

The Northern New England CF Consortium

- The Northern New England Cystic Fibrosis Consortium (NNECF) is a regional, voluntary, multi disciplinary group of clinicians and health care professionals from the CF Centers in Maine, New Hampshire, and Vermont.
- Mission Statement: to improve continuously the quality, safety, effectiveness and costs of medical interventions in the care of cystic fibrosis patients and their families.



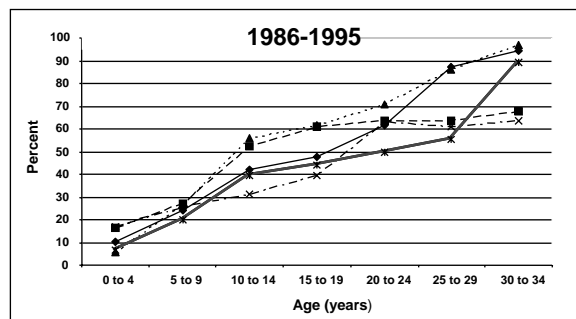
Goals

- Evaluate positive respiratory culture rates in all patients in Northern New England.
- Compare positive culture rates by Center.
- Link differences in processes to outcomes of care.

Methods

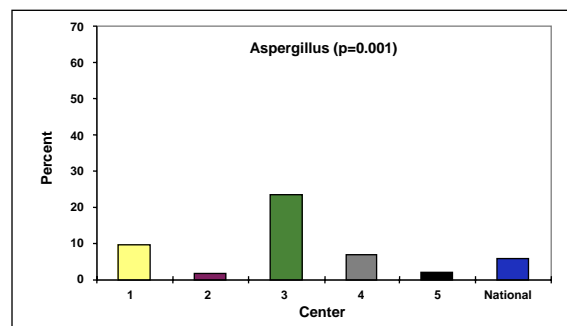
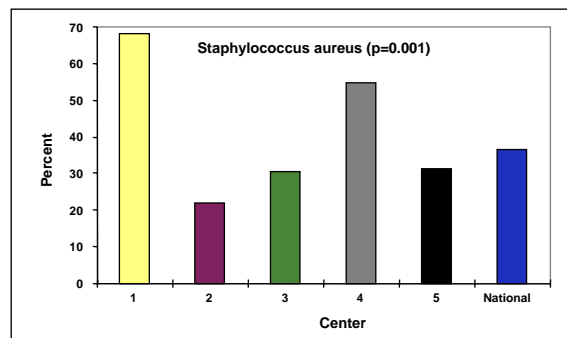
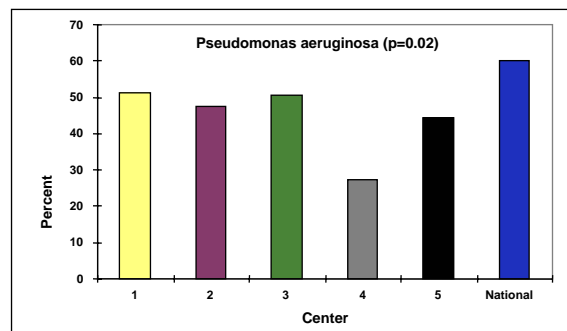
- We obtained a 10-year regional dataset from the Cystic Fibrosis Foundation Patient Registry including all 585 patients receiving care in the region during 1986-1995.
- We compared positive culture rates of *Pseudomonas aeruginosa*, *Staphylococcus aureus*, and *Aspergillus* in 1995.
- We looked at the cumulative incidence of *Pseudomonas* among the five centers over the 10-year period.

Cumulative Incidence of *Pseudomonas aeruginosa* by Center



Each line represents a CF Center (blinded)

Positive Respiratory Cultures Comparison Between Centers - 1995



Comparing sputum protocols

- We then asked if the differences in positive respiratory culture rates reflected true differences or were an artifact of differences in laboratory procedures.
- We created a questionnaire from the Clinical Practice Guidelines for CF (Appendix VIII, table 1) to compare Center sputum protocols.
- Based on variations we found from responses to the micro lab questionnaire, Center directors agreed to share their sputum protocols.

Results

- Substantial differences exist between the Centers in rates of *Pseudomonas aeruginosa* (range 27%-51%), *Staphylococcus aureus* (range 22%-68%), and *Aspergillus* (range 2%-23%) in 1995.
- The cumulative incidence of *Pseudomonas aeruginosa* for the 10 year period for patients 30-34 years old ranged from 60%-90% among the Centers.
- Differences exist among the Center laboratories in how sputum samples are collected, processed, and cultured, and in antibiotic sensitivity testing.

Sputum Protocol Variation (examples)

- Method and panel for antibiotic sensitivity testing for *P. aeruginosa* differs.
- No lab cultures throat swabs only for *P. aeruginosa* (as specified in the Guidelines)
- All labs do not routinely look for fungi.
- One lab did not use special agar to isolate Burkholderia.
- Not all labs report mucoid phenotype for *P. aeruginosa*.

Conclusions

- Significant differences exist in rates of isolation of respiratory pathogens in Northern New England based on CFF Registry data.
- Variation may reflect differences in sensitivity and lack of standardization of culture techniques rather than true differences in positive culture rates.
- This finding has important implications for both treatment decisions and epidemiologic tracking of infection rates.

Next Steps

- The NNECF is now working on developing a standardized regional sputum protocol.