

Reducing Day of Surgery Cancellations in a Large Hospital System

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Declaration of Interest

- Who had paid us to give talks?
 - NA
- Who had paid us for our advice?
 - NA
- Who has funded our research?
 - NA
- Who has paid for us to attend conferences?
 - NA
- Any other interests that could relate to our work?
 - NA

Key Take Aways



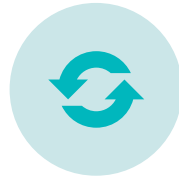
It takes a whole team



Follow the data



Independently measurable tests of change



PDCA cycles



Trust the process

Background

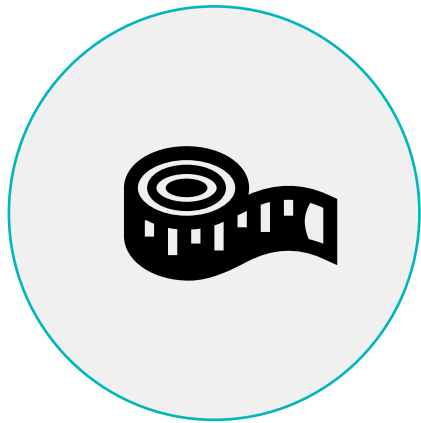
Baseline: 7.35% Day of Surgery Cancellation Rate

- Insurance Denials
- Patient No Show/No Ride
- Weather Delays
- Clearance Issues
- Scheduling Issues
- Blood Sugar/Potassium/Drugs
- Surgeon was Sick
- Equipment Issues
- NPO Compliance
- Patient Illnesses

Lean Six Sigma Approach



Define



Measure



Analyze



Improve



Control

Define

Define Phase Goals:

- Define is the “contract” phase of the project. We are determining exactly what we intend to work on and estimating the impact to the business

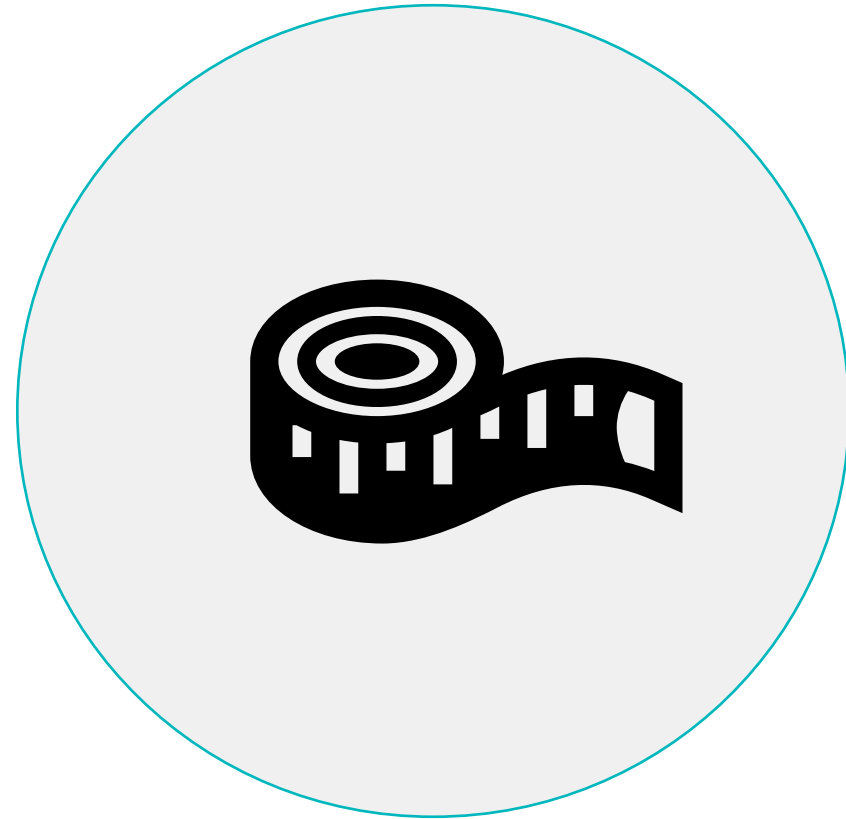


Measure

Measure Phase Goals:

- Define the Current State
- Define, explore, and classify “X” variables using a variety of tools

