a laboratory provides a laboratory service that has not been authorized, the service will be denied as the financial liability of the participating laboratory and may not be billed to the member.

Commercial Products

Some genetic testing services are not covered and a contract exclusion for any self-funded group that has excluded the expanded coverage of biomarker testing related to the state mandate, R.I.G.L. §27-19-81 described in the Biomarker Testing Mandate policy. For these groups, a list of which genetic testing services are covered with prior authorization, are not medically necessary or are not covered because they are a contract exclusion can be found in the Coding section of the Genetic Testing Services or Proprietary Laboratory Analyses policies. Please refer to the appropriate Benefit Booklet to determine whether the member's plan has customized benefit coverage. Please refer to the list of Related Policies for more information.

COVERAGE

Benefits may vary between groups and contracts. Please refer to the appropriate Benefit Booklet, Evidence of Coverage or Subscriber Agreement for applicable laboratory benefits/coverage.

BACKGROUND

Bacterial Vaginosis (BV)

BV is a condition caused by an imbalance in the normal bacteria vaginal flora. It is common, especially in individuals of reproductive age. While there is no single known etiologic agent, there is a shift in vaginal flora that involves depletion of hydrogen peroxide-producing Lactobacillus species with a rise in vaginal pH and overgrowth of other bacteria, including Gardnerella vaginalis, Mycoplasma hominis, Peptostreptococcus, Mobiluncus species, and other anaerobic gram-negative rods.

Vaginal culture is not an appropriate diagnostic method to identify BV because BV is not caused by the presence of a particular bacterial species.

Various commercial tests provide rapid and accurate pH evaluation and amine detection. For example, automated devices that measure the volatile gases produced from vaginal samples and a colorimetric pH test are commercially available.

Nucleic acid probes of DNA fragments are available to detect and quantify specific bacteria in vaginal fluid samples. Polymerase chain reaction (PCR) methods extract and amplify the DNA fragments using either universal or specific primers. The result can be qualitative (to assess whether a specific microorganism is present) or quantitative (to assess how many microorganisms are present). The technology can be used to measure multiple organisms (eg, those known to be associated with BV) at the same time and is commercially available as multitarget PCR testing.

In individuals who have signs or symptoms of BV who receive multitarget PCR testing, the evidence includes several prospective studies on technical performance and diagnostic accuracy. The relevant outcomes are test validity, symptoms, and change in disease status. Several studies have evaluated the diagnostic accuracy of multitarget PCR tests for BV, including 5 studies evaluating commercially available tests. The studies found

sensitivities between 84% and 95% and specificities between 85% and 97% compared with standard methods of diagnosis. Most studies used a combination of the Amsel criteria and Nugent scoring as the reference standard. There is a lack of direct evidence on the clinical utility of PCR testing for BV (ie, studies showing that testing leads to better patient management decisions and/or better health outcomes than current approaches). Moreover, a chain of evidence does not currently support multitarget testing because most symptomatic individuals can be diagnosed with a standard workup. The evidence is insufficient to determine that the technology results in an improvement in the net health outcome.

CODING

Medicare Advantage Plans and Commercial Products

The following code(s) is covered for Medicare Advantage Plans and not medically necessary for Commercial Products:

This code can be used for Xpert® CT/NG:

0353U Infectious agent detection by nucleic acid (DNA), Chlamydia trachomatis and Neisseria gonorrhoeae, multiplex amplified probe technique, urine, vaginal, pharyngeal, or rectal, each pathogen reported as detected or not detected

The following CPT code(s) are covered when filed with an ICD-10 diagnosis code(s)* listed below:

This code can be used for the Aptima® BV Assay:

81513 Infectious disease, bacterial vaginosis, quantitative real-time amplification of RNA markers for Atopobium vaginae, Gardnerella vaginalis, and Lactobacillus species, utilizing vaginal-fluid specimens, algorithm reported as a positive or negative result for bacterial vaginosis

This code can be used for the BD MAX™ Vaginal Panel:

81514 Infectious disease, bacterial vaginosis and vaginitis, quantitative real-time amplification of DNA markers for Gardnerella vaginalis, Atopobium vaginae, Megasphaera type 1, Bacterial Vaginosis Associated Bacteria-2 (BVAB-2), and Lactobacillus species (L. crispatus and L. jensenii), utilizing vaginal-fluid specimens, algorithm reported as a positive or negative for high likelihood of bacterial vaginosis, includes separate detection of Trichomonas vaginalis and/or Candida species (C. albicans, C. tropicalis, C. parapsilosis, C. dubliniensis), Candida glabrata, Candida krusei, when reported

