If a conflict arises between a Clinical Payment and Coding Policy 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. Blue Cross and Blue Shield of Oklahoma may use reasonable discretion interpreting and applying this policy to services being delivered in a particular case. BCBSOK 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 approved code sets. Claims should be coded appropriately according to industry standard coding guidelines including, but not limited to: Uniform Billing Editor, American Medical Association, Current Procedural Terminology, CPT® Assistant, Healthcare Common Procedure Coding System, ICD-10 CM and PCS, National Drug Codes, Diagnosis Related Group guidelines, Centers for Medicare and Medicaid Services National Correct Coding Initiative 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.

General Inflammation Testing

Policy Number: CPCPLAB049

Version 1.0

Approval Date: October 30, 2024

Plan Effective Date: January 15, 2025

Description

BCBSOK 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

NOTE 1:
For policy regarding the use of C-reactive protein (CRP) as a cardiac biomarker, please see policy CPCPLAB046 Biomarkers for Myocardial Infarction and Chronic Heart Failure.

For policy regarding the use of C-reactive protein (CRP) as a marker for acute pancreatitis, please see policy CPCPLAB047 Pancreatic Enzyme Testing for Acute Pancreatitis.

1. Measurement of C-reactive protein (CRP) and/or erythrocyte sedimentation rate (ESR) **may be reimbursable** for inflammatory conditions Noted in Table 1 below.

2. For individuals without a diagnosed inflammatory condition, measurement of erythrocyte sedimentation rate (ESR) **is not reimbursable.**

3. Measurement of CRP and/or ESR during general exam without abnormal findings **is not reimbursable**.

Table 1: Coverage of ESR, CRP (conventional or high-sensitivity), or both ESR and CRP is designated based on the diagnosed or suspected inflammatory condition. Either conventional or high-sensitivity CRP testing are allowed methods of testing for CRP levels. When either CRP **or** ESR are allowed, CRP is the preferred biomarker.

Condition	Test Preference	Frequency of Testing
Acute and Chronic Urticaria	CRP or ESR	Not specified (NS)
Acute Hematogenous Osteomyelitis (AHO)	CRP	To confirm diagnosis; 2 to 3 days during the early therapeutic course; weekly until normalization (or a clear trend toward normalization is evident)
Acute Phase Inflammation	CRP	NS
Ankylosing Spondylitis	CRP or ESR	Regular interval use in patients with active symptoms
Arthritis	CRP and ESR	1-3 months initially; 6-12 months later
Castleman's Disease	CRP	NS
General Inflammation	CRP	NS
Hodgkin Lymphoma	ESR	Every 3 to 6 months for 1 to 2 years; every 6 to 12 months for the next 3 years; annually thereafter
Irritable Bowel Syndrome	CRP and ESR	During initial assessment to exclude other diagnoses
Large Vessel Vasculitis	CRP and ESR	To confirm diagnosis every 1-3 months during the first year; every 3-6 months thereafter

(Giant Cell Arteritis; Takayasu Arteritis)		
Nonradiographic axial spondyloarthritis	CRP or ESR	Regular interval use in patients with active symptoms
Polymyalgia Rheumatica	CRP or ESR	At initial diagnosis; every 3 months during long-term steroid therapy
Periprosthetic Joint Infections (PJI)	CRP and ESR	NS
Rheumatoid Arthritis	CRP or ESR	Prior to treatment; every 1-3 months during active disease; annually when disease is inactive
Systemic Lupus Erythematosus	CRP or ESR	At initial assessment; every 1-3 months during active disease; every 6-12 months during stable disease; during pregnancy
T-cell lymphomas	ESR	NS

Procedure Codes

The following is not an all-encompassing code list. The inclusion of a code does not guarantee it is a covered service or eligible for reimbursement.

Codes
85651, 85652, 86140, 86141

References

AAOS. (2019). Diagnosis and Prevention of Periprosthetic Joint Infections Clinical Practice Guideline. https://www.aaos.org/globalassets/quality-and-practice-resources/pji/pji-clinical-practice-guideline-final-2-17-21.pdf

Alende-Castro, V., Alonso-Sampedro, M., Fernández-Merino, C., Sánchez-Castro, J., Sopeña, B., Gude, F., & Gonzalez-Quintela, A. (2021). C-Reactive Protein versus Erythrocyte Sedimentation Rate: Implications Among Patients with No Known Inflammatory Conditions. *J Am Board Fam Med*, *34*(5), 974-983. https://doi.org/10.3122/jabfm.2021.05.210072

Anderson, J., Caplan, L., Yazdany, J., Robbins Mark, L., Neogi, T., Michaud, K., Saag Kenneth, G., O'Dell James, R., & Kazi, S. (2012). Rheumatoid arthritis disease activity measures: American College of Rheumatology recommendations for use in clinical practice. *Arthritis Care & Research*, *64*(5), 640-647. https://doi.org/10.1002/acr.21649

Arnold, M. J. (2022). Management of Rheumatoid Arthritis: Update From ACR. *Am Fam Physician*, *106*(3), 340-342.

