



Compiled Data Outcomes for dental office cases



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Objectives

Review of 5 peer-reviewed published outcome studies that:

- Draw on data derived from an outcomes-based project
- Published from 2000 to 2020
- Accessible on PubMed

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Dental OBA provider Training Comparison

Anesthesia Provider	Dedicated Anesthesia Training (Minimum/Usual)	Minimum number Pediatric Cases	Ages	Minimum number of Special Needs Cases	Office-Based Experience Required
Dentist Anesthesiologist	24 mo/33 mo	125 total	> 7 years	75	Yes
Physician Anesthesiologist	30 mo/32 mo	100 total 75 20 5	<12years < 3 years < 3 months	No Special Requirement	No
Certified Registered Nurse Anesthetist	24 mo/24 mo	35 total 25 10	2 to 12 years < 2 years	No Special Requirement	No
Oral & Maxillofacial Surgeon	6 mo/6mo	50	< 13 years	No Special Requirement	Yes

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Perrott DH, Yuen JP, Andresen RV, Dodson TB. Office-based ambulatory anesthesia: outcomes of clinical practice of oral and maxillofacial surgeons. J Oral Maxillofac Surg. 2003 Sep;61(9):983-95; discussion 995-6.

- Earliest published report on dental OBA anesthesia outcomes
- Prospective cohort study of 30,058 patients undergoing office-based anesthesia in oral surgery offices from January 2001 through December 2001
- Complication rate of 1.3 per 100. All cases were minor and self-limiting. Two patients required hospital transfer
- > 95% of anesthetics provided by oral and maxillofacial surgeon directing staff while performing surgery

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Perrott DH, Yuen JP, Andresen RV, Dodson TB. Office-based ambulatory anesthesia: outcomes of clinical practice of oral and maxillofacial surgeons. J Oral Maxillofac Surg. 2003 Sep;61(9):983-95; discussion 995-6.

Provider and Case Profile


- > 90% of patients are ASA 1 or ASA 2
- > 95% of cases were for removal of third molars or other dentoalveolar surgery
- Mean patient age 28 yrs/35 yrs

Anesthesia time

	CS	DS/GA
< 10 min	4.0%	5.9%
10-30 min	45.7%	59.1%
61-120 min	4.5%	3.7%
> 120 min	1.9%	0.4%

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Saxen MA, Urman RD, Yepes JF, Gabriel RA, Jones JE. Comparison of Anesthesia for Dental/Oral Surgery by Office-based Dentist Anesthesiologists versus Operating Room-based Physician Anesthesiologists. Anesth Prog. 2017 Winter;64(4):212-220.

Hospital/ASC Based Anesthetics

- 106,420 records from NACOR database
- Dental cases identified by ICD-9 codes
- Demographic variables:
 - Age
 - ASA classification
 - Surgery and anesthetic stop/start times

Office Based Anesthetics

- 7133 records from SAMBA Clinical Outcomes Registry
- Dental cases identified by dentist anesthesiologists reporting CPT codes
- Demographic variables:
 - Age
 - ASA classification
 - Surgery and anesthetic stop/start times

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Saxen MA, Urman RD, Yepes JF, Gabriel RA, Jones JE. Comparison of Anesthesia for Dental/Oral Surgery by Office-based Dentist Anesthesiologists versus Operating Room-based Physician Anesthesiologists. Anesth Prog. 2017 Winter;64(4):212-220.

Key points

- Office-Based Dentist anesthesiologists and Hospital/ASC had nearly identical age distributions
- Matches the age distribution for early child caries (ECC)
- ECC is the dominant case treated in both settings

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Spera AL, Saxen MA, Yepes JF, Jones JE, Sanders BJ. Office-Based Anesthesia: Safety and Outcomes in Pediatric Dental Patients. Anesth Prog. 2017 Fall;64(3):144-152.

