Introduction

In 2014, the American College of Surgeons Committee on Children’s Surgery published recommendations on the optimal resources necessary for children undergoing surgery citing discrepancies between the needs of the pediatric surgical patient and resources. In order to identify populations at risk and improve delivery of health care and outcomes, it is necessary to understand the context in which pediatric anesthesia care is delivered. The National Anesthesia Clinical Outcomes Registry (NACOR) is a data registry which collects information from approximately 25% of anesthesia practices in the U.S. Our objectives were to describe patient characteristics, the delivery of pediatric anesthesia care and conduct a univariate analysis on mortality.

Materials & Methods

This is a retrospective observational study of 3,464,447 patients aged 0 – 21 years included in NACOR from January 2010 – June 2015. Cases missing patient age or those listed as ASA PS 6 were excluded.

Results

Patient characteristics are described in Table 1. The mean and median ages of patients were 10.0 and 9 years respectively. The most common procedures included ENT surgery, upper endoscopy, MRI scans, and dental surgery. Twenty-four percent of cases were performed on inpatients. Emergency status was declared in 4.1% of cases. Hospitals in the southern part of the U.S. contributed the most cases to the NACOR (44%). The most common facilities included medium sized community hospitals (Fig 1). Locations of the procedures included ORs (48.9%), NORA (16.8%) and unclassified (15.9%). Adverse event rates are described in Table 2. The crude mortality rate was 23.4 deaths per 100,000. Univariate analysis revealed patient deaths increased with increasing ASA PS (p<0.001). Children < 1 had the highest risk of death (p < 0.001). Patient sex was not significant (p=0.3).

Conclusions

One of the main advantages of NACOR is the ability to examine the delivery of pediatric perioperative care across all facilities types at the national level. Traditionally, outcome data have been obtained from academic institutions. In our analysis, non-academic centers located in the southern part of the U.S. were predominant with approximately 50% of cases occurring in operating rooms. Risk factors for mortality including ASA PS and age <1 year for death correlated with previous publications. We found that the NACOR provided a broad spectrum of perioperative data that spanned the continuum of care facilities and geographic locations in the U.S.

References