



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.

Diagnosis of Vaginitis Including Multi-target PCR Testing

Policy Number: CPCPLAB059

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. Testing of pH, testing for the presence of amines, saline wet mount, hydrogen peroxide (KOH) wet mount and microscopic examination of vaginal fluids **may be reimbursable** in individuals with symptoms of vaginitis.
2. Direct Probe DNA-based identification of *Gardnerella*, *Trichomonas* **may be reimbursable** in individuals with symptoms of vaginitis.

3. Vaginal cultures for *Candida* species **may be reimbursable** for the diagnosis of vulvovaginal candidiasis in individuals with clinical signs and symptoms of vaginitis and negative findings on wet-mount preparations and a normal pH test.
4. Measurement of sialidase activity in vaginal fluid **may be reimbursable** for the diagnosis of bacterial vaginosis in individuals with symptoms of vaginitis.
5. Nucleic Acid Amplification Test (NAAT) or Polymerase Chain Reaction (PCR)-based identification of *Trichomonas vaginalis* **may be reimbursable** in individuals with symptoms of vaginitis.
6. Screening for *Trichomonas* **may be reimbursable** for individuals with risk factors including new or multiple partners; history of sexually transmitted diseases (STDs), especially HIV; exchange of sex for payment; incarceration; or injection drug use.
7. Polymerase Chain Reaction (PCR) based identification of *Candida* **may be reimbursable** for individuals with complicated vulvovaginal candidiasis (VVC) to confirm clinical diagnosis and identify non-albicans *Candida*.
8. Nucleic Acid Amplification Test (NAAT, polymerase chain reaction (PCR) testing and multitarget PCR testing, when limited to known pathogenic species, **may be reimbursable** for the diagnosis of bacterial vaginosis.
9. Screening for trichomoniasis and bacterial vaginosis **is not reimbursable** for premature labor.
10. Rapid identification of *Trichomonas* by enzyme immunoassay **is not reimbursable** in individuals with symptoms of vaginitis.
11. Using molecular-based panel testing, including, but not limited to testing such as SmartJane™, to test for microorganisms involved in vaginal flora imbalance and/or infertility **is not reimbursable**.
- 12. All other tests for vaginitis not addressed above **are not reimbursable**.**

Procedure Codes

Codes
81513, 81514, 82120, 83986, 87070, 87149, 87150, 87210, 87480, 87481, 87482, 87510, 87511, 87512, 87660, 87661, 87797, 87798, 87799, 87800, 87801, 87808, 87905, Q0111

References:

- Abbott, J. (1995). Clinical and microscopic diagnosis of vaginal yeast infection: a prospective analysis. *Ann Emerg Med*, 25(5), 587-591. Retrieved from <http://dx.doi.org/>
- ACOG. (2006). ACOG Practice Bulletin. Clinical management guidelines for obstetrician-gynecologists, Number 72, May 2006: Vaginitis. *Obstet Gynecol*, 107(5), 1195-1206. Retrieved from <http://dx.doi.org/>
- ACOG. (2017). College Publications. *Obstet Gynecol*, 129(6), 1147-1148. doi:10.1097/aog.0000000000002107

ACOG. (2018). Practice Bulletins. Retrieved from <https://www.acog.org/Clinical-Guidance-and-Publications/Practice-Bulletins-List>

ACOG. (2020). Vaginitis in Nonpregnant Patients: ACOG Practice Bulletin, Number 215. *Obstetrics & Gynecology*, 135(1), e1-e17. doi:10.1097/aog.00000000000003604

Amegashie, C. P., Gilbert, N. M., Peipert, J. F., Allsworth, J. E., Lewis, W. G., & Lewis, A. L. (2017). Relationship between nugent score and vaginal epithelial exfoliation. *PLoS One*, 12(5), e0177797. doi:10.1371/journal.pone.0177797

Amsel, R., Totten, P. A., Spiegel, C. A., Chen, K. C., Eschenbach, D., & Holmes, K. K. (1983). Nonspecific vaginitis. Diagnostic criteria and microbial and epidemiologic associations. *Am J Med*, 74(1), 14-22. Retrieved from <http://dx.doi.org/>

Anderson, M. R., Klink, K., & Cohrssen, A. (2004). Evaluation of vaginal complaints. *Jama*, 291(11), 1368-1379. doi:10.1001/jama.291.11.1368

