Quality Improvement Implementation, Option D (by invitation only)
Preoperative Testing for Low-Risk Surgeries
Project Time Period: 1/1/2024 – 12/31/2024

Background: The Preoperative Testing for Low-Risk Surgeries QII project is a cross-collaborative project between MSQC, the Michigan Value Collaborative (MVC) and the Michigan Program on Value Enhancement (MPrOVE). Routine preoperative testing before low-risk surgery has no known benefit and is an important target for de-implementation as it is overused, costly, and can lead to downstream care cascades involving invasive diagnostic testing[1].

As part of the Choosing Wisely® campaign the American Society of Anesthesiologists, Society of General Internal Medicine, American College of Surgeons (ACS), and the American Society for Clinical Pathology recommend against the use of routine laboratory studies before low-risk surgery (Table 1). Given the high prevalence of these services, eliminating unnecessary preoperative testing before low-risk surgery represents a key opportunity to improve quality, safety, and value in surgery. The pilot study in 2023, amongst MSQC participating sites, demonstrated wide variation in preoperative testing in low-risk surgeries, and continued work is needed.

Project Goal and Summary: In collaboration with MVC and MPrOVE, this project will continue to work toward reducing unnecessary, routine preoperative testing for low-risk surgeries, as well as implement interventions to heighten awareness and reduce variation among hospitals. Continuing sites who participated in the pilot project in 2023 are eligible if their average rate of preoperative testing is >20% from 4/1/2023 to 6/30/2023, and sites who did not select preoperative testing as their QII in 2023 will be eligible to participate.

Through a multi-faceted approach, invited sites will: 1) abstract preoperative testing variables on low-risk surgical cases, 2) implement a standard protocol defining appropriate use of preoperative testing, 3) employ strategies to promote adoption of the protocol, and 4) analyze MSQC, MVC, and internal data reports to monitor progress.

Eligible low-risk surgery cases will meet the procedure inclusion criteria:

- Minor hernia, laparoscopic cholecystectomy, and breast lumpectomy (Table 2), AND
- ASA classes 1 and 2, AND
- Surgical Priority = Elective, AND
- Surgical Procedure Tab: *Is the CPT code the intended primary procedure* = Yes

QI Implementation Goals and Requirements (40 total project points)

Goal #1: **Data collection of 95% of preoperative tests** for eligible procedures that were performed within 30 days prior to the surgery date, including obtained preoperatively on the day of surgery. The measurement period is 1/1/2024 – 12/31/2024 OR dates for all sites. **(3 points)**

The presence or absence of all of the following preoperative diagnostic tests on an eligible case must be captured in the MSQC Workstation to meet the numerator requirement:

- ECG
- Trans-thoracic echocardiography
- Cardiac stress test
- Chest Xray

- Urinalysis
- Complete blood count
- Basic metabolic panel
- Coagulation tests
- Pulmonary function tests

Goal #2 New sites only: **Develop and implement a standard preoperative testing protocol for low-risk surgeries at your site**. The protocol selected must be implemented no later than **June 30, 2024**. **(20 total points)**

- **Goal 2a:** Adopt a preoperative testing guideline protocol to implement at your site. Sites may choose the approach that fits best at their hospital. **(10 points)**
    - Adopt an existing protocol
        - American Society of Anesthesiologists' "Choosing Wisely" program (https://www.choosingwisely.org/clinician-lists/american-society-anesthesiologists-baseline-laboratory-studies-for-low-risk-surgery)
        - United Kingdom's NICE (National Institute for Health and Care Excellence) preoperative testing guidelines for elective surgery (https://www.nice.org.uk/guidance/ng45)
        - MPrOVE's "Waive the Workup" protocol https://sites.google.com/umich.edu/waivetheworkupmichigan/home\
    - Develop your own hospital preoperative testing protocol
    - Review and modify an existing protocol already in use at your hospital. You must also describe the process used for monitoring compliance, and interventions put into place to improve compliance.
    - Submit a copy of the preoperative testing protocol for low-risk surgery adopted by your hospital with your 2024 final project summary.
- **Goal 2b**: As part of the implementation process, sites must adopt clinical decision support tools to embed the preoperative testing protocol into practice. **(10 points)**
    - Examples of decision support tools selected for implementation include order sets, care pathways, CPOE pop-up messages/suggestions, BPA (Best Practice Advisory), documented inventory indicating review of existing order sets for concurrence with adopted testing guidelines. This list is not exhaustive.
    - Submit an example of at least one clinical decision support tool that was implemented or modified at your site with your 2024 final project summary.

