Elevated fluconazole MIC values (MIC >4 mg/L) were observed for isolates of Candida. Fluconazole resistance rates against the 4 most common species of Candida were 0.5% among C. albicans, 4% among C. glabrata, 1% among C. parapsilosis, and 1% among C. tropicalis. Resistance to anidulafungin (2.2%), caspofungin (3.4%), and micafungin (4.1%) was still uncommon, but these isolates are increasingly reported worldwide. In this study, we reviewed the geographic and temporal variations in the frequencies of IC due to the 5 most common species of Candida (C. albicans, C. glabrata, C. parapsilosis, C. tropicalis, and C. krusei) as part of a global surveillance initiative in 151 hospitals located in 41 countries (Table 1).

### Materials and Methods

- A total of 20,788 isolates of Candida spp. (37 species) were collected as part of a global surveillance initiative in 151 hospitals located in 41 countries (Table 1).
- Isolate identification was confirmed at the central monitoring laboratory (JMI Laboratories, North Liberty, Iowa, USA) using molecular and phenotypic methods.
- Susceptibility testing was performed for the evaluation of antifungal susceptibility of fluconazole, voriconazole, caspofungin, and micafungin using the CLSI reference broth microdilution method. Fluconazole has been tested since 1997, and the echinocandins have been tested since 2006.
- CSLY clinical breakpoints were used for the most common species of Candida, and a recently published epidemiological cutoff value (ECOFF) in CLSI/M24A9 was applied for less common Candida species.
- Quality control was performed as recommended in CLSI M27-A3.

### Results

- Among the 20,788 isolates of Candida submitted for testing from 1997 to 2016, 4.5% were resistant to fluconazole, 1.9% were resistant to voriconazole, 35.0% were susceptible to caspofungin, and 0.0% were susceptible to micafungin.
- Resistance to fluconazole was observed among 0.5% of C. albicans, 3.7% of C. parapsilosis, 3.3% of C. tropicalis, and 7.8% of C. glabrata (Table 2).

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  - **Clinical Breakpoints**: CSLY clinical breakpoints were used for the most common species of Candida, and a recently published epidemiological cutoff value (ECOFF) in CLSI/M24A9 was applied for less common Candida species.
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### Results

- **Among the 20,788 isolates of Candida submitted for testing from 1997 to 2016, 4.5% were resistant to fluconazole, 1.9% were resistant to voriconazole, 35.0% were susceptible to caspofungin, and 0.0% were susceptible to micafungin.**
- **Resistance to fluconazole** was observed among 0.5% of C. albicans, 3.7% of C. parapsilosis, 3.3% of C. tropicalis, and 7.8% of C. glabrata (Table 2). Fluconazole resistance rates against the 4 most common species of Candida are as follows:
  - **C. albicans**: 0.5% (15/3,142) were resistant to fluconazole; 40 (78.4%) were NS to all 3 and all were NS to at least 2 of the tested echinocandins.
  - **C. glabrata**: 6% (2,151) were resistant to fluconazole. Of the 2,151 resistant isolates, 51 (2.4%) were NS to all 3 echinocandins and 32 (1.5%) were NS to at least 2 of the tested echinocandins.
  - **C. parapsilosis**: 1% (30/3,728) were resistant to fluconazole. Of the 30 resistant isolates, 24 (80.0%) were NS to all 3 echinocandins and 3 (10.0%) were NS to at least 2 of the tested echinocandins.
  - **C. tropicalis**: 7.4% (289/3,921) were resistant to fluconazole. Of the 289 resistant isolates, 219 (75.9%) were NS to all 3 echinocandins and 44 (15.1%) were NS to at least 2 of the tested echinocandins.
- **Conclusion**: The frequencies of IC due to the 5 most common species of Candida (C. albicans, C. glabrata, C. parapsilosis, C. tropicalis, and C. krusei) are shown in Table 2.

### References

- **Wayne, PA: CLSI.**

### Authors

The authors wish to thank all the laboratories who submitted isolates for analysis. The authors also wish to thank the Centers for Disease Control and Prevention (CDC) for supporting the study.

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**Note:** The text continues with additional details on the study's methodology, results, and conclusions, which are not entirely captured in this summary. For a comprehensive understanding, please refer to the full document.