Andrea, S. B., & Chapin, K. C. (2011). Comparison of Aptima Trichomonas vaginalis transcription-mediated amplification assay and BD affirm VP III for detection of *T. vaginalis* in symptomatic women: performance parameters and epidemiological implications. *J Clin Microbiol*, 49(3), 866-869. doi:10.1128/jcm.02367-10

Baron, E. J., Miller, J. M., Weinstein, M. P., Richter, S. S., Gilligan, P. H., Thomson, R. B., Jr., . . . Pritt, B. S. (2013). A guide to utilization of the microbiology laboratory for diagnosis of infectious diseases: 2013 recommendations by the Infectious Diseases Society of America (IDSA) and the American Society for Microbiology (ASM)(a). *Clin Infect Dis*, 57(4), e22-e121. doi:10.1093/cid/cit278

Bradshaw, C. S., Morton, A. N., Garland, S. M., Horvath, L. B., Kuzevska, I., & Fairley, C. K. (2005). Evaluation of a point-of-care test, BVBlue, and clinical and laboratory criteria for diagnosis of bacterial vaginosis. *J Clin Microbiol*, 43(3), 1304-1308. doi:10.1128/jcm.43.3.1304-1308.2005

Briselden, A. M., & Hillier, S. L. (1994). Evaluation of affirm VP Microbial Identification Test for Gardnerella vaginalis and Trichomonas vaginalis. *J Clin Microbiol*, 32(1), 148-152. Retrieved from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC262986/>

Brown, H. L., Fuller, D. D., Jasper, L. T., Davis, T. E., & Wright, J. D. (2004). Clinical evaluation of affirm VP III in the detection and identification of *Trichomonas vaginalis*, *Gardnerella vaginalis*, and *Candida* species in vaginitis/vaginosis. *Infect Dis Obstet Gynecol*, 12(1), 17-21. doi:10.1080/1064744042000210375

Campbell, L., Woods, V., Lloyd, T., Elsayed, S., & Church, D. L. (2008). Evaluation of the OSOM Trichomonas rapid test versus wet preparation examination for detection of *Trichomonas vaginalis* vaginitis in specimens from women with a low prevalence of infection. *J Clin Microbiol*, 46(10), 3467-3469. doi:10.1128/jcm.00671-08

Cartwright, C. P., Lembke, B. D., Ramachandran, K., Body, B. A., Nye, M. B., Rivers, C. A., & Schwebke, J. R. (2012). Development and validation of a semiquantitative, multitarget PCR assay for diagnosis of bacterial vaginosis. *J Clin Microbiol*, 50(7), 2321-2329. doi:10.1128/jcm.00506-12

Cartwright, C. P., Pherson, A. J., Harris, A. B., Clancey, M. S., & Nye, M. B. (2018). Multicenter study establishing the clinical validity of a nucleic-acid amplification-based assay for the diagnosis of bacterial vaginosis. *Diagn Microbiol Infect Dis*, 92(3), 173-178. doi:10.1016/j.diagmicrobio.2018.05.022

CDC. (2015a, 06/04/2015). Bacterial Vaginosis - 2015 STD Treatment Guidelines. Retrieved from <https://www.cdc.gov/std/tg2015/bv.htm>

CDC. (2015b, 08/12/2016). Trichomoniasis - 2015 STD Treatment Guidelines. Retrieved from <https://www.cdc.gov/std/tg2015/trichomoniasis.htm>

CDC. (2015c, 06/04/2015). Vulvovaginal Candidiasis - 2015 STD Treatment Guidelines. Retrieved from <https://www.cdc.gov/std/tg2015/candidiasis.htm>

CDC. (2016, 10/11/2017). A Diagnostic Test to Detect Different Vaginal Yeast Infection Types. *Office of the Associate Director for Science (OADS) Success Stories*. Retrieved from <https://www.cdc.gov/od/science/technology/techtransfer/successstories/candida.htm>

CDC. (2021a). Bacterial Vaginosis. Retrieved from <https://www.cdc.gov/std/treatment-guidelines/bv.htm>

CDC. (2021b). Diseases Characterized by Vulvovaginal Itching, Burning, Irritation, Odor or Discharge. Retrieved from <https://www.cdc.gov/std/treatment-guidelines/vaginal-discharge.htm>