Goal #2 Continuing sites only: include an in-depth analysis using a quality tool of your choice (e.g., A3, failure mode effects analysis, 5 Whys, Fishbone, etc.) with your 2024 final project summary of how the protocol and clinical decision support tools that were developed in the pilot year were modified or implemented differently to improve compliance with reducing preoperative testing. This should be completed with the multidisciplinary team early in the project year. **(10 points)**

Goal #3: Reduce the percentage of cases that receive one or more of the specified preoperative tests (as listed in Goal #1) by 20% (relative) as compared to the baseline rate, without having an increase of preoperative testing on the same day as surgery. **(20 points continuing sites, 10 points new sites)**

- Baseline period, continuing sites: 4/1/2023 – 12/31/2023 OR dates
- Baseline period, new sites: 1/1/2024 – 3/31/2024 OR dates
- Measurement period, all sites: 4/1/2024 – 12/31/2024 OR dates

Goal #4: Conduct a minimum of two multidisciplinary meetings with key stakeholders to review project requirements, implement project components and monitor project performance. **(4 total points)**

- **Goal 4a**: host a project kickoff meeting held no later than **March 31, 2024**. **(2 points)**

- Goal 4b: host at least one follow-up multidisciplinary meeting between July and December 2024 to discuss protocol implementation, progress and barriers to implementation, and monitoring of compliance data (including MVC and MSQC preoperative testing data). (2 points)
- Meeting participants must include a general surgeon, anesthesiologist, MSQC/Quality dept representation; additional attendees can also include the hospital's MVC Site Coordinator (if applicable), a primary care provider (PCP), a representative from the preoperative clinic (if applicable), a surgical resident, and others as appropriate for your site.
- Meetings can be in person, virtual, or hybrid (project information shared over email, or multiple one-on-one meetings do not count toward this requirement).
- Designate a specific member of the team to serve as the Preoperative Testing for Low-Risk Surgeries QII project Point of Contact (POC). The POC will receive updated preoperative testing reports from MVC (in addition to your hospital's MVC point of contact). The POC will be responsible for sharing MVC reports with team members. The site must provide MVC (email address TBD) and MSQC (MSQC-Info@med.umich.edu) with the project designee's contact information no later than April 14, 2024.
- For each meeting, submit the meeting minutes and attendee list (with attendee name, credentials, and department represented) with your 2024 final project summary.

Goal #5 Performance Data Monitoring: Brief feedback regarding the value of the MVC and MSQC data reports and how the data was utilized must be submitted with your 2024 final project summary. (1 point)

- Sites will use data from several sources to monitor the progress of the protocol implementation.
    - MVC Preoperative Testing Reports (distributed to the POC and the MVC Site Contact)
    - MSQC case abstraction data on preoperative testing
    - Internal hospital data collection for monitoring compliance and adoption of the preoperative testing protocol.

Goal #6: Submit an analysis on cases that received testing on the day of surgery, prior to In Room Time (2 points).

Goal #7: Submit the 2024 final project summary, due to the MSQC Coordinating Center no later than January 15, 2025.

- The QII project summary will be submitted using the template available on the Quality Improvement page of the MSQC website. The document will contain a narrative describing the adoption, implementation, and monitoring of a preoperative testing protocol for low-risk surgeries, along with successes, barriers, plans for moving forward with the project. Additional documents to be submitted with the summary include:
    - Copy of the preoperative testing protocol for low-risk surgery adopted by your hospital (from Goal 2a).
    - Example of at least one clinical decision support tool that was implemented at your site (from Goal 2b)
    - Continuing sites only: analysis using a quality tool of how the protocol and clinical decision support tools that were developed in the pilot year were modified or implemented differently to improve compliance with reducing preoperative testing (from Goal #2)
    - Meeting documents (minutes, participant list) from the project kickoff and subsequent follow-up multi-disciplinary meetings held during the project year (from Goal #4)
    - Feedback on the MVC and MSQC data reports (from Goal #5)
    - Analysis of cases with testing on day of surgery (from Goal #6)

Implementation Points

An additional 0-10 implementation points may be granted based on the detail of the project narrative, tracking log and analysis, to be added to achieve the maximum of 40 project points.

