

2011 ANTIBIOGRAM

**University of Alberta Hospital and the
Stollery Children's Hospital**

**Medical Microbiology
Department of Laboratory Medicine and Pathology**



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Introduction

The antibiogram is an annual cumulative report of the antimicrobial susceptibility rates of common microbial pathogens to antimicrobials available on the hospital formulary. This report represents the local microbial epidemiology of the University of Alberta (UAH), Stollery Children's Hospital, and the Cross Cancer Institute (CCI), and is intended to be used as a resource to direct empiric antimicrobial therapy.

Antibiograms are generated by the compilation of susceptibility results from all 'first' clinical isolates of a specific pathogen recovered from an individual patient per calendar year. That is, only the first isolate within a 14-day period, regardless of specimen type or body site, is selected for analysis. The rationale for this referral period is based on the need to represent 'wild-type' susceptibility profiles and avoid over-representing antimicrobial resistance that may develop *de novo* during a patient's prolonged hospital stay. Susceptibility rates for patient groups (ie. age or ward location) represented by less than 30 isolates of a pathogen are not calculated, with several exceptions, due to the limited statistical significance and interpretive value.

This antibiogram handbook contains summary data for 2011 and notable resistance trends over several years.

A tremendous amount of effort goes into the creation of this document each year and the effort of the entire medical microbiology technologist staff is truly appreciated. We would also like to acknowledge Dr. Darren Hudson, UAH, for his assistance with the antibiogram data synthesis.

The antibiogram is available in PDF format at <http://www.albertahealthservices.ca/3294.asp> or Google 'UAH Antibiogram'. Alternatively, users can access a web-based application for quick reference at <http://www.antibiogram.ca/>.

Inquiries and feedback may be directed to Dr. Jeff Fuller, Department of Laboratory Medicine and Pathology, at jeff.fuller@albertahealthservices.ca.

Antibiogram Resistance Trends

Enterobacteriaceae:

Enterobacter, *Citrobacter*, and *Serratia* species may develop resistance to all β -lactams except for carbapenems during prolonged β -lactam therapy. These pathogens are also intrinsically resistant to ampicillin, cefazolin, and cefuroxime.

The extended-spectrum β -lactamase (ESBL) resistance phenotype confers resistance to all third-generation cephalosporins and, in many cases, piperacillin-tazobactam. ESBL-positive *Escherichia coli* isolation rates have remained relatively stable at ~5% since 2007. In 2011, the cross-resistance rates for ESBL-positive *E. coli* to the quinolones, aminoglycosides, and trimethoprim-sulfamethoxazole were 87%, 38%, and 66%, respectively.

Klebsiella ESBL recovery rates are low and have remained between 2.0% and 4.5% since 2007. Similar to *E. coli* ESBL, resistance rates to other antibiotic classes are characteristically high but the overall annual recovery is low (n=23).

Enterococcus species:

Resistance rates in clinically relevant enterococci have not changed significantly over the last five years. However, outbreaks of vancomycin resistant enterococcus (VRE) colonization increase the risk of serious infections. Identification of enterococci to the species level is only performed for sterile site isolates but vancomycin susceptibility is confirmed for ALL enterococcus isolates, regardless of specimen site.

***Pseudomonas aeruginosa*:**

Resistance rates in *P. aeruginosa* have remained unchanged for over six years of surveillance in patients with and without cystic fibrosis and in both adult and paediatric populations. Resistance in 2011 was 14% to ceftazidime, 25% to ciprofloxacin, 26% to gentamicin, 20% to imipenem, 13% to meropenem, and 14% to piperacillin.

Staphylococcus aureus:

Resistance and isolation rates of *S. aureus* (ie. MSSA) and methicillin-resistant *S.aureus* (MRSA) have remained relatively unchanged over the last several years. The rate of MRSA detection relative to all *S. aureus* has remained at ~20% since 2009.

Streptococcus pneumoniae:

Susceptibility interpretations of certain β -lactams for pneumococci are reported in several categories to account for the pharmacodynamics in cases of meningitis (M), non-meningeal (NM) infections, or oral penicillin V therapy (PO). In 2011, resistance rates for meningeal and non-meningeal infections were 24% and 6% for penicillin, and 16% and 11% for ceftriaxone, respectively, and have increased 2-fold from 2010. Note, these rates do not reflect actual cases of pneumococcal meningitis.

