Washington State Department of Health
ELABORATIONS
News and Issues for Washington's Clinical Laboratories

Volume XXIII Issue 6 November/December 2022

Antibiotic-Resistant Organism Updates 2023

Antimicrobial Resistant Organisms Surveillance UpdatesThe Washington State Department of Health performs surveillance for highly antimicrobial resistant organisms. Some of these isolate-types are mandated to be submitted statewide, and some are requested to be submitted by sentinel labs on a voluntary basis. This article describes updates to surveillance for antibiotic resistant organisms, as of November 2022.

Since 2016, the Washington State Department of Health Public Health Laboratories (WA PHL) has served as the Antimicrobial Resistance (AR) Laboratory for the western US. The AR Lab Network is funded by Centers for Disease Control and Prevention (CDC) and performs multidrug resistant organism (MDRO) surveillance and advanced antibiotic resistance testing. Isolates submitted by clinical labs to the AR Lab Network West Regional Laboratory undergo identification, mechanism testing, and susceptibility testing.

The AR Lab performs the following antibiotic resistance testing on isolates and samples. (See Table 1, page 5)

SURVEILLANCE UPDATES

1. **Changes to the list of notifiable conditions are going into effect January 2023**

- Washington Administrative Code (WAC) 246-101 dictates which conditions are notifiable (must be reported to public health). WAC revisions go into effect January 1, 2023. *Candida auris* and Carbapenum-resistant *E.coli*, *Enterobacter spp.*, and *Klebsiella spp.* have been added to the list of notifiable conditions and will be mandated to be reported and isolates submitted, whereas until now, all reporting and submission has been voluntary. Please review revisions to the list of notifiable conditions, as well as report to public health and forward isolates, as required.

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Practice Guidelines

The following practice guidelines have been developed by the Clinical Laboratory Advisory Council. They can be accessed at the LQA website.

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Group B Streptococcus
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PSA
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2. Real-time PCR for the detection of OXA-variants in *Acinetobacter baumannii*, including OXA-23-like, OXA-24/40-like, OXA-58-like, and OXA-235-likeIn 2019, WA PHL validated the CDC-developed OXA-variant panel, which at the time included OXA-23-like, OXA-24/40-like, and OXA-58-like as targets. In Summer 2022, WA PHL validated an extended OXA-variant assay, which now includes OXA-235-like, in addition to the existing targets.

- These OXA-variants are associated with CRAB, all eligible CRAB isolates received will be tested on this PCR assay

3. Electronic Test Ordering and Reporting (ETOR) for requisition form creation and result retrieval.

- ETOR is used to create requisition forms electron ically and retrieve results via the online portal, as opposed to using fax.
- As of the end of 2022, ETOR can only be used for the submission of colonization screening (*C. auris* and CPO). However, in 2023 ETOR will be used for all testing (isolate and colonization screening swabs). Additional information will be disseminated at that time.
- Please contact ARLN@doh.wa.gov for more information on ETOR and use of ETOR for submission of colonization screening swabs.

ELABORATIONS is a free bi-monthly publication of the Washington State Department of Health (DOH) Public Health Laboratories (PHL) and Office of Laboratory Quality Assurance (LQA).

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4. COMING SOON: Whole Genome Sequencing (WGS) for *C. auris*

- As of November 2022, *C. auris* has not been reported in Washington State, but has been detected in Oregon, California and British Columbia, Canada (Please reference this map for additional information on national *C. auris* spread. As the AR Lab Network West Regional Lab, WA PHL tests *C. auris* isolates originating from the Western US.
- Currently, WA PHL is working with CDC to validate WGS for *C. auris*.

5. The ARLN test menu has recently been updated and should be used to access specimen collection and submission instructions and forms for all multidrug resistant organism testing (except tuberculosis). The ARLN test menu is an important resource for all clinical laboratories. CDC recommends that healthcare providers consider screening for:

- Carbapenemase-producing organisms in hospitalized patients who have been hospitalized in a foreign country within the prior 6 months
- *Candida auris* colonization in
  - Hospitalized patients who have been hospitalized in the prior 12 months in a region (internationally and nationally) with documented *Candida auris* transmission.; globally and US.
  - Any patient with a non-KPC carbapenemase
- *Candida auris* and carbapenemase-producing organism colonization in patients who have had healthcare contact with known cases.

Please contact your local health jurisdiction (LHJ) to arrange colonization screening.

