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Proposal to Remove Strep Pneumoniae and Legionella Urinary Antigen Tests

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Munson Healthcare Antimicrobial Stewardship Committee

Situation: Streptococcus pneumoniae and Legionella urinary antigen tests are ordered frequently, but provide low clinical utility and are unnecessary in most scenarios.

Background/Assessment:

- Strep pneumoniae urine antigen cost \$14.45/test.
- Legionella urine antigen cost \$12.50/test
- We bill \$105 for each test, but we are reimbursed \$11.98 (Medicare) \$16.44 (Priority) for each. Other insurance carriers were not listed.
- Data analysis from CAD, GRY, MMC:

09/1/2022-08/31/2023	Strep Pneumoniae Urinary Antigen	Legionella Urinary Antigen
Total MHC (inpatient)	878	1,003
Negative	853	1,002
Positive	24	1
% Positive	2.7%	0.1%
Empiric treatment appropriate	24/24 (100%)	1/1 (100%)
Other positive cultures present?		
- Blood	4/24 (17%)	N/A
- Sputum	1/24 (4.16%)	N/A
Did urine Ag positive test change treatment?	3/878 (0.003%)	1/1,003 (<0.001%)
Cost per test	\$14.45	\$12.50
Total cost	\$12,687	\$12,537

Rationale for removing these tests:

- Negative result doesn't rule out S. pneumoniae or Legionella Pneumonia (lacks sensitivity)
- Empiric treatment is active, so a positive result doesn't change antibiotics
- Not valid in patients receiving >1 day of antibiotics (S. pneumoniae)
- False positive within 5 day of pneumococcal vaccine is a concern (S. pneumoniae)
- Cross reactivity with other streptococcus species (S. pneumoniae)

Recommendation:

- Remove the orderable for S. pneumoniae and legionella urinary antigen tests in all PowerPlans/order sets.
- Remove S. pneumoniae urinary antigen testing as an orderable – lab will no longer carry the test.
- Allow for select legionella tests to be ordered when suspicion is high.
 - o Add a pop-up for these tests indicating the % positivity over 1 year, and for the clinician to assess the clinical utility, especially if the patient is already going to receive active therapy for legionella (Azithromycin, Doxycycline, Levofloxacin).