ASCP. (2020, September 1). *Don't order an erythrocyte sedimentation rate (ESR) to look for inflammation in patients with undiagnosed conditions.* ABIM Foundation. Retrieved 06/12/2018 from https://www.ascp.org/content/docs/default-source/get-involved-pdfs/istp_choosingwisely/ascp-35-things-list_2020_final.pdf

Aster, J. C., & Pozdnyakova, O. (2022, January 31). *Epidemiology, pathologic features, and diagnosis of classic Hodgkin lymphoma*. Wolters Kluwer.

https://www.uptodate.com/contents/epidemiology-pathologic-features-and-diagnosis-of-classic-hodgkin-lymphoma

Baddour, L., & Chen, A. (2023, August 14). *Prosthetic joint infection: Epidemiology, microbiology, clinical manifestations, and diagnosis*. https://www.uptodate.com/contents/prosthetic-joint-infection-epidemiology-microbiology-clinical-manifestations-and-diagnosis

Baker, J. F. (2024, March 21). *Diagnosis and differential diagnosis of rheumatoid arthritis*. Wolters Kluwer. https://www.uptodate.com/contents/diagnosis-and-differential-diagnosis-of-rheumatoid-arthritis

Berbari, E., Mabry, T., Tsaras, G., Spangehl, M., Erwin, P. J., Murad, M. H., Steckelberg, J., & Osmon, D. (2010). Inflammatory blood laboratory levels as markers of prosthetic joint infection: a systematic review and meta-analysis. *J Bone Joint Surg Am*, *92*(11), 2102-2109. https://doi.org/10.2106/jbjs.I.01199

Bernstein, J. A., Lang, D. M., Khan, D. A., Craig, T., Dreyfus, D., Hsieh, F., Sheikh, J., Weldon, D., Zuraw, B., Bernstein, D. I., Blessing-Moore, J., Cox, L., Nicklas, R. A., Oppenheimer, J., Portnoy, J. M., Randolph, C. R., Schuller, D. E., Spector, S. L., Tilles, S. A., & Wallace, D. (2014). The diagnosis and management of acute and chronic urticaria: 2014 update. *J Allergy Clin Immunol*, *133*(5), 1270-1277. https://doi.org/10.1016/j.jaci.2014.02.036

Bingham, J. S., Hassebrock, J. D., Christensen, A. L., Beauchamp, C. P., Clarke, H. D., & Spangehl, M. J. (2019). Screening for Periprosthetic Joint Infections With ESR and CRP: The Ideal Cutoffs. *J Arthroplasty*. https://doi.org/10.1016/j.arth.2019.11.040

Bitik, B., Mercan, R., Tufan, A., Tezcan, E., Küçük, H., İlhan, M., Öztürk, M. A., Haznedaroğlu, S., & Göker, B. (2015). Differential diagnosis of elevated erythrocyte sedimentation rate and C-reactive protein levels: a rheumatology perspective. *European Journal of Rheumatology*, *2*(4), 131-134. https://doi.org/10.5152/eurjrheum.2015.0113

Black, S., Kushner, I., & Samols, D. (2004). C-reactive Protein. *J Biol Chem*, *279*(47), 48487-48490. https://doi.org/10.1074/jbc.R400025200

Caylor, T. L., & Perkins, A. (2013). Recognition and management of polymyalgia rheumatica and giant cell arteritis. *Am Fam Physician*, *88*(10), 676-684.

Christopher, Z. K., McQuivey, K. S., Deckey, D. G., Haglin, J., Spangehl, M. J., & Bingham, J. S. (2021). Acute or chronic periprosthetic joint infection? Using the ESR / CRP ratio to aid in determining the acuity of periprosthetic joint infections. *J Bone Jt Infect*, *6*(6), 229-234. https://doi.org/10.5194/jbji-6-229-2021

Clough, J., Colwill, M., Poullis, A., Pollok, R., Patel, K., & Honap, S. (2024). Biomarkers in inflammatory bowel disease: a practical guide. *Therapeutic Advances in Gastroenterology*, *17*, 17562848241251600. https://doi.org/10.1177/17562848241251600

