47th ANNUAL INTERNATIONAL CONGRESS
EHS 2025 JUNE 4-6 PARIS - FRANCE

THEME: RESIDENT EDUCATION

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Title: Teaching Hernia Repairs – Why Private Practice Surgeons Matter for Resident Education

Background

- Hernia repairs (inguinal & ventral) are core to general surgery training.
- Academic centers handle complex cases; private practices often adopt innovative MIS/robotic approaches sooner.
- Hypothesis: Private practice rotations will broaden resident exposure, fill educational gaps, and improve operative proficiency.

Study Objectives

1. Compare case distribution and technique usage between academic (AA), private (PA), and private + academic-affiliated (PWA) surgeons.
2. Quantify differences in patient acuity, hernia size, surgical approach, and mesh placement.
3. Assess implications for residency training curricula.

Methods

- **Design**: Retrospective cohort via ACHQC (2013–2023).
- **N = 91,939 adult** (≥18 years old) inguinal & ventral hernia repairs.
- **Data**: Age, BMI, ASA class, hernia size, approach (open/lap/robotic), mesh use, and practice setting (AA, PA, PWA).
- **Statistics**: χ^2, Fisher's exact, Z-tests; Cohen's h for effect size; $p < 0.01$

Key Results

1. Case Distribution & Practice Settings

- Academic-affiliated **(AA)** surgeons performed **56%** (n=51,566) of cases, whereas private practice alone **(PA)** and private + academic affiliates (PWA) accounted for the remaining **44%** (n=40,373).

2. Inguinal Hernia Approaches

- **PA** surgeons lead in **robotic** repairs and **PWA** surgeons lead in **open** repairs
- **PWA** perform more open tissue repairs **without mesh**

3. Ventral Hernia Approaches

- **AA** surgeons perform **68%** open repairs, while **PA (37%)** and **PWA (33%)** surgeons favor **robotic** techniques; laparoscopic stays at 8-12% across all groups

4. Hernia Size & Patient Acuity

- Academic cases involve **larger** defects (~7cm) and **higher** ASA III-IV proportions vs. Private (~3.9cm) and PWA (~3.5) cohorts.

5. Mesh Placement Patterns:

- **AA** surgeons prefer retrorectus placement **(37.4%)**; PA and PWA use **intraperitoneal/retroperitoneal (>40% and ~30%)**
- **PWA** surgeons show higher open **onlay** use (13.3% vs. PA 2.1% and AA 4.6%).

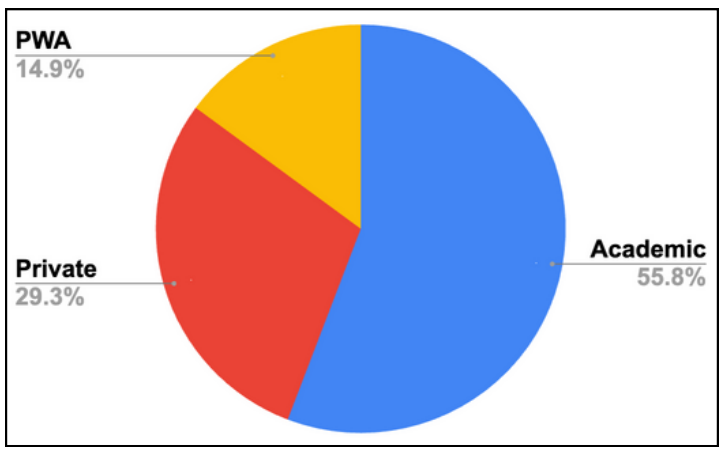
6. Inguinal and Ventral Repair Trends

- **Inguinal:** Laparoscopic and open procedures **declined**, while robotic inguinal repairs more than doubled across all practice settings.
- **Ventral:** Robotic ventral surgeries surged from 2% to 39.5%, as open and laparoscopic rates decreased—highlighting faster robotic adoption, especially in private practice.

