


Non-Urine	 Southern Colorado Region OUTPATIENT Adult (Age ≥18) Antibiogram February 2024 – December 2024	Ampicillin	Amoxicillin/Clavulanic Acid (Augmentin)	Ampicillin/Sulbactam (Unasyn)	Cefazolin	Cefepime	Ceftriaxone	Ciprofloxacin	Clindamycin	Doxycycline (Gram Pos)/Tetracycline (Gram Negs)	Erythromycin (Use Azithromycin)	Gentamicin ‡	Levofloxacin	Meropenem	Oxacillin	Piperacillin/Tazobactam (Zosyn)	Tobramycin	Trimethoprim/Sulfamethoxazole (Bactrim)	Vancomycin	
	<i>Enterobacter</i> spp. (18) ▲	R	R	R	R	88	83	94		94		100	100	100		77	100	100		<i>Enterobacter</i> spp. (18) ▲
	<i>Enterococcus faecalis</i> (29)	100			R	R	R								R			R	100	<i>Enterococcus faecalis</i> (29)
	<i>Escherichia</i> spp. (99)	58	88	63	80	95	90	70		75		90	84	100		97	89	77		<i>Escherichia</i> spp. (99)
	MRSA (67)	R	R	R	R	R	R		86	91	15	98		R	R	R		91	100	MRSA (67)
	MSSA (192)				100				81	97	73	99			100			96	100	MSSA (192)
	<i>Pseudomonas aeruginosa</i> (45)	R	R	R	R	93	R	88		R			88	93		93	98*	R		<i>Pseudomonas aeruginosa</i> (45)
	<i>Staphylococcus epidermidis</i> (29)				37				68	92	36	100			37				100	<i>Staphylococcus epidermidis</i> (29)
	All Enterobacterales (188)	41	72	55	54	92	89	76		70		86	87	99		96	85	78		All Enterobacterales (188)

Organism (# of isolates)

R = Intrinsically resistant.

% susceptible

spp = species

* = Due to breakpoint limitation % susceptible & intermediate shown for *Pseudomonas aeruginosa* only

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

▲ = Significantly <30 isolates means susceptible to outlier effect

Notes:

- Includes outpatients at MHN, MHC, Grandview, and PPRH emergency departments who were discharged from the emergency department as well as urgent care and freestanding emergency departments that are part of UCHHealth. Inpatient rehab is also included in this data.

Non-Susceptible Isolate Frequencies % (N)

All adults, All Sources, All Regional Locations

N/N → Erta/Mero [often mero same isolate as erta]

CRE = 0.97% (36)

27/1 *Enterobacter* spp.

5/1 *E. coli*

3/1 *K. pneumoniae*


1/0 *C. freundii*

MRSA = 29% (234)

VRE = 5.23% (23)

CRPA = 4.86% (12)

CRAsp = 0% (0)

Urine	 Southern Colorado Region OUTPATIENT Adult (Age ≥18) Antibiogram February 2024 – December 2024	Ampicillin	Amoxicillin/Clavulanic Acid (Augmentin)	Ampicillin/Sulbactam (Unasyn)	Cefazolin	Cefepime	Ceftriaxone	Ciprofloxacin*	Gentamicin †	Levofloxacin	Meropenem	Nitrofurantoin	Oxacillin	Piperacillin/Tazobactam (Zosyn)	Tobramycin	Trimethoprim/Sulfamethoxazole (Bactrim)	Vancomycin	
	<i>Citrobacter</i> spp. (87)	R	28	31		96	86	93	97	95		71		88	96	93		<i>Citrobacter</i> spp. (87)
	<i>Enterobacter</i> spp. (118)	R	R	R	R	96	76	84	100	94	100	23		81	98	94		<i>Enterobacter</i> spp. (118)
	<i>Enterococcus faecalis</i> (157)	99			R	R	R			94		100	R			R	99	<i>Enterococcus faecalis</i> (157)
	<i>Escherichia</i> spp. (1917)	61	89	67	91	95	94	74	92	86	99	97		98	92	82		<i>Escherichia</i> spp. (1917)
	<i>Klebsiella</i> spp. (420)	R	94	79	94	95	94	87	96	94	100	60		95	96	90		<i>Klebsiella</i> spp. (420)
	<i>Proteus mirabilis</i> (96)	83	98	83	91	97	95	80	86	86	100	R		100	87	89		<i>Proteus mirabilis</i> (96)
	<i>Pseudomonas aeruginosa</i> (82)	R	R	R	R	96	R	85		79	96	R		92	99*	R		<i>Pseudomonas aeruginosa</i> (82)
	All Enterobacterales (2553)	48	85	65	92	95	93	77	93	88	99	84		97	93	84		All Enterobacterales (2553)

Organism (# of isolates)
R = Intrinsically resistant.

