



# Preoperative Testing Workgroup

October 26, 2023

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Support for MVC is provided by Blue Cross Blue Shield of Michigan and Blue Care Network as part of the BCBSM Value Partnerships program. Although Blue Cross Blue Shield of Michigan and MVC work collaboratively, the opinions, beliefs and viewpoints expressed by the author do not necessarily reflect the opinions, beliefs and viewpoints of BCBSM or any of its employees.

# Today's Presenter

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## **Tony Cuttitta, MPH**

Program Manager, Michigan  
Program on Value Enhancement  
(MPrOVE)  
Michigan Medicine

# MPrOVE's Approach to De-Implementing Pre-Op Testing for Low-Risk Surgeries



A COLLABORATION OF



+



# Quality iMPROVEment

## Maximizing value

- “Right-sizing” care for each patient
- Efficiently using hospital beds, clinician/staff time appropriately for patients



### MPrOVE Project Example:

Safe discharge pathway for low-risk Pulmonary embolism diagnosed in ED

## Reducing unnecessary care

- Saving patients time, hospital resources
- Improves patient & provider satisfaction
- Reduces risk of cascade events



### MPrOVE Project Example:

Reduce unnecessary pre-op testing for low-risk surgeries

## Improving Outcomes

- Improve site optimization & reduce scheduling delays
- Reducing burden on clinicians/staff
- Increased patient satisfaction



Predictive Analytics

### MPrOVE Project Example:

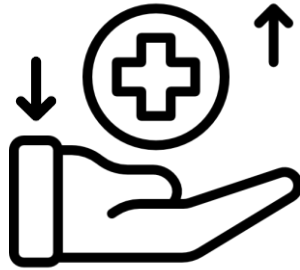
Predictive Model for ASC location to decrease PA burden

# How does MPrOVE improve care at Michigan Medicine?



MPrOVE collaborates with clinical teams & researchers to improve care through the following concepts:

*Appropriateness*



*Optimal care settings*



*De-implement low-value care & wasteful processes*



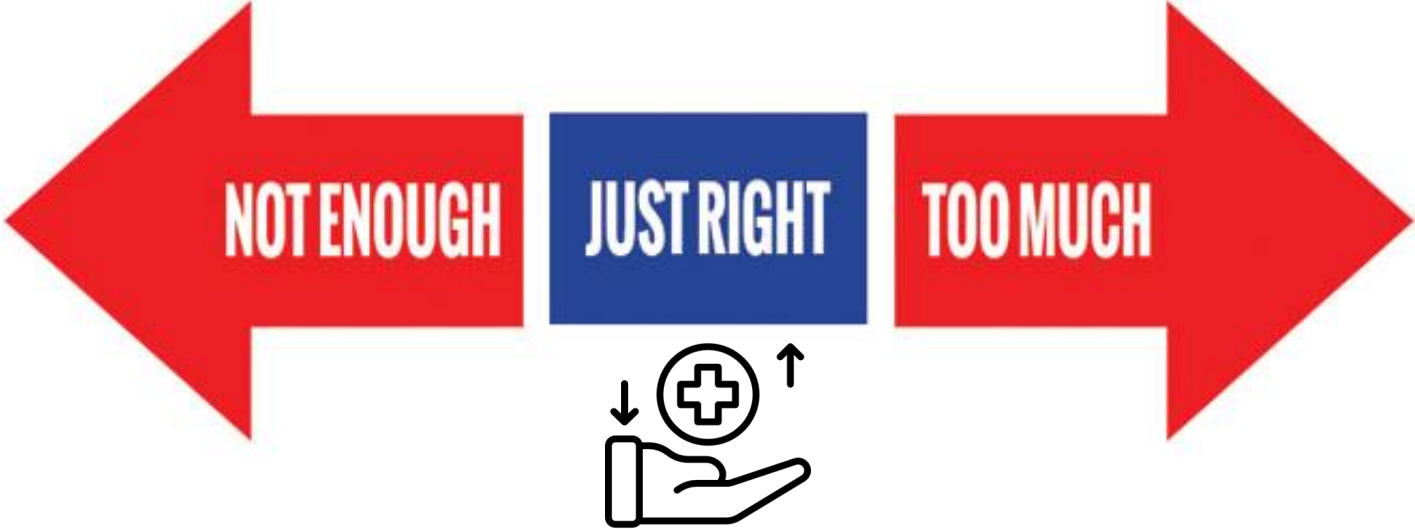
*Utilize Analytic Tools to aid Clinical Teams*



# Right-sizing Care: Less is Often More

## THE GOLDILOCKS PRINCIPLE

- Undertreatment
- Lack of access
- Poor Quality
- Harm due to lack of care



- Overtreatment
- Harm due to overuse
- Patient burden
- Low-value care & waste of resources