Candida species:

C. albicans and *C. glabrata* comprise more than 80% of all *Candida* isolated from sterile-sites. This has remained unchanged since 2005 when UAH yeast susceptibility results were first published. Azole resistance is notable for both of these species.

Medically Relevant Pathogens Based on Gram Morphology

Gram-negative bacilli		
Lactose Fermenters	Non-lactose Fermenters	Glucose Non-fermenters
<i>Escherichia coli</i>	<i>Serratia marcescens</i>	<i>Pseudomonas aeruginosa</i>
<i>Klebsiella pneumoniae</i>	<i>Proteus mirabilis</i>	<i>Pseudomonas</i> species
<i>Klebsiella oxytoca</i>	<i>Morganella morganii</i>	<i>Stenotrophomonas maltophilia</i>
<i>Enterobacter cloacae</i>	<i>Aeromonas</i> species	<i>Acinetobacter baumannii</i> complex
<i>Citrobacter freundii</i> complex	<i>Providencia rettgeri</i>	<i>Achromobacter</i> species
<i>Enterobacter aerogenes</i>	<i>Providencia stuartii</i>	<i>Burkholderia cepacia</i>
<i>Citrobacter koseri</i>	<i>Salmonella</i> species	<i>Chryseobacterium</i> species

Gram-positive Cocci	
Gram-positive Cocci in Chains	Gram-positive Cocci in Clumps
<i>Enterococcus</i> species <i>Streptococcus</i> species, including: <i>Streptococcus pyogenes</i> (Group A) <i>Streptococcus agalactiae</i> (Group B) <i>Streptococcus pneumoniae</i> Viridans group streptococci <i>Streptococcus anginosus</i> group	<i>Staphylococcus aureus</i> <i>Staphylococcus</i> species, coagulase-negative <i>Staphylococcus lugdunensis</i> <i>Micrococcus</i> species <i>Aerococcus</i> species <i>Rothia mucilagenosus</i>

Abbreviation Glossary for Antimicrobials

Antimicrobial	Abbreviation	Antimicrobial	Abbreviation
Amikacin	AMK	Gentamicin Synergy	GM500
Ampicillin	AMP	Imipenem	IMI
Amphotericin B	AMB	Levofloxacin	LEV
Cefazolin	FAZ	Linezolid	LNZ
Ceftriaxone	CRO	Meropenem	MERO
Ceftazidime	CAZ	Micafungin	MICA
Cefuroxime	CXM	Nitrofurantoin	NIT
Ciprofloxacin	CIP	Penicillin	PEN
Clindamycin	CLIN	Piperacillin	PIP
Cloxacillin	CLOX	Tetracycline	TET
Doxycycline	DOXY	Tobramycin	TOB
Erythromycin	ERY	Trimethoprim-sulfamethoxazole	SXT
Fluconazole	FLUC	Vancomycin	VAN
Gentamicin	GEN	Voriconazole	VORI

Antibiogram Tables

<i>Acinetobacter baumannii</i> complex							
All Specimen Sources		CAZ	CIP	GEN	IMI	TOB	SXT
ALL Ages	% SUS	--	--	--	--	--	--
	# SUS	19	20	19	20	21	19
	# TESTED	23	23	23	23	23	23

<i>Bacteroides fragilis</i> group					
All Specimen Sources		A/C	CLIN	IMI	METRO
CF Patients	% SUS	95	59	100	97
ALL Ages	# SUS	42	26	44	43
	# TESTED	44	44	44	44

<i>Citrobacter freundii</i> complex									
All Specimen Sources		AMP	FAZ	CRO	CIP	GEN	MERO	NIT	SXT
ALL Ages	% SUS	0	0	84	97	99	99	90	88
	# SUS	0	0	85	98	100	100	91	89
	# TESTED	101	101	101	101	101	101	101	101
≥ 17 years	% SUS	0	0	77	97	100	98	90	91
	# SUS	0	0	73	81	83	82	75	76
	# TESTED	83	83	83	83	83	83	83	83

<i>Citrobacter koseri</i>								
All Specimen Sources		AMP	CRO	CIP	GEN	MERO	NIT	SXT
ALL Ages	% SUS	--	--	--	--	--	--	--
	# SUS	0	20	20	20	20	15	20
	# TESTED	20	20	20	20	20	20	20

Enterobacter, *Citrobacter*, and *Serratia* species may develop resistance to all β -lactams except for carbapenems during prolonged β -lactam therapy. These pathogens are also intrinsically resistant to ampicillin, ceftazidime, and cefuroxime.