6. CDC recommends that healthcare providers consider screening for

- Carbapenemase-producing organisms in hospitalized patients who have been hospitalized in a foreign country within the prior 6 months
- *Candida auris* colonization in
- Hospitalized patients who have been hospitalized in the prior 12 months in a region (internationally and nationally) with documented *Candida auris* transmission.; global and US.
- Any patient with a non-KPC carbapenemase
- *Candida auris* and carbapenemase-producing organism colonization in patients who have had healthcare contact with known cases.

Please contact your local health jurisdiction (LHJ) to arrange colonization screening.

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7. Expanded Antimicrobial Susceptibility Testing has been available at WA PHL since 2020. Healthcare providers and clinical laboratories can request ExAST to determine effectiveness of new-to-market antibiotics for treating infections caused by metallo-β-lactamase (MBL)-producing Enterobacterales.

- Eligible isolates undergo standard testing (see Table 1), as well as susceptibility testing for ceftazidime/avibactam, aztreonam, and aztreo nam/avibactam.
- Eligible isolates include Enterobacterales that:
- Test non-susceptible to all beta-lactams, including either ceftazidime/avibactam or meropenem/vaborbactam (these isolates may be MBL-producing isolates with few effective treatment options) OR
- Possess MBL genes (NDM, VIM, or IMP) confirmed by molecular test
- Turn-around-time is 3 business days
- Pre-approval is required, please contact ARLN@doh.wa.gov.

8. CDC recommends that clinical laboratories speciate all *Candida* isolates from invasive infections, and all *Candida* isolates from patients who have been hospitalized in the prior 12 months in an area with sustained *C. auris* transmission (see #6 above for details).

9. Several automated identification methods can misidentify *C. auris* as other rare *Candida* species. See Table 2 on page 6 for identification methods and *Candida* species that should be **suspected as *C. auris* and submitted to PHL for confirmatory testing**. Please identify the fungal identification method used in your lab and educate lab personnel regarding *Candida* species that should raise concern for *C. auris*.

10. **Gradient Strip *Neisseria gonorrhoeae* Antimicrobial Susceptibility Testing for suspected treatment failures**

- In partnership with the University of Washington Neisseria Reference Lab (UW NRL), the AR Lab Network can now provide additional testing for suspected gonorrhea treatment failures.
- Pre-approval is required before submitting isolates and patient samples. Please contact ARLN@doh.wa.gov for more information and to arrange testing.

SURVEILLANCE REMINDERS

All Washington labs should submit the following isolate-types to PHL:

- Carbapenem-resistant *E. coli*, *Klebsiella* species, and *Enterobacter* species
- Suspected or confirmed *Candida auris* isolates
- Carbapenem-resistant *Acinetobacter* species

In addition to submitting the isolate-types above, volunteer **sentinel labs (and other interested labs) are encouraged to submit one or more of the following isolate-types to PHL:**

- Carbapenem-resistant *Pseudomonas aeruginosa*
- Carbapenem-resistant *Citrobacter* species
- Carbapenem-resistant *Morganella*, *Proteus* and *Providencia* species (Note: These genera have intrinsic resistance to imipenem. Only submit those that are resistant to another carbapenem in addition to imipenem.)
- All *Candida* species EXCEPT *albicans*

Please contact ARLN@doh.wa.gov if your laboratory is interested in becoming a sentinel laboratory.

Table 3 on page 7 summarizes species and resistance criteria for laboratories submitting isolates for MDRO surveillance.

We thank laboratories for their diligence in reporting and submitting antibiotic resistant organisms to public health. The AR Lab Network will cover shipping costs associated with MDRO submission upon request. Please contact ARLN@doh.wa.gov if you are interested in sentinel laboratory participation or if you have any Questions/concerns regarding testing or shipping. Contact Kelly Kauber at kelly.kauber@DOH.wa.gov or by phone at 206-418-5500 for questions about admission- or surveillance-screening.

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SUMMARY OF AST AND AFST DATA

Background

The Washington State Department of Health Public Health Laboratories (WA PHL) provides antibiotic and antifungal susceptibility testing (AST and AFST) for isolates collected across the state in order to help monitor resistance trends. Antibiograms are a way to summarize this data to easily understand resistance to certain drugs for key organisms of interest. These antibiograms were assembled by a summer intern, Caitlin Drover, we thank her for her efforts and partnership on this project.

