

Oregon EIP Candidemia Surveillance

Center for Public Health Practice
Oregon Public Health Division

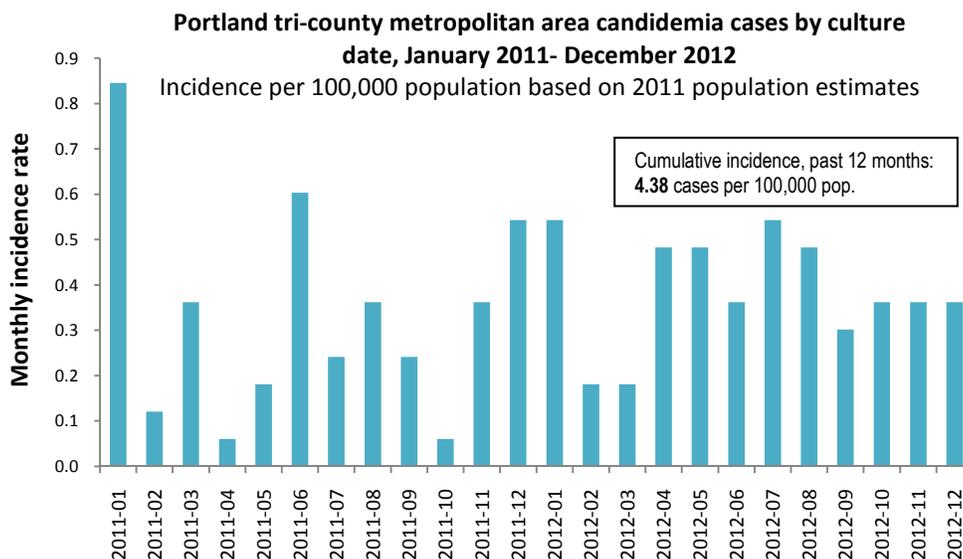


2011- 2012 Surveillance Summary

The Oregon Emerging Infections Program (EIP) conducts laboratory and population-based surveillance for *Candida* spp. bloodstream infections among residents of the tri-county (Clackamas, Multnomah, and Washington) Portland metropolitan area (2011 estimated population 1,656,775). Oregon is one of four EIP sites participating in this surveillance project, with these objectives:

- To determine how many *Candida* bloodstream infections happened in the surveillance area
- To describe people at risk for *Candida* bloodstream infections
- To identify which types of *Candida* cause illness
- To reveal trends of drug resistance

For more information about the EIP Candidemia surveillance project, see <http://www.cdc.gov/hai/eip/candida.html> or <http://public.health.oregon.gov/DiseasesConditions/CommunicableDisease/EmergingInfections/Pages/Healthcare-AssociatedInfectionsSurveillance.aspx#candidemia>.



Since surveillance began in January 2011, 138 *Candida* blood stream infections have been reported in the metropolitan area. 99% of these infections occurred in people who were hospitalized. To date, EIP surveillance officers have reviewed the medical records of 118 cases. Of these cases:

