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HARVARD MEDICAL SCHOOL TEACHING HOSPITAL

OFFICE BASED ANESTHESIA: Safety and Outcomes Research

Fred E. Shapiro DO, FASA
Associate Professor of Anaesthesia,
Harvard Medical School
Boston, MA

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Disclosure

- I have no financial relationships to disclose

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The Institute for Safety in Office-Based Surgery

- Non-profit organization established 2009
- Purpose:
 - Promote patient safety and outcomes research
 - Design tools for advanced detection and prevention of adverse events
 - Collaborate across ALL subspecialties
 - Educate physicians and patients
 - Generate evidence-based standard of care for safer office based practice


www.isobs.org
"to promote patient safety in office-based surgery and to encourage collaboration, scholarship, physician and patient education"

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Objectives

- History and Background
- Safety and Outcomes Research
- Future direction

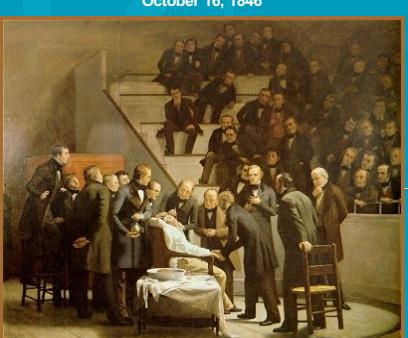
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October 16, 1846



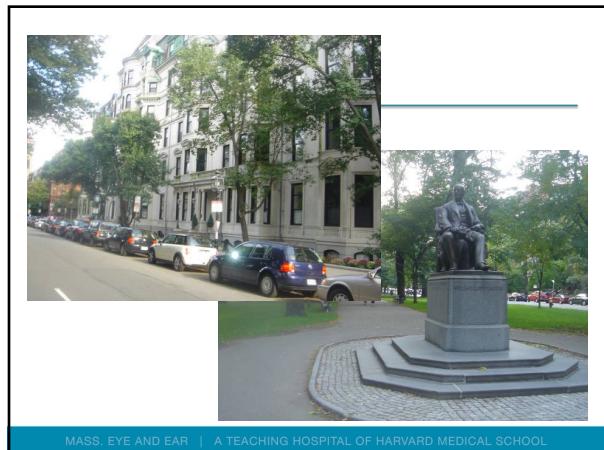
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Ether Monument, Boston, MA

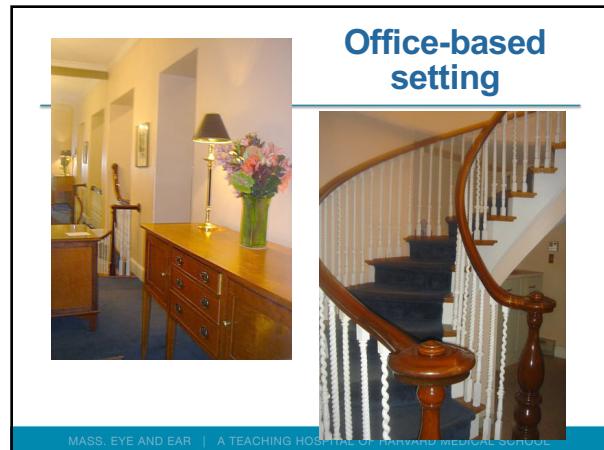


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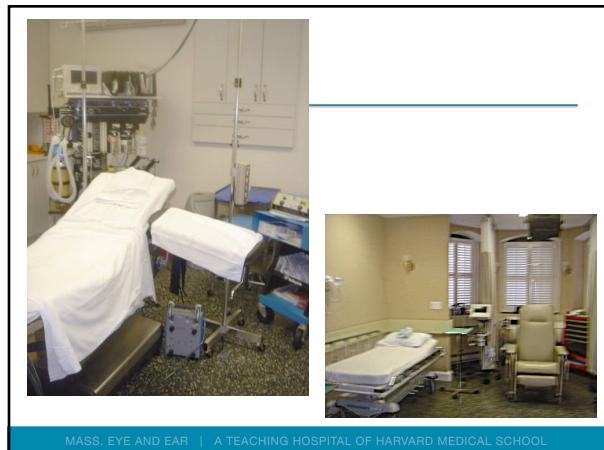
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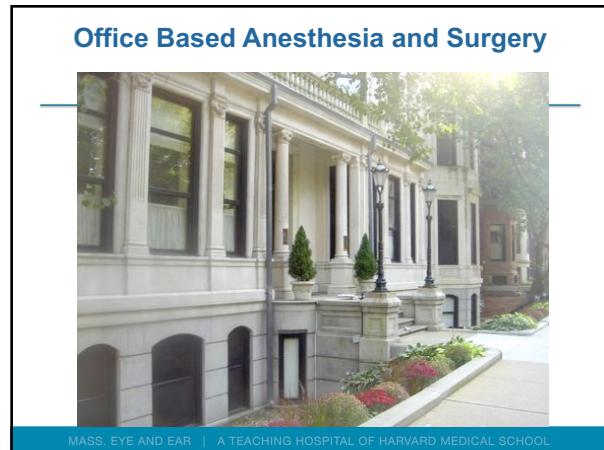
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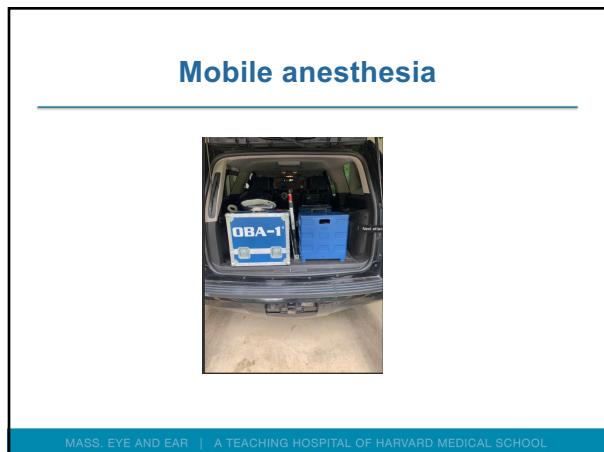
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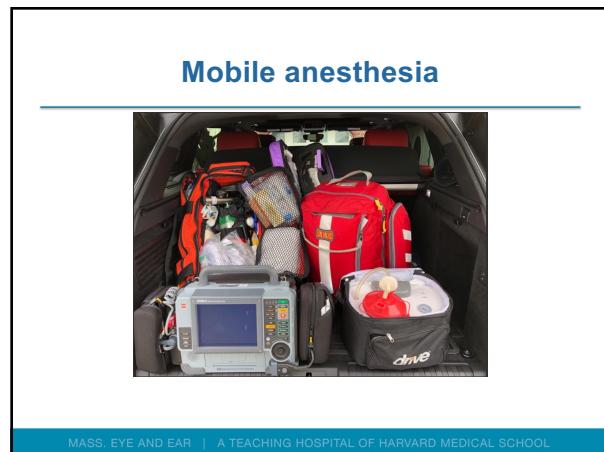
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Mobile anesthesia



