**The changing landscape of OBA:
how to overcome the challenges to
ensure patient safety**

Fred E. Shapiro DO, FASA

Associate Professor of Anaesthesia,
Harvard Medical School

Boston, MA

Disclosure

- Consultant- Fresenius-Kabi USA

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"

Objectives

- Safety and Outcomes Research
- APSF grant: Smart Assistant technology
- HMS: Patient Safety Elective
- Future direction – OBA safety

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. https://www.researchandmarkets.com/research/tfnm9z/united_states?w=5.
2. Plastic Surgery Statistics Report: ASPS National Clearinghouse of Plastic Surgery Procedure Statistics. American Society of Plastic Surgeons. 2019. Accessed April 16, 2021. https://www.plasticsurgery.org/documents/News/Statistics/2019/plastic-surgery-statistics-full-report-2019.pdf.
3. Rutkauskas JS. The statistics (chapter 2). In: Shapiro FE, editor. *Manual of office-based anesthesia procedures*. Philadelphia: Lippincott, Williams and Wilkins;2007, p. 6-10.

Safety and Outcomes Research

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¶

- 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

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

A Comparison Between Office and Ambulatory Practices: Analysis from the National Anesthesia Clinical Outcomes Registry
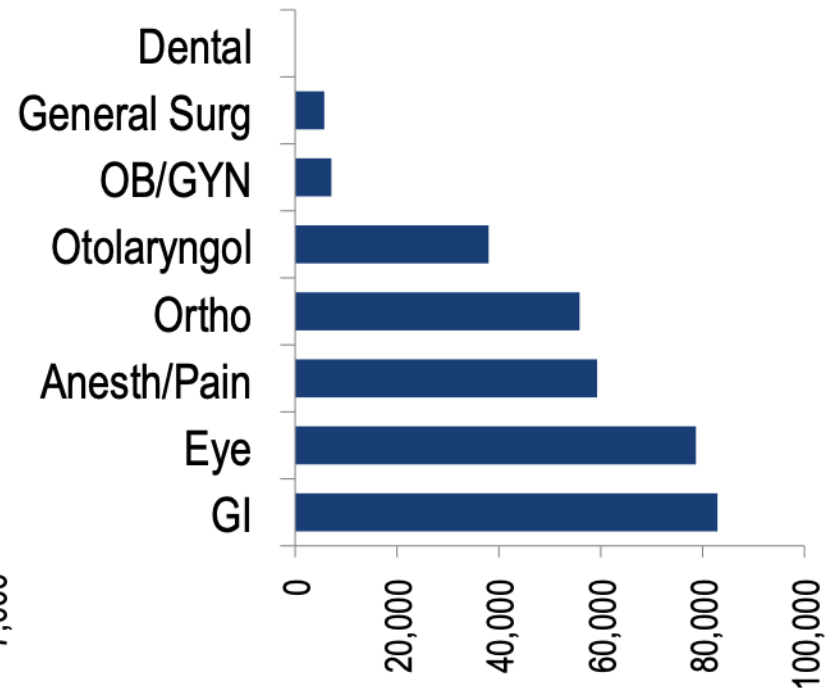
Samir R. Jani, MD, MPH, Fred E. Shapiro, DO, Hubert Kordylewski, James H. Diaz, MD, MPH, Alan D. Kaye, MD, PhD, Richard P. Dutton, MD, MBA, Richard D. Urman, MD, MBA

Most active specialties (2013)

