SOCIETY FOR AMBULATORY ANESTHESIA

Outpatient • Office Based • Non-Operating Room

SAMBA OFFICE BASED ANESTHESIA (OBA) VIRTUAL SYMPOSIUM

SATURDAY, MARCH 20, 2021

SYLLABUS

Jointly Provided by the American Society of Anesthesiologists (ASA) and the Society for Ambulatory Anesthesia (SAMBA).

Phone: (414) 488-3915 • Email: info@sambahq.org • www.SAMBAhq.org

PROGRAM INFORMATION

Target Audience
This meeting is for anesthesiologists and other healthcare professionals interested in office-based anesthesia.

About This Meeting
The purpose of this meeting is to provide an opportunity for discussions with office-based anesthesia professionals who can explain the steps they took to get where they are today and provide resources for attendees to make office based anesthesia a reality.

Registration
Registration for the 2021 Office Based Anesthesia (OBA) Virtual Symposium includes access to all sessions and the program syllabus. Note that all fees are quoted in U.S. currency. Registration for the meeting is available to members and non-members via SAMBA's website at www.sambahq.org.

Disclaimer
The information provided at this accredited activity is for continuing education purposes only and is not meant to substitute for the independent medical judgment of a healthcare provider relative to diagnostic and treatment options of a specific patient's medical condition.

Accreditation Statement
This activity has been planned and implemented in accordance with the accreditation requirements and policies of the Accreditation Council for Continuing Medical Education (ACCME) through the joint providership of the American Society of Anesthesiologists and the Society for Ambulatory Anesthesia. The American Society of Anesthesiologists is accredited by the ACCME to provide continuing medical education for physicians.

The American Society of Anesthesiologists designates this live activity for a maximum of 4.0 *AMA PRA Category 1 Credits™*. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

Commercial Support Acknowledgement
The CME activity is not supported by any educational grants.

Special Needs
The Society for Ambulatory Anesthesia (SAMBA) fully complies with the legal requirements of the Americans with Disabilities Act and the rules and regulations thereof. If any attendee in this educational activity is in need of accommodations, please contact the SAMBA Executive Office at 414-488-3915.

Cancellation Policy
Cancellations received through March 12, 2021, will receive a full refund. Cancellation of a meeting registration must be submitted in writing. Refunds will be determined by date written cancellation is received at the SAMBA office in Milwaukee, WI.

OVERALL LEARNING OBJECTIVES

At the conclusion of this activity, participants should be able to:

- Discuss the need for more OBA practitioners to meet patient needs.
- Provide steps on how to start up an OBA practice.
- Describe solutions to issues commonly faced in OBA practices with real-world cases.
- Cite the different mindset and competencies needed for practicing anesthesiologists and residents contemplating an OBA practice.
- Provide resources and contacts for questions about different types of OBA practices.

PROGRAM SCHEDULE *(All Times Listed are in Eastern Time)*

Saturday, March 20, 2021

Moderators: Grace Lee Dorsch, MD & Fred E. Shapiro DO, FASA

10:00am – 10:15am
Panel: Opening Comments by Symposium Co-Chairs
Leopoldo Rodriguez, MD, MBA, FAAP, FASA, SAMBA-F

10:15am – 10:45am
Panel: OBA Safety Measures
Richard Urman, MD, MBA, FASA; Stephen Smith, MD; Fred E. Shapiro DO, FASA

10:45am – 11:15am
Panel: How to Start Up an OBA
Hector Vila Jr., MD; Grace Lee Dorsch, MD

11:15am – 11:30am
Break

11:30am – 12:30pm
Panel: Business Side of OBA
Teresa Roberts, MD, FASA; Hector Vila Jr., MD

12:30pm – 2:00pm
Panel: Real World Cases: PBLD Format
Mary Ann Vann, MD, FASA; Marc A. Saxen, DDS, PhD; Zak Messieha, DDS FICD FACD Dipl. ADBA; Rosalind Ritchie, MD

2:00pm – 2:30pm
Panel: Teaching the Next Generation
Brian M. Osman, MD; John Bellamente, MD MS; Steven Young, MD

PROGRAM PLANNING COMMITTEE

Grace Lee Dorsch, MD
2021 Office Based Anesthesia (OBA) Virtual Symposium, Co-Chair & Program Moderator
Doctor
Founder
Office Anesthesia Services, LLC
Co-Chair SAMBA OBA Committee
Waterford, VA

Fred E. Shapiro DO, FASA
2021 Office Based Anesthesia (OBA) Virtual Symposium, Co-Chair & Program Moderator
Associate Professor of Anaesthesia, Harvard Medical School
Beth Israel Deaconess Medical Center
Department of Anesthesia
Co-Chair SAMBA OBA Committee
ASA Committee on Patient Safety and Education
Advisor, Committee on Quality of Medical Practice
Massachusetts Medical Society
Boston, MA

Steven Butz, MD
SAMBA Meetings Committee, Co-Chair
Professor of Anesthesiology, Medical College of Wisconsin
Associate Chief Medical Officer, Children's Wisconsin Surgicenter
Milwaukee, WI

STAFF

Andrew Bronson, CAE
Executive Director
Society for Ambulatory Anesthesia (SAMBA)
Milwaukee, WI

Julianna Cibula
Account Coordinator
Society for Ambulatory Anesthesia (SAMBA)
Milwaukee, WI

Claire Murray
Account Coordinator
Society for Ambulatory Anesthesia (SAMBA)
Milwaukee, WI

FACULTY

John Bellamente, MD, MS
Resident in Anesthesiology
Department of Anesthesia, Critical Care and Pain Medicine
Beth Israel Deaconess Medical Center
Boston, MA

Grace Lee Dorsch, MD
Doctor
Founder
Office Anesthesia Services, LLC
Co-Chair SAMBA OBA Committee
Waterford, VA

Zak Messieha, DDS FICD FACD Dipl. ADBA
Dentist Anesthesiologist & Clinical Director, Office Anesthesiology & Dental Consultants, PC
Retired, Clinical Professor of Anesthesiology
President-Elect, American Society of Dentist Anesthesiologists

Brian M. Osman, MD
Chief of Orthopedic Anesthesia &
Director of Quality Assurance
Assistant Professor of Anesthesiology
UHealth Tower
University of Miami Miller School of Medicine
Miami, FL

Rosalind Ritchie, MD
Professor, Department of Anesthesiology
Medical Director, Center for Advanced Surgery
University of Kentucky Chandler Medical Center
Lexington, KY

Teresa Roberts, MD, FASA
Founder
Oak Hill Anesthesia Services, PLLC
Fairfax, VA

Leopoldo Rodriguez, MD, MBA, FAAP, FASA, SAMBA-F
President
Assistant National Medical Director, Ambulatory Anesthesiology
Assistant Professor of Anesthesiology
Medical Director
SAMBA
AmSurg & Envision Physician Services
Nova Southeastern Allopathic School of Medicine
Surgery Center of Aventura
Boca Raton, FL

Marc A. Saxen, DDS, PhD
Dentist Anesthesiologist
Indiana Office-Based Anesthesia
Indianapolis, IN

Fred E. Shapiro DO, FASA
Associate Professor of Anaesthesia, Harvard Medical School
Beth Israel Deaconess Medical Center
Department of Anesthesia
Co-Chair SAMBA OBA Committee
ASA Committee on Patient Safety and Education
Advisor, Committee on Quality of Medical Practice
Massachusetts Medical Society
Boston, MA