Colebatch, A. N., Edwards, C. J., Østergaard, M., van der Heijde, D., Balint, P. V., Agostino, M.-A., Forslind, K., Grassi, W., Haavardsholm, E. A., Haugeberg, G., Jurik, A.-G., Landewé, R. B. M., Naredo, E., Connor, P. J., Ostendorf, B., Potočki, K., Schmidt, W. A., Smolen, J. S., Sokolovic, S., . . . Conaghan, P. G. (2013). EULAR recommendations for the use of imaging of the joints in the clinical management of rheumatoid arthritis [10.1136/annrheumdis-2012-203158]. *Annals of the Rheumatic Diseases*, *72*(6), 804. http://ard.bmj.com/content/72/6/804.abstract

Combe, B., Landewe, R., Daien, C. I., Hua, C., Aletaha, D., Álvaro-Gracia, J. M., Bakkers, M., Brodin, N., Burmester, G. R., Codreanu, C., Conway, R., Dougados, M., Emery, P., Ferraccioli, G., Fonseca, J., Raza, K., Silva-Fernández, L., Smolen, J. S., Skingle, D., . . . van Vollenhoven, R. (2017). 2016 update of the EULAR recommendations for the management of early arthritis [10.1136/annrheumdis-2016-210602]. *Annals of the Rheumatic Diseases*, *76*(6), 948. http://ard.bmj.com/content/76/6/948.abstract

Crowson, C. S., Rahman, M. U., & Matteson, E. L. (2009). Which Measure of Inflammation to Use? A Comparison of Erythrocyte Sedimentation Rate and C-Reactive Protein Measurements from Randomized Clinical Trials of Golimumab in Rheumatoid Arthritis

[10.3899/jrheum.081188]. *The Journal of Rheumatology*, *36*(8), 1606. http://www.jrheum.org/content/36/8/1606.abstract

Dasgupta, B. (2010). Concise guidance: diagnosis and management of giant cell arteritis. *Clin Med (Lond)*, *10*(4), 381-386.

Dasgupta, B., Borg, F. A., Hassan, N., Alexander, L., Barraclough, K., Bourke, B., Fulcher, J., Hollywood, J., Hutchings, A., James, P., Kyle, V., Nott, J., Power, M., & Samanta, A. (2010). BSR and BHPR guidelines for the management of giant cell arteritis. *Rheumatology (Oxford)*, *49*(8), 1594-1597. https://doi.org/10.1093/rheumatology/keq039a

Dasgupta, B., Borg, F. A., Hassan, N., Barraclough, K., Bourke, B., Fulcher, J., Hollywood, J., Hutchings, A., Kyle, V., Nott, J., Power, M., & Samanta, A. (2010). BSR and BHPR guidelines for the management of polymyalgia rheumatica. *Rheumatology (Oxford)*, *49*(1), 186-190. https://doi.org/10.1093/rheumatology/kep303a

Dejaco, C., Ramiro, S., Duftner, C., Besson, F. L., Bley, T. A., Blockmans, D., Brouwer, E., Cimmino, M. A., Clark, E., Dasgupta, B., Diamantopoulos, A. P., Direskeneli, H., Iagnocco, A., Klink, T., Neill, L., Ponte, C., Salvarani, C., Slart, R. H. J. A., Whitlock, M., & Schmidt, W. A. (2018). EULAR recommendations for the use of imaging in large vessel vasculitis in clinical practice [10.1136/annrheumdis-2017-212649]. *Annals of the Rheumatic Diseases*, *77*(5), 636. http://ard.bmj.com/content/77/5/636.abstract

Dejaco, C., Singh Yogesh, P., Perel, P., Hutchings, A., Camellino, D., Mackie, S., Abril, A., Bachta, A., Balint, P., Barraclough, K., Bianconi, L., Buttgereit, F., Carsons, S., Ching, D., Cid, M., Cimmino, M., Diamantopoulos, A., Docken, W., Duftner, C., . . . Dasgupta, B. (2015). 2015 Recommendations for the Management of Polymyalgia Rheumatica: A European League Against Rheumatism/American College of Rheumatology Collaborative Initiative. *Arthritis & Rheumatology*, *67*(10), 2569-2580. https://doi.org/10.1002/art.39333

Dhudasia, M. B., Benitz, W. E., Flannery, D. D., Christ, L., Rub, D., Remaschi, G., Puopolo, K. M., & Mukhopadhyay, S. (2022). Diagnostic Performance and Patient Outcomes With C-Reactive Protein Use in Early-Onset Sepsis Evaluations. *J Pediatr*. https://doi.org/10.1016/j.jpeds.2022.12.007