Appropriate, high-value care is best for patients & providers

# Right-sizing Care: Less is Often More

Right-sizing care creates benefits for clinicians, patients, & the system

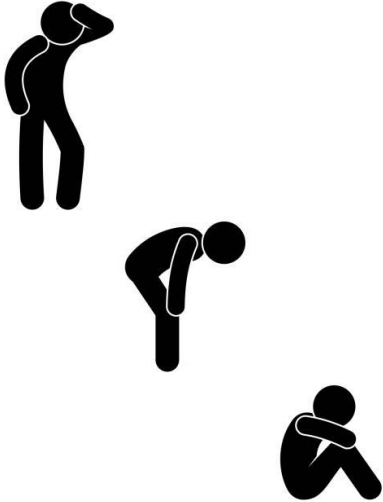
Increases Efficiency



Reduces clinician effort



Reduces patient burden



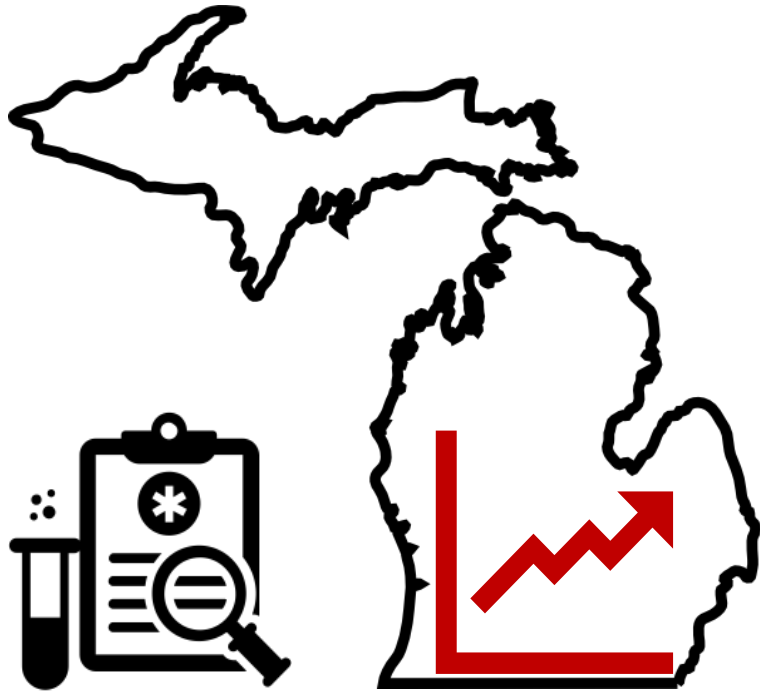
Reduces patient harm



# MPrOVE & Pre-Op Testing History



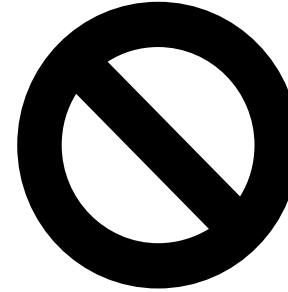
# De-implementing Low-value Testing: Background is well-established



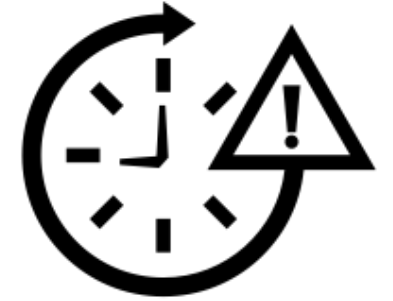
Pre-Op testing rates for low-risk surgeries range from 8-85% across the State of Michigan

Testing before low-risk procedures is common, with >50% of patients undergoing at least 1 test

Routine Pre-Op testing remains high despite...



Not recommended by several academic societies



Associated with surgical delays



Wasteful spending for health systems & patients



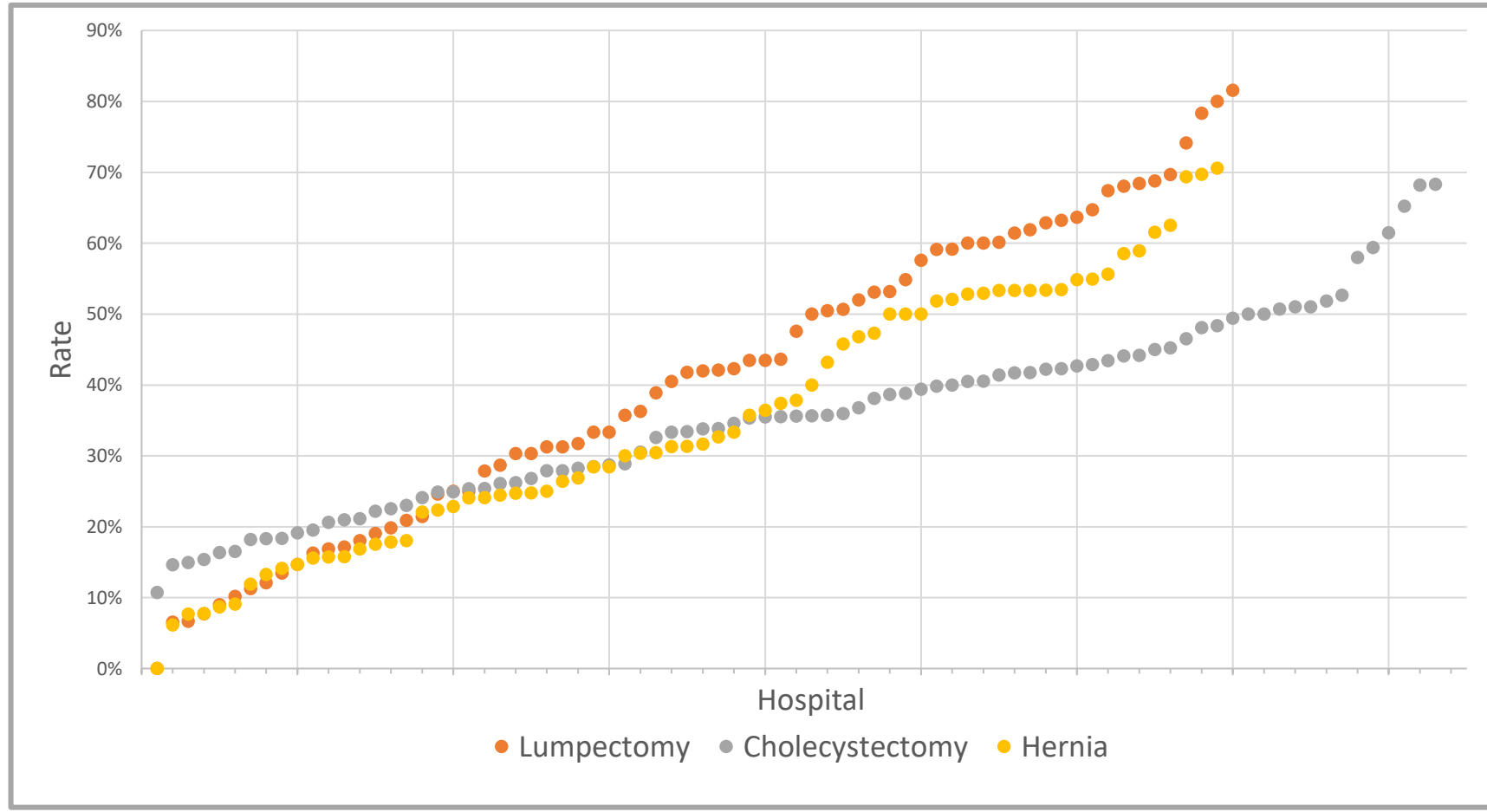
Unnecessary patient stress due to cascade events of incidental findings

# Background: De-implementing Low-value Testing

## MVC Data across 60 Michigan Hospitals: Preoperative EKG Rates



Nick Berlin, MD, MPH  
PGY 5 Plastic Surgery  
National Clinician Scholar



# History of MPrOVE's work in pre-op space & related pre-op testing data

2020

- Pre-op testing data variation across State of Michigan
- Partnership between Nick Berlin, MPrOVE, MVC



2021

- Development of MVC pre-op testing report for hospitals across Michigan
- Consideration of possible intervention opportunities with MSQC & MVC (development of R01)