Stephen Smith, MD
Physician Anesthesiologist
Western Anesthesiology Associates, Inc./ Premier Dental Anesthesiology
Columbia, MO

Richard Urman, MD, MBA, FASA
Brigham and Women's Hospital
Harvard Medical School
Boston, MA

Mary Ann Vann, MD, FASA
Assistant Professor Harvard Medical School
Beth Israel Deaconess Medical Center
Boston, MA

Hector Vila Jr., MD
Pediatric Dental Anesthesia Associates
Tampa, FL

Steven Young, MD
Anesthesia Resident, CA-3, PGY-4
Beth Israel Deaconess Medical Center
Boston, MA

DISCLOSURE STATEMENT

The American Society of Anesthesiologists remains strongly committed to providing the best available evidence-based clinical information to participants of this educational activity and requires an open disclosure of any potential conflict of interest identified by our faculty members. It is not the intent of the American Society of Anesthesiologists to eliminate all situations of potential conflict of interest, but rather to enable those who are working with the American Society of Anesthesiologists to recognize situations that may be subject to question by others. All disclosed conflicts of interest are reviewed by the educational activity course director/chair to ensure that such situations are properly evaluated and, if necessary, resolved. The American Society of Anesthesiologists educational standards pertaining to conflict of interest are intended to maintain the professional autonomy of the clinical experts inherent in promoting a balanced presentation of science. Through our review process, all American Society of Anesthesiologists accredited activities are ensured of independent, objective, scientifically balanced presentations of information. Disclosure of any or no relationships will be made available for all educational activities.

The following faculty, staff, and/or planning committee members have indicated that they have relevant financial relationships with ineligible companies to disclose:

Name	Type of Relationship	Company
Leopoldo V. Rodriguez, MD, MBA, FAAP, FASA, SAMBA-F	Consulting Fees	AcelRx Pharmaceutical
	Owner	Surgery Center of Aventura LLP
Richard Urman, MD	Funded Research	Merck
	Funded Research	Medtronic
	Consulting Fees	Medtronic
	Consulting Fees	Heron
	Funded Research	Acacia
	Consulting Fees	Novartis

All of the relevant financial relationships listed for these individuals have been mitigated.
All other planners, faculty, and staff have reported no relevant financial relationships with commercial interests to disclose.

MARK YOUR CALENDAR AND BE SURE TO JOIN US AT FUTURE SAMBA MEETINGS!

SAMBA 2021 - A Virtual Experience
May 13-16, 2021 · #SAMBA2021

HANDOUT

OBA Safety Measures

Richard Urman, MD, MBA, FASA
Panelist

03/20/2021
10:15 – 10:45am (Eastern)

SAMBA 2021 OBA Virtual Symposium

Office-Based Anesthesia: Principles of Patient Selection

Richard D. Urman, MD, MBA, FASA
Associate Chair for Dana-Farber Cancer Institute
Department of Anesthesiology, Perioperative and Pain Medicine
Brigham and Women's Hospital
Harvard Medical School
Boston, MA

Disclosures: NIH, AHRQ, NSF, APSF, FAER, Department of Defense, Mallinckrodt, Merck, AcelRx, Medtronic/Covidien, Acacia, Takeda

1

OBA Patient Selection

Patient Selection is also contingent on the following factors:

1. Conditions of the facility
2. Procedure planned/complexity
3. Medical condition of the patient
4. Skill of the surgeon/proceduralist
5. Skill/experience of the anesthesiologist
6. Anesthetic technique required

Adopted from: Koch ME, Dayan S, Barinholtz D. Office-based anesthesia: an overview. Anesthesiol Clin North America. 2003 Jun;21(2):417-43.

2

OBA Closed Claims: What We Do Know

- Female (65%), middle-age (46 + 18 yrs.), and generally healthy (79% ASA 1-2).
- More likely to involve plastic surgery (45%) vs other outpatient claims (18%).
- Eye surgery was common (16% of OBA).
- Many cases involved respiratory or equipment AEs.
- Single most common adverse event leading to injury: inadequate ventilation or oxygenation (17% vs. 6% other outpatient, p=0.003).
- Cautery fires occurred in 9% of OBA claims (same as other outpatient). Outcomes did not differ between groups, with death in 27% and permanent disabling injury in 17% of OBA claims.
- Care was more commonly substandard in OBA claims (52%) vs. other outpatient claims (37%)
- OBA claims were more likely to result in payment (72%) than other outpatient (56%, p=0.014, Fig). Payments were similar between OBA (median $135,800) and other outpatient claims ($211,500).

Twersky R, Posner KL, Domino KB. Liability in Office-Based Anesthesia: Closed Claims Analysis. Anesthesiology, A2078, 2013.

3

Patient Selection: What's Important?

Do we have any evidence for the OBS (vs. other ambulatory settings):

- Patients at risk for DVT/PE?
- Social/psychological History?
- Cognitively Impaired
- Morbid obesity?
- OSA/ COPD?
- Renal or Liver Disease?
- CAD?
- HTN?
- Substance use/Chronic pain?
- DM?
- Airway issues?
- Multiple drug allergies/side effects?
- MH-susceptible?
- No adult escort

- **Generally, lack of good quality evidence; Most comes from non-OBS settings**
- Very few studies in OBA attempt to link patient selection with outcomes
- There is more emphasis on outcomes and less on choosing your patients wisely…

Shapiro FE, … Urman RD. Anesth Analg 2014;119:276-85

4

Ways To Improve Safety and Patient Selection Process… Are we being complacent?

1. Communication (effective communication between the anesthesia provider and surgeon)
2. Set exclusion criteria (this may vary based on the office type)
3. Develop red flags
4. All patients should fill out a preliminary anesthesia questionnaire, no exceptions
5. Questionnaires should be reviewed by the anesthesia provider
6. Telephone interviews
7. Use recommendations made by the different professional medical societies
8. Education and Benchmarking

5

References:

- Koch ME, Dayan S, Barinholtz D. Office-based anesthesia: an overview. Anesthesiol Clin North America. 2003 Jun;21(2):417-43.
- Twersky R, Posner KL, Domino KB. Liability in Office-Based Anesthesia: Closed Claims Analysis. Anesthesiology, A2078, 2013.
- Whippey A, et al. Predictors of unanticipated admission following ambulatory surfery. Can J Aneasth 2013;60:675-83.
- Seligson E, Beutler SS, Urman RD. Office-based anesthesia: an update on safety and outcomes (2017-2019). Curr Opin Anaesthesiol. 2019 Dec;32(6):756-761. doi: 10.1097/ACO.0000000000000789. PMID: 31483329.
- Shapiro FE, Punwani N, Rosenberg NM, Valedon A, Twersky R, Urman RD. Office-based anesthesia: safety and outcomes. Anesth Analg. 2014 Aug;119(2):276-85. doi: 10.1213/ANE.0000000000000313. PMID: 25046785.
- Urman RD, Punwani N, Shapiro FE. Patient safety and office-based anesthesia. Curr Opin Anaesthesiol. 2012 Dec;25(6):648-53. doi: 10.1097/ACO.0b013e3283593094. PMID: 23026805.
- 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. doi: 10.2344/anpr-65-01-04. PMID: 29200371; PMCID: PMC5715304.
- Gaulton TG, Shapiro FE, Urman RD. Administrative issues to ensure safe anesthesia care in the office-based setting. Curr Opin Anaesthesiol. 2013 Dec;26(6):692-7. doi: 10.1097/ACO.0000000000000005. PMID: 24113266.
- Shapiro FE, Jani SR, Liu X, Dutton RP, Urman RD. Initial results from the National Anesthesia Clinical Outcomes Registry and overview of office-based anesthesia. Anesthesiol Clin. 2014 Jun;32(2):431-44. doi: 10.1016/j.anclin.2014.02.018. PMID: 24882129.
- Soltani AM, Keyes GR, Singer R, Reed L, Fodor PB. Outpatient surgery and sequelae: an analysis of the AAAASF Internet-based quality assurance and peer review database. Clin Plast Surg. 2013 Jul;40(3):465-73. doi: 10.1016/j.cps.2013.04.010. PMID: 23830755.

