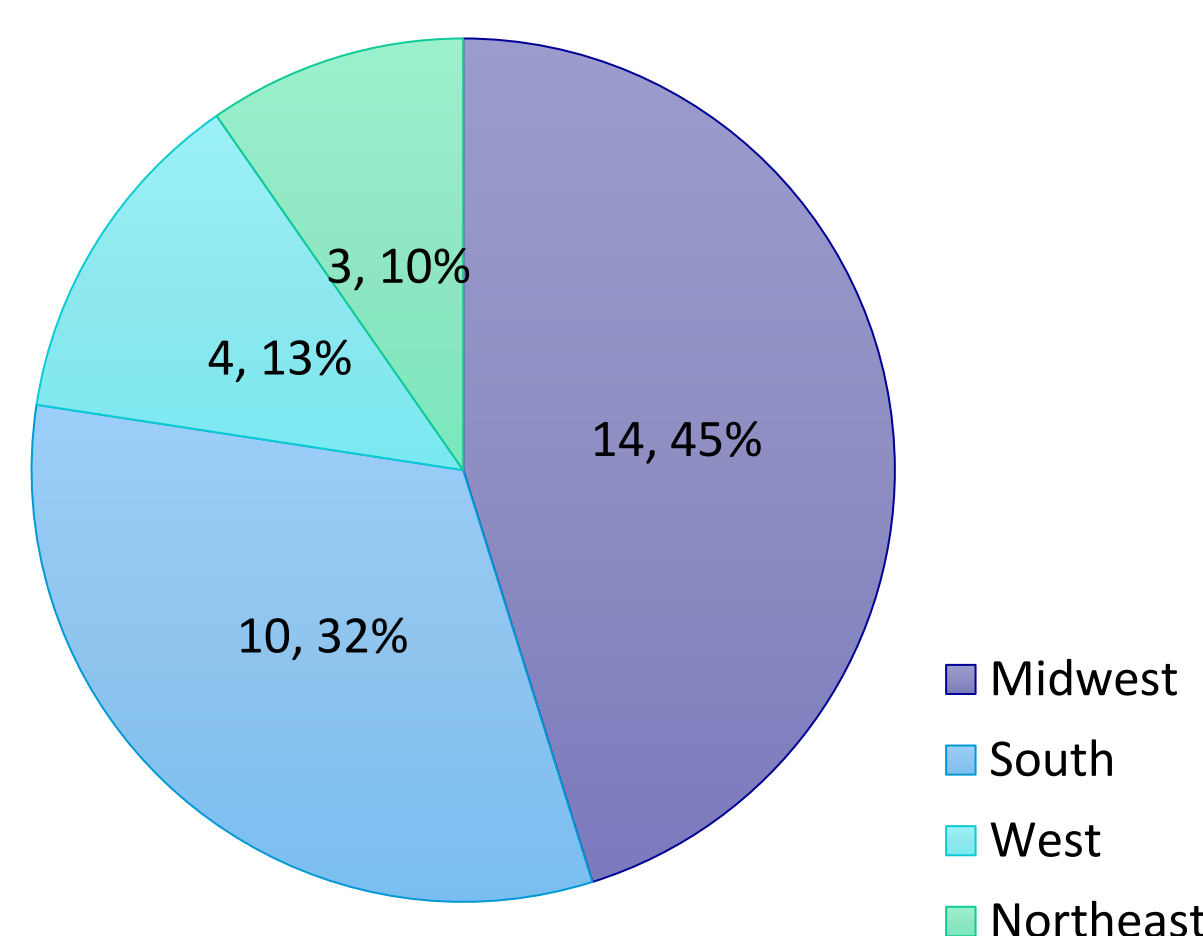


## Background

- High frequency chest compression (HFCC) is an airway clearance method for treatment of Cystic Fibrosis (CF).
- It is frequently utilized in other diagnoses such as non-CF bronchiectasis, neuromuscular disease (NMD), severe neurological impairment, or other conditions with increased airway secretions.
- Consensus for HFCC session duration and device settings is available for CF but not other diagnoses.
- The aim of this study was to evaluate HFCC practices in children's hospitals and compare to our current practice, as part of a quality improvement project.