ICD-10 diagnosis code(s) list for CPT codes 81513 and 81514*

B37.31-B37.32

L29.2-L29.3

L29.9

N76.0-N76.3

N76.89

N77.1

N89.8-N89.9

N93.0

N95.2

O86.13

R30.0

R30.9

The following CPT code(s) are covered when filed with an ICD-10 diagnosis code(s)* listed below:

This code can be used for Xpert® Xpress MVP:

0352U Infectious disease (bacterial vaginosis and vaginitis), multiplex amplified probe technique, for detection of bacterial vaginosis-associated bacteria (BVAB-2, Atopobium vaginae, and Megasphaera type 1), algorithm reported as detected or not detected and separate detection of Candida species (C. albicans,

C. tropicalis, C. parapsilosis, C. dubliniensis), Candida glabrata/Candida krusei, and trichomonas vaginalis, vaginal-fluid specimen, each result reported as detected or not detected

ICD-10 diagnosis code List for 0352U

The following CPT code(s) is not covered for Medicare Advantage Plans and not medically necessary for Commercial Products:

This code can be used for Bridge Women's Health Infectious Disease Detection Test:

0330U Infectious agent detection by nucleic acid (DNA or RNA), vaginal pathogen panel, identification of 27 organisms, amplified probe technique, vaginal swab

RELATED POLICIES

Biomarker Testing Mandate

Genetic Testing Services

Preventive Services for Medicare Advantage Plans

Proprietary Laboratory Analyses (PLA)

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REFERENCES

1. Food and Drug Administration. BD Vaginal Panel. 510(k) K223653. https://www.accessdata.fda.gov/cdrh_docs/pdf22/K223653.pdf. Accessed November 7, 2023
2. Centers for Disease Control and Prevention (CDC). Bacterial Vaginosis (BV) Statistics. <https://www.cdc.gov/std/bv/stats.htm>. Accessed November 8, 2023.
3. Amsel R, Totten PA, Spiegel CA, et al. Nonspecific vaginitis. Diagnostic criteria and microbial and epidemiologic associations. *Am J Med.* Jan 1983; 74(1): 14-22. PMID 6600371
4. Landers DV, Wiesenfeld HC, Heine RP, et al. Predictive value of the clinical diagnosis of lower genital tract infection in women. *Am J Obstet Gynecol.* Apr 2004;190(4): 1004-10. PMID 15118630
5. Nugent RP, Krohn MA, Hillier SL. Reliability of diagnosing bacterial vaginosis is improved by a standardized method of gram stain interpretation. *J Clin Microbiol.* Feb 1991; 29(2): 297-301. PMID 1706728
6. Ison CA, Hay PE. Validation of a simplified grading of Gram stained vaginal smears for use in genitourinary medicine clinics. *Sex Transm Infect.* Dec 2002; 78(6): 413-5. PMID 12473800
7. Hilbert DW, Smith WL, Chadwick SG, et al. Development and Validation of a Highly Accurate Quantitative Real-Time PCR Assay for Diagnosis of Bacterial Vaginosis. *J Clin Microbiol.* Apr 2016; 54(4): 1017-24. PMID 26818677
8. Thompson A, Timm K, Borders N, et al. Diagnostic performance of two molecular assays for the detection of vaginitis in symptomatic women. *Eur J Clin Microbiol Infect Dis.* Jan 2020; 39(1): 39-44. PMID 31502121
9. Broache M, Cammarata CL, Stonebraker E, et al. Performance of a Vaginal Panel Assay Compared With the Clinical Diagnosis of Vaginitis. *Obstet Gynecol.* Dec 01 2021; 138(6): 853-859. PMID 34736269
10. Gaydos CA, Beqaj S, Schwebke JR, et al. Clinical Validation of a Test for the Diagnosis of Vaginitis. *Obstet Gynecol.* Jul 2017; 130(1): 181-189. PMID 28594779
11. Schwebke JR, Gaydos CA, Nyirjesy P, et al. Diagnostic Performance of a Molecular Test versus Clinician Assessment of Vaginitis. *J Clin Microbiol.* Jun 2018; 56(6). PMID 29643195
12. Aguirre-Quinonero A, Castillo-Sedano IS, Calvo-Muro F, et al. Accuracy of the BD MAX™ vaginal panel in the diagnosis of infectious vaginitis. *Eur J Clin Microbiol Infect Dis.* May 2019; 38(5): 877-882. PMID 30685805
13. van den Munckhof EHA, van Sitter RL, Boers KE, et al. Comparison of Amsel criteria, Nugent score, culture and two CE-IVD marked quantitative real-time PCRs with microbiota analysis for the diagnosis of bacterial vaginosis. *Eur J Clin Microbiol Infect Dis.* May 2019; 38(5): 959-966. PMID 30903536
14. Food and Drug Administration. Evaluation of Automatic Class III Designation For BD Max Vaginal Panel: Decision Summary. 2016; https://www.accessdata.fda.gov/cdrh_docs/reviews/DEN160001.pdf. Accessed November 9, 2023.