Table 1. Selected Choosing Wisely® Recommendations for Preoperative Testing by Professional Society

Professional Society	Recommendation
American Society of Anesthesiologists	Don't obtain baseline laboratory studies in patients without significant systemic disease undergoing low-risk surgery—specifically completed blood counts, metabolic panels, or coagulation studies.
	Don't obtain baseline diagnostic cardiac testing (e.g., echocardiography) in asymptomatic stable patients with known cardiac disease undergoing low or moderate risk surgery.
Society of General Internal Medicine	Don't perform routine pre-operative testing before low-risk surgical procedures.
American College of Surgeons	Avoid preoperative chest x-rays for ambulatory patients with unremarkable history and physical exam.
American Academy of Ophthalmology	Don't perform preoperative medical tests for eye surgery unless there are specific medical indications.
American Society for Clinical Pathology	Avoid routine preoperative testing for low-risk surgeries without a clinical indication.

Table 2. Eligible Pilot Study CPT codes

Abdominal Hernias less than 3 cm and all Inguinal/Femoral Hernia Repairs ("Minor Hernia")	
49505	49505: Repair initial inguinal hernia, age 5 years or older; reducible.
49507	49507: Repair initial inguinal hernia, age 5 years or older; incarcerated or strangulated.
49520	49520: Repair recurrent inguinal hernia, any age; reducible.
49521	49521: Repair recurrent inguinal hernia, any age; incarcerated or strangulated.
49525	49525: Repair inguinal hernia, sliding, any age.
49550	49550: Repair initial femoral hernia, any age; reducible.
49553	49553: Repair initial femoral hernia, any age; incarcerated or strangulated.
49555	49555: Repair recurrent femoral hernia; reducible.
49557	49557: Repair recurrent femoral hernia; incarcerated or strangulated.
49591	49591: Repair of anterior abdominal hernia(s) (ie, epigastric, incisional, ventral, umbilical, spigelian), any approach (ie, open, laparoscopic, robotic), initial, including implantation of mesh or other prosthesis when performed, total length of defect(s); less than 3 cm, reducible
49592	49592: Repair of anterior abdominal hernia(s) (ie, epigastric, incisional, ventral, umbilical, spigelian), any approach (ie, open, laparoscopic, robotic), initial, including implantation of mesh or other prosthesis when performed, total length of defect(s); less than 3 cm, incarcerated or strangulated
49613	49613: Repair of anterior abdominal hernia(s) (ie, epigastric, incisional, ventral, umbilical, spigelian), any approach (ie, open, laparoscopic, robotic), recurrent, including implantation of mesh or other prosthesis when performed, total length of defect(s); less than 3 cm, reducible
49614	49614: Repair of anterior abdominal hernia(s) (ie, epigastric, incisional, ventral, umbilical, spigelian), any approach (ie, open, laparoscopic, robotic), recurrent, including implantation of mesh or other prosthesis when performed, total length of defect(s); less than 3 cm, incarcerated or strangulated
49650	49650: Laparoscopy, surgical; repair initial inguinal hernia

49651	49651: Laparoscopy, surgical; repair recurrent inguinal hernia
49659	49659: Unlisted laparoscopy procedure, hernioplasty, herniorrhaphy, herniotomy.
Laparoscopic Cholecystectomy	
47562	47562: Laparoscopy, surgical; cholecystectomy
47563	47563: Laparoscopy, surgical; cholecystectomy with cholangiography
47564	47564: Laparoscopy, surgical; cholecystectomy with exploration of common duct
Breast Lumpectomy/Partial Mastectomy	
19301	19301: Mastectomy, partial (e.g., lumpectomy, tylectomy, quadrantectomy, segmentectomy)

Resources

- Berlin NL, Yost ML, Cheng B, et al. Patterns and Determinants of Low-Value Preoperative Testing in Michigan. *JAMA Intern Med.* 2021;181(8):1115–1118. doi:10.1001/jamainternmed.2021.1653
- https://ihpi.umich.edu/featured-work/michigan-program-value-enhancement
- https://ihpi.umich.edu/news/routine-testing-surgery-remains-common-despite-low-value
- https://michiganvalue.org/our-work/mvc-value-coalition-campaigns-vccs/

References

[1]Berlin NL, Yost ML, Cheng B, et al. Patterns and Determinants of Low-Value Preoperative Testing in Michigan. *JAMA Intern Med.* 2021;181(8):1115–1118. doi:10.1001/jamainternmed.2021.1653