

Pneumonia Plus Panel -Multiplex PCR

Pneumonia accounts for approximately 1.5 million hospitalizations in the United States annually (1) with an associated mortality rate of 8% to 40% (2-5)

Pneumonia accounts for 14% of all deaths of children under 5 years old, killing 740,180 children in 2019 (6)

Management is reliant on targeted antimicrobial therapy. This requires definitive pathogen identification.

It often takes at least 48 to 72 h to obtain full identification and susceptibility results through culture.

Unfortunately, it has been well established that patients with >4 h delay in effective antimicrobial therapy have poor outcomes (7, 8).

Quickly identifying pathogens facilitates appropriate treatment and patient management decisions.

PNEUMONIA PLUS

33 Targets in One Test

The Pneumonia Plus Panel identifies 33 clinically relevant targets from sputum (including endotracheal aspirate) and bronchoalveolar lavage (including mini-BAL) samples. For 15 bacteria, the Pneumonia Plus Panel provides semi-quantitative results, which may help determine whether an organism is a colonizer or a pathogen.

Impact on Clinical Workflow

- Distinguishes specifically between viral and bacterial infections quickly and accurately
- Allows for informed diagnosis and therapy
- Facilitates appropriate utilization of antibiotics
- Unique feature for which bacterial targets are reported in semi-quantitative bins

Bacteria

Semi-Quantitative

- Acinetobacter calcoaceticus-baumannii complex
- Enterobacter cloacae
- Escherichia coli
- Haemophilus influenzae
- Klebsiella aerogenes
- Klebsiella oxytoca
- Klebsiella pneumoniae group
- Moraxella catarrhalis
- Proteus spp.
- Pseudomonas aeruginosa
- Serratia marcescens
- Staphylococcus aureus
- Streptococcus agalactiae
- Streptococcus pneumoniae
- Streptococcus pyogenes

Resistance Genes

- Methicillin-resistance: (mecA/mecC and MREJ)
- ESBL: (CTX-M)
- Carbapenemases: (KPC, NDM, Oxa48-like, VIM, IMP)

Atypical Pathogens

- Legionella pneumophila
- Mycoplasma pneumoniae
- Chlamydia pneumoniae

Viruses

- Influenza A
- Influenza B
- Adenovirus
- Coronavirus
- Parainfluenza virus
- Respiratory Syncytial virus
- Human Rhinovirus/Enterovirus
- Human Metapneumovirus



ADVANTAGES TO ORDERING PNEUMONIA PLUS- PCR

- **Better Results** – Compared to traditional or targeted methods, a syndromic approach increases the probability of identifying a pathogen in patients with symptoms of an infectious disease, and it increases the capability of detection of co-infections.
- **Accurate Organism Identification** – PCR technology for the detection of bacteria and viruses offers increased sensitivity and specificity over traditional methods, particularly for viruses and difficult-to-culture organisms.
- **Specimen Requirements** – BAL, tracheal aspirate, sputum; The PCR format minimizes sample requirements increasing efficiency. A single specimen can be tested for multiple infectious agents simultaneously.

For Additional Information on Pneumonia

Pneumonia | CDC :
<https://www.cdc.gov/pneumonia/index.html>

Pneumonia | WHO:
https://www.who.int/health-topics/pneumonia/#tab=tab_1

Test Name:	Pneumonia- PCR
Methodology:	PCR
Specimen Requirements:	BAL Tracheal Aspirate Sputum

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