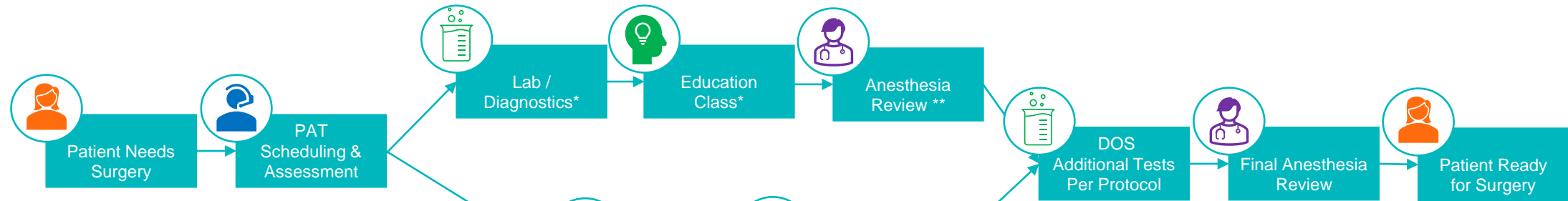
$$Y = f(X_i)$$



**Per Protocol*
***Occurs with Variation*

PAT Process Map Beginning State (High Level)

90% - NO PAT CLINIC



10% PAT CLINIC



- PAT CLINIC:
- Labs
 - Diagnostics
 - Education
 - Hospitalist Optimization

Analyze

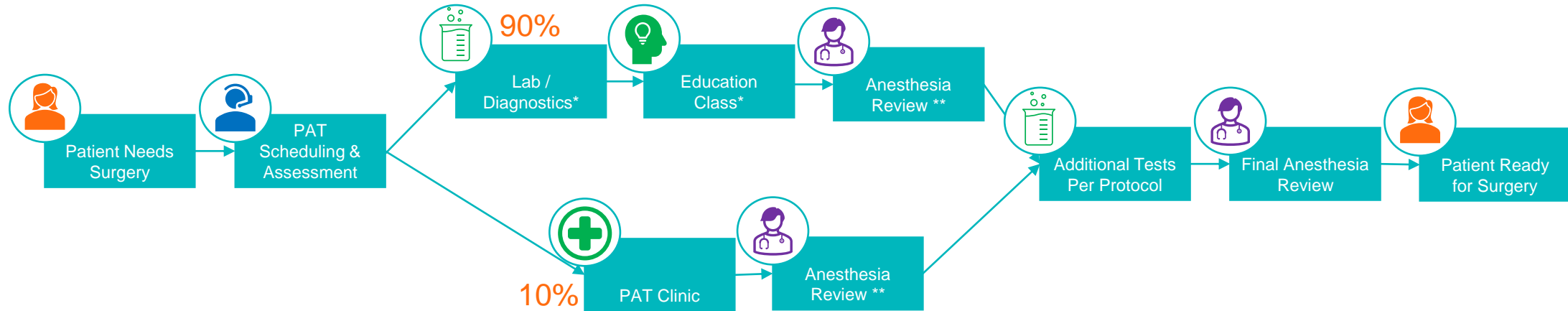
Analyze Phase Goals:

- Analyze:
 - Causes of variation
 - Statistical impact
 - Potential interventions



Analysis Findings

**Per Protocol*
***Occurs with Variation*



Ruled Out:

- Wrong Order Set
- Surgical Order Delays
- Anesthesia Flagging
- Timely Patient Contact
- Lab Results
- Surgeon Cancellations
- Insurance Delays

Opportunities:

- PAT Clinic Utilization
- Hospitalist Consultation Notes <72 Hours
- Anesthesia Review <2/4 Days

Critical Variation:

- PAT Protocol

Improve

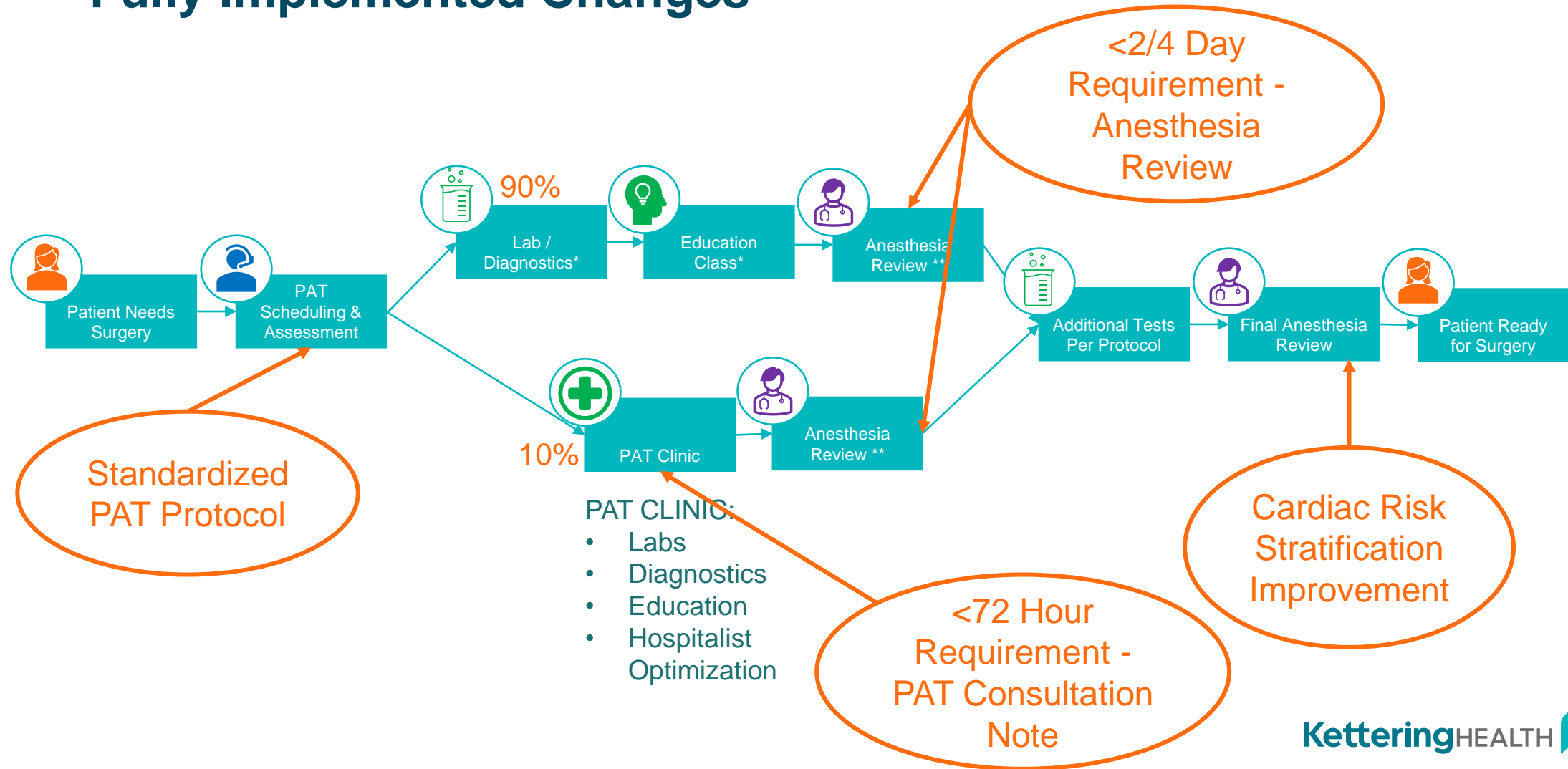
Improve Phase Goals:

- Structured tests of change that can be measured independently for affect
- PDCA cycles



*Per Protocol
**Occurs with Variation


Fully Implemented Changes



Singular PAT Protocol

Standardization

- Everyone follows the protocol
- Limits over/under ordering
- Can be updated when new information is available