15. Cartwright CP, Pherson AJ, Harris AB, et al. Multicenter study establishing the clinical validity of a nucleic-acid amplification-based assay for the diagnosis of bacterial vaginosis. *Diagn Microbiol Infect Dis*. Nov 2018; 92(3): 173-178. PMID 29937222
16. Cartwright CP, Lembke BD, Ramachandran K, et al. Development and validation of a semiquantitative, multitarget PCR assay for diagnosis of bacterial vaginosis. *J Clin Microbiol*. Jul 2012; 50(7): 2321-9. PMID 22535982
17. Schwebke JR, Taylor SN, Ackerman R, et al. Clinical Validation of the Aptima Bacterial Vaginosis and Aptima Candida/Trichomonas Vaginitis Assays: Results from a Prospective Multicenter Clinical Study. *J Clin Microbiol*. Jan 28 2020; 58(2). PMID 31748322
18. Richter SS, Otiso J, Goje OJ, et al. Prospective Evaluation of Molecular Assays for Diagnosis of Vaginitis. *J Clin Microbiol*. Dec 23 2019; 58(1). PMID 31694966
19. Kusters JG, Reuland EA, Bouter S, et al. A multiplex real-time PCR assay for routine diagnosis of bacterial vaginosis. *Eur J Clin Microbiol Infect Dis*. Sep 2015; 34(9):1779-85. PMID 26143346
20. Rumyantseva TA, Bellen G, Romanuk TN, et al. Utility of microscopic techniques and quantitative real-time polymerase chain reaction for the diagnosis of vaginal microflora alterations. *J Low Genit Tract Dis*. Apr 2015; 19(2): 124-8. PMID 25023332
21. Rumyantseva T, Shipitsyna E, Guschin A, et al. Evaluation and subsequent optimizations of the quantitative AmpliSens Florocenosis/Bacterial vaginosis-FRT multiplex real-time PCR assay for diagnosis of bacterial vaginosis. *APMIS*. Dec 2016; 124(12): 1099-1108. PMID 27714844
22. van der Veer C, van Houdt R, van Dam A, et al. Accuracy of a commercial multiplex PCR for the diagnosis of bacterial vaginosis. *J Med Microbiol*. Sep 2018; 67(9):1265-1270. PMID 29985123
23. Committee on Practice Bulletins—Obstetrics, The American College of Obstetricians and Gynecologists. Practice bulletin no. 130: prediction and prevention of preterm birth. *Obstet Gynecol*. Oct 2012; 120(4): 964-73. PMID 22996126
24. Vaginitis in Nonpregnant Patients: ACOG Practice Bulletin, Number 215. *Obstet Gynecol*. Jan 2020; 135(1): e1-e17. PMID 31856123
25. Workowski KA, Bachmann LH, Chan PA, et al. Sexually Transmitted Infections Treatment Guidelines, 2021. *MMWR Recomm Rep*. Jul 23 2021; 70(4): 1-187. PMID 34292926
26. U.S. Preventive Services Task Force. Bacterial Vaginosis in Pregnancy to Prevent Preterm Delivery: Screening. 2020; <https://www.uspreventiveservicestaskforce.org/uspstf/recommendation/bacterial-vaginosis-in-pregnancy-to-prevent-preterm-delivery-screening#:~:text=The%20USPSTF%20recommends%20against%20screening%20for%20bacterial%20vaginosis,who%20are%20at%20increased%20risk%20for%20preterm> Accessed November 9, 2023.
27. Centers for Medicare & Medicaid. National Coverage Determination (NCD) for Screening For Sexually Transmitted Infections (stis) And High-Intensity Behavioral Counseling (hibc) To Prevent Stis (210.10)
28. Centers for Medicare and Medicaid Services (CMS). Local Coverage Determination (LCD): MolDX: Molecular Syndromic Panels For Infectious Disease Pathogen Identification Testing (L39001)
29. Centers for Medicare and Medicaid Services (CMS). Local Coverage Article: Billing and Coding: MolDX: Molecular Syndromic Panels for Infectious Disease Pathogen Identification Testing (A58720)

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