6

HANDOUT

OBA Safety Measures

Stephen Smith, MD
Panelist

03/20/2021
10:15 – 10:45am (Eastern)

OBA SAFETY MEASURES

FORMULATION and APPLICATION
of
PROTOTYPICAL SAFETY MEASURES
to
ADDRESS NOVEL PATIENT SAFETY THREATS

MARCH 20, 2021
Stephen R. Smith MD

1

INITIAL MEASURES MUST SEEK ABSOLUTE SAFETY FOR PATIENTS AND STAFF

- Avoid Known Risks Entirely
  - Elective Cases
  - Non-Elective Cases
- Anticipate Potential Risks
  - Mechanism of Pathology
  - Mechanism of Risk Transmission
- Mitigate Unavoidable Risks
  - Minimize Exposure
  - Maximize Protective Measures

2

NEW MEASURES MUST EVOLVE TO REMAIN EFFECTIVE

- Process Evolution
  - Modifications required for effective implementation
- Outcome Evolution
  - Modifications required to achieve desired effect
- Knowledge Evolution
  - New information drives modifications
- Technology Evolution
  - New technology drives modifications
    - Equipment
    - Pharmaceuticals
    - Laboratory

3

NEW MEASURES SHOULD NOT COMPROMISE EXISTING SAFETY MEASURES

- Fundamental Principles Remain
  - Principles of Physiologic Support
  - Principles of Pharmacology
- Novel Threats Seldom Are
  - Known Mechanisms of Pathologic Effect
    - Infectious Agent
    - Toxin
    - Physical Trauma
    - Physics
  - Unknown Mechanisms of Pathologic Effect
    - Not yet categorized as known mechanism
    - Truly Novel Mechanism

4

REFERENCES

- https://www.asahq.org/about-asa/newsroom/news-releases/2020/03/asa-sccm-joint-statement-to-collaboratively-address-the-covid-19-pandemic
- https://www.asahq.org/about-asa/newsroom/news-releases/2020/03/joint-statement-on-multiple-patients-per-ventilator
- https://www.asahq.org/about-asa/newsroom/news-releases/2020/04/joint-statement-on-elective-surgery-after-covid-19-pandemic
- https://sambahq.org/wp-content/uploads/2020/04/SAMBA-Statement-on-Resuming-Ambulatory-Anesthesia-Care-as-the-Nation-Recovers-From-COVID-19-4-18-2020.pdf
- https://www.asahq.org/about-asa/governance-and-committees/asa-committees/committee-on-occupational-health/coronavirus

5

HANDOUT

OBA Safety Measures

Fred E. Shapiro, DO, FASA
Panelist

03/20/2021
10:15 – 10:45am (Eastern)

Safety in Office-Based Anesthesia: Research and Outcomes 2021

Fred E. Shapiro DO, FASA
Associate Professor of Anaesthesia
Harvard Medical School
Beth Israel Deaconess Medical Center
Department of Anesthesia, Critical Care, and Pain Medicine
Boston, MA

Beth Israel Lahey Health

Beth Israel Deaconess Medical Center | HARVARD MEDICAL SCHOOL TEACHING HOSPITAL

1

Overview 2021

- Growth of ambulatory anesthesia in both ASC and OBS over past two decades
- Most safety outcome data is limited
- Little data on safety of ASC or OBS individually
- No true benchmarks

No disclosures or conflicts of interest

Beth Israel Lahey Health

2

Office-Based Anesthesia: Safety and Outcomes

Fred E. Shapiro, DO,* Nathan Punwani, MD,† Noah M. Rosenberg, MD,‡ Arnaldo Valedon, MD,§ Rebecca Twersky, MD, MPH,‖ and Richard D. Urman, MD, MBA¶ (Anesth Analg 2014;119:276–85)

Lack of randomized controlled trials

Enhanced quality of care :

- proper procedure and patient selection
- provider credentialing
- facility accreditation
- patient safety checklists (cognitive aids)
- professional society guidelines

3

journal

Ambulatory Surgical Risk

A Comparison between office and other ambulatory practices: Analysis from the National Anesthesia Clinical Outcomes Registry

- 23 million Anesthesia cases, 2010 - 2014
- 180,000 office vs 4.6 million ASC
- Statistically significant differences in patient demographics, procedure types, and reported events

4

Research in 2021

- Advent of EHR allows better analysis
- New research provides quantitative insights
- Software designed for Anesthesia care

Beth Israel Lahey Health

5

2016-19 OBA Research

- Retrospective data **~90,000 patients** in growing anesthesia practice from **2016-2019**
- Data extracted from **administrative claims and electronic medical records**
- Segregated into ASC and OBS

Beth Israel Lahey Health

6

ASC and OBS 2019 (Annualized)

Volume	ASC	OBS	Total	% OBS
Number of Procedures	31,428	8,954	40,382	22.2%
Complication Rate	0.0727%	0.1268%	0.0847%	

7

Demographics ASC vs OBS

	ASC	OBS
Average Age	52.6	**58.5**
Average ASA Status	2.10	**2.24**
Average Number of Procedures per MD per Year	661	**167**
Average Number of Procedures per Office per Year	4,490	**176**

Beth Israel Lahey Health

8

Most Common Procedures ASC vs OBS 2019

ASC		OBS	
Procedure Name	% of 2019 annualized Total	Procedure Name	% of 2019 annualized Total
Cataract removal	38.9%	Colonoscopy	17.3%
Epidural Steroid Injection (lumbar)	20.1%	Prostate Biopsy	15.5%
Arthroscopy (shoulder)	13.8%	Angiogram (upper extremity)	13.4%
Arthroscopy (knee)	11.4%	Cystoscopy	8.8%
Microdiscectomy (lumbar)	5.2%	Uterine Fibroid Embolization	7.8%

Beth Israel Lahey Health

9

Future Direction

Suggestion: Field would benefit if everyone undertakes research and publishes

Develop best practices, safety protocols and benchmarks

Beth Israel Lahey Health

10

References

Shapiro FE, Punwani N, Rosenberg NM, et al. Office-based anesthesia: safety and outcomes. *Anesth Analg.* 2014;119:276–85.

Jani S, Shapiro FE, Kordylewski H, et al. A comparison between office and other ambulatory practices: analysis from the National Anesthesia Clinical Outcomes Registry. *J Healthc Risk Manag* 2016;35(4):38–47.