Test Methods Over Time

Since the inception of the AR Lab Network, a variety of testing AST/AFST methods have been used. For carbapenem-resistant organisms (CROs) and carbapenemase-producing organisms (CPOs), specific AST panels were previously used for each of 3 main multi-drug resistant organisms (MDROs) of interest: carbapenem-resistant Enterobacterales (CRE), carbapenem-resistant *Pseudomonas aeruginosa* (CRPA), and carbapenem-resistant *Acinetobacter baumannii* (CRAB). The panels included a small number of drugs (<10) and were in use starting in May 2017 through October 2018 for CRAB and CRPA, and through November 2021 for CRE genera. Due to the targeted nature and short duration of use, the CRAB AST and CRPA AST panels were excluded from this analysis. Expanded AST for hard-to-treat-infections (ExAST) is a specialized panel and is limited to qualifying CRE isolates. As a result of the specialized nature of this test, these data were excluded from this analysis. Please refer to Surveillance Updates, item 8 for additional information on ExAST.

In July 2018, the Sensititre Gram Negative GNX2F AST panel was implemented, this panel tested for 20 drugs[1] and was used for CRE, CRPA, and CRAB, excluding less common CRE genera , such as *Proteus* and *Morganella*. This panel was phased out in November of 2021 and replaced by the Sensititre Gram Negative GN7F panel. This panel includes 23 drugs[2] and is used for all CRE, CRPA, and CRAB isolates. Data from both the GNX2F and GN7F, as well as the limited CRE panel, were included in this analysis.

For *Candida*, a custom broth microdilution (BMD) panel was implemented in May 2017 and is still in use. All *Candida* isolates, excluding *Candida albicans*, are tested with this panel, which contains 9 antifungal drugs.[3]

Inclusion and Exclusion Criteria

The inclusion and exclusion criteria were informed by a combination of the timeline of AST panels available and guidelines set by the Clinical and Laboratory Standards Institute (CLSI) M39 and M100 documents.

For the CRO/CPO species, clinical isolates from Washington State (WA) submitters from July 1, 2018, through June 30, 2022 were included, with the exception of CRPA which had an inclusion start date of October 19, 2018 due to a testing panel transition. Species were excluded if the number of isolates was <30 in this analysis period, per Clinical Lab Standards Institute M39 guidelines.

For *Candida* species, clinical isolates from WA submitters from May 1, 2017, through June 30, 2022 were included. Species were excluded if the number of isolates was <30 in this analysis period.

Isolates from surveillance screening were removed, only clinical isolates were included in the antibiograms. De-duplication was done to ensure that only the first isolate from each unique patient was included.

After application of these criteria, the CRO/CPO genera/species included in this analysis include *Acinetobacter baumannii* complex, *Enterobacter cloacae* complex, *Escherichia coli*, *Klebsiella aerogenes*, *Klebsiella pneumoniae* group, *Morganella morganii*, *Proteus spp*. (*P. mirabilis, P. penneri, P. vulgaris*, and *P. vulgaris* group; grouped to get n>30), *Pseudomonas aeruginosa*, and *Serratia marcescens*. *Candida* species with enough isolates to include were *C. glabrata* and *C. parapsilosis*.

Results and Discussion

The antibiograms show the percent of organisms of a particular genus or species that were susceptible to the given antibiotic or antifungal. Organisms with higher susceptibility to a particular drug indicates that the drug may be a better treatment option than a drug to which the organism has lower susceptibility. Intrinsic resistance to a drug is indicated in the antibiograms below with a “R”. Table 3, page 7 includes all eligible CRO/CPO genera and species. Table 5, page 8 includes all eligible *Candida* species. For CRO/CPO surveillance, WA PHL only accepts isolates that are resistant to at least one carbapenem, as such submission bias may reduce generalizability to all isolates across Washington state. To bolster surveillance and better characterize resistance trend over time, we ask clinical labs to consider sentinel lab participation, please see “Surveillance Reminders” for additional information.