<i>Enterobacter aerogenes</i>									
All Specimen Sources		AMP	FAZ	CRO	CIP	GEN	MERO	NIT	SXT
ALL Ages	% SUS	0	0	89	100	100	100	11	98
	# SUS	0	0	60	67	67	67	8	66
	# TESTED	67	67	67	67	67	67	67	67
≥ 17 years	% SUS	0	0	90	100	100	100	11	100
	# SUS	0	0	55	61	61	61	7	61
	# TESTED	61	61	61	61	61	61	61	61

<i>Enterobacter cloacae</i>									
All Specimen Sources		AMP	FAZ	CRO	CIP	GEN	MERO	NIT	SXT
All Patients ALL Ages	% SUS	0	0	74	88	95	99	28	86
	# SUS	0	0	134	160	172	180	51	156
	# TESTED	181	181	181	181	181	181	181	181
≥ 17 years	% SUS	0	0	73	86	96	99	28	84
	# SUS	0	0	113	133	147	152	44	130
	# TESTED	153	153	153	153	153	153	153	153
< 17 years	% SUS	--	--	--	--	--	--	--	--
	# SUS	0	0	21	27	25	28	7	26
	# TESTED	28	28	28	28	28	28	28	28

Enterobacter, *Citrobacter*, and *Serratia* species may develop resistance to all β -lactams except for carbapenems during prolonged β -lactam therapy. These pathogens are also intrinsically resistant to ampicillin, cefazolin, and cefuroxime.

<i>Escherichia coli</i> (including ESBLs)								
All Specimen Sources		AMP	CRO	CIP	GEN	MERO	NIT	SXT
All Patients ALL Ages	% SUS	50	91	69	89	99	94	70
	# SUS	1250	2266	1732	2213	2474	2346	1737
	# TESTED	2475	2475	2475	2475	2475	2473	2475
≥ 17 years	% SUS	50	90	64	89	99	94	70
	# SUS	986	1776	1269	1748	1961	1856	1388
	# TESTED	1963	1963	1963	1963	1962	1961	1963
< 17 years	% SUS	51	95	90	90	100	95	68
	# SUS	264	490	463	465	512	490	349
	# TESTED	512	512	512	512	512	512	512
UAH 3C3/3C4	% SUS	40	80	53	89	100	90	64
	# SUS	26	52	35	59	100	57	42
	# TESTED	66	66	66	66	66	64	66
CCI	% SUS	59	90	69	89	100	94	74
	# SUS	55	88	68	87	98	92	73
	# TESTED	98	98	98	98	98	98	98

<i>Escherichia coli</i> - ESBL Producers								
All Specimen Sources		AMP	CRO	CIP	GEN	MERO	NIT	SXT
ALL Ages	% SUS	0	0	13	62	99	83	34
	# SUS	0	0	20	92	146	123	50
	# TESTED	147	147	147	147	147	147	147
≥ 17 years	% SUS	0	0	11	65	99	84	33
	# SUS	0	0	15	85	129	110	43
	# TESTED	130	130	130	130	130	130	130

The extended-spectrum β -lactamase (ESBL) resistance phenotype confers resistance to all third-generation cephalosporins and, in many cases, piperacillin-tazobactam. ESBL-positive *Escherichia coli* isolation rates have remained relatively stable at ~5% since 2007. In 2011, the cross-resistance rates for ESBL-positive *E. coli* to the quinolones, aminoglycosides, and trimethoprim-sulfamethoxazole were 87%, 38%, and 66%, respectively.

<i>Klebsiella</i> species (Including ESBLs)								
All Specimen Sources		AMP	CRO	CIP	GEN	MERO	NIT	SXT
All Patients ALL Ages	% SUS	0	95	94	96	100	47	92
	# SUS	0	701	697	712	735	346	681
	# TESTED	735	735	735	735	735	735	735
≥ 17 years	% SUS	0	96	94	97	100	44	93
	# SUS	0	603	593	615	628	280	587
	# TESTED	628	628	628	628	628	628	628
< 17 years	% SUS	0	91	97	90	100	61	87
	# SUS	0	98	104	97	107	66	94
	# TESTED	107	107	107	107	107	107	107
UAH 3C3/3C4	% SUS	0	99	82	99	100	32	94
	# SUS	0	45	37	45	46	15	43
	# TESTED	46	46	46	46	46	46	46
CCI	% SUS	0	97	92	97	100	40	95
	# SUS	0	39	37	39	40	16	38
	# TESTED	40	40	40	40	40	40	40

