

VUMC  
Antimicrobial  
Susceptibility Summary:  
Pediatric Patients  
2024

Clinical Microbiology  
Department of Pathology, Microbiology and Immunology

## **Preface**

This booklet contains up-to-date information to assist in decisions concerning antimicrobial therapy.

Tables summarize susceptibility data obtained for organisms isolated in the VUMC Clinical Microbiology Laboratory between 4/1/24 to 3/30/25.

## **Guidelines for Interpretation of Minimum Inhibitory Concentrations (MICs)**

MICs are interpreted as susceptible, intermediate, resistant, non-susceptible or susceptible dose dependent according to Clinical and Laboratory Standards Institute (CLSI) guidelines. When deciding whether the interpretation is meaningful, one should consider the antimicrobial pharmacokinetics, taking into account dosage and route of administration, the infecting organism and site of infection, and previous clinical experience.

For additional information, please call the microbiology laboratory, or the Antimicrobial Stewardship team.

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VASP Website:

<https://www.vumc.org/antimicrobial-stewardship-program>

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## General Antibiograms, 2024 Data

Table 1. Pediatrics – Most common Gram-negative Bacteria, % Susceptible

Data represent first isolate per patient.

Organism	N	Ampicillin	Ampicillin-Sulbactam	Cefazolin*	Cefepime	Ceftazidime	Ceftriaxone	Ciprofloxacin	Ertapenem	Gentamicin	Levofloxacin	Meropenem	Nitrofurantoin <sup>1</sup>	Piperacillin-tazobactam	Trimethoprim-Sulfamethoxazole
<i>Escherichia coli</i>	843	44	73.9	88.5	93.1	92.1	91.7	71.8	100	89	74.3	100	97.7	91.7	65.4
<i>Pseudomonas aeruginosa</i>	258	R	R	R	93.7	97.5	R	89.4	R	97.6	85.8	97.2	R	88.2	R
<i>Klebsiella pneumoniae</i>	181	R	81.2	85.6	91.7	88.4	87.8	80.7	98.3	92.8	82.3	98.9	24.3	85.1	81.8
<i>Enterobacter cloacae</i>	99	R	R	R	93.9	84.8	81.2	87.9	94.9	97	89.9	99	38.4	82.8	88.9
<i>Serratia marcescens</i>	81	R	R	R	100	100	98.8	87.7	100	98.8	88.9	100	R	ND	100
<i>Proteus mirabilis</i>	70	87.1	94.3	95.6	98.6	98.6	98.6	92.9	100	90	92.9	100	R	100	82.9
<i>Klebsiella oxytoca</i>	69	R	89.9	44.9	100	100	91.3	95.7	100	95.7	95.7	100	87	92.8	91.3

\*Preferred oral cephalosporin for uncomplicated urinary tract infection in children is cephalexin.

R, intrinsic resistance; ND, not tested.

<sup>1</sup> Nitrofurantoin use is restricted to uncomplicated cystitis only.

 Urinary Tract Clinical Practices Guidelines are available [here](#).  
For empiric treatment of uncomplicated UTI, first line therapy in children is oral cephalexin.

Table 2. Pediatrics – *Staphylococcus sp.*, % Susceptible

Data represent first isolate per patient.

Organism	N	Oxacillin	Clindamycin	Daptomycin	Doxycycline	Gentamicin	Levofloxacin	Linezolid	Nitrofurantoin <sup>1</sup>	Tetracycline	Trimethoprim-sulfamethoxazole	Vancomycin
<i>Staphylococcus epidermidis</i>	124	28.2	48.4	100	88.7	70.2	66.9	100	100	87.1	50	100
<i>Staphylococcus aureus</i>	848	70	94.7	100	99.3	97.6	R	100	99.8	93.2	92.8	100
MRSA	263	R	90.1	100	98.1	97	R	100	99.6	92	89.4	100
MSSA	599	100	96.7	100	99.7	97.7	R	99.8	99.7	93.2	94.5	100

<sup>1</sup> Nitrofurantoin should only be used for treatment of uncomplicated cystitis.

**i** Clindamycin susceptibility is high for MRSA and MSSA in all settings.

Table 3. Pediatrics – *Enterococcus* spp., % Susceptible by Location

Data represent first isolate per patient.

Organism	N	Ampicillin	Clindamycin	Daptomycin	Doxycycline	Levofloxacin	Linezolid	Nitrofurantoin <sup>1</sup>	Tetracycline	Vancomycin
<i>Enterococcus faecalis</i>	218	100	R	78.4	40.8	98.6	98.6	99.5	37.6	99.1

<sup>1</sup> Nitrofurantoin should only be used for treatment of uncomplicated cystitis.

Table 4. Pediatrics – *Streptococcus pneumoniae*, % Susceptible

Data represent first isolate per patient.

		Ceftriaxone, meningitis	Ceftriaxone, non-meningitis	Clindamycin	Erythromycin <sup>1</sup>	Levofloxacin	Linezolid	Penicillin, meningitis	Penicillin-Non Meningitis	Tetracycline	Trimethoprim-sulfamethoxazole	Vancomycin
<i>Streptococcus pneumoniae</i>	54	83	98.1	86.7	51.9	100	100	64.2	98.1	87	74.1	100

<sup>1</sup> Predicts activity of azithromycin



Macrolides are not preferred therapy for pneumococcal pneumonia due to reduced susceptibility. Penicillin and amoxicillin susceptibility remains high and is preferred for infections outside the central nervous system.



Clinical Practice Guidelines for Community Acquired Pneumonia in Children are available [here](#).