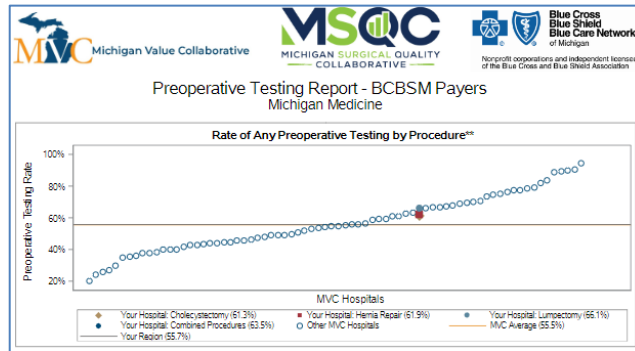
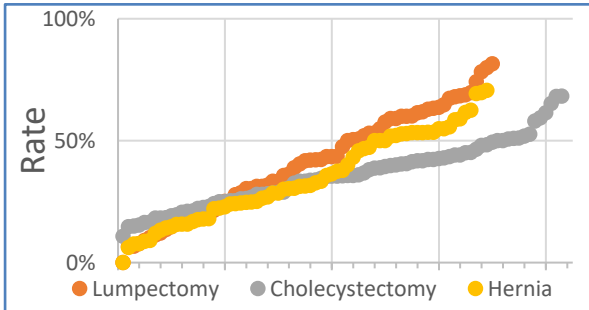
2022

- Ethnography work at Michigan Medicine to better understand pre-op testing perceptions of anesthesiologists, PAs, and surgeons
- Continued development of intervention opportunities with MVC, MSQC

2023

- Collaborated with MVC, MSQC to facilitate statewide P4P and Value-based metrics to reduce low-value testing

MVC Data across 60 Michigan Hospitals: Variable EKG rates



Aware Resistant

Naïve



# Target Low-risk Surgeries & Low-Value Tests

## Target Low-Risk Surgeries

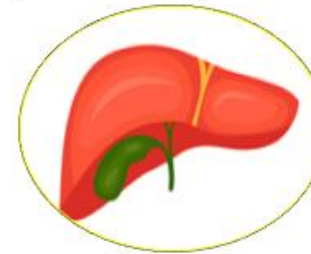
Lumpectomy



Hernia Repair



Lap Cholecystectomy



## Common Unnecessary Pre-Op Tests

Blood Tests



EKG



Chest X-ray



Stress Tests



# Applying MPrOVE's Right-sizing Approaches to De-implement Low-value Pre-op testing





# ROADMAP FOR ADDRESSING UNNECESSARY PRE-OP TESTING AT YOUR HOSPITAL

*How do I get started?*



*And achieve reductions in low-value testing?*



# ROADMAP FOR ADDRESSING UNNECESSARY PRE-OP TESTING AT YOUR HOSPITAL





# REVIEW AVAILABLE BASELINE DATA: What have we learned about pre-op testing?



## 1. Clinician values around pre-op testing are remarkably consistent

Peer-reviewed research



Local ethnography & interviews



**Safety** and **evidence-based medicine** are shared values.

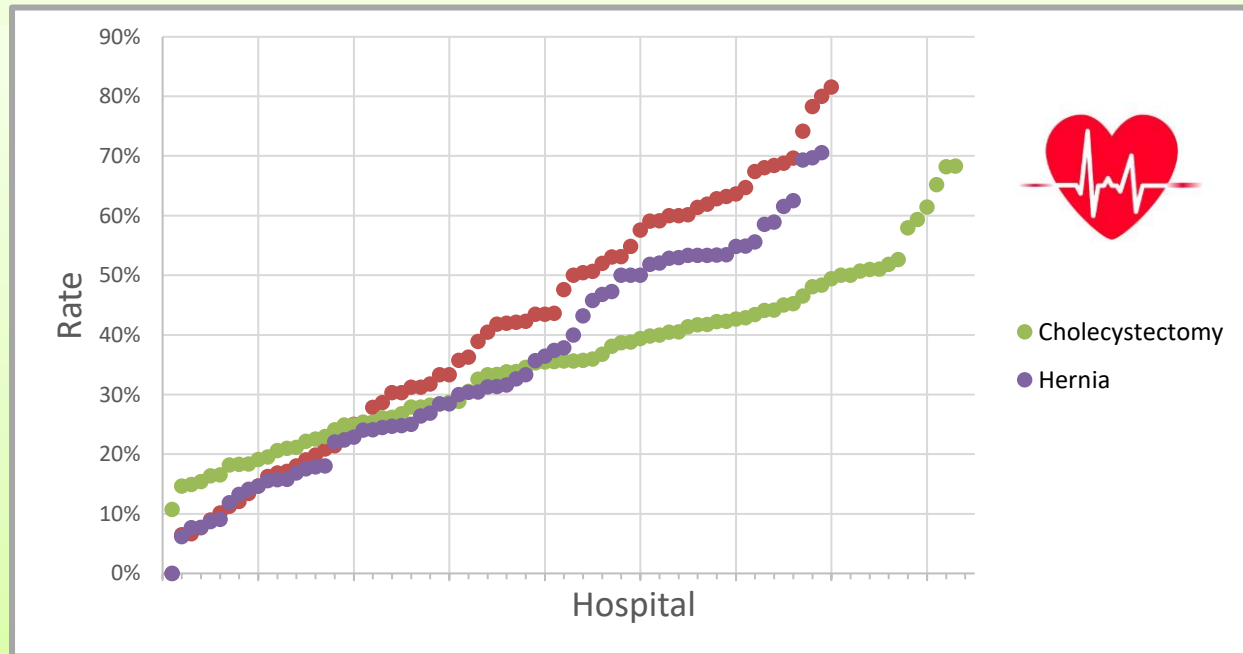


# REVIEW AVAILABLE BASELINE DATA: What have we learned about pre-op testing?



## 2. *Pre-op testing ordering practices are remarkably inconsistent*

Statewide Data across 60 Michigan Hospitals (MVC):  
Unnecessary Preoperative EKG



### Local ethnography & interviews



- Surgeons performing the same procedure on similar patients often have different testing rates & preferences
- Perceived differences in clinician perspectives
  - Anesthesia wants this test
  - The pre-op clinic needs to see that
  - Surgery requested bloodwork



# REVIEW AVAILABLE BASELINE DATA: What have we learned about pre-op testing?



*Who wanted the pre-operative EKG ordered?*



# FIND A CHAMPION:

## Identify interested local stakeholders



Minimally  
Invasive  
Surgery



Nabeel Obeid, MD, MPH  
Chief, Division of Minimally Invasive Surgery

Surgical  
Oncology



Lesly Dossett, MD, MPH  
Chief, Division of Surgical Oncology  
Vice Chair for Faculty Life  
Co-Director, MProVE

