

2025

Effective Test Utilization Best Practices Recommendations

1

Routine ordering of *Streptococcus pneumoniae* urine antigen is discouraged for community-acquired pneumonia, especially in non-severe cases.

2

Clinician-ordered peripheral smear review by pathologist in routine practice is discouraged. Instead, a complete blood count with differential (CBC with differential) should be ordered.

3

Use serum free light chain testing with serum protein electrophoresis for evaluating multiple myeloma.

4

Repeat Serum Protein Electrophoresis (SPEP) testing is discouraged for at least 25 days from the previous result for patients with actively treated disease.

1. Routine ordering of *Streptococcus pneumoniae* urine antigen is discouraged for community-acquired pneumonia, especially in non-severe cases.

Subspecialty Area: Microbiology

Submitted by: American Society for Microbiology (ASM)

Description: *Streptococcus pneumoniae* antigen tests (SPUAT) are intended to rapidly detect pneumococcal antigens from urine of adult patients to aid in the diagnosis of community acquired pneumonia (CAP), but due to the lower sensitivity the test (approximately 60-65%), a negative test cannot rule out *S. pneumoniae* as the etiologic agent of CAP.^{1,2} Current therapeutic regimens include antibiotics with activity against *S. pneumoniae*, therefore even if a test is positive it does not alter empiric therapy in most cases. Because other pathogens, in addition to *S. pneumoniae*, may be contributing to CAP, antimicrobial therapy is not often de-escalated and there is concern for clinical relapse.³

2024 IDSA/ASM guidelines for diagnostic testing and 2019 ATS/IDSA guidelines on treatment of CAP state that if antigen test is available it should only be considered for severe CAP in hospitalized patients.^{3,4} Although studies have found higher positivity rates for SPUATs in severe pneumonia and in patients admitted to the intensive care unit, the recommended empiric regimens for that patient population are effective against *S. pneumoniae*. In addition, providers are less likely to deescalate antibiotics in this high-risk population, therefore the value of the antigen test is questionable.^{1,3} Given the prevalence of CAP as a presenting diagnosis and that clinical characteristics of patients do not strongly correlate with a positive SPUAT,^{1,2} widespread utilization of a diagnostic test is an inefficient use of laboratory resources when the test has limited potential to impact clinical care and antibiotic utilization.

References:

1. Davis MR, McCreary EK, Trzebucki AM. Things we do for no reason – ordering *Streptococcus pneumoniae* urinary antigen in patients with community-acquired pneumonia (CAP). Open Forum Infect Dis 2024
2. Bellew S, Grijalva CG, Williams DJ, et al. Pneumococcal and Legionella urinary antigen tests in community-acquired pneumonia: prospective evaluation of indications for testing. Clin Infect Dis 2019; 68:2026–33.
3. Metlay JP, et al. Diagnosis and Treatment of Adults with Community-acquired Pneumonia. Am J Respir Crit Care Med 2019; 200:e45–e67.
4. Miller JM, et al. Guide to Utilization of the Microbiology Laboratory for Diagnosis of Infectious Diseases: 2024 Update by the Infectious Diseases Society of America (IDSA) and the American Society for Microbiology (ASM). Clin Infect Dis 2024



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This recommendation was written in collaboration the American Society for Microbiology.

2. Clinician-ordered peripheral smear review by pathologist in routine practice is discouraged. Instead, a complete blood count with differential (CBC with differential) should be ordered.

Subspecialty Area: Hematology

Submitted by: Sanjai Nagendra, MD, MMM

Description: Clinician-ordered peripheral smear review by pathologist has traditionally been ordered in patients suspected of hematologic disease or to assess CBC abnormalities. However, with the advent of sophisticated hematology analyzers, flags, and middleware rules, clinician-ordered peripheral smear review by pathologist is considered obsolete and of low clinical utility. A CBC with differential should be ordered instead; if there is evidence of hemolysis or malignancy, the laboratory will generate a report to the clinician.