### Regional Location of Participating Institutions

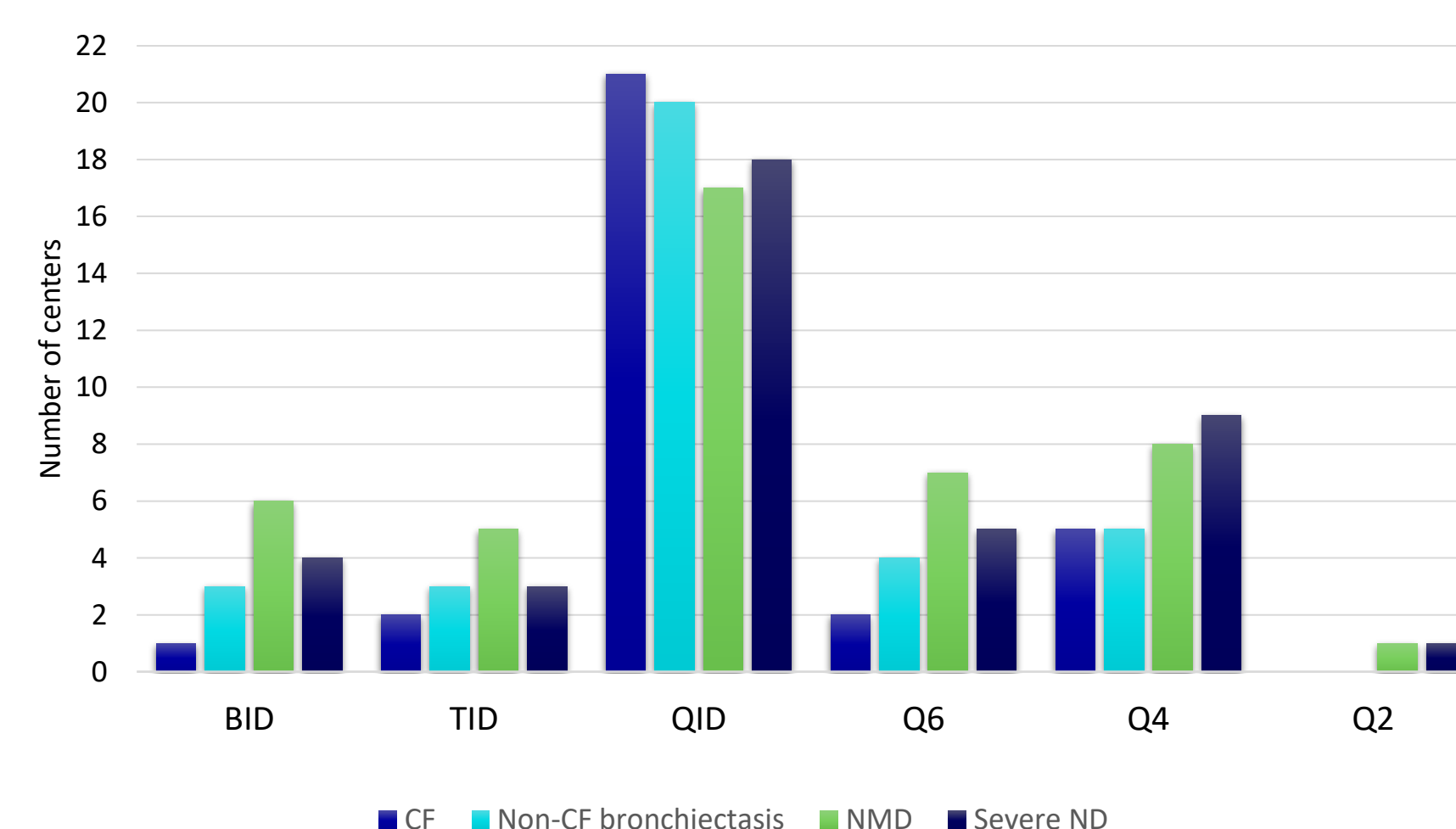


Diagnosis	Session Duration Minutes Median (IQR 25-75)
Cystic Fibrosis	30 (IQR 27.5-30)
Non-CF bronchiectasis	20 (IQR 17.5-30)
NMD	20 (IQR 20-30)
Severe ND	20 (IQR 20-30)

## Methods

- The UAMS Institutional Review Board determined the study was not human subject research.
- Acute care children's hospitals in the US who were members of the Children's Hospital Association at the time of the study were invited to participate in a survey about HFCC practices used at their institution.
- Respiratory department directors, managers or supervisors were contacted by email to complete an electronic questionnaire.
- Responses were collected in REDCap.
- Survey domains included diagnoses in which HFCC is used, session duration, device settings, frequency of therapy, and concomitant inhaled medication use.
- Specific diagnoses included were CF, non-CF bronchiectasis, NMD, and severe neurodisability (ND).
- Descriptive statistics were used to analyze collected data.