Office-Based Cases

Ambulatory Cases

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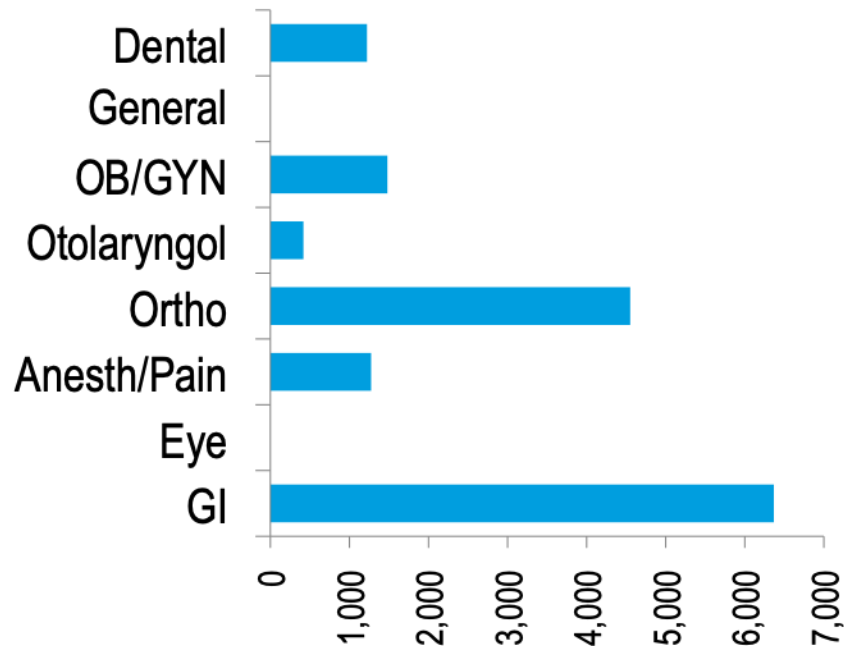
The assessment of a growing mobile anesthesia practice from 2016 to 2019: A retrospective observational cohort study of 89,999 cases comparing ambulatory surgery (ASC) and office-based surgery (OBS) centers using a high-fidelity, anesthesia-specific electronic medical record (EMR)

Fred E. Shapiro DO, FASA[1] | Brian H. Park MD[2] | Tal S. Levy MD[3] | Brian M. Osman MD[4]

- 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

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%	

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**

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%

Anesthesia Patient Safety Foundation Grant

"Testing a Proof of Concept Model for Real-Time, Dual Interactive Decision Support in the Perioperative Period Using the SMART Assistant Device"

- video /audio system to aid in real time decision making
- prevent and treat patient deterioration

Anesthesia Patient Safety Foundation Grant: Smart Assistant

Anesthesia Patient Safety Foundation

1. **Artificial Intelligence:** pattern recognition- physiologic data+ med hx

2. **Differential dx coupled w best practices** and emergency checklist

3. **Customized:** provider need, clinical situation (OR, ICU, ASC, OBS)

4. SA software system **can be integrated into EMR**

5. **Visual** (glass wear e.g. google glass) **or audio response** (eg SIRI, or ALEXA)

6. **Clinician capture data w/ all senses** while viewing pt or surgical site

HMS: Ambulatory Anesthesia Patient Safety Elective

HMS Ambulatory Patient Safety Elective

- Expose students to adult and pediatric patients presenting for ambulatory surgical procedures in the **hospital, ambulatory surgery center (ASC) and office-based setting (OBS**).

- Appreciate **patient and procedure selection**

- Understand **the role of the anesthesiologist and the principles that guide the performance of safe anesthesia care in the pre, intra, and postoperative setting**

Learning Objectives

- **Appreciate how the multidisciplinary interaction between the anesthesia care team, surgeons and nursing affects patient safety**

- Participate as a member of the anesthesia care team comprised of physicians and certified nurse anesthetists (CRNAs) helping gather information which will be integrated into the formulation of the anesthetic plan

Future Direction: Develop the highest quality and standard of safe patient care

- 25 years: changing landscape of OBA
- Number and complexity of pts and procedures continues to grow
- Lack of uniform regulation
- Proper patient selection
- **Suggestion: Field would benefit if everyone undertakes similar research**
- **Develop and implement safe and efficient systems to optimize patient outcomes and minimize morbidity**