C. gattii Outbreak in North America

- An outbreak of C. gattii has been occurring since 1999 in British Columbia, Canada, and the United States Pacific Northwest.
- C. gattii infections in these areas have been characterized by underlying (non-HIV) disease among most patients, and a high frequency of respiratory disease.

Materials and Methods
- We conducted a survey of infective disease physicians in the Emerging Infections Network (EIN) to learn how infectious disease physicians in the US recognize, diagnose, and treat cryptococcal infections.
- The EIN is funded by the Centers for Disease Control and Prevention and sponsored by the Infectious Disease Society of America.
- During February-March 2011, web-based surveys were distributed to the 1,342 infectious disease physician members.
- ENF staff at the coordinating center sent the reminders; questions are described in the table.
- Region was defined by the four US census regions (Northeast, Midwest, South, and West) as depicted in figure 2.
- Responders not currently practicing in the US were excluded.
- Results were analyzed with SAS version 9.2.

Results
- Of the 1,342 physicians receiving the survey, 792 (59%) responded.
- Two hundred and eighty six (36%) respondents reported treating any patients with cryptococcosis during the past year; the remaining respondents were excluded from further analysis.

Key Points continued
- Nearly all respondents used cryptococcal antigen test (CrAg) for diagnosis.
- 73% commonly obtained a culture (with or without CrAg).
- 26% used a combination of tests (CrAg, microscopy, histopathology) that did not include culture.
- Approximately 1/3 of labs cannot distinguish C. neoformans from C. gattii, but this is similar across the US Census regions.
- The proportion of respondents treating cryptococcosis patients who lacked known risk factors for infection during the past five years was much higher in the West, compared with other areas of the US.

Conclusions
- Cryptococcal infections with characteristics similar to outbreak-associated C. gattii (respiratory symptoms) are patients with underlying disease may be occurring outside of the Western US, but they are likely relatively infrequent.
- Geographically nonspecific underdiagnosis of C. gattii may be occurring in the US due to laboratory limitations.
- To better understand the burden of C. gattii in the US, clinicians and labs should be made aware of the need to obtain cultures and methods of distinguishing cryptococcal species.

Limitations
- Results are limited to infectious disease physicians who are members of the EIN and responded to this survey, and are therefore likely not generalizable to all US health practitioners.

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Table: Physicians responses to EIN survey, Feb–Mar 2011.

Key Points
- Nearly all respondents were aware of the C. gattii outbreak.
- Many already considered Cryptococcus species a factor of interest in patient diagnosis or treatment, but this was more frequent among physicians in the West compared with other areas of the US.
- Higher proportions of respondents from the West, compared with the South, the Midwest, or the Northeast, reported that >25% of their cryptococcosis patients had pneumonia.

Figure 1: Distribution of respondents who have seen any cryptococcosis cases in the past year, and who have ever treated a patient with C. gattii infection, EIN survey, Feb–Mar 2011.

Figure 2: Proportion of survey respondents who reported treating a patient with C. gattii, among those who saw a patient with cryptococ cosis in the past year, by region, EIN survey, Feb–Mar 2011.

Figure 3: Risk factors seen in HIV-uninfected patients with cryptococcosis infections, EIN survey, Feb–Mar 2011.

Figure 4: Frequency of respiratory disease associated with C. gattii infections in The United States: A Survey of the Emerging Infections Network (EIN), February-March 2011.