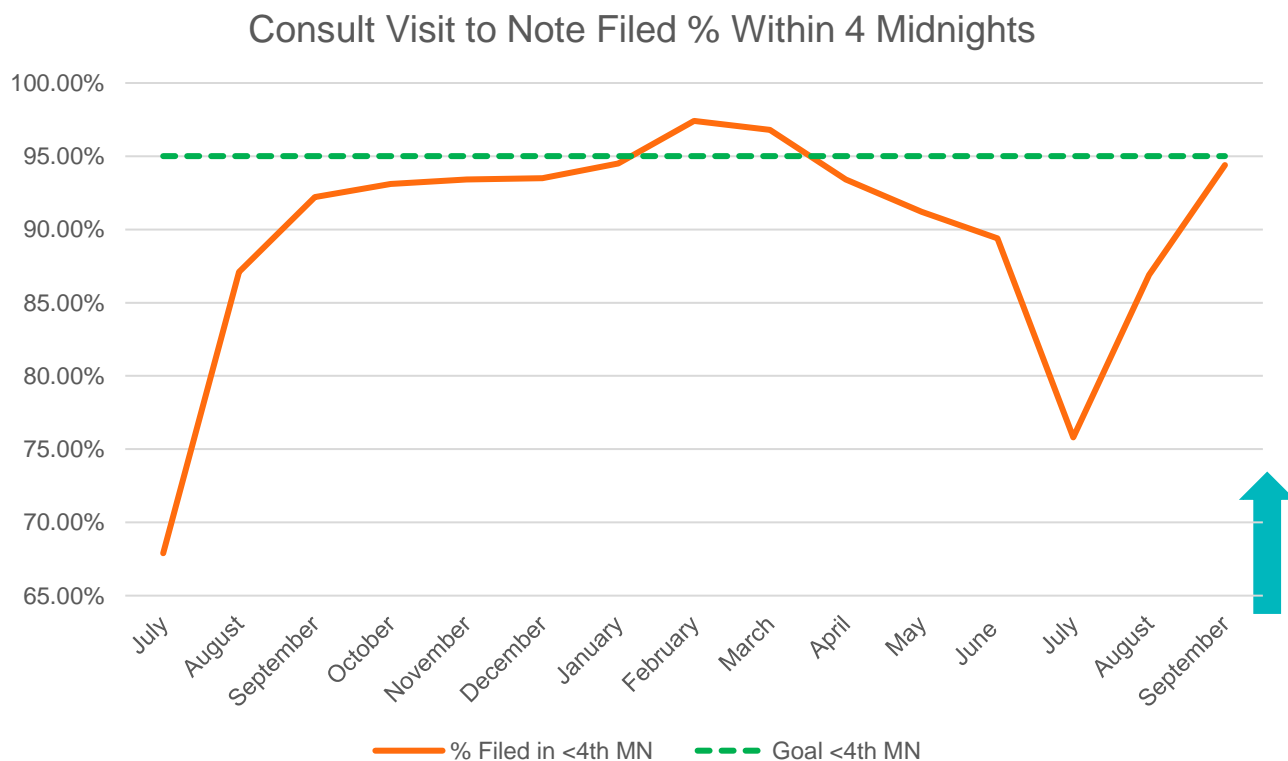
Kettering HEALTH 

KHN ANESTHESIA PAT PRE-OPERATIVE TESTING PROTOCOL Reference

Key for Test Required:
 ● = Obtain lab testing within 60 days of surgery
 ▲ = Obtain lab testing 2 days prior to the day of surgery

	CBC With Diff	CBC Without Diff	BMP	PT/INR	Liver Panel	Drug Level	EKG	Type and Screen	SARS-CoV-2
No Medical Conditions									
MINOR Surgery with local and Eye surgery with IV Sedation	None Required								
All Surgeries with Anesthesia and any below Medical Conditions or Procedures									
Anemia/Hemoglobinopathy/Sickle Cell		●							
Bleeding disorder/Coagulopathy		●		●					
Cardiovascular disease: (CAD, CHF, Hx MI, High Cholesterol, Severe Valvular disease, Hx Hypertension, arrhythmia, Stroke, CVA)		●	●				1		
COPD and/or smoking greater than 25 pack years									
Diabetes			●				1		
Liver disease, Hepatitis, Cirrhosis		●	●	●	●				
Sleep Apnea							1		
BMI greater than 50									
Dilantin/Phenobarbital/Tegretol		●	●			●			
Digoxin			●				1		
Diuretic or Steroid			●						