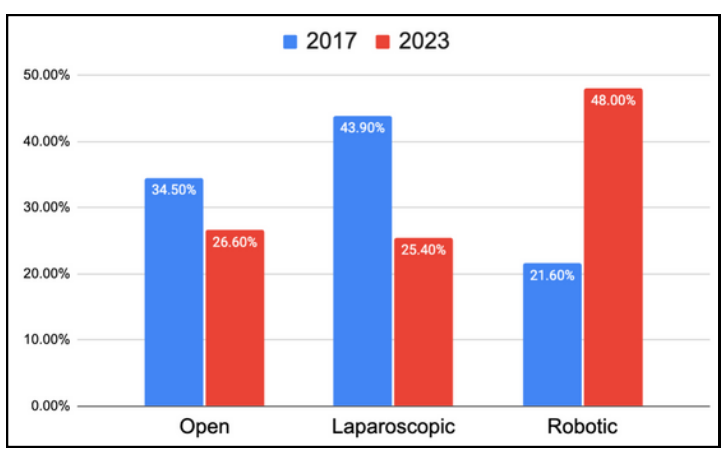
Inguinal Hernias	AA	PA	PWA	p-value
Surgical Approach, N	17581	13209	7236	**<0.01**
• Open	5751 (32.7%)	3722 (28.2%)	**2929 (40.5%)**	
• Laparoscopic	6105 (34.7%)	4222 (32%)	1960 (27.1%)	
• Robotic	5725 (32.6%)	**5265 (39.8%)**	2347 (32.4%)	
Open Tissue -Based Inguinal Hernia Repair without Mesh	3.7%	**7.5%**	4.1%	**<0.01**

Ventral Hernias	AA	PA	PWA	p-value
Surgical Approach, N	26044	10650	5239	**<0.01**
• Open	**17731 (68.1%)**	5745 (54%)	3034 (57.9%)	
• Laparoscopic	3125 (12%)	928 (8.7%)	457 (8.7%)	
• Robotic	5188 (19.9%)	**3977 (37.3%)**	**1748 (33.4%)**	
Average Hernia Size, N	33492	13663	6412	**<0.01**
• Width ± (SD) (cm)	**7.05 ± 6.45**	3.91 ± 3.62	3.48 ± 3.48	
Mesh Placement	26044	10650	5240	**<0.01**
• (Open) Onlay	1207 (4.6%)	222 (2.1%)	**699 (13.3%)**	
• Retrorectus	**9735 (37.4%)**	2591 (24.3%)	619 (11.8%)	
• Intraperitoneal	6590 (25.3%)	4251 (40%)	2260 (43.1%)	
• Retroperitoneal	4991 (19.2%)	3183 (29.9%)	1478 (28.2%)	

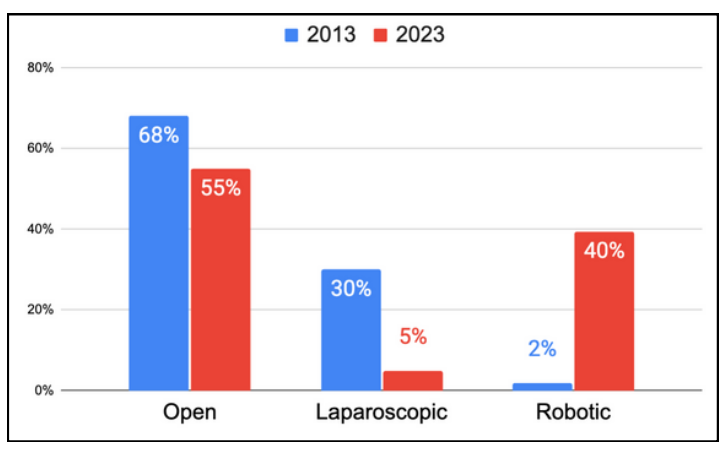
1. INGUINAL AND VENTRAL HERNIA REPAIR DISTRIBUTION (2013-2023)



TRENDS FOR INGUINAL HERNIA REPAIR



TRENDS FOR VENTRAL HERNIA REPAIR



Discussions

- **Distinct Practice Patterns & Patient Profiles**: Academic surgeons treated **higher-risk** patients with **larger** ventral hernias and relied predominantly on **open** techniques, whereas **private** surgeons operated on lower-risk populations, adopted **robotic** platforms more rapidly for both ventral and inguinal repairs, and favored intraperitoneal mesh over the retrorectus approach.
- **Surgeon Training & Subspecialization Differences:** Hernia repairs in private settings were often performed by general surgery–only surgeons with a higher rate of MIS subspecialization, while academic cases frequently involved acute/trauma-trained or dual-trained (MIS + acute/trauma) faculty.

Limitations and Conclusions

- **Study Limitations:** The ACHQC's self-selected cohort and lack of resident-level data and long-term follow-up limit generalizability and training exposure assessment
- Significant variation exists in practice patterns, patient acuity, and technology use between AA and PA/PWA surgeons.
- Integrating private practice rotations into residency curricula can **fill educational gaps, especially in MIS/robotic techniques** and lower-acuity cases.
- **Future work:** Evaluate resident performance metrics and patient outcomes across mixed training environments.