England, B. R., Tiong, B. K., Bergman, M. J., Curtis, J. R., Kazi, S., Mikuls, T. R., O'Dell, J. R., Ranganath, V. K., Limanni, A., Suter, L. G., & Michaud, K. (2019). 2019 Update of the American College of Rheumatology Recommended Rheumatoid Arthritis Disease Activity Measures. *Arthritis Care Res (Hoboken)*, *71*(12), 1540-1555. https://doi.org/10.1002/acr.24042

Ernst, A. A., Weiss, S. J., Tracy, L. A., & Weiss, N. R. (2010). Usefulness of CRP and ESR in predicting septic joints. *South Med J*, *103*(6), 522-526. https://doi.org/10.1097/SMJ.0b013e3181ddd246

FDA. (2005). *Review Criteria for Assessment of C-Reactive Protein (CRP), High Sensitivity C-Reactive Protein (hsCRP)k and Cardiac C-Reactive Protein (cCRP) Assays*. Rockville, MD: U.S. Department of Health and Human Services Retrieved from https://www.fda.gov/downloads/medicaldevices/deviceregulationandguidance/guidancedocuments/ucm071017.pdf

FDA. (2018). *Devices@FDA*. U.S. Department of Health & Human Services. Retrieved 06/12/2018 from https://www.accessdata.fda.gov/scripts/cdrh/devicesatfda/index.cfm

Fransen, J., & van Riel, P. L. (2006). DAS remission cut points. *Clin Exp Rheumatol*, *24*(6 Suppl 43), S-29-32.

Gaitonde, S., Samols, D., & Kushner, I. (2008). C-reactive protein and systemic lupus erythematosus. *Arthritis Care & Research*, *59*(12), 1814-1820. https://doi.org/10.1002/art.24316

Gergianaki, I., & Bertsias, G. (2018). Systemic Lupus Erythematosus in Primary Care: An Update and Practical Messages for the General Practitioner. *Frontiers in Medicine*, *5*, 161. https://doi.org/10.3389/fmed.2018.00161

Gordon, C., Amissah-Arthur, M.-B., Gayed, M., Brown, S., Bruce, I. N., D'Cruz, D., Empson, B., Griffiths, B., Jayne, D., Khamashta, M., Lightstone, L., Norton, P., Norton, Y., Schreiber, K., Isenberg, D., for the British Society for Rheumatology Standards, A., & Guidelines Working, G. (2018). The British Society for Rheumatology guideline for the management of systemic lupus erythematosus in adults. *Rheumatology*, *57*(1), e1-e45. https://doi.org/10.1093/rheumatology/kex286

Government of British Columbia. (2023, 08/24/2023). *C-Reactive Protein and Erythrocyte Sedimentation Rate Testing*. https://www2.gov.bc.ca/gov/content/health/practitioner-professional-resources/bc-guidelines/esr#seventeen

Ha, C. S., Hodgson, D. C., Advani, R., Dabaja, B. S., Dhakal, S., Flowers, C. R., Hoppe, B. S., Mendenhall, N. P., Metzger, M. L., Plastaras, J. P., Roberts, K. B., Shapiro, R., Smith, S., Terezakis, S. A., Winkfield, K. M., Younes, A., & Constine, L. S. (2014, 2014). *Follow-up of Hodgkin lymphoma*. American College of Radiology. Retrieved 06/13/2018 from https://acsearch.acr.org/docs/69388/Narrative/

Hale, A. J., Ricotta, D. N., & Freed, J. A. (2019). Evaluating the Erythrocyte Sedimentation Rate. *Jama*, *321*(14), 1404-1405. https://doi.org/10.1001/jama.2019.1178

Hamann, P. D. H., Shaddick, G., Hyrich, K., Green, A., McHugh, N., & Pauling, J. D. (2019). Gender stratified adjustment of the DAS28-CRP improves inter-score agreement with the DAS28-ESR in rheumatoid arthritis. *Rheumatology (Oxford)*, *58*(5), 831-835. https://doi.org/10.1093/rheumatology/key374

Hazlewood, G. S., Pardo, J. P., Barnabe, C., Schieir, O., Barber, C. E. H., Proulx, L., Richards, D. P., Tugwell, P., Bansback, N., Akhavan, P., Bombardier, C., Bykerk, V., Jamal, S., Khraishi, M., Taylor-Gjevre, R., Thorne, C., Agarwal, A., & Pope, J. E. (2022). Canadian Rheumatology Association living guidelines for the pharmacological management of rheumatoid arthritis with disease-modifying anti-rheumatic drugs. *The Journal of Rheumatology*, jrheum.220209. https://doi.org/10.3899/jrheum.220209