<i>Klebsiella</i> species - ESBL Producers								
All Specimen Sources		AMP	CRO	CIP	GEN	IMI	NIT	SXT
ALL Ages	% SUS	--	--	--	--	--	--	--
	# SUS	0	0	11	5	23	10	1
	# TESTED	23	23	23	23	23	23	23

The extended-spectrum β -lactamase (ESBL) resistance phenotype confers resistance to all third-generation cephalosporins and, in many cases, piperacillin-tazobactam. *Klebsiella* ESBL recovery rates are low and have remained between 2.0% and 4.5% since 2007. Similar to *E. coli* ESBL, resistance rates to other antibiotic classes are characteristically high.

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<i>Haemophilus influenzae</i>				
All Specimen Sources		AMP	CXM	SXT
ALL Ages	% SUS	79	73	76
	# SUS	168	39	36
	# TESTED	212	53	47
≥ 17 years	% SUS	76	70	74
	# SUS	112	26	26
	# TESTED	146	37	35

<i>Morganella morganii</i>									
All Specimen Sources		AMP	FAZ	CRO	CIP	GEN	MERO	NIT	SXT
ALL Ages	% SUS	0	0	88	80	92	100	0	69
	# SUS	0	0	56	51	58	63	0	44
	# TESTED	63	63	63	63	63	63	63	63
≥ 17 years	% SUS	0	0	91	81	95	100	0	68
	# SUS	0	0	44	39	46	48	0	33
	# TESTED	48	48	48	48	48	48	48	48

<i>Proteus mirabilis</i>									
All Specimen Sources		AMP	FAZ	CRO	CIP	GEN	MERO	NIT	SXT
ALL Ages	% SUS	0	0	98	75	97	100	0	75
	# SUS	0	0	191	147	189	194	0	147
	# TESTED	194	194	194	194	194	194	194	194
≥ 17 years	% SUS	0	0	98	72	98	100	0	74
	# SUS	0	0	168	123	167	170	0	126
	# TESTED	170	170	170	170	170	170	170	170

<i>Pseudomonas aeruginosa</i>									
All Specimen Sources		AMK	CAZ	CIP	GEN	IMI	MERO	PIP	TOB
All Patients	% SUS	78	86	75	74	80	87	86	89
	# SUS	830	921	800	789	851	926	917	952
	# TESTED	1060	1065	1066	1066	1062	1064	1066	1065
ALL Ages	% SUS	77	85	71	73	79	85	85	89
	# SUS	670	747	624	642	686	747	747	782
	# TESTED	865	871	871	871	867	869	871	871
≥ 17 years	% SUS	82	89	90	75	84	91	87	87
	# SUS	160	174	176	147	165	179	170	170
	# TESTED	195	194	195	195	195	195	195	194
< 17 years	% SUS	93	86	75	81	81	86	86	93
	# SUS	604	562	490	531	529	558	564	607
	# TESTED	646	649	649	649	646	648	649	649
Non-CF Patients	% SUS	92	85	72	81	79	83	85	93
	# SUS	500	463	391	441	429	454	466	505
	# TESTED	539	542	542	542	539	541	542	542
≥ 17 years	% SUS	97	92	92	84	93	97	91	95
	# SUS	104	99	99	90	100	104	98	102
	# TESTED	107	107	107	107	107	107	107	107
< 17 years	% SUS	54	86	74	61	77	88	84	82
	# SUS	226	359	310	258	322	368	353	345
	# TESTED	414	416	417	417	416	416	417	416
CF Patients	% SUS	52	86	70	61	78	89	85	84
	# SUS	170	284	233	201	257	293	281	277
	# TESTED	326	329	329	329	328	328	329	329
≥ 17 years	% SUS	63	86	87	64	73	85	81	78
	# SUS	56	75	77	57	65	75	72	68
	# TESTED	88	87	88	88	88	88	88	87
< 17 years	% SUS	92	72	63	80	55	64	71	91
	# SUS	53	42	36	46	32	37	41	53
	# TESTED	58	58	58	58	58	58	58	58
UAH 3C3/3C4									

Resistance rates in *P. aeruginosa* have remained unchanged for over six years of surveillance in patients with and without cystic fibrosis and in both adult and paediatric populations. Resistance in 2011 was 14% to ceftazidime, 25% to ciprofloxacin, 26% to gentamicin, 20% to imipenem, 13% to meropenem, and 14% to piperacillin.