Beth Israel Lahey Health

11

HANDOUT

How to Start Up an OBA

Hector Vila Jr., MD
Panelist

03/20/2021
10:45 – 11:15am (Eastern)

HANDOUT

How to Start Up an OBA

Grace Lee Dorsch, MD
Panelist

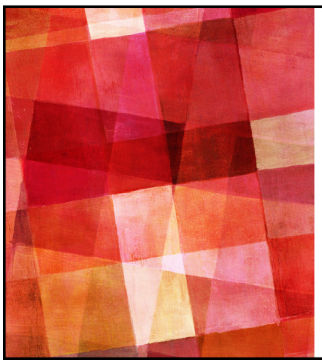
03/20/2021
10:45 – 11:15am (Eastern)

HOW TO START UP AN OBA PRACTICE

Grace "Lee" Dorsch, MD
Hector Vila, Jr, MD

gldorsch@me.com
drvila@pediatricsedation.com

1

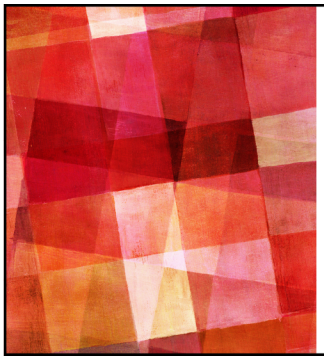


BUSINESS DETAILS

- Company Name
- Set-up LLC (lawyer, accountant reviewed)
- State Business License
- Malpractice policy
- Paper records (pre-anesthesia evaluation and anesthesia record) or EMR

gldorsch@me.com
drvila@pediatricsedation.com

2

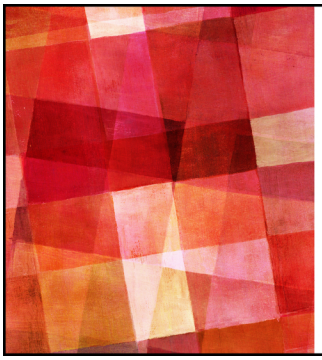


TYPE OF PRACTICE

- Think of types of cases you enjoy or want to do
- Think about types of offices where you want to work …this may help determine whether you are fee for service or accept insurance
- Fee for service- pro/cons
- Accept Insurance- pro/con

gldorsch@me.com
drvila@pediatricsedation.com

3

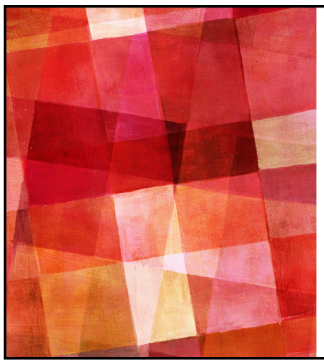


EQUIPMENT

- Anesthesia machine- OBA-1 from Cardinal Medical Specialties in KY. Website: https://obamed.com
- Monitors- same as OR (Mindray, Cardio-CAP, your choice)
- Oxygen connectors (offices have different connection types)
- Airway devices- laryngoscopes, LMA's, Nasal CPAP)
- Medications- all non controlled substances
- Disposables- IV, tapes, labels
- SCD (sequential compression device)
- Suppliers: McKesson/Southern Anesthesia

gldorsch@me.com
drvila@pediatricsedation.com

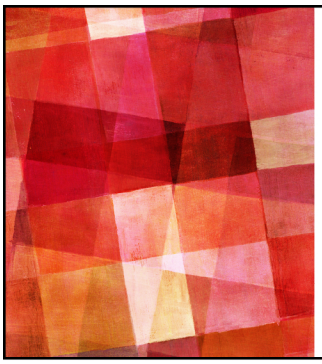
4



SPACE

- Much smaller area especially dental offices
- Medical gases- not always piped for oxygen. Not all have nitrous. Many will only have portable e-cylinders.
- Scavenging if using inhalation gases. Not usually waste line. May use absorber canister which connect to anesthesia machine.

5



MARKETING

- Business cards
- Set up meeting with offices
- How to "sell" it? Why office better for surgeon or dentist- increased productivity, time efficient, less hassle for patients
- More to be covered in business side of OBA practice session

gldorsch@me.com
drvila@pediatricsedation.com

6


RESOURCES ON ASA'S WEBSITE
Guidelines for Office-Based Anesthesia.
Statement on Qualifications of Anesthesia Providers in the Office-Based Setting
Statement on Sedation & Anesthesia Administration in Dental Office-Based Settings.
Practice Guidelines for Moderate Procedural Sedation and Analgesia 2018: A Report by the American Society of Anesthesiologists Task Force on Moderate Procedural Sedation and Analgesia, the American Association of Oral and Maxillofacial Surgeons, American College of Radiology, American Dental Association, American Society of Dentist Anesthesiologists, and Society of Interventional Radiology
gldorsch@me.com
drvila@pediatricsedation.com

7

HANDOUT

Business Side of OBA

Teresa Roberts, MD, FASA
Panelist

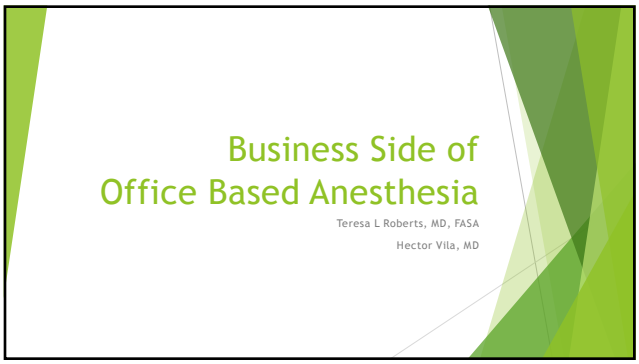
03/20/2021
11:30am – 12:30pm (Eastern)

HANDOUT

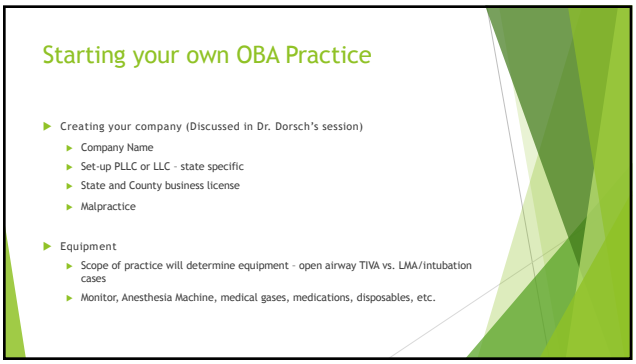
Business Side of OBA

Hector Vila Jr., MD
Panelist

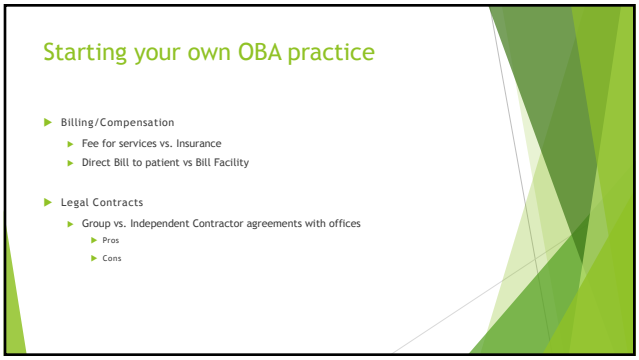
03/20/2021
11:30am – 12:30pm (Eastern)


Business Side of
Office Based Anesthesia
Teresa L Roberts, MD, FASA
Hector Vila, MD

1


Starting your own OBA Practice
Creating your company (Discussed in Dr. Dorsch's session)
Company Name
Set-up PLLC or LLC - state specific
State and County business license
Malpractice
Equipment
Scope of practice will determine equipment - open airway TIVA vs. LMA/intubation cases
Monitor, Anesthesia Machine, medical gases, medications, disposables, etc.