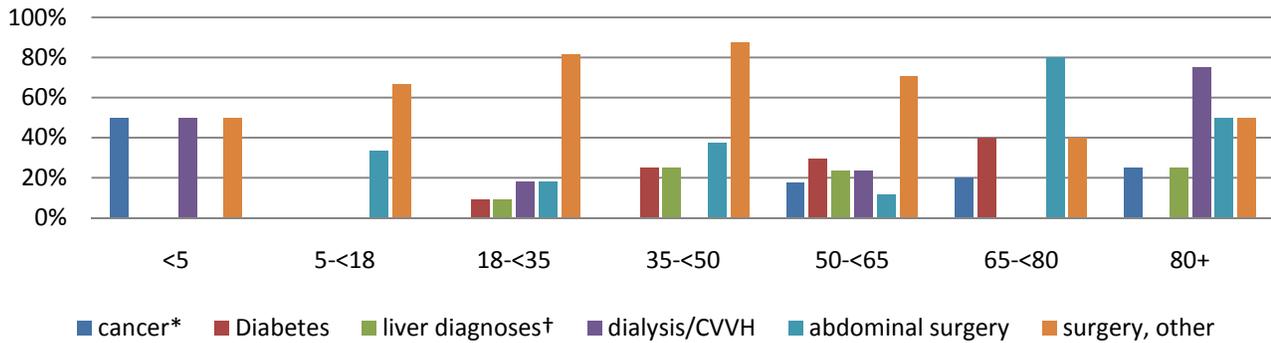
- **71%** had received systemic antibiotics in the 2 weeks prior to their candidemia episode
- **69 %** had had a central venous catheter in the previous 2 days
- **11%** had been neutropenic in the previous 2 days
- **48%** were admitted to an intensive care unit related to treatment of candidemia
- **26%** died while hospitalized or within 30 days of candidemia

Underlying medical conditions frequently reported among these cases include recent history of surgery (44%), diabetes (24%), liver diseases such as cirrhosis and hepatitis (18%), and recent history of cancer (16%).

Portland metro area candidemia cases, January 2011- December 2012, by age group and sex

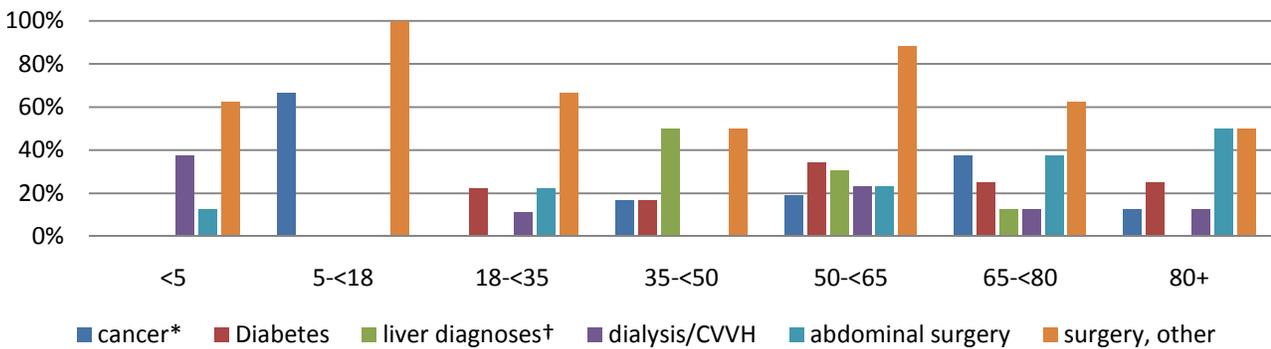
Age group	Female	Male	Total
<5 years	2 (3.3%)	11 (14.1%)	13
5-<18 years	3 (5.0%)	3 (3.9%)	6
18-<35 years	14 (23.3%)	10 (12.8%)	24
35-<50 years	11 (18.3%)	7 (9.0%)	18
50-<65 years	18 (30.0%)	29 (37.2%)	47
65-<80 years	7 (13.6%)	10 (12.8%)	17
80+ years	5 (8.3%)	8 (10.3%)	13
Total	60	78	138

Comorbidities in previous 90 days
among female cases with chart review completed (n= 50)

