Variability in Positive Culture Rates for *B. cepacia*

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The Northern New England Cystic Fibrosis Consortium

The NNECFC is a regional, voluntary consortium of more than 70 clinicians and researchers from the CF care centers in Maine, New Hampshire and Vermont. The mission of the group is to improve CF care and patient outcomes.

Goals

Examine national variability in *B. cepacia* rates.

Understand differences in regional laboratory practices.

Methods

We obtained a national dataset from the Cystic Fibrosis Foundation Patient Registry including all 19,513 patients seen at 111 US CF care centers in 1998.

We compared positive culture rates of *B. cepacia*.

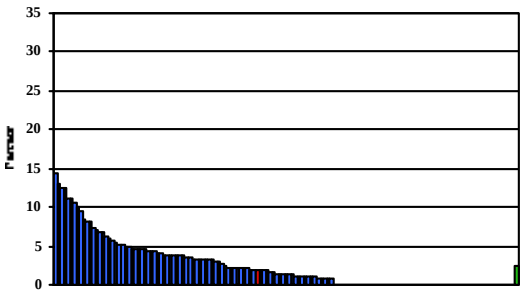
We convened a work group of microbiologists and clinicians from the five NNE Centers to look at regional differences in laboratory processes that could lead to this variability.

Results

Nationally, positive culture rates for *B. cepacia* varied from 0% to 14.3% for children and 0% to 31.1% for adults.

Positive *B. cepacia* Cultures
Comparison Between Centers - 1998

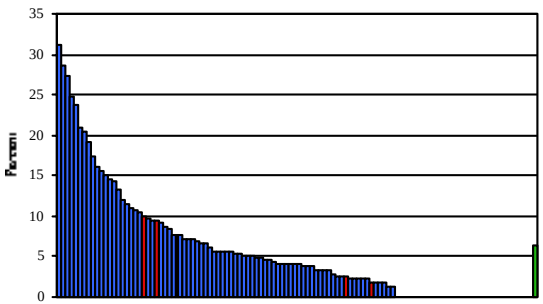
Children 0-17 years of age (n=8325)



Each bar represents one center.

Bar on the far right is the national mean.

Adults 18-30 years of age (n=6293)



Children: Median=1.6% Average=2.3%

Adults: Median=4.2% Average=6.4%

27.6% of centers reported no *B. cepacia*

3.9% of centers reported rates over 10%.

Potential Sources of Variability

1) Biologic differences in geographically diverse populations
2) Bacterial differences may affect transmission or virulence
3) Infection control practice differences in the inpatient and outpatient settings
4) Differences in suppression therapy
5) Process differences in sputum collection and pathogen isolation methods

•Culturing: Differences existed between the NNE labs in selective media used and in incubation times to isolate *B. cepacia*.

•Use of CFF *B. cepacia* Research Lab and Repository (BCRLR): Not all NNE labs were sending *B. cepacia* isolates for verification. Of those that did, frequency of sending isolates varied.

Conclusions

- Substantial differences exist both in our region and in the nation in rates of isolation of *B. cepacia* in the US based on CFF Registry data.
- Standardizing local laboratory protocols and the use of the BCRLR are important for better detection.
- Once laboratory processes for identification of *B. cepacia* are standardized we can better evaluate differences in clinical practice, infection control, and patient characteristics to identify which factors result in the lowest rates of *B. cepacia* colonization.