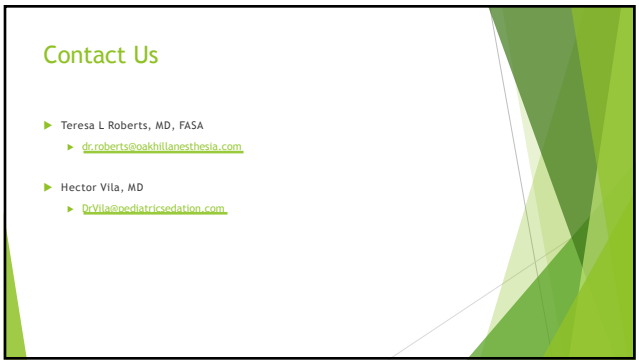
2


Starting your own OBA practice
Billing/Compensation
Fee for services vs. Insurance
Direct Bill to patient vs Bill Facility
Legal Contracts
Group vs. Independent Contractor agreements with offices
Pros
Cons

3


Growing your Business
Marketing
Organic growth, speak at study clubs, attend local meetings
Expanding practice
Individual vs. Group of anesthesia providers - pros/cons
Support Staff
Office Manager, Clinical Manager, Nurse/tech for office set up

4


Contact Us
Teresa L Roberts, MD, FASA
dr.roberts@oakhillanesthesia.com
Hector Vila, MD
DrVila@pediatricsedation.com

5

HANDOUT

Real World Cases: PBLD Format

Mary Ann Vann, MD, FASA
Panelist

03/20/2021
12:30 – 2:00pm (Eastern)

A Challenging Ophthalmologic Case

Mary Ann Vann MD FASA
Asst. Professor, Harvard Medical School

1

Patient Summary

93 year old Female Scheduled for Bilateral Cataract Surgery

- Severe Dementia – lives in facility
- Other medical conditions: h/o CVA 2016, Hyperlipidemia, Type 2 DM – metformin recently stopped , Arthritis, GERD, Hip fracture 2020
- Not "Cleared" by Primary Care PA

2

Questions: Preoperative

- Is this patient eligible for ambulatory surgery?
- Should this patient be done at your office based center?
  - Why? Why Not?
- Anything else you need to know before proceeding?

3

Questions: Anesthesia Plan

- MAC vs. GA – Does it matter?
- GA – How would you do it?
- Eye block – Needed or not?

4

References

- Preoperative Medical Evaluation for Cataract Surgery: Finally an Opportunity for Common Medical Sense to Prevail. Schein OD. Ophthalmology 2021 Feb;128(2).
- Preoperative Medical Testing and Falls in Medicare Beneficiaries Awaiting Cataract Surgery. Chen CL, McLeod SD, et al. Ophthalmology 2021 Feb:128(2).
- Preoperative Evaluation for Ambulatory Anesthesia What, When, and How? Okocha O, Gerlach RM, Sweitzer B. Anesthesiol Clin. 2019 Jun;37(2).
- Intravenous versus inhalational maintenance of anaesthesia for postoperative cognitive outcomes in elderly people undergoing non-cardiac surgery. Miller D, Lewis SR, et al. Cochrane Database Syst Rev 2018 Aug 21;8(8).

5

HANDOUT

Real World Cases: PBLD Format

Marc A. Saxen, DDS, PhD
Panelist

03/20/2021
12:30 – 2:00pm (Eastern)

Mark Saxen

Presentation: Office-Based Anesthesia for Dental Rehabilitation using TIVA

Summary for syllabus.

Complete Dental Rehabilitation is a term used to describe the comprehensive restoration of damaged dentition in children with early childhood caries, a condition estimated to affect approximately 2% to 3% of preschool-aged children in the United States.[1] Treatment of this condition under general anesthesia is quite common in both the hospital and office-based settings. [2] This presented describes a total intravenous technique (TIVA) for providing intubated general anesthesia in either environment.

The dental office environment often presents several challenges to the anesthesia provider. Most dental operatories are extremely small compared to ASC and hospital operating rooms. A typical 10ft by 11ft dental operatory is one-fourth the size of a typical hospital operating room and has 33% less square footage than the minimum standard space designed for endoscopy. Medical gas plumbing and waste gas evacuation is highly variable across offices.[3] Dental rehabilitation is usually a mix of light and heavy surgical stimulation, often at unpredictable times. The use of local anesthesia under general anesthesia is not universally practiced by pediatric dentists. In the midst of these factors, the anesthesia provider is expected to provide rapid induction, excellent analgesia in an immobile, unconscious patient, and rapid recovery with minimal postoperative pain and PONV.

In our experience, the TIVA technique outlined in this presentation consistently meets those expectations. Initial separation of the parent and child is achieved with an intramuscular injection of ketamine and midazolam. Nasal intubation is facilitated by bolus administration of propofol and remifentanil (in divided doses). Intraoral local anesthetic administration is performed immediately after the airway is secured, and often returns the patient to spontaneous ventilation within 3-5minutes of induction. Maintenance is achieved by administering separate infusions of remifentanil and propofol. Adjuvant drugs are added for PONV prophylaxis, control of oral secretions and postop analgesia, as needed. The chief advantage of this technique is the ability to separate and control analgesia and anesthesia in a balanced anesthetic approach which enables the anesthesia provider to rapidly adjust to changing levels of surgical stimulation while maintaining a light general anesthesia with a protected airway. [4] Compared to inhalational anesthesia, this approach is associated with less PONV.[5,6]

---

[1]Anil S, Anand PS. Early Childhood Caries: Prevalence, Risk Factors, and Prevention. Front Pediatr. 2017;5:157. Published 2017 Jul 18. doi:10.3389/fped.2017.00157

[2] 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. Anesthesia Progress. 2017 ;64(4):212-220. DOI: 10.2344/anpr-65-01-04.

[3] Saxen MA, Tom JT and Mason KP Advancing the Safe Delivery of Office-Based Dental Anesthesia and Sedation in: Ambulatory Anesthesia Walsh MT Ed., Anesthesiology Cl 37(2019) 333-348.

[4] Scott, H.B., Choi, S.W., Wong, G.T.C. and Irwin, M.G. (2017), The effect of remifentanil on propofol requirements to achieve loss of response to command vs. loss of response to pain. Anaesthesia, 72: 479-487. https://doi-org.proxy.ulib.uits.iu.edu/10.1111/anae.13781

[5] Lerman J, Jöhr M. Inhalational anesthesia vs total intravenous anesthesia (TIVA) for pediatric anesthesia. Paediatr Anaesth. 2009 May;19(5):521-34. doi: 10.1111/j.1460-9592.2009.02962.x. PMID: 19453585.

[6] König MW, Varughese AM, Brennen KA, Barclay S, Shackleford TM, Samuels PJ, Gorman K, Ellis J, Wang Y, Nick TG. Quality of recovery from two types of general anesthesia for ambulatory dental surgery in children: a double-blind, randomized rial. Paediatr Anaesth. 2009 Aug;19(8):748-55. doi: 10.1111/j.1460-9592.2009.03054.x. Epub 2009 Jun 15. PMID: 19538532.

HANDOUT

Real World Cases: PBLD Format

Rosalind Ritchie, MD
Panelist

03/20/2021
12:30 – 2:00pm (Eastern)

OBSTRUCTIVE SLEEP APNEA

Are these patients contra-indicated in the office?