- First published clinical outcomes of OBA performed by dentist anesthesiologists on children
- Of 7,041 cases reported to SCOR database from 2010 to 2014:
 - Mean age of 4.7 years
 - 98% were ASA 1 or 2
- No major morbidity or mortality
- 3% postop adverse event rate
 - Most common predischarge event was laryngospasm (0.5%)
 - Most common post-discharge event was nausea (5%)
- Children < 6 had highest rates of laryngospasm and PONV

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Spera AL, Saxen MA, Yepes JF, Jones JE, Sanders BJ. Office-Based Anesthesia: Safety and Outcomes in Pediatric Dental Patients. Anesth Prog. 2017 Fall;64(3):144-152.

Physical Status and Case Duration

- Average surgery time 58.2 min
- Average recovery time 22.5 min
- ASA Physical status classification of ASA 1 or 2 for 99% of cases

Airway Management

Technique	%
Endotracheal intubation	39%
Non-intubated managed airway	60%
Laryngeal mask*	< 1%

* uncertain significance

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Silvers A, Licina A, Jolevska L. A clinical audit of an office-based anaesthesia service for dental procedures in Victoria. Anaesth Intensive Care. 2018 Jul;46(4):404-413.

- Retrospective audit of 1,323 dental office-based anaesthetics provided by specialist anaesthetists in Victoria, Australia from 2014 to 2017
- 93.6% patients were ASA 1 or 2
- Most common procedures:
 - 49% third molar extractions
 - 15.7% multiple tooth extractions
 - 6.8% implant procedures
- Mean age 33.3 years
- Mean weight 69,8 kg
- Population compared to AAOMS Outcomes Study (Perrott et al) by authors

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Silvers A, Licina A, Jolevska L. A clinical audit of an office-based anaesthesia service for dental procedures in Victoria. Anaesth Intensive Care. 2018 Jul;46(4):404-413.

Length of cases and adverse events

- Mean duration 117 min
- Std deviation 101 minutes
- 10% exceeded 265 min
- Adverse event rate: 0.2%
- 3 unplanned hospital transfers
- No sentinel events

Airway and Anesthetic Technique

- Laryngeal mask 76.8%
- Endotracheal tube 20.6%
- Propofol TIVA 88.1%
- Volatile agents 2.4%
- Mixed volatile/TIVA 1.5%
- Min/Mod sedation 7.8%

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Clark HM, Saxen MA, Yepes JF, Jones JE, Vinson LA, Eckert GJ, Tang Q. Comparison of Intubated Versus Nonintubated Airway Management in Children Under General Anesthesia Provided by Dentist Anesthesiologists. Pediatr Dent. 2019 Jan 15;41(1):52-55.

- Retrospective review of 9,333 dental anaesthetics from 2010 to 2016 from SCOR Clinical Outcomes Registry
- All cases performed by dentist anesthesiologists in a pediatric dental setting
- Airway management techniques compared included
 - Native airway
 - Oxygen with nasal cannula
 - Oxygen with face mask
 - Nasopharyngeal or oropharyngeal airway
 - Laryngeal mask airway
 - Endotracheal intubation

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Clark HM, Saxen MA, Yepes JF, Jones JE, Vinson LA, Eckert GJ, Tang Q.
Comparison of Intubated Versus Nonintubated Airway Management in Children Under General Anesthesia Provided by Dentist Anesthesiologists.
Pediatr Dent. 2019 Jan 15;41(1):52-55.



- When endotracheal intubation was compared to all other techniques, no significant difference in respiratory complications was found
- Patients with a pre-existing pulmonary diagnosis displayed higher rates of complications across all techniques
- Adverse events included
 - Laryngospasm 0.3%
 - Bronchospasm 0.2%
 - Hypoxia 0.1%
- Overall rate of complications 0.6%

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Closing thoughts



- These studies, like all outcome data research share several significant limitations including:
 - Self-reported data entry by volunteers
 - Predesigned data entry forms with limited, broad parameters
 - Limited analysis of results
- Useful for identifying broad trends and directing future studies

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