Hellmich, B., Agueda, A., Monti, S., Buttgereit, F., de Boysson, H., Brouwer, E., Cassie, R., Cid, M. C., Dasgupta, B., Dejaco, C., Hatemi, G., Hollinger, N., Mahr, A., Mollan, S. P., Mukhtyar, C., Ponte, C., Salvarani, C., Sivakumar, R., Tian, X., . . . Luqmani, R. A. (2020). 2018 Update of the EULAR recommendations for the management of large vessel vasculitis. *Annals of the Rheumatic Diseases*, *79*(1), 19-30. https://doi.org/10.1136/annrheumdis-2019-215672

Henderson, L. A., Canna, S. W., Friedman, K. G., Gorelik, M., Lapidus, S. K., Bassiri, H., Behrens, E. M., Ferris, A., Kernan, K. F., Schulert, G. S., Seo, P., MB, F. S., Tremoulet, A. H., Yeung, R. S. M., Mudano, A. S., Turner, A. S., Karp, D. R., & Mehta, J. J. (2020). American College of Rheumatology Clinical Guidance for Multisystem Inflammatory Syndrome in Children Associated With SARS-CoV-2 and Hyperinflammation in Pediatric COVID-19: Version 1. *Arthritis Rheumatol*, *72*(11), 1791-1805. https://doi.org/10.1002/art.41454

Henderson, L. A., Canna, S. W., Friedman, K. G., Gorelik, M., Lapidus, S. K., Bassiri, H., Behrens, E. M., Ferris, A., Kernan, K. F., Schulert, G. S., Seo, P., Son, M. B. F., Tremoulet, A. H., Yeung, R. S. M., Mudano, A. S., Turner, A. S., Karp, D. R., & Mehta, J. J. (2021). American College of Rheumatology Clinical Guidance for Multisystem Inflammatory Syndrome in Children Associated With SARS-CoV-2 and Hyperinflammation in Pediatric COVID-19: Version 2. *Arthritis Rheumatol*, *73*(4), e13-e29. https://doi.org/10.1002/art.41616

Hensor, E. M. A., Emery, P., Bingham, S. J., & Conaghan, P. G. (2010). Discrepancies in categorizing rheumatoid arthritis patients by DAS-28(ESR) and DAS-28(CRP): can they be reduced? *Rheumatology*, *49*(8), 1521-1529. https://doi.org/10.1093/rheumatology/keq117

Horsti, J., Rontu, R., & Collings, A. (2010). A Comparison Between the StaRRsed Auto-Compact Erythrocyte Sedimentation Rate Instrument and the Westergren Method. *Journal of Clinical Medicine Research*, *2*(6), 261-265. https://doi.org/10.4021/jocmr476w

Keeling, S. O., Alabdurubalnabi, Z., Avina-Zubieta, A., Barr, S., Bergeron, L., Bernatsky, S., Bourre-Tessier, J., Clarke, A., Baril-Dionne, A., Dutz, J., Ensworth, S., Fifi-Mah, A., Fortin, P. R., Gladman, D. D., Haaland, D., Hanly, J. G., Hiraki, L. T., Hussein, S., Legault, K., . . .

Santesso, N. (2018). Canadian Rheumatology Association Recommendations for the Assessment and Monitoring of Systemic Lupus Erythematosus. *J Rheumatol*, *45*(10), 1426-1439. https://doi.org/10.3899/jrheum.171459

Keenan, R. T., Swearingen, C. J., & Yazici, Y. (2008). Erythrocyte sedimentation rate and C-reactive protein levels are poorly correlated with clinical measures of disease activity in rheumatoid arthritis, systemic lupus erythematosus and osteoarthritis patients. *Clin Exp Rheumatol*, *26*(5), 814-819.

Kheir, M. M., Tan, T. L., Shohat, N., Foltz, C., & Parvizi, J. (2018). Routine Diagnostic Tests for Periprosthetic Joint Infection Demonstrate a High False-Negative Rate and Are Influenced by the Infecting Organism. *J Bone Joint Surg Am*, *100*(23), 2057-2065. https://doi.org/10.2106/jbjs.17.01429

Kratz, A., Plebani, M., Peng, M., Lee, Y. K., McCafferty, R., & Machin, S. J. (2017). ICSH recommendations for modified and alternate methods measuring the erythrocyte sedimentation rate. *International Journal of Laboratory Hematology*, *39*(5), 448-457. https://doi.org/10.1111/ijlh.12693

Kushner, I. (2024, May 16). *Acute phase reactants*. Wolters Kluwer. https://www.uptodate.com/contents/acute-phase-reactants