Rosalind Ritchie MD
University of Kentucky
Professor, Anesthesiology

1

Case Scenario

You are a new graduate from an anesthesiology residency program. You have joined a private practice group in town. There has been a cancellation at the plastic surgery office that your group provides anesthesia coverage. Dr. Plastic calls your group to ask for anesthesia services for an add-on case. You are told the patient has been NPO for 8 hours. The Chief of Anesthesia sends you to the office to provide the anesthesia service. You arrive at the plastic surgery office and your patient walks in the pre-op area.

2

Case Scenario

Mrs. C. Pap is a 52 year old woman scheduled for lipo-abdominoplasty. She had been on the wait list and was notified late the night before of a cancellation.

- Vitals: BP 145/90 HR 94 O2Sat 96%
- Height 5'2
- BMI 45
- Type 2 Diabetes: Metformin BID
- HTN: Lisinopril and HCTZ
- GERD: Prilosec

3

Controversies in office-based anesthesia: obstructive sleep apnea considerations

4

Making the Argument

PROs: OSA can be cared for in OBA setting

- Studies comparing OSA patients in ASC vs. Inpatient; no clinically significant adverse outcomes
- Office based liability claims could have been prevented by better monitoring and patient selection, not specifically related to OSA patients
- Safe as long as surgeon is credentialed for same procedure I ASC and Hospital
- Multimodal pain mgmt. is essential
- Determining factor is the availability of resources, not the location

CONs: OSA is a contraindication in the OBA setting

- OSA patients have increased prevalence of comorbidities
- GA increases upper airway collapsibility in a dose dependent manner
- Anesthetic medicines impair the arousal response, protective mechanism for OSA patients
- OSA patients have increased propensity to have a difficult airway
- Most OBA lack the same resources available to an anesthesiologist in a ASC
- Variability or lack of federal oversight in OBA setting

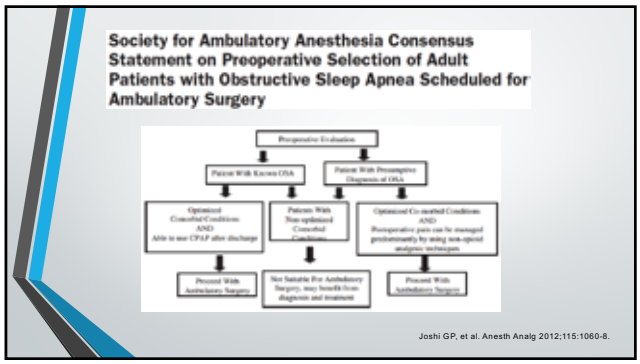
5

Things you can do

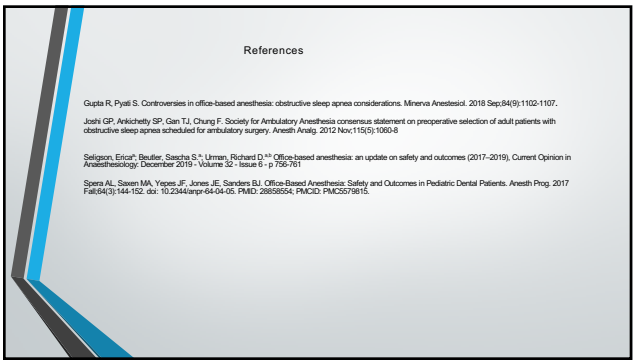
1. Measure the OSA risk using the STOP-BANG questionnaire
   - Snore?
   - Tired?
   - Observed Apnea
   - BP
   - BMI
   - Age
   - Neck circumference
   - Gender

   0-2 low risk; 3-4 moderate risk; 5-8 high risk
2. Comprehensively trained OBA anesthesiologist
   - Only 16 % of anesthesiology residency programs have an office-based rotation

6


Society for Ambulatory Anesthesia Consensus Statement on Preoperative Selection of Adult Patients with Obstructive Sleep Apnea Scheduled for Ambulatory Surgery
Joshi GP, et al. Anesth Analg 2012;115:1060-8.

7


References
Gupta R, Pyati S. Controversies in office-based anesthesia: obstructive sleep apnea considerations. Minerva Anestesiol. 2018 Sep;84(9):1102-1107.
Joshi GP, Ankichetty SP, Gan TJ, Chung F. Society for Ambulatory Anesthesia consensus statement on preoperative selection of adult patients with obstructive sleep apnea scheduled for ambulatory surgery. Anesth Analg. 2012 Nov;115(5):1060-8
Seligson, Erica[A]; Beutler, Sascha S.[A]; Urman, Richard D.[AB] Office-based anesthesia: an update on safety and outcomes (2017–2019), Current Opinion in Anaesthesiology: December 2019 - Volume 32 - Issue 6 - p 756-761
Spera AL, Sawan 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. doi: 10.2344/anpr-64-04-05. PMID: 28858554; PMCID: PMC5579815.

8

HANDOUT

Teaching the Next Generation

Brian M. Osman, MD
Panelist

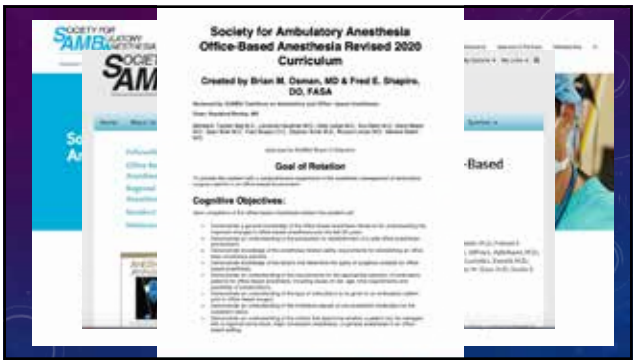
03/20/2021
2:00 – 2:30pm (Eastern)

Educating the Next Generation: A Curriculum for Providing Safe Anesthesia in Office-Based Surgery

Brian M. Osman, MD
Assistant Professor of Anesthesiology
University of Miami Miller School of Medicine
UHealth University of Miami Health System
Department of Anesthesiology, Perioperative Medicine and Pain Management
Miami, FL

Fred E. Shapiro, DO, FASA
Associate Professor of Anaesthesia
Harvard Medical School
Beth Israel Deaconess Medical Center
Department of Anesthesia, Critical Care, and Pain Medicine
Boston, MA

1



2

We Focused on the Following Four Areas

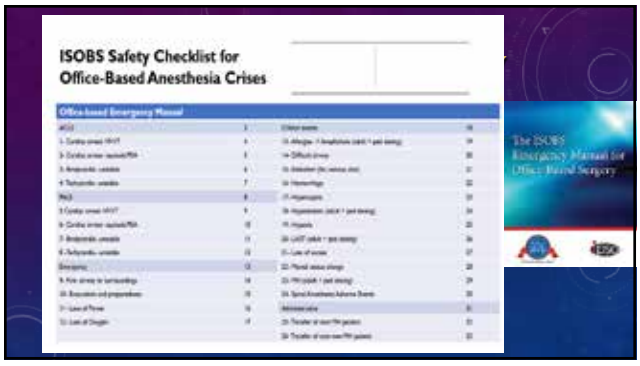
1. Safety Literature
2. Practice Management and Anesthesia Techniques
3. Accreditation
4. Legislation

3

New Office-Based Anesthesia Safety Literature

- Shapiro FE, Punwani N, Rosenberg NM, et al. Office-based anesthesia: safety and outcomes. Anesth Analg. 2014;119:276–85.
- Gupta V, Parikh R, Nguyen L, et al. Is office-based surgery safe? comparing outcomes of 183,914 aesthetic surgical procedures across different types of accredited facilities. Aesthet Surg J. 2017;37:226–235.
- Young S, Shapiro FE, Urman RD. Office-based surgery and patient outcomes. Curr Opin Anaesthesiol. 2018;31:707–712.
- Seligson E, Beutler SS, Urman RD. Office-based anesthesia:an update on safety and outcomes (2017-2019). Curr OpinAnaesthesiol. 2019; 32:756–761.
- De Lima A, Osman BM, Shapiro FE. Safety in office-based anesthesia: an updated review of the literature from 2016 to 2019. Curr Opin Anaesthesiol. 2019;32:749–755.
- Osman BM, Shapiro FE. Office-based anesthesia: a comprehensive review and 2019 update. Anesthesiol Clin. 2019;37:317–331.