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Table 1: Isolation or Samples Solicited at Washington Antibiotic Resistance Lab and Testing Performed

Isolate/Sample Type	Testing Performed
Carbapenem-resistant Enterobacteriaceae (CRE)	• Species identification (ID) • Mechanism testing • Antibiotic susceptibility (AST) • Whole genome sequencing (WGS)*
Carbapenem-resistant *Acinetobacter baumannii* (CRAB)	• Species ID • Mechanism testing • AST • WGS*
Carbapenem-resistant *Pseudomonas aeruginosa* (CRPA)	• Species ID • Mechanism testing • AST • WGS*
Non-albicans *Candida* species	• Species ID • Antifungal susceptibility testing (AFST)
Carbapenemase-producing organism (CPO) colonization screening sample	• Mechanism testing • Species ID (only if a carbapenemase is detected)
Candida auris colonization screening sample	• *Candida auris* ID • AFST, by request only
Targeted surveillance colonization screening sample (i.e. culture-based screening for OXA-23-like, OXA-24/40-like, OXA-58-like, OXA-235-like in CRAB)	• Species ID • Mechanism testing

*WGS is not done on all isolates, only isolates eligible for sequencing (based on CDC sequencing criteria).

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Table 2. When to Suspect *Candida auris*

Identification Method	**Organism *C. auris* can be misidentified as:**
Vitek 2YST*	*Candida haemulonii* *Candida duobushhaemulonii*
API 20C	*Rhodotorua glutinis* (characteristic red color not present) *Candida sake*
API ID 32C	*Candida intermedia* *Candida sake* *Saccaromyces kluyveri*
BD Phoenix yeast Identification system	*Candida haemulonii* *Candida catenulata*
MicroScan	*Candida famata* *Candida guilliermondii*** *Candida lusitaniae*** *Candida parapsilosis***
RapID Yeast Plus	*Candida parapsilosis*

Table 2 is reproduced from CDC.

*There have been reports of *C. auris* being misidentified as *Candida lusitaniae* and *Candida famata* on VITEK 2. A confirmatory test, such as cornmeal agar, may be warranted for these species.
***C.guilliermondii, C. lustianiae*, and *C. parapsilosis* generally make pseudohyphae on cornmeal agar. If hyphae or pseudohyphae are not present on cornmeal agar, this should raise suspicion for *C. auris* as *C. auris* typically does not make hyphae or pseudohyphae. However, some *C. auris* isolates have formed hyphae or pseudohyphae. Therefore, it would be prudent to consider any *C. guilliermondii, C. lusitaniae*, and *C. parapsilosis* isolates identified on MicroScan or any *C. parapsilosis* isolates identified on RapID Yeast Plus as possible *C. auris* isolates and forward them for further identification.

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Table 3. Species, Resistance Criteria, and Submitters for Washington State MDRO Surveillance

Family or Genus	Antibiotic Resistance Criteria	Submitters
CR-Enterobacterales: *E. coli* *Klebsiella* spp. *Enterobacter* spp.	Resistant to ≥1 carbapenem: Minimum inhibitory concentrations MIC ≥4 mcg/ml for meropenem, imipenem, and doripenem, and ≥2 mcg/ml for ertapenem **OR** Kirby-Bauer zone of inhibition diameter ZID ≤19 mm for meropenem, imipenem, and doripenem, and ≤18 mm for ertapenem	All labs
CR-Acinetobacter spp.	Resistant to ≥1 carbapenem: MIC ≥8 µg/ml for any carbapenem **OR** Kirby-Bauer ZID ≤14 mm for doripenem and meropenem, and ≤18 mm for imipenem	All labs
Candida auris (suspected or confirmed)	None	All labs
All *Candida* spp. EXCEPT *albicans*[1]	None	Sentinel labs
CR-*Pseudomonas aeruginosa* spp.[1] (non-mucoid)	Resistant to ≥1 carbapenem excluding ertapenem: MIC ≥8 µg/ml for any carbapenem **OR** Kirby-Bauer ZID diameter ≤15 mm for any carbapenem **AND** Non-susceptible or resistant (I or R) to ceftazidime (MIC ≥16 µg/ml or Kirby-Bauer ZID ≤ 17 mm) and cefepime (MIC ≥16 µg/ml or Kirby-Bauer ZID ≤ 17 mm	Sentinel labs[2]
Carbapenem-resistant *Citrobacter* spp.	Resistant to ≥1 carbapenem: MIC ≥4 mcg/ml for meropenem, imipenem, and doripenem, and ≥ 2 mcg/ml for ertapenem **OR** Kirby-Bauer ZID ≤19 mm for meropenem, imipenem and doripenem, and ≤18 mm for ertapenem	Sentinel labs[2]
Carbapenem-resistant *Morganella, Proteus and Providencia* spp. [3]	Resistant to ≥ 1carbapenem ***in addition to imipenem***: MIC ≥4 mcg/ml for meropenem and doripenem, and ≥ 2 mcg/ml for ertapenem **OR** Kirby-Bauer ZID ≤19 mm for meropenem and doripenem, and ≤18 mm for ertapenem	Sentinel labs[2]

