From playbook to practice: High-impact solutions to remove bottlenecks and improve access & care

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Program Background



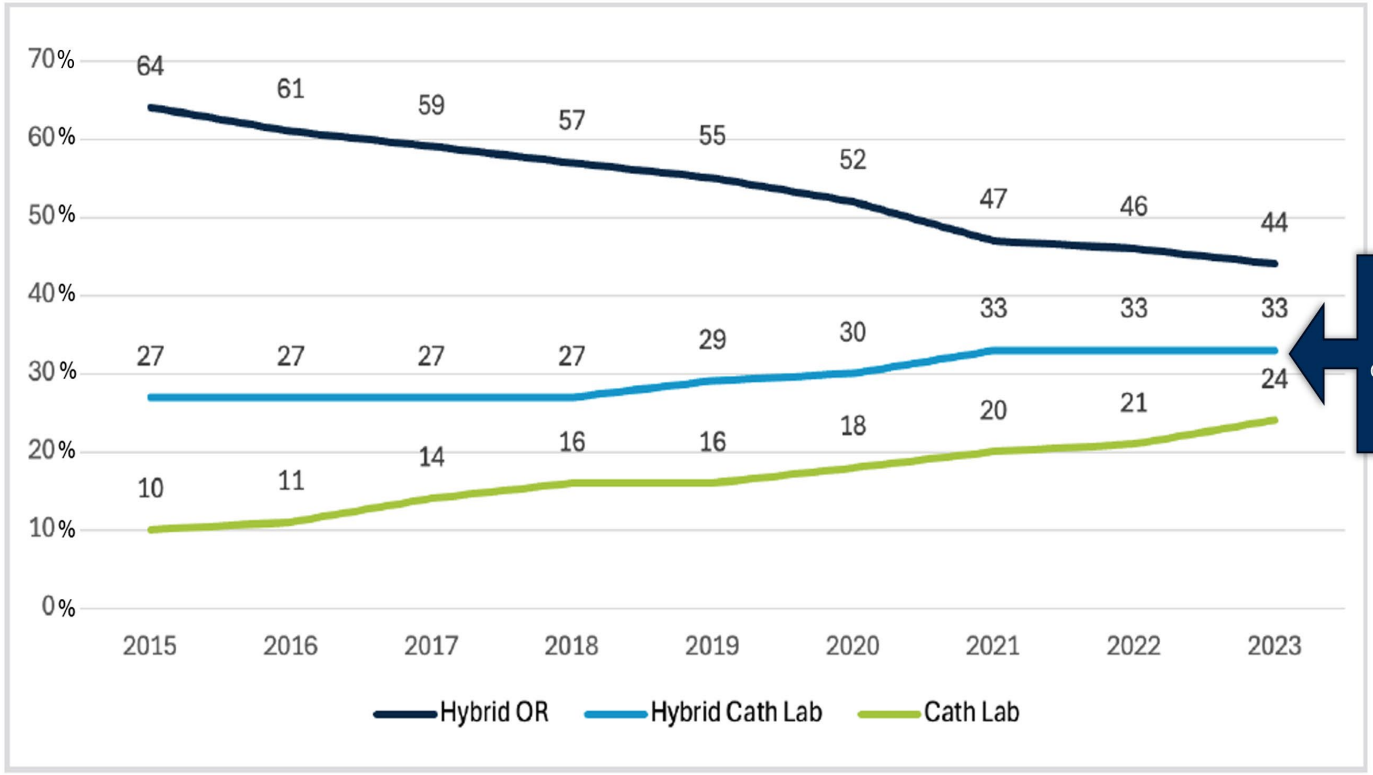
University of Maryland Medical Center Baltimore, MD

- Heart team consists of 2 ICs, 2 surgeons, 1 Clinical program manager, 1 APP, 1 nurse navigator
- Structural Heart Program:
  - Aortic: TAVR started 2012
  - Mitral: TEER, TMVR, SAPIEN M3 System (coming soon!!)
  - Tricuspid: TEER, The EVOQUE System 2025