Mackie, S. L., Dejaco, C., Appenzeller, S., Camellino, D., Duftner, C., Gonzalez-Chiappe, S., Mahr, A., Mukhtyar, C., Reynolds, G., de Souza, A. W. S., Brouwer, E., Bukhari, M., Buttgereit, F., Byrne, D., Cid, M. C., Cimmino, M., Direskeneli, H., Gilbert, K., Kermani, T. A., . . . Dasgupta, B. (2020). British Society for Rheumatology guideline on diagnosis and treatment of giant cell arteritis. *Rheumatology (Oxford)*, *59*(3), e1-e23. https://doi.org/10.1093/rheumatology/kez672

Maz, M., Chung, S. A., Abril, A., Langford, C. A., Gorelik, M., Guyatt, G., Archer, A. M., Conn, D. L., Full, K. A., Grayson, P. C., Ibarra, M. F., Imundo, L. F., Kim, S., Merkel, P. A., Rhee, R. L., Seo, P., Stone, J. H., Sule, S., Sundel, R. P., . . . Mustafa, R. A. (2021). 2021 American College of Rheumatology/Vasculitis Foundation Guideline for the Management of Giant Cell Arteritis and Takayasu Arteritis. *Arthritis Rheumatol*, *73*(8), 1349-1365. https://doi.org/10.1002/art.41774

McCarthy, E. M., MacMullan, P. A., Al-Mudhaffer, S., Madigan, A., Donnelly, S., McCarthy, C. J., Molloy, E. S., Kenny, D., & McCarthy, G. M. (2014). Plasma Fibrinogen Along with Patient-reported Outcome Measures Enhances Management of Polymyalgia Rheumatica: A Prospective Study [10.3899/jrheum.131055]. *The Journal of Rheumatology*, *41*(5), 931. http://www.jrheum.org/content/41/5/931.abstract

Mukhtyar, C., Guillevin, L., Cid, M. C., Dasgupta, B., de Groot, K., Gross, W., Hauser, T., Hellmich, B., Jayne, D., Kallenberg, C. G. M., Merkel, P. A., Raspe, H., Salvarani, C., Scott, D. G. I., Stegeman, C., Watts, R., Westman, K., Witter, J., Yazici, H., & Luqmani, R. (2009). EULAR recommendations for the management of large vessel vasculitis [10.1136/ard.2008.088351]. *Annals of the Rheumatic Diseases*, *68*(3), 318. http://ard.bmj.com/content/68/3/318.abstract

Muresan, S., & Slevin, M. (2024). C-reactive Protein: An Inflammatory Biomarker and a Predictor of Neurodegenerative Disease in Patients With Inflammatory Bowel Disease? *Cureus*, *16*(4). https://doi.org/10.7759/cureus.59009

NCCN. (2024a, January 18, 2024). *Castleman Disease*. https://www.nccn.org/professionals/physician_gls/pdf/castleman.pdf

NCCN. (2024b, March 18). *NCCN Clinical Practice Guidelines in Oncology - Hodgkin Lymphoma Version 3.2024*. https://www.nccn.org/professionals/physician_gls/pdf/hodgkins.pdf

NCCN. (2024c, May 28). *NCCN Clinical Practice Guidelines in Oncology - T-Cell Lymphomas Version 4.2024*. https://www.nccn.org/professionals/physician_gls/pdf/t-cell.pdf

NICE. (2017, 4 April 2017). *Irritable bowel syndrome in adults: diagnosis and management*. National Institute for Health and Care Excellence.