References:

1. Kurt-Mangold ME, Grieme CV, Krasowski MD, Rosenthal NS. Clinical Utility of Ordered Pathology Blood Smear Reviews - an Overused Resource? *Clin Lab*. 2018;64(1):99-104. doi:10.7754/Clin.Lab.2017.170703
2. Nagendra S, Mongillo J, Dodge K, Ranjitkar P, Burns B, Allen L. Clinician-Ordered Peripheral Smear Review by a Pathologist Has Low Clinical Utility-A Reference Laboratory Perspective. *J Appl Lab Med*. 2025;10(2):352-358. doi:10.1093/jalm/jfae101
3. Petrone J, Jackups R Jr, Eby CS, Shimer G, Anderson J, Frater JL. Blast flagging of the Sysmex XN-10 hematology analyzer with supervised cell image analysis: Impact on quality parameters. *Int J Lab Hematol*. 2019;41(5):601-606. doi:10.1111/ijlh.13069

3. Use serum free light chain testing with serum protein electrophoresis for evaluating multiple myeloma.

Subspecialty Area: Immunology

Submitted by: Jill Pauli, PhD

Description: Multiple myeloma is often diagnosed late, and improper diagnostic work ups can contribute to this delay. Most myeloma patients present in primary care, where providers may be less confident knowing what diagnostic testing to order.¹ Combining serum free light chain (sFLC) testing with serum protein electrophoresis and immunofixation, as recommended by guidelines,^{2,3} enhances diagnostic sensitivity for multiple myeloma. Without sFLC testing, 1 in 8 myeloma cases may be missed.⁴

References:

1. Mikhael J, Bhutani M, Cole CE. Multiple Myeloma for the Primary Care Provider: A Practical Review to Promote Earlier Diagnosis Among Diverse Populations. *Am J Med.* 2023 Jan;136(1):33-41. doi: 10.1016/j.amjmed.2022.08.030. Epub 2022 Sep 20. PMID: 36150517.
2. Kumar SK, Callander NS, Adekola K, et al. Multiple Myeloma, Version 2.2024, NCCN Clinical Practice Guidelines in Oncology. *J Natl Compr Canc Netw.* 2023 Dec;21(12):1281-1301.
3. Rajkumar SV, Dimopoulos MA, Palumbo A, Blade J, Merlini G, Mateos MV, Kumar S, Hillengass J, Kastritis E, Richardson P, Landgren O, Paiva B, Dispenzieri A, Weiss B, LeLeu X, Zweegman S, Lonial S, Rosinol L, Zamagni E, Jagannath S, Sezer O, Kristinsson SY, Caers J, Usmani SZ, Lahuerta JJ, Johnsen HE, Beksac M, Cavo M, Goldschmidt H, Terpos E, Kyle RA, Anderson KC, Durie BG, Miguel JF. International Myeloma Working Group updated criteria for the diagnosis of multiple myeloma. *Lancet Oncol.* 2014 Nov;15(12):e538-48. doi: 10.1016/S1470-2045(14)70442-5. Epub 2014 Oct 26. PMID: 25439696.
4. Katzmann JA, Kyle RA, Benson J, Larson DR, Snyder MR, Lust JA, Rajkumar SV, Dispenzieri A. Screening panels for detection of monoclonal gammopathies. *Clin Chem.* 2009 Aug;55(8):1517-22. doi: 10.1373/clinchem.2009.126664. Epub 2009 Jun 11. PMID: 19520758; PMCID: PMC3773468.

4. Repeat Serum Protein Electrophoresis (SPEP) testing is discouraged for at least 25 days from the previous result for patients with actively treated disease.

Subspecialty Area: Immunology

Submitted by: Elsie Yu, PhD, DABCC, FADLM

Description: For patients with acute or actively treated disease, a minimum retesting interval of 25 days is recommended¹. For patients without actively treated disease, a minimum retesting interval of 3 months is recommended².

Certain high-risk patients with aggressive diseases may warrant more frequent testing. Considering the underlying pathophysiology of monoclonal gammopathies, it is unlikely that SPEP results would change on a weekly basis in most cases³. For most patients who are undergoing active treatments, a monthly monitoring is appropriate³.

References:

1. Choosing Wisely Canada / Canada's Drug and Health Technology Agency. Advisory Panel Guidance on Minimum Retesting Intervals for Lab Tests. Ottawa (ON): CADTH; 2024. [hc0078-minimum-retesting-intervals-guidance_for-feedback.pdf](#)
2. UK NICE Guideline: NG35 Myeloma: diagnosis and management. <https://www.nice.org.uk/guidance/ng35/chapter/Recommendations#monitoring>
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