Background
The majority of adverse events involving out-of-hospital pediatric sedation occur during dental procedures (1). Dental procedures requiring sedation in children are becoming increasingly common (2,3). While popular pediatric dental sedation courses focus on physiologic and pharmacologic effects of sedatives (4), there is little emphasis on airway management to reduce potentially catastrophic adverse outcomes that can occur with pediatric sedation (1, 5). Closed claims analyses of pediatric dental malpractice claims resulting in death or permanent brain damage emphasize the importance of dentist’s ability to both diagnose and manage adverse respiratory events when they occur (7).

Objective
To design an advanced airway management curriculum for dental and oral maxillofacial surgery (OMFS) residents to improve patient safety in pediatric dental sedation.

Methods
In partnership with faculty at the University of Washington School of Dentistry, we developed a comprehensive two-week airway management course for dental and OMFS residents at Seattle Children’s Hospital that combines internet-based self-study, small-group discussion, and hands-on airway training to teach the conceptual and practical considerations for safe airway management.

Results
A core set of learning objectives were specifically designed to efficiently develop a conceptual foundation for pediatric airway management.
1. Normal respiratory patterns for infants, children, and adolescents.
2. Anatomy of the upper and lower airways, including differences between infants and adults.
4. Techniques for relieving upper airway obstruction.
5. Airway exam, predictors of difficult facemask ventilation, and predictors of difficult direct laryngoscopy.
6. Anticipated and unanticipated difficult airway management.
7. Complications of pediatric airway management, including laryngospasm and aspiration.

Results (continued)
Learning objectives were expanded and made into 10 problem sets (Daily Assignments) for trainees to complete at home prior to each day of the two week rotation. An internet-based portal was created to host the problem sets, associated references, and allow for rapid deployment of future updates to the curriculum. Daily assignments are discussed with anesthesia faculty on each day of the rotation.

To develop hands-on experience, dental residents practice hands-on airway management in the operating room with pediatric patients under the supervision of anesthesia faculty. Course participants are expected to demonstrate proficiency in a detailed list of technical airway skills. Pre- and post-course evaluations are collected to assess trainee knowledge and attitudes towards pediatric airway management.

Discussion
Advanced pediatric airway training should be considered mandatory for all practitioners that provide sedation to children (1, 6, 7). Advanced pediatric airway management should be a formal part of dental and OMFS training. We used a multidisciplinary approach to developing an airway management curriculum for pediatric dentistry and OMFS.

References