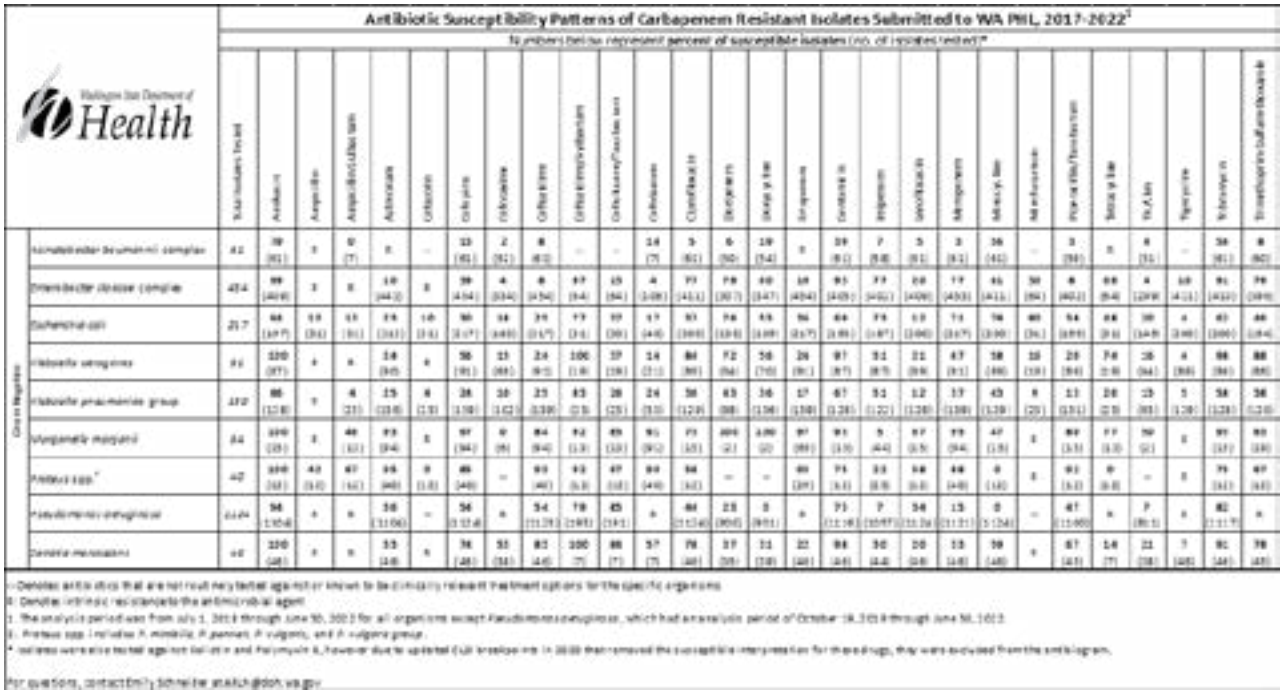
[1]If the number of each isolate-type for submission is too burdensome, sentinel labs may submit only a subset.

[2]All labs are encouraged to submit these isolate types but are not required to do so.

[3]Note: These genera may have intrinsic resistance to imipenem. Only those that are resistant to a carbapenem other than imipenem should be submitted.

continued on page 8

Table 4. Antibiotic Susceptibility Patterns of Carbapenum Resistant Isolates Submitted to WA PHL, 2017-2022



Antibiotic Susceptibility Patterns of Carbapenem Resistant Isolates Submitted to WA PHL, 2017-2022[1]

Numbers below represent percent of susceptible isolates (no. of isolates tested)*