<i>Serratia marcescens</i>									
All Specimen Sources		AMP	FAZ	CRO	CIP	GEN	MERO	NIT	SXT
All Patients ALL Ages	% SUS	0	0	89	86	94	97	0	95
	# SUS	0	0	91	88	96	99	0	97
	# TESTED	102	102	102	102	102	102	102	102
≥ 17 years	% SUS	0	0	87	88	97	96	0	96
	# SUS	0	0	74	75	83	82	0	82
	# TESTED	85	85	85	85	85	85	85	85

Enterobacter, *Citrobacter*, and *Serratia* species may develop resistance to all β -lactams except for carbapenems during prolonged β -lactam therapy. These pathogens are also intrinsically resistant to ampicillin, cefazolin, and cefuroxime.

<i>Stenotrophomonas maltophilia</i>				
All Specimen Sources		DOXY	CAZ	SXT
All Patients ALL Ages	% SUS	77	36	96
	# SUS	267	125	332
	# TESTED	345	345	345
≥ 17 years	% SUS	74	43	95
	# SUS	183	107	237
	# TESTED	247	247	247
< 17 years	% SUS	85	18	96
	# SUS	84	18	95
	# TESTED	98	98	98

<i>Enterococcus</i> species (Including VRE)						
All Specimen Sources		AMP	GM500	LNZ	NIT	VAN
All Patients ALL Ages	% SUS	84	71	97	85	96
	# SUS	1397	1182	1586	1397	1614
	# TESTED	1648	1643	1622	1642	1670
≥ 17 years	% SUS	81	68	97	83	95
	# SUS	1093	914	1279	1104	1297
	# TESTED	1333	1328	1313	1327	1353
< 17 years	% SUS	96	85	99	93	100
	# SUS	304	268	307	293	317
	# TESTED	315	315	309	315	317
UAH 3C3/3C4	% SUS	61	60	96	65	75
	# SUS	38	38	60	41	47
	# TESTED	63	63	63	63	63
CCI	% SUS	81	57	96	78	93
	# SUS	49	35	59	48	57
	# TESTED	61	61	61	61	61

<i>Enterococcus faecalis</i>						
Blood specimens		AMP	GM500	LNZ	NIT	VAN
ALL Ages	% SUS	100	64	100	100	100
	# SUS	46	29	46	46	46
	# TESTED	46	46	46	46	46

<i>Enterococcus faecium</i>						
Blood specimens		AMP	GM500	LNZ	NIT	VAN
ALL Ages	% SUS	--	--	--	--	--
	# SUS	5	15	25	2	19
	# TESTED	25	25	25	25	25

Resistance rates in clinically relevant enterococci have not changed significantly over the last five years. However, outbreaks of vancomycin resistant enterococcus (VRE) colonization increase the risk of serious infections. Identification of enterococci to the species level is only performed for sterile site isolates but vancomycin susceptibility is confirmed for ALL enterococcus isolates, regardless of specimen site.

<i>Staphylococcus aureus</i> (Including MRSA)									
All Specimen Sources		CLIN	CLOX	ERY	LNZ	NIT	SXT	TET	VAN
All Patients ALL Ages	% SUS	74	83	66	100	98	95	93	100
	# SUS	1445	1609	1279	1923	1895	1839	1804	1925
	# TESTED	1928	1926	1928	1923	1924	1930	1923	1925
≥17 years	% SUS	73	82	65	99	98	95	94	100
	# SUS	1086	1215	966	1467	1446	1408	1381	1470
	# TESTED	1474	1471	1474	1468	1468	1474	1468	1470
< 17 years	% SUS	79	86	68	99	98	92	94	100
	# SUS	359	394	313	454	449	431	423	455
	# TESTED	454	455	454	455	456	456	455	455
UAH 3C2	% SUS	87	90	87	100	100	100	100	100
	# SUS	28	29	28	32	32	32	32	32
	# TESTED	32	32	32	32	32	32	32	32
UAH 3C3/3C4	% SUS	78	83	74	100	99	94	91	100
	# SUS	110	117	104	141	140	133	129	141
	# TESTED	141	141	141	141	141	141	141	141
CCI	% SUS	75	85	70	96	89	100	96	100
	# SUS	48	54	45	64	61	64	61	64
	# TESTED	64	64	64	64	64	64	64	64

Resistance and isolation rates of *S. aureus* (ie. MSSA) and methicillin-resistant *S.aureus* (MRSA) have remained relatively unchanged over the last several years. The rate of MRSA detection relative to all *S. aureus* has remained at ~20% since 2009.