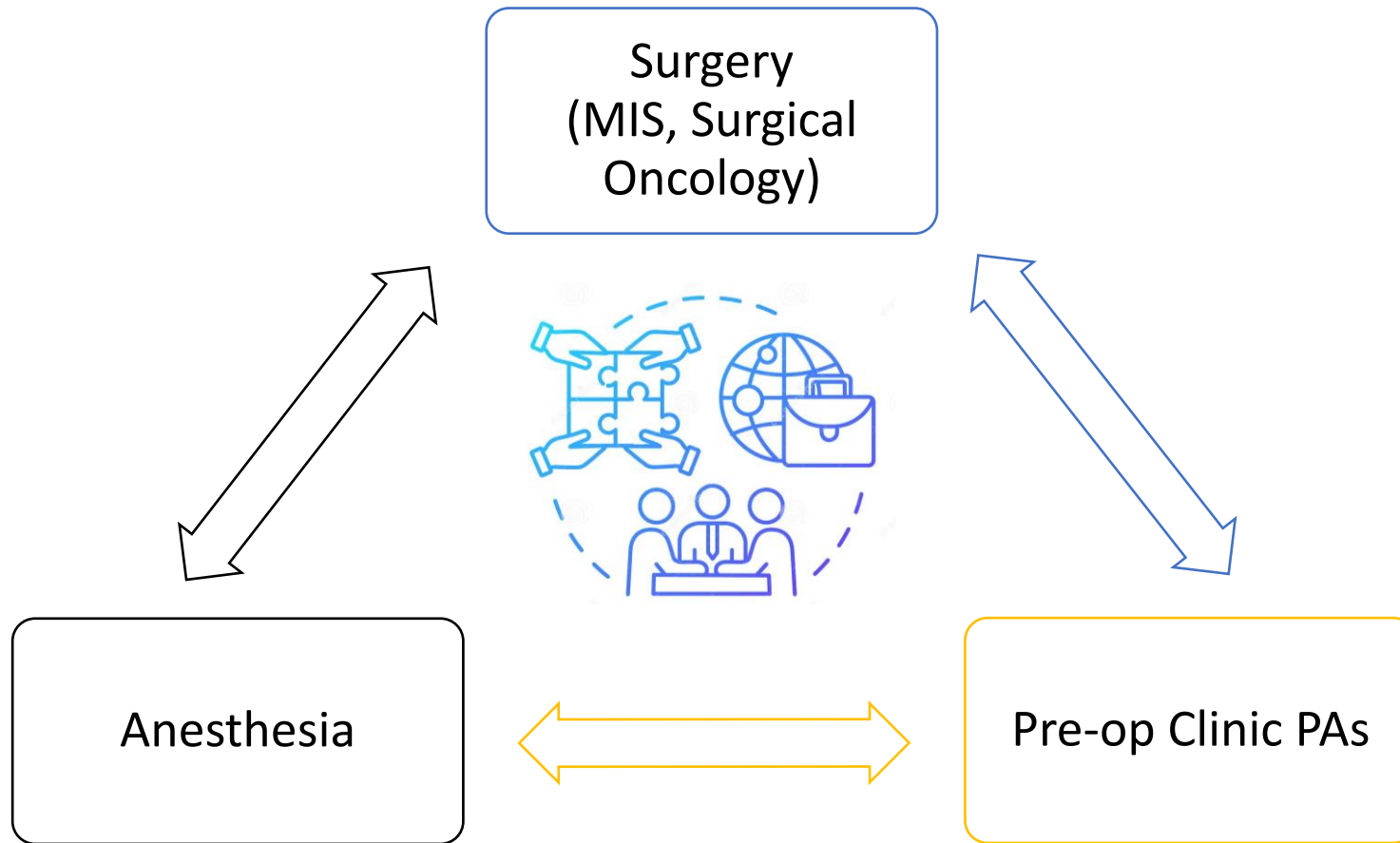
Anesthesia



Bernie Jiang, MD  
Lead, Outpatient Anesthesia

# DISCUSS TOPIC WITH STAKEHOLDERS:

Socialize concept, learn feedback & ideas



# GATHER MORE FOCUSED DATA: Medical Chart review & Additional data



## Surg Onc pre-op testing data: Lumpectomy

### Data & Approach

- Reviewed 300 cases of target operations at Michigan Medicine from February-September 2022
- Assessed pre-op testing, ASA class, and comorbidities to determine the appropriateness of ordering
- Analyzed rates of appropriateness for various tests

### Findings



In 100 lumpectomy cases:

- Older population than MIS
- 54% of ordered CBCs were not indicated
- 48% of ordered BMP/CMPs not necessary
- 48% of ordered EKGs were not in line with existing guideline recommendations
- Low absolute rates of unnecessary testing, especially compared to other divisions, but **19% of patients still received at least 1 unnecessary test**



# GATHER MORE FOCUSED DATA: Medical Chart review & Additional data



## MIS pre-op testing data: Cholecystectomy & Inguinal Hernia

### Data & Approach

- Reviewed 300 cases of target operations at Michigan Medicine from February-September 2022
- Assessed pre-op testing, ASA class, and comorbidities to determine the appropriateness of ordering
- Analyzed rates of appropriateness for various tests

### Findings

In 200 inguinal hernia & lap chole cases:



