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## *A Comparison of Pediatric and Adult Anesthesia Closed Malpractice Claims*

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**Background:** Since 1985, the Committee on Professional Liability of the American Society of Anesthesiologists has evaluated closed anesthesia malpractice claims. This study compared pediatric and adult closed claims with respect to the mechanisms of injury, outcome, the costs, and the role of care judged to be substandard.

**Methods:** Using a standardized form and method developed for analysis of closed claims, the American Society of Anesthesiologists Closed Claims Data Base was used to compare pediatric with adult anesthesia-related adverse events.

**Results:** Of the 2,400 total claims, 238 (10%) were in the pediatric age group (15 yr of age or younger). The pediatric claims presented a different distribution of damaging events compared with that of adults. In particular, respiratory events were more common among pediatric claims (43% versus 30% in adult claims;  $P \leq 0.01$ ). The mortality rate was greater in the pediatric claims (50% versus 35% in adult claims;  $P \leq 0.01$ ), anesthetic care more often was judged less than appropriate (54% versus 44% in adult claims;  $P \leq 0.01$ ), the complications more frequently were thought to be preventable with better

monitoring (45% versus 30% in adult claims;  $P \leq 0.01$ ), and the distribution of payments to the plaintiff was different (median payment, \$111,234 versus \$90,000 in adult claims;  $P \leq 0.05$ ). Many of the differences between pediatric and adult claims were explained by a higher prevalence of patient injury caused by inadequate ventilation in the pediatric claims (20% versus 9% in adult claims;  $P \leq 0.01$ ). In pediatric compared with adult inadequate ventilation claims, poor medical condition and/or obesity (6% versus 41%;  $P \leq 0.01$ ) were uncommon associated factors. Cyanosis (49%) and/or bradycardia (64%) often preceded cardiac arrest in pediatric claims related to inadequate ventilation, resulting in death (70%) or brain damage (30%) in previously healthy children. Although clinical clues suggested hypoxemia as a common mechanism of injury, the files did not contain enough information to explain the genesis of hypoxemia in these claims.

**Conclusions:** Comparison of adult and pediatric closed claims revealed a large prevalence of respiratory related damaging events—most frequently related to inadequate ventilation. In the opinion of the reviewers, 89% of the pediatric claims related to inadequate ventilation could have been prevented with pulse oximetry and/or end tidal  $\text{CO}_2$  measurement. However, pulse oximetry appeared to prevent poor outcome in only one of seven claims in which pulse oximetry was used and could possibly have done so. (Key words: Anesthesia, pediatric. Complications. Monitoring.)

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STUDIES of anesthetic morbidity and mortality have suggested a greater risk for children compared with adults.<sup>1-4</sup> If children are more likely to experience complications, we might see a different profile of liability in pediatric anesthesia. However, a direct comparison of a large sample of pediatric and adult anesthesia-related complications has not been reported to our knowledge.

Since 1985, the Committee on Professional Liability of the American Society of Anesthesiologists (ASA) has been engaged in the collection and study of closed anesthesia malpractice claims.<sup>5</sup> The data base containing these claims provides access to a large collection of both adult and pediatric cases in which an adverse outcome has occurred. The purpose of this report is to present a review of 238 pediatric cases in which a

## PEDIATRIC ANESTHESIA CLOSED CLAIMS STUDY

reviewers, who depend, in turn, on the information in the insurance company file. Thus, a number of issues of interest, such as the presumed benefit of having only pediatric anesthesiologists care for infants and young children, cannot be addressed.

Closed claims analysis does allow a comparison of the claims profile of subsets of the total data base, such as pediatric and adult claims. Such a comparison revealed a large prevalence of pediatric respiratory-related damaging events, most frequently caused by inadequate ventilation. These events resulted in a severe degree of patient injury and significant liability. The specific mechanism of injury in most cases of pediatric inadequate ventilation remains undefined.

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