https://www.nice.org.uk/guidance/cg61/resources/irritable-bowel-syndrome-in-adults-diagnosis-and-management-pdf-975562917829
NICE. (2020). Rheumatoid arthritis in adults: management. https://www.nice.org.uk/guidance/ng100/chapter/Recommendations
Nielung, L., Christensen, R., Danneskiold-Samsøe, B., Bliddal, H., Holm, C. C., Ellegaard, K., Slott Jensen, H., & Bartels, E. M. (2015). Validity and Agreement between the 28-Joint Disease Activity Score Based on C-Reactive Protein and Erythrocyte Sedimentation Rate in Patients with Rheumatoid Arthritis. *Arthritis*, *2015*, 401690. https://doi.org/10.1155/2015/401690
O'Neill, S. G., Giles, I., Lambrianides, A., Manson, J., D'Cruz, D., Schrieber, L., March Lyn, M., Latchman David, S., Isenberg David, A., & Rahman, A. (2010). Antibodies to apolipoprotein A-I, high-density lipoprotein, and C-reactive protein are associated with disease activity in patients with systemic lupus erythematosus. *Arthritis & Rheumatism*, *62*(3), 845-854. https://doi.org/10.1002/art.27286
Perez-Prieto, D., Portillo, M. E., Puig-Verdie, L., Alier, A., Martinez, S., Sorli, L., Horcajada, J. P., & Monllau, J. C. (2017). C-reactive protein may misdiagnose prosthetic joint infections, particularly chronic and low-grade infections. *Int Orthop*, *41*(7), 1315-1319. https://doi.org/10.1007/s00264-017-3430-5
Salvarani, C., & Muratore, F. (2023a, October 17). *Clinical manifestations and diagnosis of polymyalgia rheumatica*. Wolters Kluwer. Retrieved 06/18/2018 from https://www.uptodate.com/contents/clinical-manifestations-and-diagnosis-of-polymyalgia-rheumatica
Salvarani, C., & Muratore, F. (2023b, July 31). *Clinical manifestations of giant cell arteritis*. Wolters Kluwer. https://www.uptodate.com/contents/clinical-manifestations-of-giant-cell-arteritis
Sherkatolabbasieh, H., Firouzi, M., & Shafizadeh, S. (2020). Evaluation of platelet count, erythrocyte sedimentation rate and C-reactive protein levels in paediatric patients with inflammatory and infectious disease. *New Microbes and New Infections*, *37*, 100725. https://doi.org/10.1016/j.nmni.2020.100725
Singh, J. A., Saag, K. G., Bridges, S. L., Akl, E. A., Bannuru, R. R., Sullivan, M. C., Vaysbrot, E., McNaughton, C., Osani, M., Shmerling, R. H., Curtis, J. R., Furst, D. E., Parks, D., Kavanaugh, A., O'Dell, J., King, C., Leong, A., Matteson, E. L., Schousboe, J. T., . . . McAlindon, T. (2015). 2015 American College of Rheumatology Guideline for the Treatment of Rheumatoid Arthritis. *Arthritis & Rheumatology*, *68*(1), 1-26. https://doi.org/10.1002/art.39480
Smalley, W., Falck-Ytter, C., Carrasco-Labra, A., Wani, S., Lytvyn, L., & Falck-Ytter, Y. (2019). AGA Clinical Practice Guidelines on the Laboratory Evaluation of Functional Diarrhea and Diarrhea-Predominant Irritable Bowel Syndrome in Adults (IBS-D). *Gastroenterology*, *157*(3), 851-854. https://doi.org/10.1053/j.gastro.2019.07.004
Suarez-Almazor, M. E., Gonzalez-Lopez, L., Gamez-Nava, J. I., Belseck, E., Kendall, C. J., & Davis, P. (1998). Utilization and predictive value of laboratory tests in patients referred to rheumatologists by primary care physicians. *J Rheumatol*, *25*(10), 1980-1985.
Taylor, P. C., & Deleuran, B. (2024, April 22). *Biologic markers in the diagnosis and assessment of rhematoid arthritis*. Wolters Kluwer. https://www.uptodate.com/contents/biologic-markers-in-the-diagnosis-and-assessment-of-rheumatoid-arthritis
Toyoda, T., Armitstead, Z., Bhide, S., Engamba, S., Henderson, E., Jones, C., MacKeith, P., Maddock, J., Reynolds, G., Scrafton, N., Subesinghe, M., Subesinghe, S., Twohig, H., Mackie, S. L., & Yates, M. (2024). Treatment of polymyalgia rheumatica: British Society for Rheumatology guideline scope. *Rheumatology Advances in Practice*, *8*(1). https://doi.org/10.1093/rap/rkae002
Ward, M. M., Deodhar, A., Akl, E. A., Lui, A., Ermann, J., Gensler, L. S., Smith, J. A., Borenstein, D., Hiratzka, J., Weiss, P. F., Inman, R. D., Majithia, V., Haroon, N., Maksymowych, W. P.,

Joyce, J., Clark, B. M., Colbert, R. A., Figgie, M. P., Hallegua, D. S., . . . Caplan, L. (2016). American College of Rheumatology/Spondylitis Association of America/Spondyloarthritis Research and Treatment Network 2015 Recommendations for the Treatment of Ankylosing Spondylitis and Nonradiographic Axial Spondyloarthritis. *Arthritis & rheumatology (Hoboken, N.J.)*, *68*(2), 282-298. https://doi.org/10.1002/art.39298

Ward, M. M., Deodhar, A., Gensler, L. S., Dubreuil, M., Yu, D., Khan, M. A., Haroon, N., Borenstein, D., Wang, R., Biehl, A., Fang, M. A., Louie, G., Majithia, V., Ng, B., Bigham, R., Pianin, M., Shah, A. A., Sullivan, N., Turgunbaev, M., . . . Caplan, L. (2019). 2019 Update of the American College of Rheumatology/Spondylitis Association of America/Spondyloarthritis Research and Treatment Network Recommendations for the Treatment of Ankylosing Spondylitis and Nonradiographic Axial Spondyloarthritis. *Arthritis Care Res (Hoboken)*, *71*(10), 1285-1299. https://doi.org/10.1002/acr.24025

