Adoption barriers and opportunities for energy-based surgical Devices in tier 2 and tier 3 indian cities

Exploring challenges and opportunities for Energy-Based Surgical Devices (ESDs) in smaller Indian cities.

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Background: ESDs in Modern Surgery

- **Now standard in many minimally invasive and open procedures**
- **Provide precision, hemostasis, and reduced operating time**
- **Technologies include radiofrequency, ultrasound, and electrosurgical currents**

Tier 1 vs Tier 2/3 Cities

Tier 1 Cities:

ESDs are **widely available** and **routinely used**
Backed by **strong infrastructure**

Tier 2/3 Cities:

Limited access to advanced surgical tools
Lack of training, technical support, and **budget constraints** hinder adoption

Introduction & Objective

Context: Energy-Based Surgical Devices (ESDs) improve **precision, efficiency, and outcomes.**

Issue: Low adoption in semi-urban India despite benefits.

Objectives:

- **Identify** key barriers impeding the adoption of ESDs in semi-urban healthcare settings
- **Explore** current usage patterns, perceptions, and decision-making behaviors of surgeons and hospital administrators
- **Recommend** practical and scalable strategies to bridge the adoption gap

Research Methodology

Design:

- Descriptive, Cross-sectional

Sample size :

- 50

Tool:

- Structured questionnaire

Focus:

- Energy based instruments only

Key Findings: Awareness, Usage & Barriers

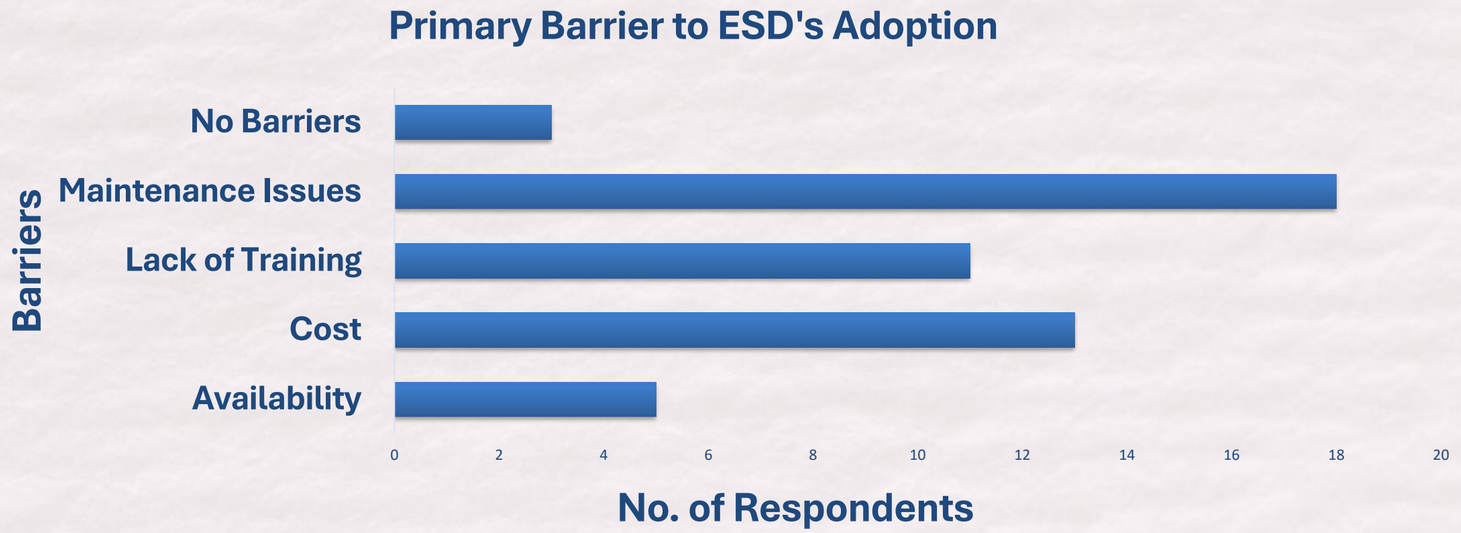
- ❑ **Awareness:** Moderate to high
- ❑ **Usage:** Mixed
  - **Tier 2 surgeons slightly ahead**
  - **Tier 3 face access and training gaps**

- ❑ **Top Barriers Identified:**

High equipment cost

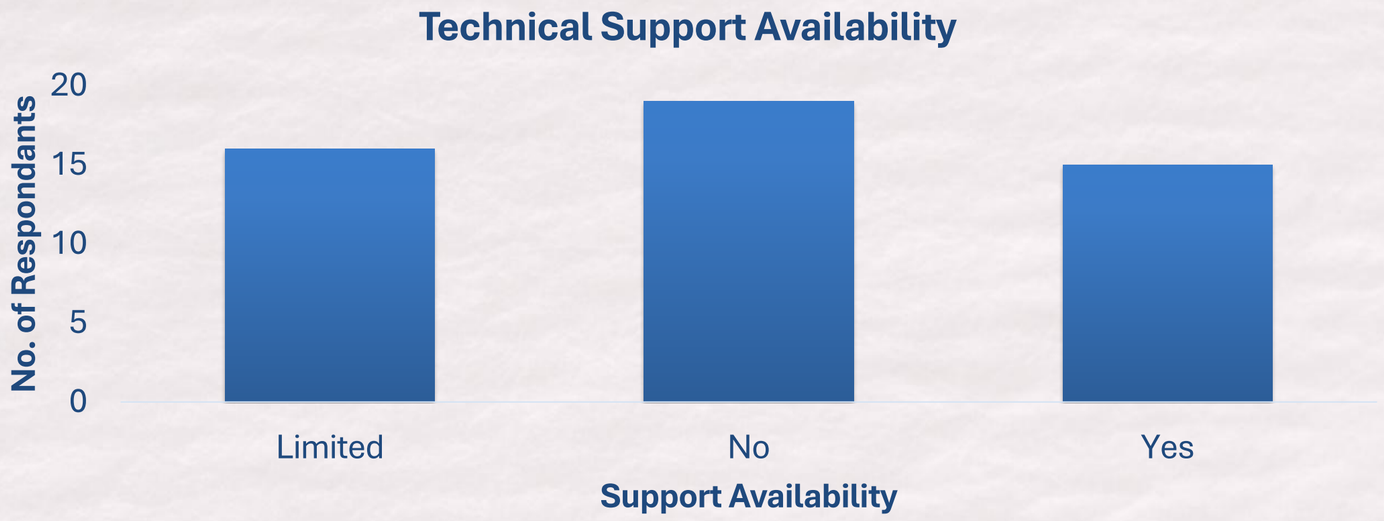
Limited or no hands-on training

Poor technical support in remote areas



Surgeon Preferences & Trends

- ❑ **Training Gaps:** Surgeons show interest but lack practical exposure.
- ❑ **Cost & Service Issues:** High costs and poor maintenance deter usage.
- ❑ **Preference for Safe, Efficient Devices:** Simplicity and performance drive adoption.
- ❑ **Adoption Grows with Trust**: Surgeons are more open when reliability and outcomes are proven.



Opportunities & Recommendations

❑ **Opportunities:**

- Mobile training programs
- Local service centres
- Affordable, modular devices

❑ **Recommendations:**

- Subsidies for Tier 2/3 hospitals
- Post-sales engagement by manufacturers
- Surgeons: demand structured training & support

Conclusion: Future of ESDs in India

Barriers are solvable with systemic interventions

Surgeons are willing—but need support

Focus must shift from just technology to enablement

Path ahead: Training, affordability, infrastructure

Thank You