% susceptible
spp = species

* = Due to breakpoint limitation % susceptible & intermediate shown for *Pseudomonas aeruginosa* only
† = For synergy for gram-positive infections, not appropriate as monotherapy for gram-positives.

Notes:

- 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 outpatients at MHN, MHC, Grandview, and PPRH emergency departments who were discharged from the emergency department as well as urgent care and freestanding emergency departments that are part of UCHealth. Inpatient rehab is also included in this data.

Non-Susceptible Isolate Frequencies % (N) All adults, All Sources, All Regional Locations N/N → Erta/Mero [often mero same isolate as erta]

CRE = 0.97% (36)	MRSA = 29% (234)
27/1 <i>Enterobacter</i> spp.	VRE = 5.23% (23)
5/1 <i>E. coli</i>	CRPA = 4.86% (12)
3/1 <i>K. pneumoniae</i>	CRAsp = 0% (0)
1/0 <i>C. freundii</i>	

MDRO PROTOCOL: An automatic infectious disease consult will occur at MHN, MHC, and GVH for **CRE/CRPA/CRAB/CRO/C. auris** from **ANY site** and **blood specimens positive for S. aureus, S. lugdunensis, Enterococcus, or Yeast** in inpatient adult patients age 15 and over. Unless there are extenuating circumstances, the patient will be seen within 24 hours.

Urine Culture Reflex Guidance (Outpatient):

- 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
<i>Bacteroides fragilis</i>	84	96	100	93	26	100
<i>B. fragilis</i> group	74	94	70	95	33	100
<i>Clostridium perfringens</i>	100	100	-	100	83	100
<i>Fusobacterium</i> spp	100	96	-	100	77	95

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

- = no data available GPC = Gram Positive Cocci

Gram-Positive Inducible Resistance: All ages/sources/locations:
2023 Grp B Strep Clinda = 48% sensitive, 14% of the total resistance was inducible from 64 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.

Blood Cultures (Outpatient) Frequency of Pathogen Isolation:

- | | |
|-------------------------------|---|
| 1. <i>E. coli</i> (47) | 5. <i>Klebsiella</i> spp (7) |
| 2. MSSA (16) | 6. MRSA (6) |
| 3. <i>K. pneumoniae</i> (12) | 7/8. <i>Enterobacter</i> spp., <i>P. aeruginosa</i> |
| 4. <i>S. epidermidis</i> (10) | (5 each) |

Types of Isolation and Associated Organisms

Isolation	Required PPE	Organisms/ Diseases (active or r/o)	Comments
Contact	Gowns & gloves	MRSA, VRE, MDROs and draining abscesses	MRSA can be cleared with nares/axilla/groin cultures.
Special Contact	Gowns & gloves, soap & water for hand hygiene	<i>C. diff</i>	Isolate until discontinued by physician or Infection Preventionist.
		Diapered or incontinent pts with: Shigella, Shigella, & Norovirus	Isolate for duration of illness.
Droplet	Mask, eye protection rec'd; gowns & gloves as necessary	Influenza	Isolate for 7 days from onset of sx or 24 hrs after resolution of fever & resp sx whichever is longer.
		<i>Neisseria meningitidis</i> , meningitis	Isolation until pt on abxs for 24 hrs. Viral or aseptic meningitis → Standard precautions.
Airborne	PAPR or N95, gowns & gloves as needed per standard precaution	Tuberculosis	3 negative AFB AND 2 negative PCR required to rule out.
		Varicella (Chickenpox)	Airborne/contact until lesions dry and crusted over.
		Varicella Zoster (Shingles)	Airborne/contact for immunocomp'd pts or disseminated shingles infection. For non-immunocomp'd pts and/or shingles confined to one area on body → Standard precautions.
Droplet/ Contact Peds Units	Gowns, gloves, & mask	RSV, Enterovirus, Acute respiratory illness, Bronchiolitis	Isolate for duration of illness.

Questions? Possible Employee Exposure?

Call Infection Prevention at 719-365-6612

For more information search, "isolation guidelines" on The Source



Southern Colorado Region

OUTPATIENT Adult (Age ≥18) Antibiogram

February 2024 – December 2024

MICROBIOLOGY

719-365-5686

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