Quality Improvement Implementation, Option C
Appropriate Preoperative Screening for Low-Risk Surgeries Pilot Study
Project Time Period: 1/1/2023 – 12/31/2023

Background: The Appropriate Preoperative Screening for Low-Risk Surgeries Pilot Study is based on 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.

Project Goal and Summary – In collaboration with MVC and MPrOVE, this pilot project will work toward reducing unnecessary, routine preoperative testing for low-risk surgeries. Pilot study work performed by MSQC sites will be integral to identifying the underlying reasons for overuse of preoperative testing in low-risk surgeries, as well as interventions to heighten awareness and reduce variation among hospitals.

Through a multi-faceted approach, 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.

QI Implementation Goals and Requirements (25 total project points)
Goal #1: **Baseline data collection of preoperative testing use (6 total points)**

- **Goal 1a:** Abstract and capture preoperative diagnostic testing that was performed within 90 days prior to surgery date into the MSQC Workstation. **(2 points if 50% complete data collection achieved; see goal 1b for definition)**
  Eligible low-risk surgery cases will meet the procedure inclusion criteria:
  - Minor hernia, laparoscopic cholecystectomy, and breast lumpectomy (Table 2) AND
  - Surgical Priority = Elective, AND
  - Surgical Procedure Tab: *Is the CPT code the intended primary procedure*= Yes
- **Goal 1b:** Achieve 80% complete data collection of preop diagnostic testing for eligible procedures. Measurement period 1/1/2023 – 12/31/2023 cases. **(4 points)**
  Presence/absence of all of the following preoperative diagnostic tests on an eligible case must be captured 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: **Develop/implement a standard preoperative testing protocol for low-risk surgeries at your site**. The protocol selected must be implemented no later than **June 30, 2023**. **(14 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 facility. **(4 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)
    - 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 facility with your 2023 Appropriate Preoperative Screening Pilot Study Summary, due to the MSQC Coordinating Center no later than **January 16, 2024.**
- **Goal 2b**: As part of the implementation process, sites must adopt clinical decision support tools to embed the preoperative testing protocol into practice. **(5 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 2023 Appropriate Preoperative Screening Pilot Study Summary, due to the MSQC Coordinating Center no later than **January 16, 2024.**
- **Goal 2c**: Achieve measurable progress toward reducing the use of low-value preoperative testing by 20% as compared to baseline rate **(5 points)**
    - Reduce the percentage of cases that receive one or more of the specified preoperative tests (as listed in Goal 1b) by 20% as compared to baseline.
        - Baseline period: 1/1/2023 – 3/31/2023
        - Measurement period: 4/1/2023 – 12/31/2023

Goal #3: 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 3a**: host a project kickoff meeting held no later than **March 31, 2023**. **(2 points)**
- **Goal 3b**: host at least one follow-up multidisciplinary meeting **between July and December 2023** 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), an OB/GYN surgeon, a representative from the pre-operative 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 Appropriate Preoperative Screening Pilot Study Point of Contact. The POC will receive updated preoperative testing reports from MVC (in addition to your facility's MVC point of contact). The Appropriate Preoperative Screening Pilot Study POC will be responsible for sharing of 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, 2023**.
- For each meeting, submit the meeting minutes and attendee list (with attendee name, credentials, and department represented) with your 2023 Appropriate Preoperative Screening Pilot Study Summary due to MSQC Coordinating Center no later than **January 16, 2024**.

Goal #4: Performance Data Monitoring (1 point total)

- Sites will use data from several sources to monitor the progress of the protocol implementation
  - MVC Preoperative Testing Reports (distributed to the Appropriate Preoperative Screening Pilot Study 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.
- Sites will include brief feedback regarding the value of the MVC and MSQC data reports and how the data was utilized in the 2023 Appropriate Preoperative Screening Pilot Study Summary. **(1 point)**

Goal #5: **Qualitative Survey participation** – MPrOVE plans to conduct qualitative interviews with 8-10 sites throughout the state. Site selection will be based on various criteria, to be determined by the Institute for Healthcare Policy and Innovation's MPrOVE study team. MSQC sites that select the Appropriate Preoperative Screening Pilot Study QI project must agree to participate in the qualitative survey if they are asked for their feedback.

Goal #6: Submit the 2023 Appropriate Preoperative Screening Pilot Study Summary to the MSQC Coordinating Center no later than **January 16, 2024.**

- The QI 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, and your site's feedback regarding the pilot project experience that will contribute to future development of the program. Additional documents to be submitted with the summary include:
  - Copy of the preoperative testing protocol for low-risk surgery adopted by your facility (from Goal #2)
  - Example of at least one clinical decision support tool that was implemented at your site (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 #3)
  - Feedback on the MVC and MSQC data reports (from Goal #4)

Implementation Points

An additional 0-5 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 25 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

Open Inguinal/Femoral/Umbilical & All Laparoscopic 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.
49570	49570: Repair epigastric hernia; reducible.
49572	49572: Repair epigastric hernia; incarcerated or strangulated.
49585	49585: Repair umbilical hernia, age 5 years or older; reducible.
49587	49587: Repair umbilical hernia, age 5 years or older; incarcerated or strangulated.
49650	49650: Laparoscopy, surgical; repair initial inguinal hernia.
49651	49651: Laparoscopy, surgical; repair recurrent inguinal hernia.
49652	49652: Laparoscopy, surgical, repair, ventral, umbilical, spigelian or epigastric hernia; reducible.
49653	49653: Laparoscopy, surgical, repair, ventral, umbilical, spigelian or epigastric hernia; incarcerated or strangulated
49654	49654: Laparoscopy, surgical, repair, incisional hernia; reducible.
49655	49655: Laparoscopy, surgical, repair, incisional hernia; incarcerated or strangulated.
49656	49656: Laparoscopy, surgical, repair, recurrent incisional hernia; reducible.
49657	49657: Laparoscopy, surgical, repair, recurrent incisional hernia; incarcerated or strangulated.
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