Movement of TAVR Out of the OR

Figure 1: TAVR Procedure Location, Calendar Years 2015-2023, STS/ACC TVT Registry Database



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The Capacity Challenge: TAVR growth is Outpacing Traditional Workflow Models

- TAVR programs are increasingly dependent on efficient cath lab workflows
- Anesthesia coverage can be a limiting factor when programs try to add TAVR capacity
- Delays, cancellations, or limited procedure days can affect access and throughput
- Nurse-led sedation can be considered as one strategy to reduce workflow dependency on anesthesia for appropriate patients

Why nurse led sedation? A Program Prospective

Administrator priority	Nurse-led sedation value
Improve access	Greater scheduling flexibility and availability
Optimize scarce resources	Allows anesthesia to focus on higher acuity, complex or competing procedural needs
Reduce avoidable disruption	Fewer anesthesia-related delays or cancellations for appropriate TAVR cases
Support growth	Create a scalable model as TAVR volumes increase
Maintain safety	Use clear patient selection, screening, training and escalation

The Business Case: Where NLS creates value

- Access
- Throughput
- Reliability
- Resource allocation
- Growth readiness



Partnering with Anesthesia not Replacing Them



Position nurse-led sedation to prioritize anesthesia expertise where it is most needed, not as a replacement model



Discuss with Anesthesiologist early in patient selection criteria, escalation pathways, training, and go-live planning



Use transparent data to monitor outcomes, case selection, and expectations



Reinforce that anesthesia remains essential for high-risk, complex and non-minimalist candidates. Minimalist – candidates for NLS.

Securing Leadership Buy-In



Patient Selection: The Foundation for Safe Scaling

Not every patient is appropriate for nurse led sedation

Success depends on agreed-upon inclusion/exclusion criteria

The heart team and anesthesia should define clear escalation pathways

Selection criteria should be embedded into workflow, documentation, and scheduling

Inclusion Criteria:

- BMI <40
- Ejection Fraction > 30%
- OSA with assisted device
- Not claustrophobic
- Amenable to femoral access

Exclusion Criteria:

- BMI >40
- Difficult airway
- Aspiration risk
- EF <30%
- Unable to lie flat/position supine
- Patient preference
- Access concerns or alternative access
- Mallampati >3 (See below)

Who Owns What?

Workstream	Owner	Key questions before go-live
Patient selection	Heart team & anesthesia	Who qualifies? Who requires anesthesia?
Sedation protocol	Nursing, anesthesia, and physician champions	What medications, monitoring, and escalation steps are involved?
Training competency	Nursing leadership	Who is trained? How is competency documented?
Scheduling	Cath lab & structural heart team	How is sedation type identified before the procedure day?
Quality monitoring	Program leadership	What outcomes are reviewed and how often?

Next Steps!

- ❑ **Form a multidisciplinary work group** to achieve buy-in and consensus. Be sure to engage with anesthesiology early in the planning process.
- ❑ **Develop policies and procedures** clarifying patient selection criteria and nursing responsibilities. Include key facility leaders and staff in their review and approval.
- ❑ **Collaborate with IT** to incorporate policy and procedure content into standard order sets and procedural documentation.
- ❑ **Create standard workflows** for patient review and selection for NLS.
- ❑ **Work with cath lab and anesthesia scheduling teams** to ensure the sedation type is clearly indicated on the cath lab procedure schedule.
- ❑ **Use change management strategies** to support and sustain process changes.
- ❑ **Provide education to cath lab staff** on the specific knowledge and skills needed for TAVR procedural sedation.
- ❑ **Plan simulation opportunities** to familiarize staff with emergency management of patients.
- ❑ **Collect and review operational, financial and patient outcomes** on a regular basis. Share performance with all team members and facility cardiovascular leaders.

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