CDC. (2021c). Trichomoniasis. Retrieved from <https://www.cdc.gov/std/treatment-guidelines/trichomoniasis.htm>

CDC. (2021d). Vulvovaginal Candidiasis (VVC). Retrieved from <https://www.cdc.gov/std/treatment-guidelines/candidiasis.htm>

Chatwani, A. J., Mehta, R., Hassan, S., Rahimi, S., Jeronis, S., & Dandolu, V. (2007). Rapid testing for vaginal yeast detection: a prospective study. *Am J Obstet Gynecol*, 196(4), 309.e301-304. doi:10.1016/j.ajog.2006.11.025

Dan, M., Leshem, Y., & Yeshaya, A. (2010). Performance of a rapid yeast test in detecting *Candida* spp. in the vagina. *Diagn Microbiol Infect Dis*, 67(1), 52-55. doi:10.1016/j.diagmicrobio.2009.12.010

Das, S., Brown, T. M., Kellar, K. L., Holloway, B. P., & Morrison, C. J. (2006). DNA probes for the rapid identification of medically important *Candida* species using a multianalyte profiling system. *FEMS Immunol Med Microbiol*, 46(2), 244-250. doi:10.1111/j.1574-695X.2005.00031.x

Diba, K., Namaki, A., Ayatolahi, H., & Hanifian, H. (2012). Rapid identification of drug resistant *Candida* species causing recurrent vulvovaginal candidiasis. *Med Mycol J*, 53(3), 193-198. Retrieved from <http://dx.doi.org/>

Dumonceaux, T. J., Schellenberg, J., Goleski, V., Hill, J. E., Jaoko, W., Kimani, J., . . . Severini, A. (2009). Multiplex detection of bacteria associated with normal microbiota and with bacterial vaginosis in vaginal swabs by use of oligonucleotide-coupled fluorescent microspheres. *J Clin Microbiol*, 47(12), 4067-4077. doi:10.1128/jcm.00112-09

Ellis, I., Lerch, M. M., & Whitcomb, D. C. (2001). Genetic testing for hereditary pancreatitis: guidelines for indications, counselling, consent and privacy issues. *Pancreatology*, 1(5), 405-415. Retrieved from <http://dx.doi.org/>

Eschenbach, D. A., Davick, P. R., Williams, B. L., Klebanoff, S. J., Young-Smith, K., Critchlow, C. M., & Holmes, K. K. (1989). Prevalence of hydrogen peroxide-producing *Lactobacillus* species in normal women and women with bacterial vaginosis. *J Clin Microbiol*, 27(2), 251-256. Retrieved from <http://dx.doi.org/>

FDA. (2016). EVALUATION OF AUTOMATIC CLASS III DESIGNATION FOR BD MAX Vaginal Panel. Retrieved from https://www.accessdata.fda.gov/cdrh_docs/reviews/DEN160001.pdf

Fredricks, D. N., Fiedler, T. L., Thomas, K. K., Oakley, B. B., & Marrazzo, J. M. (2007). Targeted PCR for detection of vaginal bacteria associated with bacterial vaginosis. *J Clin Microbiol*, 45(10), 3270-3276. doi:10.1128/jcm.01272-07

Garrett, N., Mitchev, N., Osman, F., Naidoo, J., Dorward, J., Singh, R., . . . Mindel, A. (2019). Diagnostic accuracy of the Xpert CT/NG and OSOM Trichomonas Rapid assays for point-of-care STI testing among young women in South Africa: a cross-sectional study. *BMJ Open*, 9(2), e026888. doi:10.1136/bmjopen-2018-026888

Gaydos, C. A., Beqaj, S., Schwebke, J. R., Lebed, J., Smith, B., Davis, T. E., . . . Cooper, C. K. (2017). Clinical Validation of a Test for the Diagnosis of Vaginitis. *Obstet Gynecol*, 130(1), 181-189. doi:10.1097/aog.0000000000002090

Giraldo, P., von Nowaskonski, A., Gomes, F. A., Linhares, I., Neves, N. A., & Witkin, S. S. (2000). Vaginal colonization by *Candida* in asymptomatic women with and without a history of recurrent vulvovaginal candidiasis. *Obstet Gynecol*, 95(3), 413-416. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/?term=10711554%5Buid%5D>