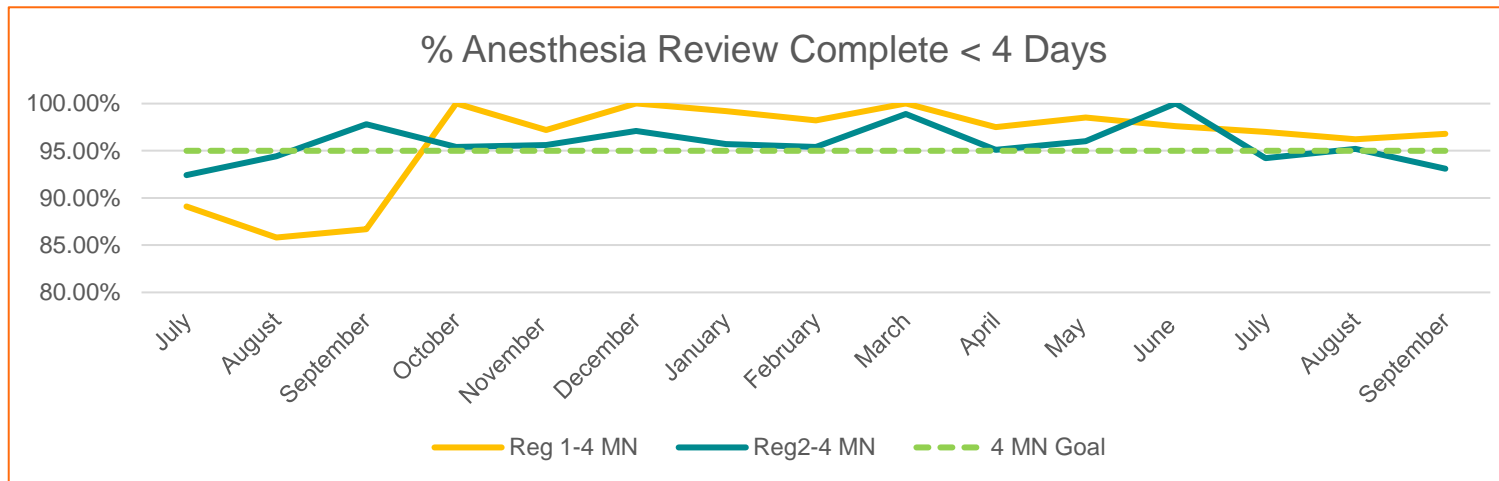
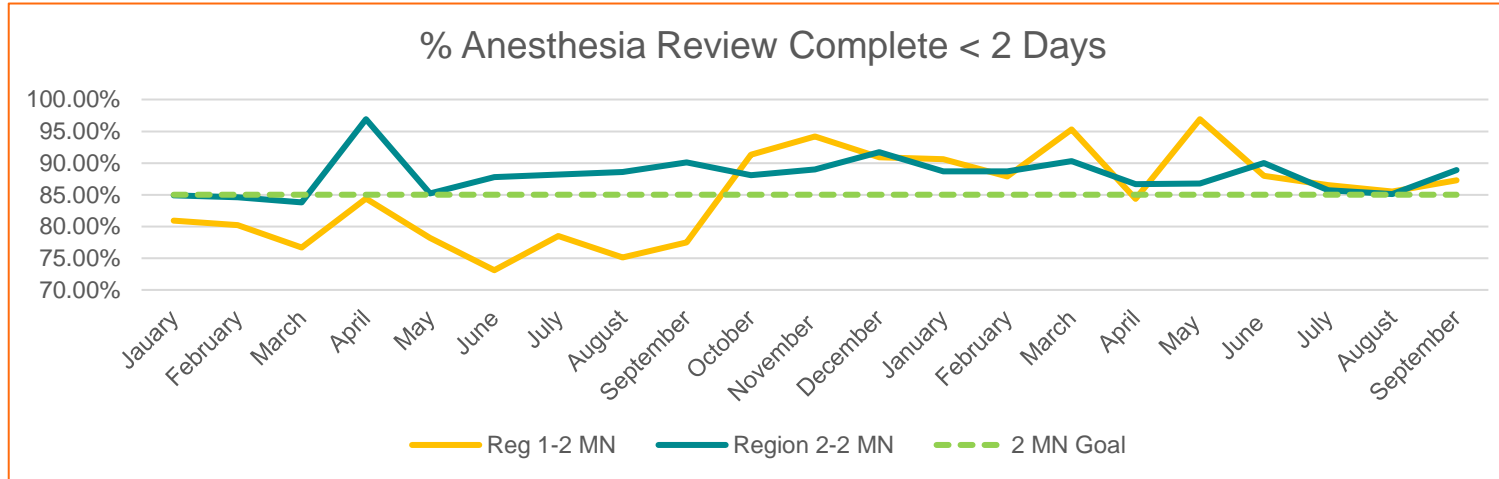
Consultation Note Requirements