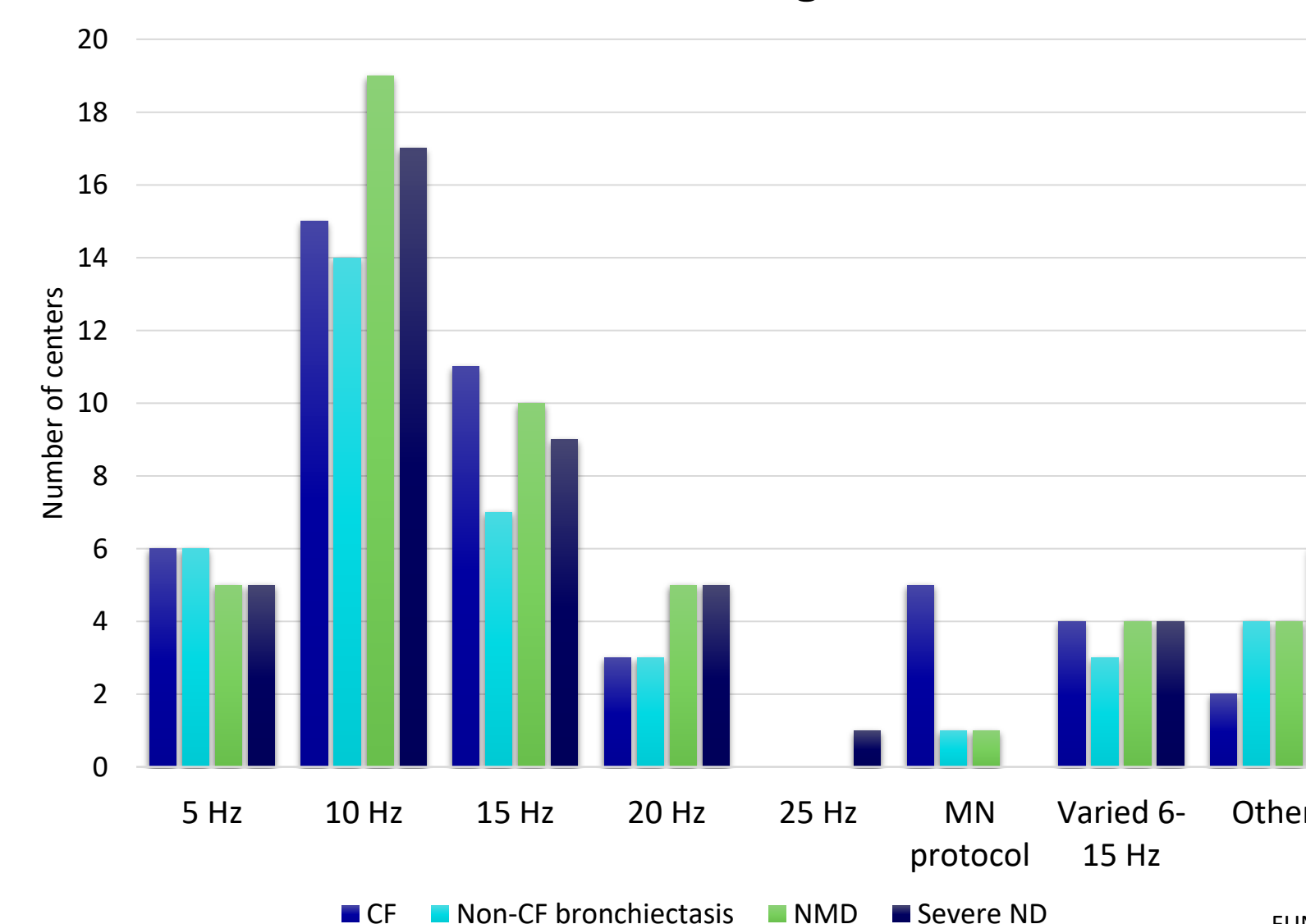
### Frequency of Therapy for Pulmonary Exacerbation



## Results

- Email invitations were sent to 198 institutions.
  - 16% (31/198) returned for unknown address
  - 167 institutions invited
- The response rate was 19% (31/167).
- HFCC was not used by 3 institutions (3/31, 10%) who did not proceed to the survey.
- Of those who completed the survey, most (20/28, 71%) were free-standing hospitals and did not have a pediatric pulmonary fellowship program (17/28, 61%).
- The use of 10 and 15 hertz were the most common settings for all diagnoses.
- Frequency of HFCC therapy for inpatient treatment of pulmonary exacerbation was most commonly QID for all diagnoses.
- Short-acting bronchodilators (SABA) were utilized by all institutions either before or during HFCC for all diagnoses.
- Many institutions also used anticholinergics, inhaled corticosteroids (ICS), mucolytics, antibiotics, and other inhaled medications in conjunction with HFCC.

### Hertz Settings



## Conclusions

- Practices for HFCC use vary among US children's hospitals.
- More research is needed to establish best practices and evidence-based guidelines for HFCC session duration, device settings, and concomitant inhaled medications, especially for non-CF diagnoses.

### Concomitant Inhaled Medications