Hainer, B. L., & Gibson, M. V. (2011). Vaginitis: Diagnosis and Treatment. *American Family Physician*, 83(7), 807-815. Retrieved from /afp/2011/0401/p807.pdf

Hill, G. B. (1993). The microbiology of bacterial vaginosis. *Am J Obstet Gynecol*, 169(2 Pt 2), 450-454. Retrieved from <http://dx.doi.org/>

Hollman, D., Coupey, S. M., Fox, A. S., & Herold, B. C. (2010). Screening for *Trichomonas vaginalis* in high-risk adolescent females with a new transcription-mediated nucleic acid amplification test (NAAT): associations with ethnicity, symptoms, and prior and current STIs. *J Pediatr Adolesc Gynecol*, 23(5), 312-316. doi:10.1016/j.jpag.2010.03.004

Hopwood, V., Evans, E. G., & Carney, J. A. (1985). Rapid diagnosis of vaginal candidosis by latex particle agglutination. *J Clin Pathol*, 38(4), 455-458. Retrieved from <http://dx.doi.org/>

Huppert, J. S., Hesse, E., Kim, G., Kim, M., Agreda, P., Quinn, N., & Gaydos, C. (2010). Adolescent women can perform a point-of-care test for trichomoniasis as accurately as clinicians. *Sex Transm Infect*, 86(7), 514-519. doi:10.1136/sti.2009.042168

Huppert, J. S., Mortensen, J. E., Reed, J. L., Kahn, J. A., Rich, K. D., Miller, W. C., & Hobbs, M. M. (2007). Rapid antigen testing compares favorably with transcription-mediated amplification assay for the detection of *Trichomonas vaginalis* in young women. *Clin Infect Dis*, 45(2), 194-198. doi:10.1086/518851

Jones, A. (2019). Bacterial Vaginosis: A Review of Treatment, Recurrence, and Disparities. *The Journal for Nurse Practitioners*, 15(6), 420-423. doi:<https://doi.org/10.1016/j.nurpra.2019.03.010>

Kairys, N., & Garg, M. (2020). *Bacterial Vaginosis*. Retrieved from <https://www.ncbi.nlm.nih.gov/books/NBK459216/>

Kissinger, P. (2015). Epidemiology and treatment of trichomoniasis. *Curr Infect Dis Rep*, 17(6), 484. doi:10.1007/s11908-015-0484-7

Lamont, R. F., Sobel, J. D., Akins, R. A., Hassan, S. S., Chaiworapongsa, T., Kusanovic, J. P., & Romero, R. (2011). The vaginal microbiome: new information about genital tract flora using molecular based techniques. *Bjog*, 118(5), 533-549. doi:10.1111/j.1471-0528.2010.02840.x

Landers, D. V., Wiesenfeld, H. C., Heine, R. P., Krohn, M. A., & Hillier, S. L. (2004). Predictive value of the clinical diagnosis of lower genital tract infection in women. *Am J Obstet Gynecol*, 190(4), 1004-1010. doi:10.1016/j.ajog.2004.02.015

Ling, Z., Kong, J., Liu, F., Zhu, H., Chen, X., Wang, Y., . . . Xiang, C. (2010). Molecular analysis of the diversity of vaginal microbiota associated with bacterial vaginosis. *BMC Genomics*, 11, 488. doi:10.1186/1471-2164-11-488

Lynch, T., Peirano, G., Lloyd, T., Read, R., Carter, J., Chu, A., . . . Church, D. (2019). Molecular Diagnosis of Vaginitis: Comparing Quantitative PCR and Microbiome Profiling Approaches to Current Microscopy Scoring. *J Clin Microbiol*, 57(9). doi:10.1128/jcm.00300-19

Mahmoudi Rad, M., Zafarghandi, A., Amel Zabihi, M., Tavallaee, M., & Mirdamadi, Y. (2012). Identification of Candida species associated with vulvovaginal candidiasis by multiplex PCR. *Infect Dis Obstet Gynecol*, 2012, 872169. doi:10.1155/2012/872169

Marot-Leblond, A., Nail-Billaud, S., Pilon, F., Beucher, B., Poulain, D., & Robert, R. (2009). Efficient diagnosis of vulvovaginal candidiasis by use of a new rapid immunochromatography test. *J Clin Microbiol*, 47(12), 3821-3825. doi:10.1128/jcm.01168-09

