Exploring the Benefits of Integrating Operating Rooms in the United States

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Background

- Workflow and communication inefficiencies lead to surgical delays, staff burnout and patient safety risks
- Integrated operating rooms (iORs) unify systems through a single console for streamlined processes
- Moving equipment from floor carts to overhead boom arms enhances efficiency and safety

Purpose

- To evaluate how implementing iORs in U.S. hospitals and ASCs may impact workflow efficiency, intraoperative communication and perioperative team satisfaction

Methods

- A web survey of perioperative surgical personnel at U.S. healthcare facilities with at least one iOR was conducted in February 2024
- Definition of an iOR:
  - A dynamic OR designed to better facilitate MIS surgical procedures
  - Utilizes a variety of technologies and room designs
  - Minimum features include:
    - Boom-mounted MIS hardware components
    - Integration of lights, AV technology, insufflation systems and IT systems
  - Controlled via computer(s) operated by a circulator assigned to the room during a case
- Definition of a non-iOR:
  - Lacks the above minimum requirements
  - May still use cart-based laparoscopic towers
  - May lack data integration among devices/systems

Survey Respondents

n=150

- **150 perioperative surgical personnel** at U.S. healthcare facilities **with at least one iOR** were surveyed

The survey included responses from perioperative surgical personnel across various surgical settings:

Hospital

- **80%** (n=120) from **acute care hospitals**

ASC

- **20%** (n=30) from **ASCs**

Approximately half the respondents held managerial roles:

n=45

- **30%** (n=45) were **surgical nurses, technologists or assistants**

n=30

- **20%** (n=30) were **surgeons**

Results

- Percentage of respondents who associated iORs with the following:

Feature / Benefit of iORs to **Staff & Surgeons**	Agreed
Considered standard-of-care for performing surgery today	**68%**
Better visibility of images on surgical displays during procedure	
Automated control of lights in the OR	
Data management	
Insufflation capability	**67%**
Image management efficiencies	
Improved OR efficiency & staff and patient safety in the OR	**63%**
Workflow improvements via interactive/touchscreen displays	
Integration with robotic systems	**54%**
Fewer injuries than non-iORs	**41%**
Feature / Benefit of iORs to Leadership	**Agreed**
Connectivity & collaboration across facilities	**69%**
Improved profitability of surgical services	**59%**

- Additionally, iORs deliver substantial time savings over non-iORs:

9% shorter average **surgical case lengths**

8% higher average **on-time start rates**

17% faster **turnover** and **set-up times**

Conclusions

Survey responses indicate that the benefits of iORs align with important goals of surgical services departments.

Perioperative leaders are encouraged to technologically transform their ORs into iORs to enhance their institution's operational efficiency and improve staff and patient safety.

Abbreviations: *ASC,* ambulatory surgery center; *AV,* audio-visual; *iOR, integrated operating room; IT,* information technology; *MIS,* minimally invasive surgery; *OR*, operating room; *U.S.,* United States

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