OPINION PAPER

DOI: 10.52054/FVVO.2025.236
Facts Views Vis Obgyn 2025;17(3):218-221

Dual operating in gynaecological endoscopy: towards a culture of shared learning and safer surgery

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ABSTRACT

Dual operating is increasingly recognised as a valuable strategy in complex gynaecological surgery. Models include supervising (trainer–trainee), buddy (comparable proficiency within a specialty), and inter-specialty (collaboration across specialities). Each approach offers unique benefits for patient safety, surgical training, and surgeon wellbeing. Buddy operating in particular promotes peer-to-peer learning, shared responsibility, and enhances decision-making. As minimally invasive gynaecology evolves, embedding these models into practice may strengthen training, and improve outcomes and workforce resilience. Further evidence is needed to evaluate long-term benefits and cost-effectiveness in different clinical contexts.

Keywords: Buddy operating, supervision, inter-specialty surgery, gynaecological endoscopy, surgical training, patient safety

Introduction

Minimally invasive gynaecological surgery has transformed patient care by reducing postoperative pain, hospital stay, and recovery times compared to laparotomy.[1,2] However, the increasing complexity of procedures such as laparoscopic excision of deep endometriosis and hysterectomy in the frozen pelvis has amplified demands on surgeons. Such operations are technically challenging, ergonomically tiring, and often prolonged. Operating in tandem with another equally competent colleague may help overcome these obstacles.

However, it is not just surgical complexity that drives the need for dual operating. Consultants (or equivalent where this term is not used) are being appointed to posts without the requisite level of surgical skill, such that there is a need for supervision and training by other surgical colleagues. In addition, as technologies and research expand the surgical repertoire at pace, senior surgeons may require training to expand their skill set.

Different models of dual operating can be categorised according to the relative expertise of the participating surgeons (Table 1). Each model carries distinct implications for training, efficiency, and patient outcomes, and the choice of approach should be tailored to the complexity of the case and the expertise available.

The *supervising model* is the most traditional form of dual operating and typically manifests as the consultant–trainee dynamic. The trainee is usually of junior status but as highlighted above, we must also recognise that a "trainee" may be a peer colleague, typically one who has been promoted but lacks the

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Received: 01.09.2025 **Accepted:** 11.09.2025 **Publication Date:** 30.09.2025

Cite this article as: Antoun L, Clark TJ. Dual operating in gynaecological endoscopy: towards a culture of shared learning and safer surgery. Facts Views Vis Obgyn. 2025;17(3):218-221

craft skills necessary for the post or a colleague who wishes to retrain/develop the range of their skills. It should also be recognised that in contrast to dual operating with a similarly proficient colleague, dual operating with a less proficient colleague, whether trainee or peer, may be more stressful for the supervising surgeon. When the trainee is a peer colleague supervision may be potentially more problematic due to skewed, less clear "trainer-trainee" dynamics. The supervising surgeon conventionally retains overall responsibility for patient safety while allowing the less experienced surgeon to undertake progressive components of the procedure under direct observation and guidance. However, when supervising operating with peers or even more senior colleagues, the boundries ofs responsibility may become blurred.

The supervision model, whether junior, peer or senior colleague, remains essential for surgical education, albeit challenges persist e.g., lengthening operative times. Furthermore, balancing patient safety with meaningful hands-on training requires skill and experience from the supervisor. Arguably supervising trainees in laparoscopic surgery is more difficult and time consuming than conventional open surgery. This is because the subtle movements involved in laparoscopic surgery from expert surgeons/trainers may not always be appreciated and as a result not taught. In contrast, open, laparotomic surgery allows for immediate, tactile, "hands-on" direction. In contrast others may argue that the visualisation and exposure is better in endoscopic surgery compared with open surgery facilitating training.

The *buddy model* involves two surgeons of comparable proficiency operating collaboratively within the same specialty with both surgeons sharing technical tasks, intraoperative decision-making, and responsibility for outcomes. This facilitates shared responsibility for complex cases.

The *inter-specialty model* brings together surgeons from different specialities to address complex cases. In gynaecology, this is most relevant in advanced endometriosis involving the bowel, bladder, or ureters, where colorectal or urological expertise is required. While logistical challenges such as scheduling across departments can be significant, the inter-specialty model represents the most collaborative form of dual operating, and its value in complex gynaecological surgery is self-evident.