4



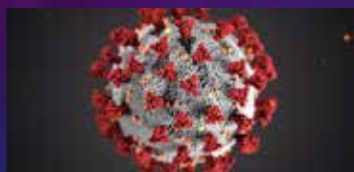
5

Updates to Office-Based Accreditation Requirements and New Legislation

- https://www.jointcommission.org/accreditation-and-certification/state-recognition/

6

HOW DO WE EDUCATE THE NEXT GENERATION?



- COVID-19, Technology shifts (Simulation)
- OBS and COVID (Dr. Stephen Young) & Simulation (Dr. Johnny Bellamente)

7

References

1. Seligson E, Beutler SS, Urman RD. Office-based anesthesia:an update on safety and outcomes (2017-2019). Curr OpinAnaesthesiol. 2019; 32:756–761.
2. About us: our mission, our vision, our goal. The Society for Ambulatory Anesthesia (SAMBA) 2020. Available at: https://sambahq.org/about-us/. Accessed Mar. 1, 2021.
3. Ahmad S, Shapiro FE. Society for Ambulatory Anesthesia Office-Based Curriculum. The Society for Ambulatory Anesthesia (SAMBA) 2010. Available at: https://samba.socious.com/p/cm/ld/fid=72. Accessed Mar. 1, 2021.
4. Osman BM, Shapiro FE. Society for Ambulatory Anesthesia Office-Based Anesthesia Revised 2020 Curriculum. The Society for Ambulatory Anesthesia (SAMBA) 2020. Available at: https://samba.memberclicks.net/assets/2019%20Curriculum%20Update_Corrected3.pdf. Accessed Mar. 1, 2021.
5. Shapiro FE, Punwani N, Rosenberg NM, et al. Office-based anesthesia: safety and outcomes. Anesth Analg.2014;119:276–85.
6. Young S, Shapiro FE, Urman RD. Office-based surgery and patient outcomes. Curr Opin Anaesthesiol. 2018;31:707–712.
7. Gupta V, Parikh R, Nguyen L, et al. Is office-based surgery safe? comparing outcomes of 183,914 aesthetic surgical procedures across different types of accredited facilities. Aesthet Surg J. 2017;37:226–235.
8. De Lima A, Osman BM, Shapiro FE. Safety in office-based anesthesia: an updated review of the literature from 2016 to 2019. Curr Opin Anaesthesiol. 2019;32:749–755.
9. Osman BM, Shapiro FE. Office-based anesthesia: a comprehensive review and 2019 update. Anesthesiol Clin. 2019;37:317–331.
10. Guidelines for office-based anesthesia. American Society of Anesthesiologists. 2018. Available at: https://asahq.org/standards-and-guide-lines/guidelines-for-office-based-anesthesia. Accessed Mar. 1, 2021.

8

11. Practice guidelines for moderate procedural sedation and analgesia 2018: a report by the American Society of Anesthesiologists Task Force on moderate procedural sedation and analgesia, the American Association of Oral and Maxillofacial Surgeons, American College of Radiology, American Dental Association, American Society of Dentist Anesthesiologists, and Society of Interventional Radiology. Anesthesiology. 2018;128:437–479.
12. Rosenberg NM, Urman RD, Gallagher S, et al. Effect of an office-based surgical safety system on patient outcomes. Eplasty. 2012;12:e59.
13. Robert MC, Choi CJ, Shapiro FE, et al. Avoidance of serious medical errors in refractive surgery using a custom preoperative checklist. J Cataract Refract Surg. 2015;41:2171–2178.
14. The ISOBS emergency manual for office-based surgery. The Emergency Manuals Implementation Collaborative. Available at: https://cdn2.sph.harvard.edu/wp- content/uploads/sites/116/2017/06/ISOBS-Checklists.pdf. Accessed Mar. 1, 2021.
15. Resources from ASA Committees. American Society of Anesthesiologists. 2020 Available at: https://www.asahq.org/standards-and-guidelines/resources-from-asa-committees. Accessed Mar. 1, 2021.
16. Office-Based Surgery Laws. The Policy Surveillance Program:A LawAtlas Project. 2016. Available at: http://lawatlas.org/datasets/office-based-surgery-laws. Accessed Mar. 1, 2021.
17. State Recognition. The Joint Commission. 2020. Available at: https://www.jointcommission.org/accreditation-and-certification/state-recognition/. Accessed Mar. 1, 2021.

9

HANDOUT

Teaching the Next Generation

Steven Young, MD
Panelist

03/20/2021
2:00 – 2:30pm (Eastern)

Office-Based Anesthesia: Gaps in knowledge

Steven Young, MD
CA3/PGY4 Anesthesia Resident
Beth Israel Deaconess Medical Center
Mar 20, 2021

1

Objectives

- Recognize the increased variety of office-based procedures
- Understand clinical practice differences in the office-based setting
- Define office-based anesthesia policies & administrative issues

2

Clinical Gaps

- Outpatient vs inpatient
- Appropriate Patient selection
- Types of Procedures
- Drugs (how to obtain, storage of controlled substances)
- Physician board certification
- COVID considerations

3

Facility Gaps

- Facility accreditation
- Non-OR based anesthetizing location
- Staff scheduling
- Gas scavenging
- Equipment logistics, storage, cleaning
- ACLS resuscitative equipment

4

Administrative Gaps

- Documentation
- Patient PACU recovery
- Payment structure
- Transfer of patients in emergency
- Quality monitoring

5

References

- SAMBA Office-Based Anesthesia Curriculum https://samba.memberclicks.net/assets/2019%20Curriculum%20Update_Corrected3.pdf
- ASA Guidelines for Office-based Anesthesia. Date accessed 2/14/2021 https://www.asahq.org/standards-and-guidelines/guidelines-for-office-based-anesthesia
- Ambulatory Anesthesia. Chung M, Vazques R. Miller's Anesthesia Ninth Edition.
- Non-Operating Room Anesthesia. Chung M, Vazques R. Miller's Anesthesia Ninth Edition.