- 71% of ordered CBCs were not indicated
- 62% of ordered BMP/CMPs not necessary

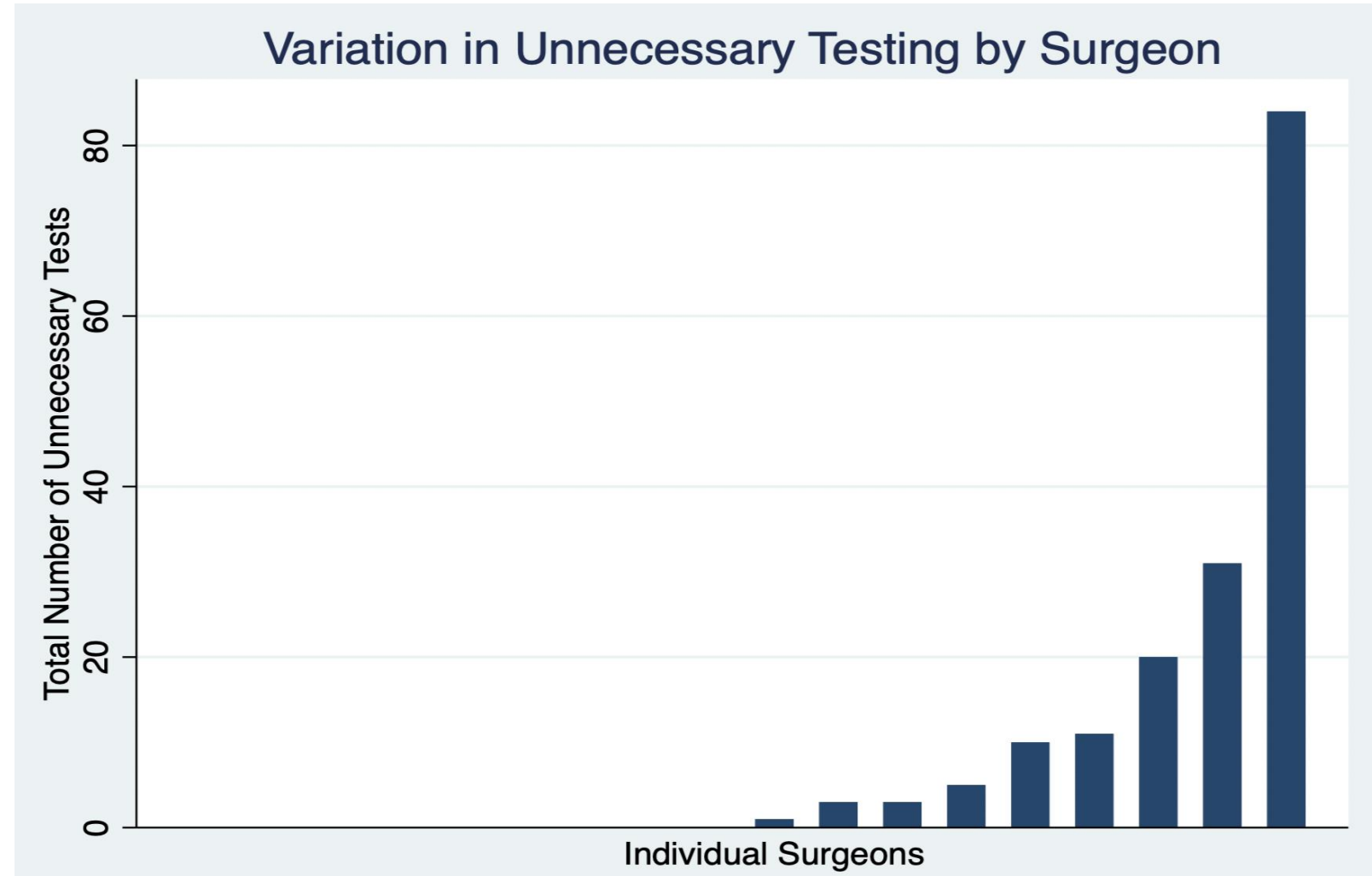


- 42% of ordered EKGs were not in line with existing guideline recommendations
- **45.5 % of all patients still received at least 1 unnecessary test**

# GATHER MORE FOCUSED DATA: Medical Chart review & Additional data



Practices are inconsistent between providers



# DEVELOP RESOURCES & STRATEGIES: Testing Recommendations & More



## Common Myths about Pre-Op Testing



"It's better to be safe than sorry"

FACT: If a healthy patient is undergoing low-risk surgery, evidence shows that pre-operative tests do not improve surgical safety for the patient and/or alter the surgical plan the day of surgery.

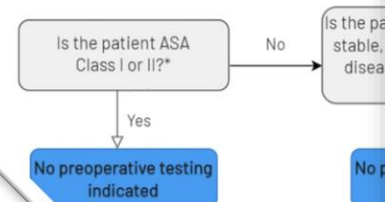


For patients undergoing one of the following low-risk surgeries

- Lumpectomy
- Laparoscopic cholecystectomy
- Inguinal hernia repair

\*American Society of Anesthesiologists (ASA) Physical Status Classification System

ASA Class I: Normal healthy patient. Non-smoking, no or minimal alcohol use, no acute or chronic disease, normal BMI  
ASA Class II: Mild systemic disease without substantive functional limitations. Current smoker, obesity (30<BMI<40), well-controlled DM/HTN, mild lung disease



**Suggested Pre-Op Tests for patients undergoing low-risk surgery who are ASA>II**  
This chart does not replace clinical judgment and is intended as guidance only

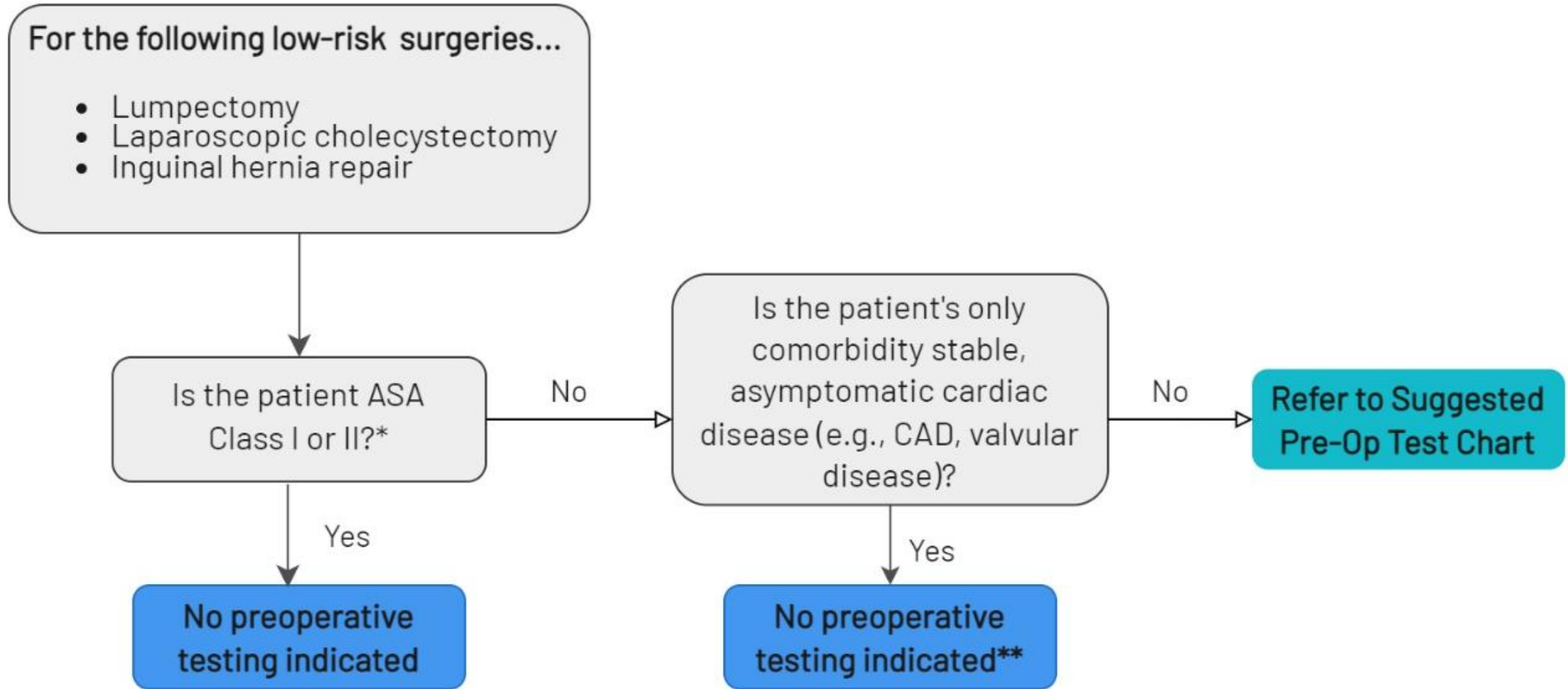
	CBC	T&S	BMP	LFTs	INR/PT/PTT	EKG	CXR
History of anemia, thrombocytopenia	Blue						
Potential for significant blood loss	Blue	Blue					
Cardiovascular disease						Blue	
Anticoagulant use or history of bleeding disorder		Blue			Blue		
DM/major endocrine disease, prior electrolyte abnormalities, use of diuretics, antiarrhythmics, ACE/ARB			Blue				
Kidney disease	Blue		Blue				
Liver disease or risk of malnutrition			Blue	Blue	Blue		
Age≥70, peripheral/cerebral vascular disease, cardiac risk factors, new cardiac symptoms			Blue			Blue	
Existing cardiopulmonary disease (without CXR in past 6 mo), poor exercise tolerance (<4 metabolic equivalents), thoracic surgery							Blue