Matsui, H., Hanaki, H., Takahashi, K., Yokoyama, A., Nakae, T., Sunakawa, K., & Omura, S. (2009). Rapid detection of vaginal Candida species by newly developed immunochromatography. *Clin Vaccine Immunol*, 16(9), 1366-1368. doi:10.1128/cvi.00204-09

MedLabs. (2015). AMPLISwab™ Women's Health. Retrieved from <http://www.medlabdx.com/AmpliSwab.html>

Menard, J. P., Fenollar, F., Henry, M., Bretelle, F., & Raoult, D. (2008). Molecular quantification of *Gardnerella vaginalis* and *Atopobium vaginae* loads to predict bacterial vaginosis. *Clin Infect Dis*, 47(1), 33-43. doi:10.1086/588661

Menard, J. P., Mazouni, C., Fenollar, F., Raoult, D., Boublí, L., & Bretelle, F. (2010). Diagnostic accuracy of quantitative real-time PCR assay versus clinical and Gram stain identification of bacterial vaginosis. *Eur J Clin Microbiol Infect Dis*, 29(12), 1547-1552. doi:10.1007/s10096-010-1039-3

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-ciay381. doi:10.1093/cid/ciy381

Myziuk, L., Romanowski, B., & Johnson, S. C. (2003). BVBlue test for diagnosis of bacterial vaginosis. *J Clin Microbiol*, 41(5), 1925-1928. Retrieved from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC154737/>

Owens, D. K., Davidson, K. W., Krist, A. H., Barry, M. J., Cabana, M., Caughey, A. B., . . . Wong, J. B. (2020). Screening for Bacterial Vaginosis in Pregnant Persons to Prevent Preterm Delivery: US Preventive Services Task Force Recommendation Statement. *Jama*, 323(13), 1286-1292. doi:10.1001/jama.2020.2684

Paladine, H. L., & Desai, U. A. (2018). Vaginitis: Diagnosis and Treatment. *Am Fam Physician*, 97(5), 321-329. Retrieved from <https://www.aafp.org/afp/2018/0301/p321.html>

Pappas, P. G., Kauffman, C. A., Andes, D. R., Clancy, C. J., Marr, K. A., Ostrosky-Zeichner, L., . . . Sobel, J. D. (2016). Clinical Practice Guideline for the Management of Candidiasis: 2016 Update by the Infectious Diseases Society of America. *Clin Infect Dis*, 62(4), e1-50. doi:10.1093/cid/civ933

Quest. (2019a). SureSwab®, Bacterial Vaginosis/Vaginitis. *Test Directory*. Retrieved from <https://testdirectory.questdiagnostics.com/test/test-detail/15509/sureswab-bacterial-vaginosvvaginitis?p=r&q=Sureswab&cc=MASTER>

Quest. (2019b). SureSwab®, Bacterial Vaginosis/Vaginitis Plus. *Test Directory*. Retrieved from <https://testdirectory.questdiagnostics.com/test/test-detail/17333/sureswab-vaginosvvaginitis-plus?p=r&q=Sureswab&cc=MASTER>

Roth, A. M., Williams, J. A., Ly, R., Curd, K., Brooks, D., Arno, J., & Van Der Pol, B. (2011). Changing sexually transmitted infection screening protocol will result in improved case finding for trichomonas vaginalis among high-risk female populations. *Sex Transm Dis*, 38(5), 398-400. doi:10.1097/OLQ.0b013e318203e3ce

Schwebke, J. R., Gaydos, C. A., Nyirjesy, P., Paradis, S., Kodsi, S., & Cooper, C. K. (2018). Diagnostic Performance of a Molecular Test versus Clinician Assessment of Vaginitis. *J Clin Microbiol*, 56(6). doi:10.1128/jcm.00252-18

Sherrard, J. (2019). Evaluation of the BD MAX Vaginal Panel for the detection of vaginal infections in a sexual health service in the UK. *Int J STD AIDS*, 30(4), 411-414. doi:10.1177/0956462418815284

Sobel, J. D. (1985). Epidemiology and pathogenesis of recurrent vulvovaginal candidiasis. *Am J Obstet Gynecol*, 152(7 Pt 2), 924-935. Retrieved from <http://dx.doi.org/>