6

HANDOUT

Real World Cases: PBLD Format

Zak Messieha, DDS FICD FACD Dipl. ADBA
Panelist

03/20/2021
12:30 – 2:00pm (Eastern)

INHALATION TECHNIQUES IN OBA

SAMBA OBA SYMPOSIUM MARCH 20TH, 2021
ZAK MESSIEHA, DDS FICD FACD DIPL. ADBA
DENTIST ANESTHESIOLOGIST, PRIVATE PRACTICE
RETIRED, CLINICAL PROFESSOR

OBJECTIVES

- TO DISCUSS THE ADVANTAGES OF INHALATION ANESTHESIA IN OBA
- TO LIST THE CHALLENGES THAT UTILIZING SUCH TECHNIQUES CAN PRESENT
- TO PROPOSE SOLUTIONS TO SUCH CHALLENGES AND HOW TO IMPROVE THE OUTCOMES OF PATIENT CARE UTILIZING SUCH TECHNIQUES

ADVANTAGES

- FACILITATES INDUCTION OF GENERAL ANESTHESIA IN SMALLER CHILDREN AND INDIVIDUALS WITH NEEDLE PHOBIA
- FAVORABLE CLINICAL EFFECT INCLUDING PROFOUND CORTICAL AND BRAIN STEM EFFECTS AIDING IN DEEPER AND LESS STIMULATING ANESTHETIC AND CAN FREQUENTLY LEAD TO OPIOID-FREE PROTOCOLS AND BETTER MAINTENANCE OF LONGER ANESTHETICS
- BRONCHODILATION EFFECT IN INDIVIDUALS WITH RAD
- SHORT DURATION OF RECOVERY ESPECIALLY FOR SEVOFLURANE AND DESFLURANE

CHALLENGES

- RISK FOR MALIGNANT HYPERTHERMIA (DANTROLENE IS A MUST)
- NEED FOR EFFECTIVE SCAVENGING SYSTEM
- HIGH INCIDENT OF DELIRIUM AND AGITATION ESPECIALLY IN YOUNGER CHILDREN
- PORTABLE ANESTHESIA MACHINE OR DELIVERY SYSTEM IS NEEDED
- COST OF SEVOFLURANE IS RELATIVELY HIGH

HOW TO IMPROVE OUTCOMES

- MAINTENANCE OF LONGER CASES WITH A VOLATILE ANESTHETIC THE SWITCHING TO PROPOFOL TIVA IN THE FINAL 30 TO 45 MINUTES OF THE PROCEDURE
- THE ABOVE TECHNIQUE ALLOWS FOR SIGNIFICANT REDUCTION IN DELIRIUM AND AGITATION IN CHILDREN
- IMPLEMENT MH PROTOCOL UTILIZING THE GUIDELINES AND TOOLS PROVIDED BY THE MALIGNANT HYPERTHERMIA SOCIETY OF NORTH AMERICA
- FAMILIARIZE YOURSELF WITH THE EXISTING SCAVENGING SYSTEMS AND, IF NECESSARY, UTILIZE PORTABLE SCAVENGERS

REFERENCES

- PREVENTION OF SEVOFLURANE DELIRIUM WITH PROPOFOL. MESSIEHA ZS ANESTH PROG 60:67-71 2013
- AN OVERVIEW OF ANESTHETIC PROCEDURES, TOOLS AND TECHNIQUES IN AMBULATORY ANESTHESIA. MESSIEHA ZS AMBULATORY ANESTHESIA 2:21-28 2015

HANDOUT

Teaching the Next Generation

John Bellamente, MD MS
Panelist

Educating the Next Generation of Learners: Simulation Programs for Office Based Anesthesia

John Bellamente, MD MS
PGY-4
March 20, 2021

Beth Israel Lahey Health

Beth Israel Deaconess Medical Center | HARVARD MEDICAL SCHOOL TEACHING HOSPITAL

1

Learning Objectives

- Highlight the unique patient safety challenges that exist in the office-based anesthesia setting
- Understand the education needs of the next generation of learners
- Recognize the importance of simulation-based education
- Identify evidence supporting the use of simulation
- Define an office-based simulation curriculum

2

Educating the Next Generation

- Changes in Office-Based Practice
  - Expansion
  - Patient population
  - Systems adaptations as a result of COVID-19
- SAMBA OBA Curriculum[1]
  - Cognitive aids
  - Practice management protocols
  - Safety checklists
- Technology-based Learning and Simulation
  - Proportion of virtual learning has rapidly increased
  - Immersion in real-world clinical scenarios in a safe environment

1. Osman BM, Shapiro FE. Society for Ambulatory Anesthesia Office-Based Anesthesia Revised 2020 Curriculum.

3

Simulation Education

- Simulation education and patient safety[2]
  - Emergency drills required for accreditation
  - Effective in gauging readiness
  - Improves self-confidence, knowledge, and individual and team performance
  - Procedural simulation, deliberate practice, and debriefing can improve operational performance in clinical settings
- A feasibility study employing an in-situ simulation program[3]
  - Allowed assessment of OBA safety and regulatory issues
  - Resulted in greater awareness of patient safety issues

2. Griswold S, Ponnuru S, Nishisaki A, et al. The emerging role of simulation education to achieve patient safety: translating deliberate practice and debriefing to save lives. Pediatr Clin North Am. 2012;59(6):1329-40.

3. Shapiro, FE, Pavlowski JB, Rosenberge NM, etal. The Use of In-Situ Simulation to Improve Safety in the Plastic Surgery Office: A Feasibility Study. ePlasty 2014:9

4

OBA Simulation Curriculum

- In-situ simulation
- Characteristics
  - Customizable and scalable
  - Focused on safety
  - Debriefing and feedback
- Goals
  - Improving safety education of office-based personnel
  - Educating trainees on evidence-based techniques to improve patient safety
  - Sustain quality and safety of office-based practice

5

References

- Osman BM, Shapiro FE. Educating the Next Generation: A Curriculum for Providing Safe Anesthesia in Office-Based Surgery. ASPF Newsletter, June 2020; 53-56.
- Griswold S, Ponnuru S, Nishisaki A, et al. The emerging role of simulation education to achieve patient safety: translating deliberate practice and debriefing to save lives. Pediatr Clin North Am. 2012;59(6):1329-40.
- Shapiro, FE, et al. The Use of In-Situ Simulation to Improve Safety in the Plastic Surgery Office: A Feasibility Study. *ePlasty* 2014:9.
- Rosenberg NM, et al. Effect of an Office-Based Surgical Safety System on Patient Outcomes. *ePlasty* 2012;12.
- Diekmann, P et. al The use of simulation to prepare and improve responses to infectious disease outbreaks like COVID-19: practical tips and resources from Norway, Denmark, and the UK. Adv Simul (Lond). 2020; 5: 3.
- Young S, Shapiro FE, Urman RD. Office-based surgery and patient outcomes. Curr Opin Anaesthesiol. 2018;31:707–712.
- Osman BM, Shapiro FE. Society for Ambulatory Anesthesia Office-Based Anesthesia Revised 2020 Curriculum. Reviewed by SAMBA Taskforce on Ambulatory and Office-based Anesthesia. Chair: Rosalind Ritchie, MD.
- Shapiro FE, Young S, Urman RD, Osman BM. Teaching the Next Generation about Safe Practices in Office-Based Anesthesia and Surgery. Session: 289, Panel
- Healthcare simulation to prepare for the COVID-19 pandemic. J Clin Anesth. 2020 Nov; 66: 109928.
- Young S. Hannenberg, Urman R, Shapiro F. ISOBS safety checklist for office-based anesthesia crises. https://www.emergencymanuals.org/tools-resources/free-tools (Accessed on March 26, 2018).
- Office-based Anesthesia: Considerations for Anesthesiologists In Setting Up and Maintaining a Safe Office Anesthesia Environment, from ASA Committee on Ambulatory Society for Ambulatory Anesthesia (SAMBA) Committee on Office-Based Anesthesia. American Society of Anesthesiologists, 2008.

6