Gram Negatives	Total Isolates Tested	Amikacin	Ampicillin	Ampicillin/Sulbactam	Aztreonam	Cefazolin	Cefepime	Cefotaxime	Ceftazidime	Ceftazidime/Avibactam	Ceftolozane/Tazobactam	Cefuroxime	Ciprofloxacin	Gentamicin	Meropenem	Piperacillin/Tazobactam	Tetracycline	Tigecycline	Tobramycin	Trimethoprim/Sulfamethoxazole
Acinetobacter baumannii complex	62	39 (63)	3	0 (7)	0	--	13 (21)	2 (3)	8 (13)	--	--	14 (23)	5 (8)	6 (10)	19 (31)	0	19 (31)	7 (11)	5 (8)	3 (5)	16 (26)	--	3 (50)	0	8 (13)	--	16 (26)	8 (13)
Enterobacter cloacae complex	424	99 (23.3)	3	0	18 (4.2)	3	39 (9.2)	4 (0.9)	8 (1.9)	67 (15.8)	15 (3.5)	6 (1.4)	77 (18.2)	79 (18.6)	40 (9.4)	18 (4.2)	91 (21.5)	77 (18.2)	28 (6.6)	17 (4.0)	91 (21.5)	50 (11.8)	8 (40.0)	8 (1.9)	4 (0.9)	18 (4.2)	91 (21.5)	79 (18.6)
Escherichia coli	217	44 (20.3)	13 (6.0)	13 (6.0)	14 (6.5)	14 (6.5)	30 (13.8)	18 (8.3)	19 (8.8)	73 (33.6)	19 (8.8)	17 (7.8)	93 (42.9)	74 (34.1)	43 (19.8)	56 (25.8)	84 (38.7)	73 (33.6)	13 (6.0)	73 (33.6)	74 (34.1)	40 (18.4)	54 (24.9)	28 (12.9)	10 (4.6)	4 (1.8)	43 (19.8)	44 (20.3)
Klebsiella aerogenes	31	100 (31)	0	0	24 (7.5)	0	56 (17)	13 (4.0)	24 (7.5)	100 (31)	17 (5.3)	14 (4.4)	84 (26)	72 (22)	56 (17)	26 (8.1)	87 (27)	81 (25)	21 (6.5)	47 (15)	58 (18)	10 (3.1)	20 (6.5)	74 (2.3)	16 (5.0)	4 (1.3)	88 (28)	88 (28)
Klebsiella pneumoniae group	237	86 (20.8)	1	4 (1.0)	25 (6.0)	4 (1.0)	26 (6.3)	10 (2.4)	23 (5.6)	83 (20.1)	26 (6.3)	24 (5.8)	56 (13.6)	63 (15.3)	36 (8.7)	17 (4.1)	67 (16.2)	51 (12.3)	12 (2.9)	17 (4.1)	43 (10.4)	9 (2.2)	13 (3.1)	26 (6.3)	13 (3.1)	1 (0.2)	58 (14.0)	36 (8.7)
Morganella morganii	84	100 (23.1)	1	48 (11.1)	93 (21.4)	1	97 (22.4)	0 (0.0)	84 (19.4)	92 (21.3)	85 (19.6)	91 (21.0)	71 (16.4)	100 (23.1)	97 (22.4)	93 (21.5)	5 (1.2)	97 (22.4)	95 (21.9)	47 (10.8)	1 (0.2)	89 (20.5)	77 (17.8)	50 (11.5)	1 (0.2)	91 (21.0)	93 (21.5)
Proteus spp.*	42	100 (12.1)	42 (5.0)	67 (8.1)	95 (11.5)	0 (0.0)	86 (10.4)	--	93 (11.3)	93 (11.3)	67 (8.1)	69 (8.4)	94 (11.4)	--	--	69 (8.4)	71 (8.6)	33 (4.0)	58 (7.0)	48 (5.8)	0 (0.0)	1 (0.1)	91 (11.0)	0 (0.0)	--	1 (0.1)	79 (9.6)	67 (8.1)
Pseudomonas aeruginosa	2,124	96 (204.0)	0	0	58 (123.6)	--	56 (119.4)	0	54 (115.2)	78 (166.3)	65 (138.6)	0	84 (179.4)	23 (49.0)	0 (0.0)	0	73 (155.8)	7 (14.9)	56 (119.4)	15 (32.1)	0 (0.0)	--	67 (143.0)	0	7 (15.0)	0	82 (174.9)	0
Serratia marcescens	48	100 (48.0)	0	0	33 (16.0)	0	76 (36.6)	31 (15.0)	83 (40.0)	100 (48.0)	88 (42.3)	57 (27.5)	79 (38.0)	37 (17.9)	31 (15.0)	22 (10.6)	88 (42.3)	50 (24.0)	20 (9.6)	33 (16.0)	59 (28.4)	0 (0.0)	87 (41.8)	14 (6.7)	22 (10.6)	7 (3.4)	91 (43.8)	78 (37.5)

-- Denotes antibiotics that are not routinely tested against or known to be clinically relevant treatment options for the specific organisms.

