PRACTICE IMPROVEMENT PROJECT, PLAN-DO-STUDY-ACT FORMAT

Systematic Mapping of the Abdomen and Pelvis (S-MAP): a standardized protocol for diagnostic laparoscopy in gynecologic fertility surgery, with a four-case incidental neoplasm series

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Plan PROBLEM, AIM, MEASURES

Problem and gap

Pain and infertility are the check engine light. The light says something is wrong, not what. Finding out means opening the hood and checking every system in order. A pelvic glance opens the hood and looks at one corner.

No professional body defines what a diagnostic laparoscopy must include. There are no diagnostic criteria, no minimum examination standard, and no documentation standard. The same procedure code is billed whether the surgeon takes a brief look at the pelvis or performs a systematic station-by-station examination of the abdomen and pelvis. A quick look never reaches the upper abdomen, the paracolic gutters, or the appendix. A 2013 proposal to standardize the pelvic examination, prompted by operative notes that routinely omitted the anterior cul-de-sac, ovarian fossae, and lateral sidewall, was never adopted as a standard (Bedaiwy 2013).

Repeat near-contact examination found endometriosis in 89.1% of a self-referred cohort previously told their laparoscopy was normal (Hilgers 2004, Table 63-1). Microscopic endometriosis sits in visually normal peritoneum in 15.2% of women with known disease (Khan 2014). Aviation has run checklists since 1935. Surgery adopted one in 2008. The diagnostic survey still has none.

Aim

Complete and document all 12 S-MAP stations, including the upper abdomen and the appendix, in 100% of diagnostic and operative laparoscopies in this practice, verified in the operative note of every case from 2018 forward.

Baseline and measures

The before picture. Before 2018 there was no S-MAP. The survey was a pelvic glance, and the notes listed findings, not stations. So the starting point is zero: no case documented all 12 stations.

What we count now.

DID WE DO IT?	All 12 stations named in every operative note.
DID IT MATTER?	Disease or tumors found outside the usual pelvic view.
DID IT COST ANYTHING?	Operative time.

Do TWO CYCLES, ONE ROUTE

Cycle 1 · 2017, fellowship

The systematic survey replaced the pelvic glance: a fixed anatomic route through the upper abdomen, the appendix, and the pelvis under near-contact magnification at lens-to-tissue distances under 3 cm, on every case.

Cycle 2 · 2018 to present, attending practice

The route became a written operative note template that names each region, so an omitted region shows on the page. Refinements since: a photograph taken at every station, video when available, and the rules for when to biopsy and when to remove the appendix set before the case rather than at the table.

The 12 stations

1. Umbilical entry, wide-field orientation
2. Right hemidiaphragm, upper right quadrant
3. Left hemidiaphragm, upper left quadrant
4. Right paracolic gutter, cecum, appendix
5. Terminal ileum, omentum, transverse colon
6. Right adnexa, above and below: ovary, tube and fimbriae, ovarian fossa
7. Right posterior cul-de-sac and pelvic sidewall, then right posterior broad ligament
8. Midline posterior cul-de-sac: rectovaginal septum, rectum, cervix, posterior uterine serosa
9. Left adnexa, above and below: ovary, tube and fimbriae, ovarian fossa
10. Left posterior cul-de-sac and pelvic sidewall, then left posterior broad ligament
11. Anterior cul-de-sac, anterior uterine serosa, bladder peritoneum
12. Final documentation pass

● Upper abdomen ● Pelvis

Study WHAT THE SURVEY FOUND



The S-MAP route as one continuous loop from entry to documentation pass. The four neoplasms sat at stations 4 and 7, which a pelvic-only survey never visits.

Process

Station documentation is complete in every templated case. Nobody yet logs every station's finding in every case, so this project reports no yield rate.

Outcome: four incidental neoplasms

NEOPLASM	SIZE	STATION
Appendiceal well-differentiated neuroendocrine tumor	0.5 mm	4, appendix
Appendiceal well-differentiated neuroendocrine tumor	4 mm	4, appendix
Appendiceal well-differentiated neuroendocrine tumor	2.5 cm	4, appendix
Well-differentiated papillary mesothelioma, right pelvic sidewall peritoneum, a rare neoplasm of low malignant potential	2 mm	7, right sidewall

All four sat outside the standard pelvic field. All four patients received definitive treatment. One had a prior laparoscopy elsewhere read as normal. All three patients presenting with infertility later conceived after full surgical management, which included excision of endometriosis and adhesions alongside oncologic resection.

Balancing. Operative time enters the record in every case. Baseline times from the non-systematic period are not retrievable, so no comparison figure appears here.

Act WHAT HAPPENS NEXT

Next steps

Teach the sequence in surgical training, hold it as the standard rather than the exception, and raise awareness that a diagnostic laparoscopy without a systematic route is incomplete. Evaluate it prospectively across several surgeons with station documentation as the measure, and record station-level findings in a registry, so we can finally say how often the full survey finds what a pelvic glance misses.

Lessons learned

- A systematic route shows what was skipped. A note that lists only findings cannot.
- Three of four neoplasms sat in the appendix, a structure pelvic-only survey never reaches.
- Documentation discipline, not new equipment, produced the change. The template did the work.

Attribution

Near-contact laparoscopy is Redwine's, first published by Petersen and Rhoe (1988). The sequence-driven concept and the 89.1% figure are Hilgers (2004). S-MAP naming and the 12-station codification are the author's.

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Abstract and paper
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