## Sources

Compilation of national guidelines from academic societies, Choosing Wisely, and incorporated Michigan Medicine policies.



# DEVELOP RESOURCES & STRATEGIES: Testing Recommendations & More



# DEVELOP RESOURCES & STRATEGIES: Testing Recommendations & More



## Suggested Pre-Op Tests for patients undergoing low-risk surgery who are ASA>II

*This chart does not replace clinical judgment and is intended as guidance only*

	CBC	T&S	BMP	LFTs	INR/PT/PTT	EKG	CXR
History of anemia, thrombocytopenia	Blue						
Potential for significant blood loss	Blue	Blue					
Cardiovascular disease	Blue					Blue	
Anticoagulant use or history of bleeding disorder	Blue	Blue			Blue		
DM/major endocrine disease, prior electrolyte abnormalities, use of diuretics, antiarrhythmics, ACE/ARB			Blue				
Kidney disease	Blue		Blue				
Liver disease or risk of malnutrition			Blue	Blue	Blue		
Age≥70, peripheral/cerebral vascular disease, cardiac risk factors, new cardiac symptoms			Blue			Blue	
Existing cardiopulmonary disease (without CXR in past 6 mo), poor exercise tolerance (<4 metabolic equivalents), thoracic surgery							Blue

CBC: Complete blood count  
T&S: Type and screen  
BMP: Basic metabolic panel

LFTs: Liver function tests  
INR: International normalized ratio  
PT: Prothrombin time

PTT: Partial thromboplastin time  
EKG: Electrocardiogram  
CXR: Chest radiography

ACE: Angiotensin-converting enzyme inhibitors  
ARB: Angiotensin receptor blocker

# DEVELOP RESOURCES & STRATEGIES: Testing Recommendations & More



## Old EHR Recommendations

Here is an example: low risk lumpectomy

COVID and INR default order (COVID is no longer necessary for outpatient surgery). ECHO, EKG and stress test as options.

### Recommended Procedures and Labs

UM OR SON CASE REQUEST: Magnetic Seed Localization Lumpectomy with IOLM and SLNB  
These procedure and lab orders are recommended for the Procedure Pass based on the selected case.

Orders Needed

- Echocardiogram ⌵  
[Add order](#)
- EKG ⌵  
 EKG 12 lead  
[Add order](#)
- EKG Stress Test ⌵  
[Add order](#)
- COVID-19 ⌵
- PT/INR ⌵ !

## New EHR Recommendations

### Studies / Findings

Laboratory studies ordered: none indicated.

**EKG:** Does not require EKG per updated anesthesia guidelines July 2020.

# KICK-OFF ENGAGEMENT: Champions Connect to Key Stakeholders



Minimally Invasive Surgery



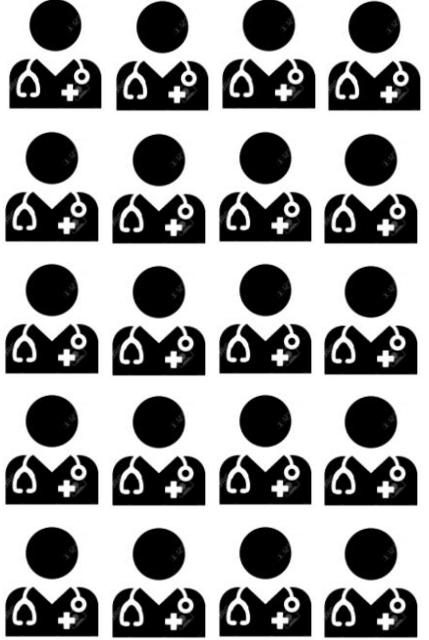
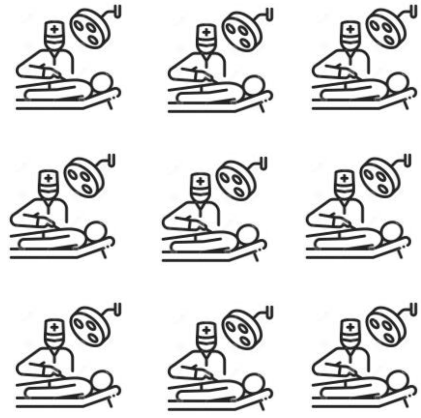
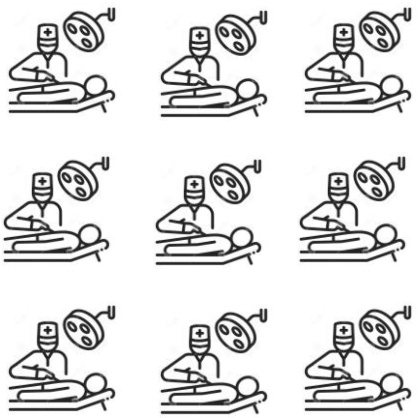
Surgical Oncology



Anesthesia



Pre-op Clinic



# REDUCE LOW-VALUE TESTING: Improve Care & Patient Experience



So?