<i>Staphylococcus</i> species, coagulase-negative							
All Specimen Sources		CLIN	CLOX	ERY	NIT	SXT	VAN
All Patients ALL Ages	% SUS	52	39	39	99	57	100
	# SUS	199	143	148	367	214	377
	# TESTED	378	364	378	369	375	377
≥ 17 years old	% SUS	49	35	39	99	53	100
	# SUS	146	101	117	288	158	296
	# TESTED	297	283	297	289	296	296
< 17 years old	% SUS	65	51	38	98	70	100
	# SUS	53	42	31	79	56	81
	# TESTED	81	81	81	80	79	81

<i>Staphylococcus lugdunensis</i>							
All Specimen Sources		CLIN	CLOX	ERY	NIT	SXT	VAN
ALL Ages	% SUS	87	98	88	100	100	100
	# SUS	76	85	77	87	87	87
	# TESTED	87	87	87	87	87	87
≥ 17 years	% SUS	88	98	88	100	100	100
	# SUS	67	74	67	76	76	76
	# TESTED	76	76	76	76	76	76

Viridans Group Streptococci				
All Specimen Sources		CRO	PEN	VAN
ALL Ages	% SUS	97	66	100
	# SUS	119	81	122
	# TESTED	122	122	122
≥ 17 years	% SUS	98	70	100
	# SUS	89	63	90
	# TESTED	90	90	90
< 17 years	% SUS	93	56	100
	# SUS	30	18	32
	# TESTED	32	32	32

<i>Streptococcus anginosus</i> group				
All Specimen Sources		CRO	PEN	VAN
ALL Ages	% SUS	100	97	100
	# SUS	39	38	39
	# TESTED	39	39	39

<i>Streptococcus pneumoniae</i>		M	NM			M	NM	PO			
All Specimen Sources		CRO	CRO	DOXY	ERY	LEV	PEN	PEN	PEN	SXT	VAN
All Patients ALL Ages	% SUS	84	89	80	72	99	76	94	76	81	100
	# SUS	81	85	104	103	168	140	172	193	116	180
	# TESTED	96	95	129	143	169	183	182	182	143	180
≥ 17 years old	% SUS	82	90	79	70	99	76	95	76	81	100
	# SUS	51	56	79	74	128	102	127	102	86	134
	# TESTED	62	62	100	105	129	133	133	133	105	134
< 17 years old	% SUS	88	87	86	76	100	76	91	75	78	100
	# SUS	30	29	25	29	40	29	45	37	30	46
	# TESTED	34	33	30	38	40	50	49	49	38	46

M, meningitis; NM, non-meningitis; PO, oral administration.

Susceptibility interpretations of certain β -lactams for pneumococci are reported in several categories to account for the pharmacodynamics in cases of meningitis (M), non-meningeal (NM) infections, or oral penicillin V therapy (PO). In 2011, resistance rates for meningeal and non-meningeal infections were 24% and 6% for penicillin, and 16% and 11% for ceftriaxone, respectively, and have increased 2-fold from 2010. Note, these rates do not reflect actual cases of pneumococcal meningitis.

<i>Streptococcus pyogenes</i>				
All Specimen Sources		CLIN	ERY	PEN
ALL Ages	% SUS	81	79	100
	# SUS	40	39	42
	# TESTED	49	49	42

<i>Candida species</i>					
All Specimen Sources		AMB	FLUC	VORI	MICA
<i>C. albicans</i> ALL Ages	% SUS	100	93	92	100
	# SUS	91	85	84	91
	# TESTED	91	91	91	91
<i>C. glabrata</i> ALL Ages	% SUS	100	*	90	96
	# SUS	81		73	78
	# TESTED	81		81	81
<i>C. parapsilosis</i> ALL Ages	% SUS	--	--	--	--
	# SUS	22	22	22	22
	# TESTED	22	22	22	22

C. albicans and *C. glabrata* comprise more than 80% of all *Candida* isolated from sterile-sites. This has remained unchanged since 2005 when UAH yeast susceptibility results were first published. Azole resistance is notable for both of these species. * Not recommended for empiric therapy.