Urine Culture Reflex Guidance (Pediatric):

- A urine sample will be cultured when the patient is <13 years old OR when reflex criteria are met:
  - Positive leukocyte esterase AND/OR
  - Positive nitrite **and** leukocytes > 10/hpf
  - No reflex culture will be done when epithelial cells > 10/hpf (indicative of contaminated specimen, unsatisfactory for culture)
- **Asymptomatic bacteriuria does not require therapy.** If the patient does not have UTI symptoms, urine culture is not indicated unless the patient is pregnant, pediatric, undergoing invasive urinary tract procedures, or immunocompromised.
- If culture is indicated; re-submit a clean catch or catheterized urine if it has been >24 hours from initial collection of UA, otherwise add-on from UA.
- The negative chemical and/or microscopic urinalysis has a very high specificity and a very high negative predictive value for absence of a UTI.

United States Anaerobic Susceptibility Data 2013-2016 % Susceptible

	Amp/Sulb	Pip/Tazo	Cefoxitin	Meropenem	Clindamycin	Metronidazole
Anaerobic GPC*	-	99	-	100	97	100
Bacteroides fragilis	84	96	100	93	26	100
B. fragilis group	74	94	70	95	33	100
Clostridium perfringens	100	100	-	100	83	100
Fusobacterium spp	100	96	-	100	77	95

*Anaerobic gram-positive cocci = *Peptococcus, Peptostreptococcus, Fingoldia, Peptoniphilus,* and *Anaerococcus* species

- = no data available GPC = Gram Positive Cocci

Inducible Resistance: All ages/sources/locations:
MRSA inducible clindamycin resistance 3%
MSSA inducible clindamycin resistance 19%

Grp B Strep Clinda = 47% Sensitive; 28% of the total resistance was due to "inducible mechanism" during this time period from 39 resistant isolates tested.

While susceptibility testing may indicate that bacteria are susceptible to an antibiotic, some bacteria may have enzymes that can be “turned on” or induced (thus inducible resistance) in vitro resulting in antibiotic resistance.

Common Blood Culture Isolations (Frequency of Pathogen):

1. MSSA (25)
2. *S. epidermidis* (16)
3. *E. coli* (13)
4. *S. pneumoniae* (10)
5. *E. faecalis* (5)
6. Viridans streptococci (4)

7/8. *K. pneumoniae*, *S. anginosus* (3 each)

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Nathan D. Johnston, DO – Medical Director

Elizabeth Kleiner, MD – Infectious Disease Physician

Alex Novin, PharmD, BCPS, BCIDP Infectious Disease Clinical Pharmacist

Amery Vilander, MT (ASCP) – Microbiology Manager

Krenza Ortiz, MLS (ASCP)CM – Microbiology Medical Laboratory Scientist, Molecular Lead

uchealth

Children’s Hospital Colorado

Southern Colorado Region

PEDIATRIC (Age <18)

Antibiogram

January 2022 – December 2022

UCHEALTH MICROBIOLOGY

719-365-5686

Sara Saporta-Keating, MD – Pediatric Infectious Disease Physician

Michael Bozzella, DO – Pediatric Infectious Disease Physician

Heather Johnson, PharmD, BCPPS – Pediatric Clinical Pharmacist

Children’s Hospital Colorado

	Southern Colorado Region **PEDIATRIC** (Age <18) Antibiogram January 2022 – December 2022	Amoxicillin/Clavulanic Acid (Augmentin)	Ampicillin +/- Sulbactam (Unasyn) ◊	Cefazolin*	Cefepime	Ceftriaxone	Ciprofloxacin*	Clindamycin	Erythromycin (Use Azithromycin)	Gentamicin ǂ	Levofloxacin	Meropenem	Nitrofurantoin	Oxacillin	Penicillin	Piperacillin/Tazobactam (Zosyn)	Tetracycline (Use Doxycycline)	Tobramycin	Trimethoprim/ Sulfamethoxazole (Bactrim)	Vancomycin	NU = Non-Urine U = Urine All = All Sources	
NU	MSSA (150)			99				79	70	100				99	R		95		95	100	MSSA (150)	NU
	MRSA (41)	R	R	R	R	R		87	19	100		R		R	R	R	95		95	100	MRSA (41)	
	All Enterobacterales (71)	57	32	57	94	91	91			94	87	100				94	68	95	88		All Enterobacterales (71)	
U	*Enterococcus faecalis* (84)		100	R	R	R	100				100		100	R					R	100	*Enterococcus faecalis* (84)	U
	Escherichia spp. (587)	91	63	96	98	97	94			94	86	100	99			98		94	81		*Escherichia* spp. (587)	
	Klebsiella pneumoniae (32)	90	R	93	93	93	90			90	90	100	43			96		93	87		*Klebsiella pneumoniae* (32)	
	All Enterobacterales (676)	88	59	96	98	97	94			94	87	100	91			98		94	82		All Enterobacterales (676)	
Results Below This Line Must Be Interpreted With Caution Due To Low Isolate Numbers – Significant Outlier Effects Possible – May Not Be Representative of Wild Type Bacteria																						
All	*Staph. epidermidis* (77; 33 NU, 44 U)			50				28	14	96			97	40	R		81		77	100	*Staph. epidermidis* (77; 33 NU, 44 U)	All
	P. aeruginosa (35; 21 NU, 14 U)	R	R	R	97	R	91				85	100	R			94	R	100	R		*P. aeruginosa* (35; 21 NU, 14 U)	
NU	*Streptococcus pneumoniae* (23)					100		100	78		100				100		100		69	100	*Streptococcus pneumoniae* (23)	NU
	S. pneumo. Meningitis MIC					86									69						*S. pneumo.* Meningitis MIC	

Organism (# of isolates) % susceptible R = Intrinsically resistant. spp = species

* = Due to breakpoint limitation % susceptible & intermediate shown; for ciprofloxacin only applies to Enterobacterales group

ǂ = For synergy for gram-positive infections, not appropriate as monotherapy for gram-positives.

◊ = Ampicillin/sulbactam susceptibility is approximately the same or only a few percentage points better than ampicillin by itself except for *K. pneumo* which it should still maintain decent activity against

Notes:

- Clindamycin, Erythromycin, and Tetracycline are only for non-urine isolates.
- Nitrofurantoin is only for urine isolates.
- Routine testing of urine isolate of *Staph saprophyticus* is not advised because infections respond to concentrations achieved in urine of antimicrobial agents commonly used to treat acute, uncomplicated UTIs (e.g. cephalexin, nitrofurantoin, trimethoprim/sulfamethoxazole, or fluoroquinolones). It is intrinsically resistant to fosfomycin.
- Includes inpatient and outpatient data for MHN, MHC, Grandview, PPRH, CHCO in Colorado Springs, as well as any outpatient clinic, urgent care, or freestanding emergency department who sent specimens to Memorial microbiology lab.
- For *S. pneumo* and penicillin for oral administration use the meningitis MIC susceptibility data

Non-Susceptible Isolate Frequencies **% (N)**
Pediatric Data (Age <18), All Sources, All regional locations (not just CHCO but Southern Colorado Region)
N/N → Erta/Mero [often mero same isolate as erta]

CRE = 0.7% (5)
5/0 *E. cloacae*
CRPA = 0% (0)
CRAsp = 0% (0)
MRSA = 21.2% (46)
VRE = 0% (0)