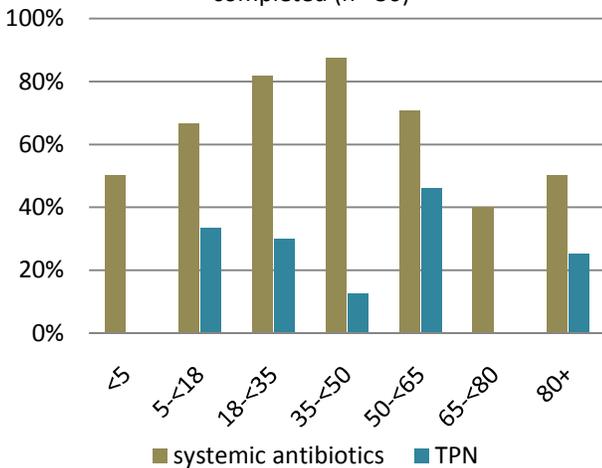


* Cancer diagnoses include leukemia, lymphoma, solid organ malignancy, and other cancers
† Liver diagnoses include cirrhosis, alcohol-related liver disease, viral hepatitis, and non-alcoholic fatty liver disease

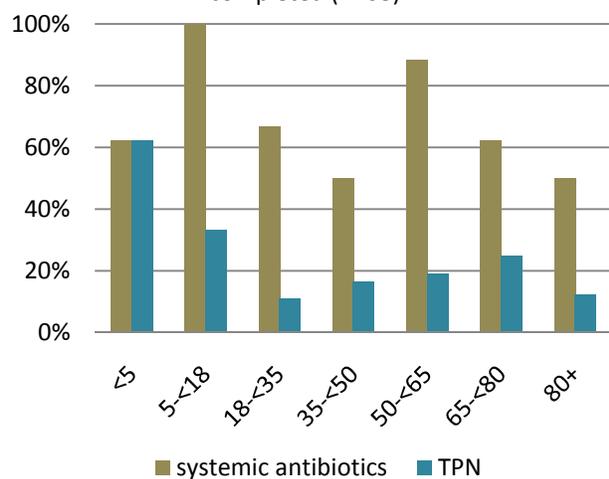
Comorbidities in previous 90 days
among male cases with chart review completed (n=68)



Exposures in previous 14 days
among female cases with chart review completed (n= 50)

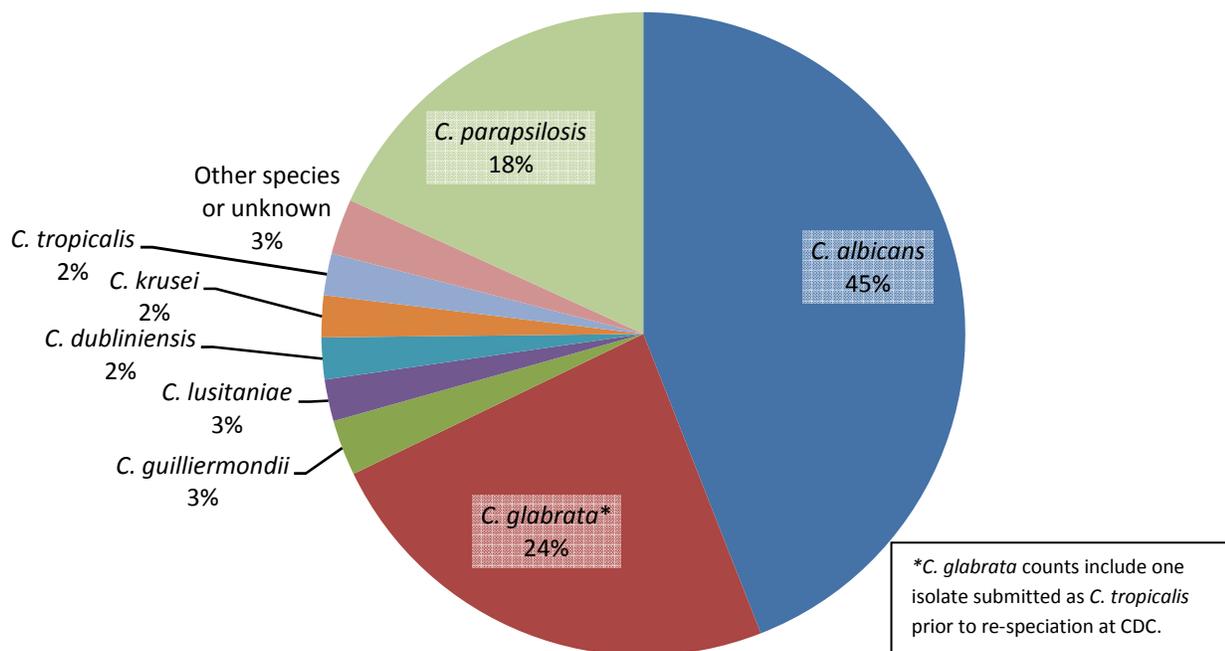


Exposures in previous 14 days
among male cases with chart review completed (n=68)