*Has this approach been effective  
at reducing low-value testing?*




# REDUCE LOW-VALUE TESTING: Improve Care & Patient Experience



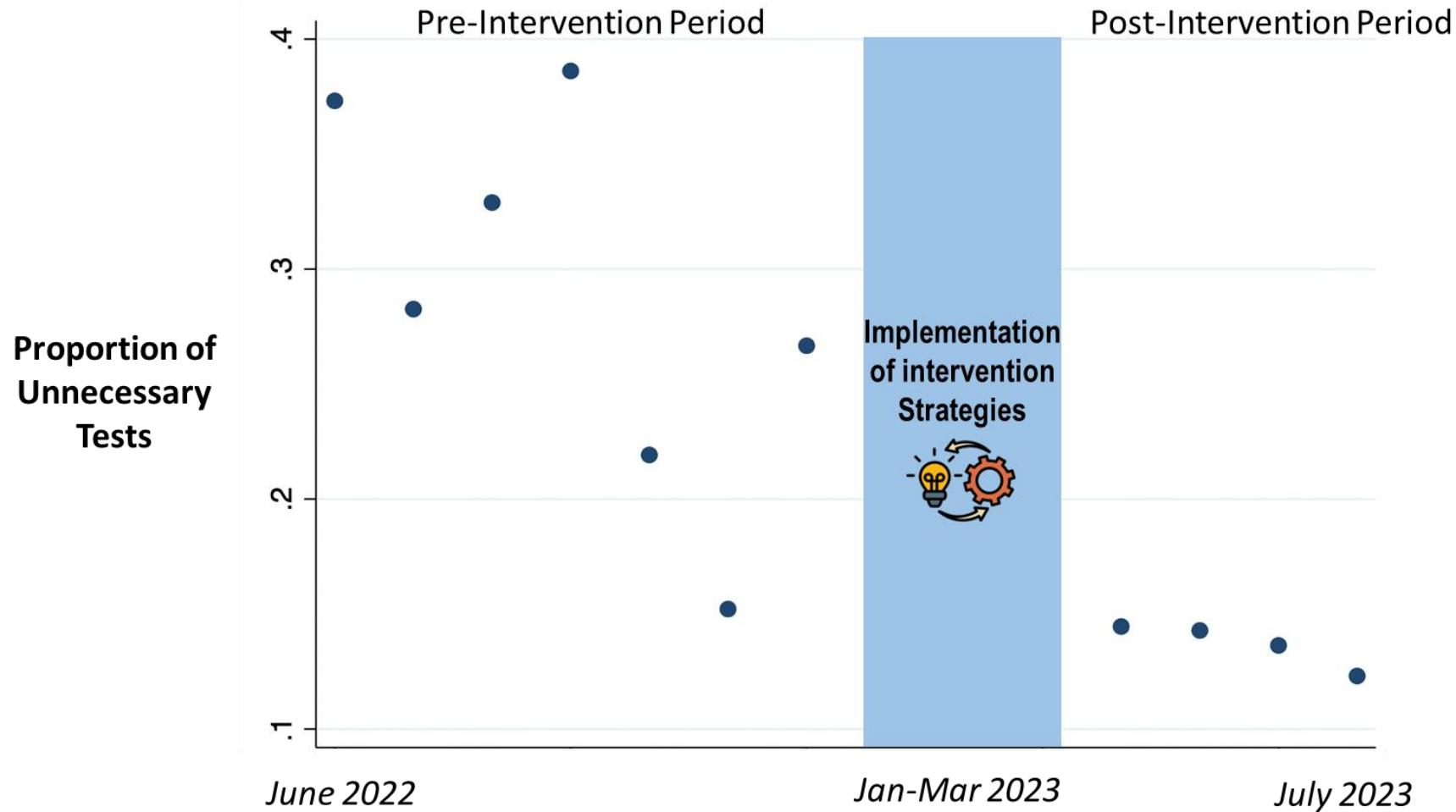
## Preliminary Results: *Rates of Inappropriate Testing*

	Pre-Op Test	Pre-Period	Post-Period
	CBCs	63.8%	56.1%
	BMPs/CMPs	58.1 %	41.2%
	EKGs	53.7%	39.5%





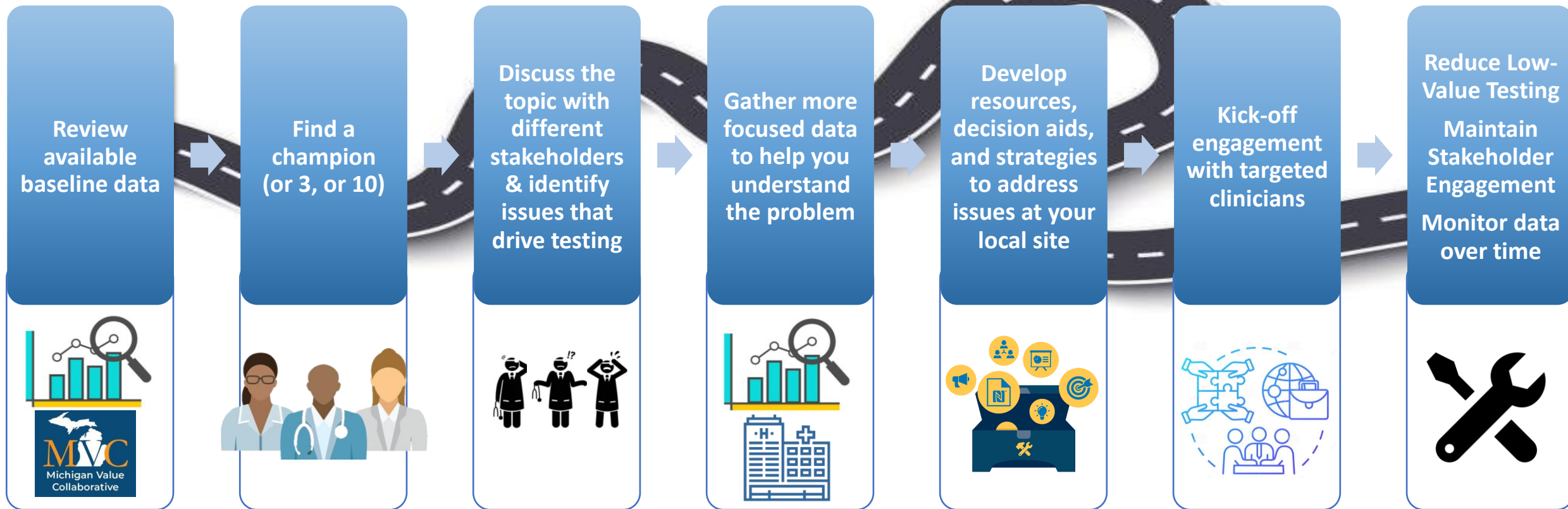
# REDUCE LOW-VALUE TESTING: Improve Care & Patient Experience



