

# Antibiotic Protocol



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## Emergency Department

Emergency Department Empirical Therapy. Send cultures before starting antibiotics!

	TYPE 1	TYPE 2 Low Risk : < 5 days admission High Risk : > 5 days admission	TYPE 3
Blood	IV Amoxicillin / Clavulanate If impending shock/in shock: Add IV Gentamicin (for 3 days only)* <sup>2</sup>	IV Piperacillin/Tazobactam ± IV Gentamicin (for 3 days only)* <sup>2</sup>	IV Imipenem/Meropenem ± IV Vancomycin*
Urine	Outpatient: CrCL>30ml/min: Nitrofurantoin* <sup>1</sup>  If pending admission, i) Lower UTI/Cystitis with CrCL>30ml/min: Nitrofurantoin* <sup>1</sup>  ii) Suspect Pyelonephritis: IV Amoxicillin / Clavulanate + IV Amikacin	i) Lower UTI/Cystitis with CrCL>30ml/min: Nitrofurantoin* <sup>1</sup> [consider oral Fosfomycin] + IV Amikacin  ii) Suspect Pyelonephritis: IV Piperacillin/Tazobactam + IV Amikacin	IV Imipenem/Meropenem
Pus	IV Amoxicillin / Clavulanate	IV Piperacillin/Tazobactam ± IV Gentamicin (for 3 days only)* <sup>2</sup>	IV Imipenem/Meropenem ±IV Vancomycin* If MRSA is strongly suspected* <sup>3</sup> , add vancomycin

\*<sup>1</sup> Nitrofurantoin NOT for pyelonephritis      \*<sup>2</sup> Stop Gentamicin till culture review      \*<sup>3</sup> Suspect MRSA if colonized with MRSA, previous MRSA infections within past 3 months.

Continuing treatment	If the pathogen is sensitive or culture is negative & patient responds clinically; Consider ORAL switch if 1. T < 38 °C for >24 hours with clinical improvement AND 2. Orally tolerated, AND 3. No sign of sepsis AND 4. No high risk / deep seated infection.	De-escalate to narrowest spectrum antimicrobials if culture negative and clinically stable, consider 5-7 days duration (* Strongly recommend ID consultation)
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- TYPE 1** No contact with health care system in the last 90 days AND No prior antibiotic treatment in the last 90 days AND young Patient with no or few co-morbid conditions.
- TYPE 2** Contact with health care system in past 3 months or < 1 week in the hospital or < 48hrs in ICU (eg. admission in hospital or nursing home), invasive procedure OR Recent antibiotic therapy in last 3 months OR elderly (> 65 years) with few co-morbidities.
- TYPE 3** Hospitalization > 5-7 days ± infections following major invasive procedures OR Recent & multiple antibiotic therapies OR Elderly (> 65 years) + multiple co-morbidities (eg. structural lung disease, immunodeficiency).

## TOP 5 Pathogens [Emergency Department] 2016 – 2020

Blood (Top 5 is 65% of 707 blood-positive isolates)	Urine (Top 5 is 88% of 284 urine-positive isolates)
Escherichia coli [n=183 (26%); ESBL 29 (16%)]	Escherichia coli [n=120 (42%); ESBL 29 (24%)]
Klebsiella sp. [n=116 (16%); ESBL 26 (22%)]	Klebsiella sp. [n=59 (21%); ESBL 26 (44%)]
Staphylococcus aureus [n=91 (13%); MRSA 27 (30%)]	Pseudomonas aeruginosa [n=30 (11%)]
Proteus sp. [n= 41 (6%); ESBL 1 (2%)]	Proteus sp. [n= 24 (8%); ESBL 2 (8%)]
Pseudomonas aeruginosa [n=28 (4%)]	Enterobacter sp. [n=16 (6%); ESBL 1 (6%)]

Pus (Top 5 is 82% of 358 pus-positive isolates)
Staphylococcus aureus [n=178 (50%); MRSA 30 (17%)]
Escherichia coli [n=31 (9%); ESBL 5 (16%)]
Klebsiella sp. [n=30 (8%); ESBL 8 (27%)]
Pseudomonas aeruginosa [n=28 (8%)]
Streptococcus Group A, B, C, G [n= 26 (7%)]