Candida blood isolates by species, 1/2011- 12/2012

(n=143 isolates)



Antifungal susceptibilities, *Candida* spp. blood isolates, January-September 2011 (n=33 isolates with testing performed)

	Anidulafungin ²	Caspofungin ²	Fluconazole ¹	Itraconazole ²	Flucytosine ²	Micafungin ²
sensitive	33/33 (100%)	33/33 (100%)	23/32 (71.9%)	24/33 (72.7%)	33/33 (100%)	33/33 (100%)
intermediate	0	0	1/32 (3.1%)	0	0	0
sensitive dose-dependent	0	0	6 (18.8%)	3/33 (9.1%)	0	0
resistant	0	0	2/32 (6.3%)	6/33 (18.2%)	0	0

1. Fluconazole: susceptibility table includes all tested isolates except *C. lusitaniae*

2. Anidulafungin, Caspofungin, Flucytosine, Itraconazole, and Micafungin: all tested isolates included in susceptibility table

The Clinical and Laboratory Standards Institute has not established antifungal susceptibility interpretive breakpoints for use with all species-drug combinations. For more information about interpreting antifungal susceptibility test results, see:

Pfaller, M.A., D. Andes, M.C. Arendrup, D.J. Diekema, A. Espinel-Ingroff, B.D. Alexander, S.D. Brown, V. Chaturvedi, C.L. Fowler, M.A. Ghannoum, E.M. Johnson, C.C. Knapp, M.R. Moutyl, L. Ostrosky-Zeichner, and T.J. Walsh. 2011. Clinical breakpoints for voriconazole and *Candida* spp. revisited: review of microbiologic, molecular, pharmacodynamic, and clinical data as they pertain to the development of species-specific interpretive criteria. *Diagnost. Microbiol. Infect. Dis.* **70**:330-343.

Antifungal susceptibilities by species

***C. albicans* blood isolates, January-September 2011 (n=19)**

	Anidulafungin	Caspofungin	Fluconazole	Itraconazole	Flucytosine	Micafungin
sensitive	19/19 (100%)	19/19 (100%)	19/19 (100%)	19/19 (100%)	19/19 (100%)	19/19 (100%)
intermediate	0	0	0	0	0	0
sensitive dose-dependent	0	0	0	0	0	0
resistant	0	0	0	0	0	0

***C. glabrata* blood isolates, January-September 2011 (n=6)**

	Anidulafungin	Caspofungin	Fluconazole	Itraconazole	Flucytosine	Micafungin
sensitive	6/6 (100%)	6/6 (100%)	4/6 (67%)	0	6/6 (100%)	6/6 (100%)
intermediate	0	0	0	0	0	0
sensitive dose-dependent	0	0	0	0	0	0
resistant	0	0	2/6 (33.3%)	6/6 (100%)	0	0

***C. parapsilosis* blood isolates, January-September 2011 (n=7)**

	Anidulafungin	Caspofungin	Fluconazole	Itraconazole	Flucytosine	Micafungin
sensitive	7/7 (100%)	7/7 (100%)	5/7 (71.4%)	5/7 (71.4%)	7/7 (100%)	7/7 (100%)
intermediate	0	0	0	0	0	0
sensitive dose-dependent	0	0	2 (28.6%)	2 (28.6%)	0	0
resistant	0	0	0	0	0	0