Sobel, J. D. (1999). Vulvovaginitis in healthy women. *Compr Ther*, 25(6-7), 335-346. Retrieved from <http://dx.doi.org/>

Sobel, J. D. (2020a, 4/8/2020). Approach to women with symptoms of vaginitis - UpToDate. *UpToDate*. Retrieved from https://www.uptodate.com/contents/approach-to-women-with-symptoms-of-vaginitis?source=search_result&search=bacterial%20vaginosis&selectedTitle=2~97

Sobel, J. D. (2020b, 9/4/2020). Bacterial vaginosis: Clinical manifestations and diagnoses. *UpToDate*. Retrieved from <https://www.uptodate.com/contents/bacterial-vaginosis-clinical-manifestations-and-diagnosis>

Sobel, J. D. (2020c, 3/24/2020). Candida vulvovaginitis: Clinical manifestations and diagnosis. *UpToDate*. Retrieved from https://www.uptodate.com/contents/candida-vulvovaginitis?source=see_link#H6

Sobel, J. D., & Mitchell, C. (2020, 12/1/2020). Trichomoniasis. *UpToDate*. Retrieved from https://www.uptodate.com/contents/trichomoniasis?source=see_link§ionName=Rapid%20antigen%20and%20DNA%20hybridization%20probes&anchor=H10#H10

Sobel, J. D., Subramanian, C., Foxman, B., Fairfax, M., & Gygax, S. E. (2013). Mixed vaginitis-more than coinfection and with therapeutic implications. *Curr Infect Dis Rep*, 15(2), 104-108. doi:10.1007/s11908-013-0325-5

Spiegel, C. A. (1991). Bacterial vaginosis. *Clin Microbiol Rev*, 4(4), 485-502. Retrieved from <http://dx.doi.org/>

Sumeksri, P., Koprasert, C., & Panichkul, S. (2005). BVBLUE test for diagnosis of bacterial vaginosis in pregnant women attending antenatal care at Phramongkutklao Hospital. *J Med Assoc Thai*, 88 Suppl 3, S7-13.

Tabrizi, S. N., Pirotta, M. V., Rudland, E., & Garland, S. M. (2006). Detection of Candida species by PCR in self-collected vaginal swabs of women after taking antibiotics. In *Mycoses* (Vol. 49, pp. 523-524). Germany.

Ubiome. (2017). SmartJane Physician's Guidelines Clinical Approach and Recommendations. Retrieved from <http://s3-us-west-1.amazonaws.com/ubiome-assets/wp-content/uploads/2017/12/06202128/SmartJane-Physician-Guidelines.pdf>

Ubiome. (2018). SmartGut. Retrieved from <https://ubiome.com/providers/smартgut/>

USPSTF. (2008). Screening for bacterial vaginosis in pregnancy to prevent preterm delivery: U.S. Preventive Services Task Force recommendation statement. *Ann Intern Med*, 148(3), 214-219. Retrieved from <http://dx.doi.org/>

van Schalkwyk, J., & Yudin, M. H. (2015). Vulvovaginitis: screening for and management of trichomoniasis, vulvovaginal candidiasis, and bacterial vaginosis. *J Obstet Gynaecol Can*, 37(3), 266-274. doi:10.1016/s1701-2163(15)30316-9

Weissenbacher, T., Witkin, S. S., Ledger, W. J., Tolbert, V., Gingelmaier, A., Scholz, C., ... Mylonas, I. (2009). Relationship between clinical diagnosis of recurrent vulvovaginal candidiasis and detection of Candida species by culture and polymerase chain reaction. *Arch Gynecol Obstet*, 279(2), 125-129. doi:10.1007/s00404-008-0681-9

Workowski, K. A., & Bolan, G. A. (2015). Sexually transmitted diseases treatment guidelines, 2015. *MMWR Recomm Rep*, 64(Rr-03), 1-137. Retrieved from <http://dx.doi.org/>

Yudin, M. H., & Money, D. M. (2017). No. 211-Screening and Management of Bacterial Vaginosis in Pregnancy. *J Obstet Gynaecol Can*, 39(8), e184-e191. doi:10.1016/j.jogc.2017.04.018

Policy Update History:

5/1/2022	New policy
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