Why Dual Operating Matters

Three trends make dual operating particularly relevant:

1. Increasing Surgical Complexity

Deep endometriosis excision, challenging myomectomies because of location, size or multiplicity and anatomical distortion due to adhesions e.g., a frozen pelvis results in prolonged operating times, requiring advanced anatomical dissection and enhanced levels of concentration. Fatigue and cognitive overload are genuine risks that dual operating can help mitigate.[3]

2. Constraints on Training

The European Working Time Directive and rising service pressures limit exposure to surgery whether straight forward "major" cases or complex cases necessitating advanced surgical skills.[4] Dual operating maximises learning opportunities—whether through the supervising model for junior or peer trainees or the buddy model for peer-to-peer learning.

3. Surgeon Wellbeing

Musculoskeletal strain, burnout, and psychological burden are increasingly reported among gynaecological surgeons.[5] Sharing responsibility distributes workload and fosters a culture of mutual support.

Benefits for Patients

For patients, dual operating may translate into shorter operative times, reduced complication rates, and improved outcomes. Evidence from colorectal and hepatobiliary surgery shows that paired consultant operating can lower complication rates and optimise resection margins.[6] Inter-specialty collaboration in endometriosis specialist centres in the UK is particularly

Table 1. Clark models of dual operating.

Level	Definition
Supervising	One surgeon less proficient than the other in the same specialty
Buddy	Both surgeons of comparable proficiency
Inter-specialty[1]	Surgeons with proficiency in different surgical specialties

[1]Complex procedures where urological, colorectal, cardiothoracic or vascular input may be required.

valuable to reduce complication risk especially where single-specialty expertise may be insufficient.[7]

Benefits for Surgeons

For surgeons, dual operating supports skill acquisition and professional growth. In the supervising model, trainers provide direct feedback during live operating. The buddy model allows experienced surgeons to learn from each other—observing subtle variations in technique and decision-making. Inter-specialty collaboration (e.g., with colorectal or urological surgeons) exposes surgeons to complementary surgical approaches, broadening anatomical understanding. Beyond technical learning, dual operating reduces the isolation often experienced in complex procedures. The emergence of dual console systems in robotic surgery provides a useful parallel to buddy operating in conventional laparoscopy.[7] This facilitates structured training, immediate feedback, and shared responsibility for complex steps.[8]

Workforce Sustainability

Sustainability of the surgical workforce is a growing concern. High case complexity, limited training opportunities, and surgeon attrition threaten the delivery of advanced endoscopic care. Dual operating may contribute to sustainability by:

- Preventing musculoskeletal injury through shared workload,
- Reducing burnout by fostering a supportive culture,
- Creating more resilient training pathways and embedding teamwork.

Challenges and Limitations

Despite its benefits, challenges remain. Allocating two consultants to a single procedure may appear inefficient in resource-constrained health systems. Moreover, the supervisory model if involving a fellow peer, make take away training opportunities from colleagues in junior grades adversely impacting their progression. Whilst peer colleagues may want to acquire new skills, the time, effort and resource to achieve this via direct supervision should be in keeping with a department's strategic goals.

Not all procedures require dual operating, and overuse could reduce service capacity. Hierarchy may also hinder implementation: the buddy model relies on equality, which can be difficult to achieve in cultures dominated by senior–junior structures. Finally, robust evidence is limited, with most reports being observational. High-quality prospective studies and health-economic analyses are needed to build the case for widespread adoption.

Future Directions

Professional societies such as the European Society for Gynaecological Endoscopy (ESGE) can play a central role in defining when dual operating should be encouraged. Consensus statements, prospective registries, and training frameworks would strengthen the evidence base. Dual operating could be embedded into fellowship programmes, particularly for advanced endometriosis surgery and complex laparoscopic hysterectomy. Interdisciplinary training pathways may also evolve, with joint gynaecology–colorectal or gynaecology–urology fellowships formalising inter-specialty dual operating.

Conclusion

Dual operating is more than a technical arrangement; it represents a cultural shift towards collaborative, safe and sustainable surgery. In gynaecological endoscopy, where complexity is increasing and surgeon wellbeing is under pressure, dual operating has the potential to enhance patient outcomes, improve training, and protect the workforce. The challenge now lies in moving away from the isolated surgeon towards working in teams, sharing expertise, and promoting sustainable practice with the ESGE ideally positioned to lead this shift.

Acknowledgments: None.

Contributors: Surgical and Medical Practices: L.A., T.J.C., Concept: L.A., T.J.C., Design: L.A., T.J.C., Data Collection or Processing: T.J.C., Analysis or Interpretation: L.A., Literature Search: L.A., Writing: L.A., T.J.C.

Funding: This paper received no financial support.

Competing interests: No conflict of interest to declare by the authors.

Ethical approval: Not required.

Informed consent: Not required.

Data sharing: No data to share.

Transparency: The authors confirm that the manuscript is an honest, and transparent account of consensus, no important aspects have been omitted.

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