## Monthly Rates of Unnecessary Preoperative Tests



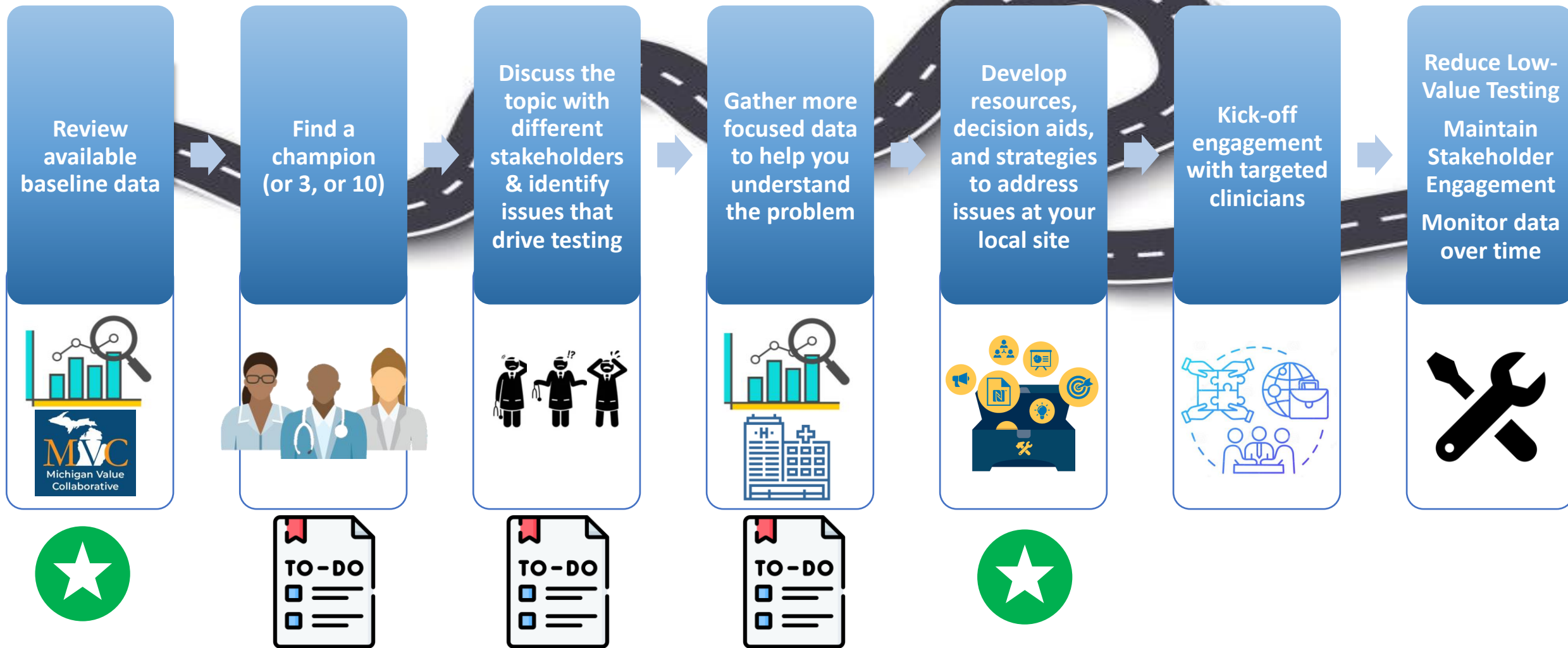
# ROADMAP FOR ADDRESSING UNNECESSARY PRE-OP TESTING AT YOUR HOSPITAL







# ROADMAP FOR ADDRESSING UNNECESSARY PRE-OP TESTING AT YOUR HOSPITAL

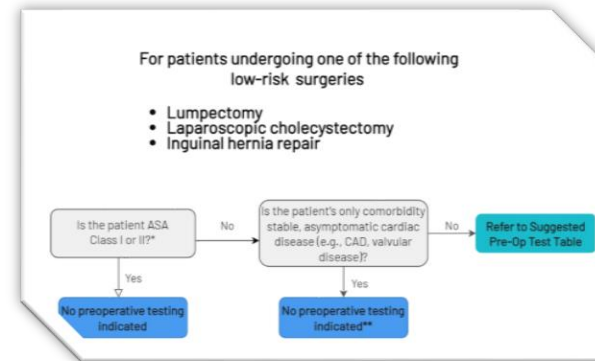


# Lessons Learned



*Engage clinicians as much as possible*

*Be flexible with the guidelines*



*Share as much data as you can throughout the process*



UNIVERSITY OF MICHIGAN HEALTH  
MICHIGAN MEDICINE



MICHIGAN PROGRAM ON  
VALUE ENHANCEMENT

# Housekeeping

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## **Recording**

- This session is being recorded; slides and the recording will be shared with attendees following the workgroup.

## **Questions**

- We will be monitoring the chat throughout the presentation so feel free to add questions.

## **Post-Workgroup Survey**

- Your feedback is important! Please complete the post-workgroup survey (link to be provided).

# Upcoming Events

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- [Diabetes Workgroup, November 2, 1:00 - 2:00 p.m.](#)  
**Presenter:** Gina Schutter, CPHQ, Holland PHO
- [Health in Action Workgroup- Rural Health, November 15, 11:00 a.m. – 12:00 p.m.](#)  
**Presenter:** Stephanie Pins, MSA, CPHQ, MyMichigan
- [Cardiac Rehabilitation Workgroup, December 7, 2:00-3:00 p.m.](#)  
**Presenter:** Jana Stewart, MPH, MVC

# Thank you!

MVC Coordinating Center:

**[Michigan-Value-Collaborative@med.umich.edu](mailto:Michigan-Value-Collaborative@med.umich.edu)**