Watson, J., Jones, H. E., Banks, J., Whiting, P., Salisbury, C., & Hamilton, W. (2019). Use of multiple inflammatory marker tests in primary care: using Clinical Practice Research Datalink to evaluate accuracy. *Br J Gen Pract*, *69*(684), e462-e469. https://doi.org/10.3399/bjgp19X704309

WHO. (2019). Second WHO Model List of Essential In Vitro Diagnostics. https://www.who.int/docs/default-source/nutritionlibrary/complementary-feeding/second-who-model-list-v8-2019.pdf?sfvrsn=6fe86adf_1

WHO. (2020). *The selection and use of essential in vitro diagnostics: report of the third meeting of the WHO Strategic Advisory Group of Experts on In Vitro Diagnostics, 2020 (including the third WHO model list of essential in vitro diagnostics)*. https://www.icao.int/EURNAT/EUR%20and%20NAT%20Documents/COVID%2019%20Updates-%20CAPSCA%20EUR/02%20February%202021%20COVID19%20Updates/COVID19%20-%202021-02-01%20Updates/WHO%20Essential%20diagnostics%20list%20(EDL).pdf

Woods, C. R., Bradley, J. S., Chatterjee, A., Copley, L. A., Robinson, J., Kronman, M. P., Arrieta, A., Fowler, S. L., Harrison, C., Carrillo-Marquez, M. A., Arnold, S. R., Eppes, S. C., Stadler, L. P., Allen, C. H., Mazur, L. J., Creech, C. B., Shah, S. S., Zaoutis, T., Feldman, D. S., & Lavergne, V. (2021). Clinical Practice Guideline by the Pediatric Infectious Diseases Society and the Infectious Diseases Society of America: 2021 Guideline on Diagnosis and Management of Acute Hematogenous Osteomyelitis in Pediatrics. *J Pediatric Infect Dis Soc*, *10*(8), 801-844. https://doi.org/10.1093/jpids/piab027

Wu, A. H., Lewandrowski, K., Gronowski, A. M., Grenache, D. G., Sokoll, L. J., & Magnani, B. (2010). Antiquated tests within the clinical pathology laboratory. *Am J Manag Care*, *16*(9), e220-227.

Policy Update History:

Approval Date	Effective Date; Summary of Changes
T10/30/2024	01/15/2025: Document updated with literature review. The following changes were made to Reimbursement Information: Added to the introductory statement for Table 1: "Either conventional or high-sensitivity CRP testing are allowed methods of testing for CRP levels. When either CRP or ESR are allowed, CRP is the preferred biomarker." Within the table, removed ESR as a test preference for Castleman's Disease; moved Giant Cell Arteritis to Large Vessel Vasculitis; test preference revised to include ESR; Frequency of Testing changed from NS to "To confirm diagnosis every 1-3 months during the first year; every 3-6 months thereafter"; added Takayasu Arteritis to the Large Vessel Vasculitis condition. Added code 86141. References revised.

11/01/2023	11/01/2023: Document updated with literature review. The following changes were made to Reimbursement Information: In #1 reordered the test so that CRP is listed first due to preference for CRP over ESR. Added: 2. For individuals without a diagnosed inflammatory condition, measurement of erythrocyte sedimentation rate (ESR) is not reimbursable. For Table 1, added (conventional or high-sensitivity) for CRP to the introductory statement, which now reads: Coverage of ESR, CRP (conventional or high-sensitivity), or both ESR and CRP is designated based on the diagnosed or suspected inflammatory condition; Changed Frequency of the following: Testing for Acute Hematogenous Osteomyelitis (AHO) from "NS" to "To confirm diagnosis; 2 to 3 days during the early therapeutic course; weekly until normalization (or a clear trend toward normalization is evident)"; Giant Cell Arteritis: from "At or near diagnosis of GCA and during follow-up visits" to "To confirm diagnosis; during follow-up visits"; Hodgkin Lymphoma: revised for clarity; removed Hypereosinophilic Syndrome from table; Rheumatoid Arthritis: Revised for clarity and added "annually when disease is inactive"; under Test Preference, changed "and" to "or" for Acute and Chronic Urticaria, Polymyalgia Rheumatica, and Systemic Lupus Erythematosus. References revised.
08/15/2023	08/15/2023: Document updated with literature review. Reimbursement information revised to provide specific listing of inflammatory conditions for ESR, CRP or both ESR/CRP testing including frequency. References revised.
11/1/2022	11/01/2022: New policy