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Dental office: March 24, 2022



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"Wild Wild West of Healthcare"

- Lack of uniform regulation of office based practice
- Increasing number and variety of cases
- Increasing complexity of cases and patients
- Sedation by anesthesia and non-anesthesia personnel
- Widely publicized fatalities and malpractice claims

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Recent Media Attention: High-Profile Events



Tean died of malignant hyperthermia during breast surgery. Parents suing surgeon and anesthesiologist for not recognizing MH and having enough dantrolene stocked in outpatient surgery center



Eight-year-old died after receiving three times the prescribed amount of sedation medication for a wisdom tooth extraction



Three-year-old died of possible asphyxiation after general anesthesia for tooth extraction



Dr. Henry Patel, a cardiologist, while under anesthesia for a dental implant and never regained consciousness

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Exponential growth

- Office-based surgery (OBS) has grown significantly in the last 30 years.
- Outpatient procedures (USA) expected to increase:
 - 129 million (2018) → 144 million (2023)
 - offices ~ 24-35% of the volume. (1,2)
- ~3x growth from 2005, ASA estimated 10 million office procedures. (3)

1. US Outpatient Surgical Procedures Market by Surgical Procedure Type, Patient Care Setting- US Forecast to 2023. January 2019. Accessed April 16, 2021. <http://www.marketsandmarkets.com/Market-Reports/Outpatient-Surgery-Market-101011111.html>

2. 2019. Accessed April 16, 2021. <http://www.amsa.org/AMSA/About/Statistics/Outpatient-Procedure-Statistics>

3. Muir WM, 2017. In: Shapiro E, editor. *Manual of office-based anesthesia procedures*. Philadelphia: Lippincott, Williams and Wilkins; 2017: 16-81.

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Safety and Outcomes Research

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Office-Based Anesthesia: Safety and Outcomes

Fred E. Shapiro, DO,* Nathan Punwani, MD,† Noah M. Rosenberg, MD,‡ Arnaldo Valedon, MD,§
Rebecca Iversky, 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

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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

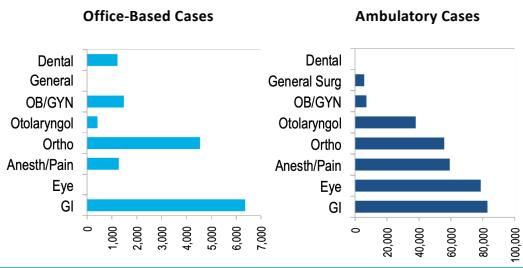
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A Comparison Between Office and Ambulatory Practices: Analysis from the National Anesthesia Clinical Outcomes Registry

Samir R. Jani, MD, MPH, Fred E. Shapiro, DO, Hubert Kordylewski, James H. Diaz, MD, MPH,
Alan D. Kaye, MD, PhD, Richard P. Dutton, MD, MBA, Richard D. Urman, MD, MBA

Most active specialties (2013)



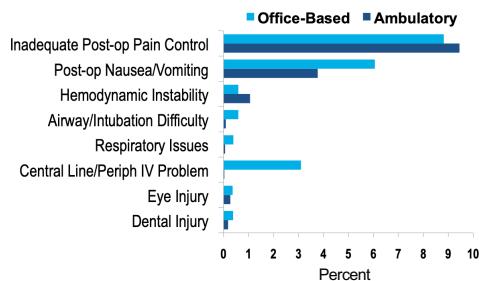
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NACOR Reported Outcomes (2010-14 combined)



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The assessment of a growing mobile anesthesia practice from 2016 to 2019: A retrospective observational cohort study of 89,999 cases comparing ambulatory surgery (ASC) and office-based surgery (OBS) centers using a high-fidelity, anesthesia-specific electronic medical record (EMR)

Fred E. Shapiro DO, FASA* | Brian H. Park MD† | Tal S. Levy MD‡ | Brian M. Osman MD§

- 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

J Healthc Risk Manag. 2022;1-9. doi:10.1002/jhrm.21499

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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%	

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ASC and OBS 2019 (Annualized)

	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

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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%

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Future Directions

- Suggestion: Field would benefit if everyone undertakes research and publishes
- Develop best practices, safety protocols and benchmarks

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SAMBA OBA Symposium



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