‡ Denotes intrinsic resistance to the antimicrobial agent.

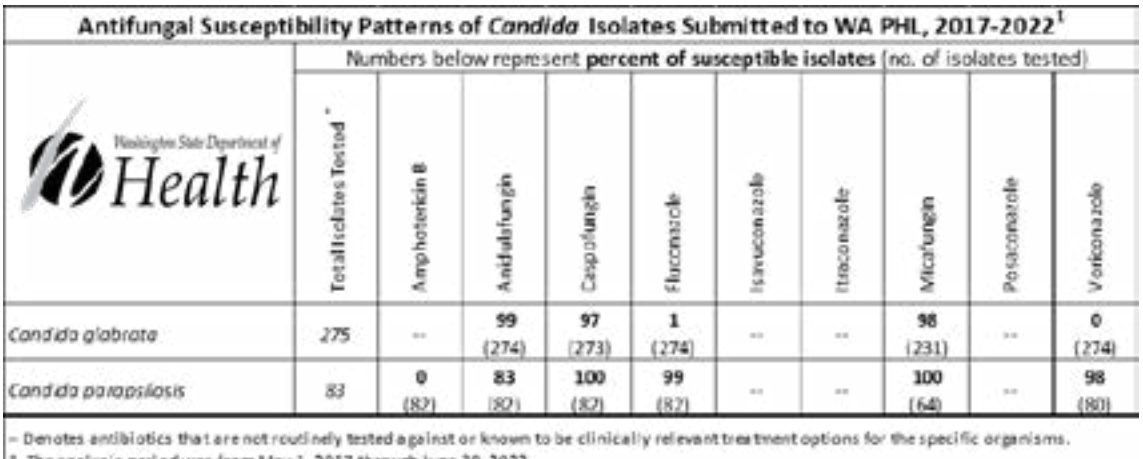
1. The analysis period was from July 1, 2017 through June 30, 2022 for all organisms except *Pseudomonas aeruginosa*, which had an analysis period of October 16, 2019 through June 30, 2022.

2. *Proteus* spp. includes *P. mirabilis*, *P. penneri*, *P. vulgaris*, and *P. vulgaris* group.

* Isolates were also tested against colistin and polymyxin B, however due to updated CLSI breakpoints in 2020 that removed the susceptible interpretation for these drugs, they were excluded from the antibiogram.

For questions, contact Emily Schneider at ARLN@doh.wa.gov

Table 5. Antifungal Susceptibility Patterns of Candida Isolates Submitted to WA PHL, 2017-2022



Antifungal Susceptibility Patterns of *Candida* Isolates Submitted to WA PHL, 2017-2022[1]

Numbers below represent **percent of susceptible isolates** (no. of isolates tested)

	Total Isolates Tested*	Amphotericin B	Anidulafungin	Caspofungin	Fluconazole	Isavuconazole	Itraconazole	Micafungin	Posaconazole	Voriconazole
Candida glabrata	275	--	**99** (274)	**97** (273)	**1** (274)	--	--	**98** (231)	--	**0** (274)
Candida parapsilosis	83	**0** (82)	**83** (82)	**100** (82)	**99** (82)	--	--	**100** (64)	--	**98** (80)

-- Denotes antibiotics that are not routinely tested against or known to be clinically relevant treatment options for the specific organisms.

1. The analysis period was from May 1, 2017 through June 30, 2022.

* *C. lusitaniae* had enough isolates to be included (>30), however there were no interpretations for any of the antifungals tested.

For questions, contact Emily Schneider at ARLN@doh.wa.gov

Calendar of Events

Training Classes:

2023 Joint Spring Seminar

April 20-23 Virtual

2023 Northwest Laboratory Symposium (NWMLS)

October (date TBA) Virtual

Contact information for the events listed above can be found on page 2. The Calendar of Events is a list of upcoming conferences, deadlines, and other dates of interest to the clinical laboratory community. If you have events that you would like to have included, please mail them to ELABORATIONS at the address on page 2. Information must be received at least one month before the scheduled event. The editor reserves the right to make final decisions on inclusion.

Washington State Department of Health

ELABORATIONS

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DOH 505-068 December 2022