Standardization

- Everyone held to the same standard expectations
- Implemented accountability through our Medical Records charting requirements
- Susceptible to suspension and revocation of privileges

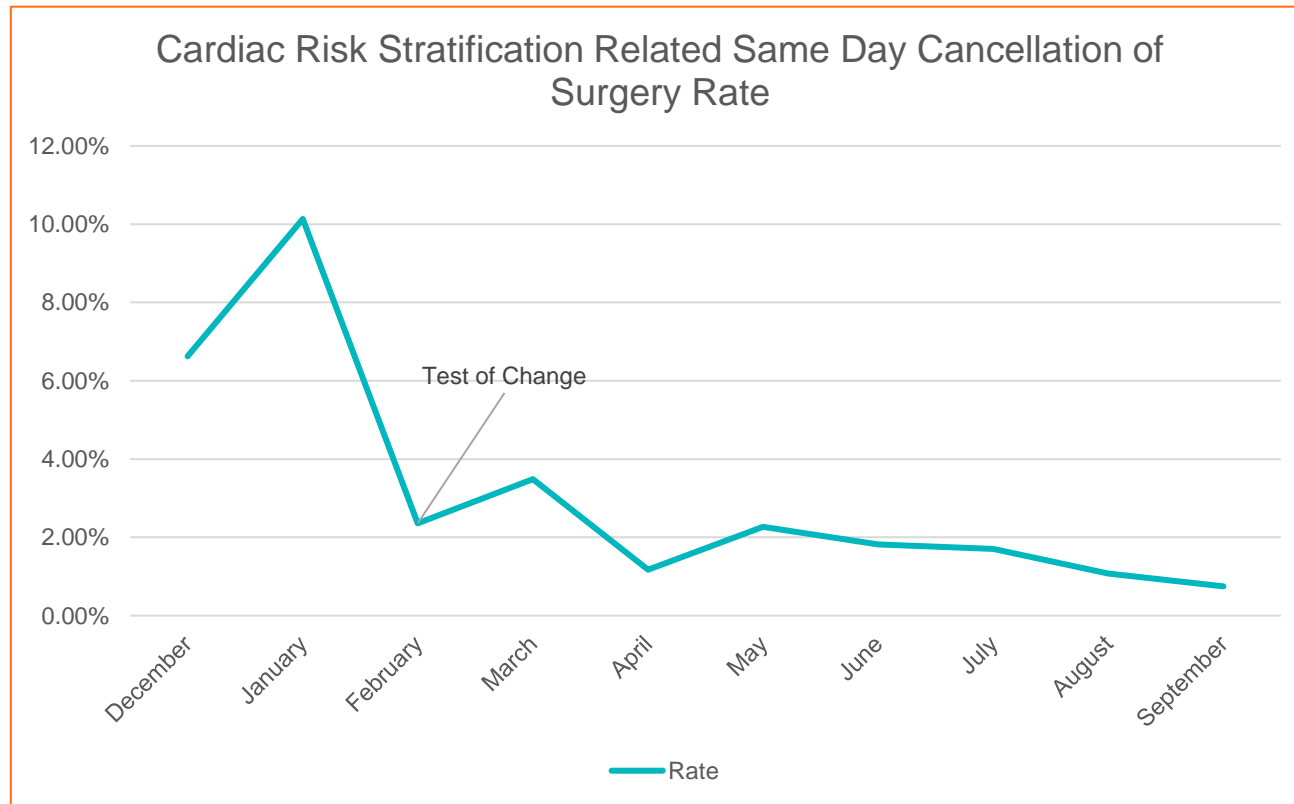
Anesthesia Review Requirements



Standardization

- Everyone held to the same standard expectations
- Implemented accountability through our standard evaluation of contracts cycles

Cardiac Risk Stratification Improvement

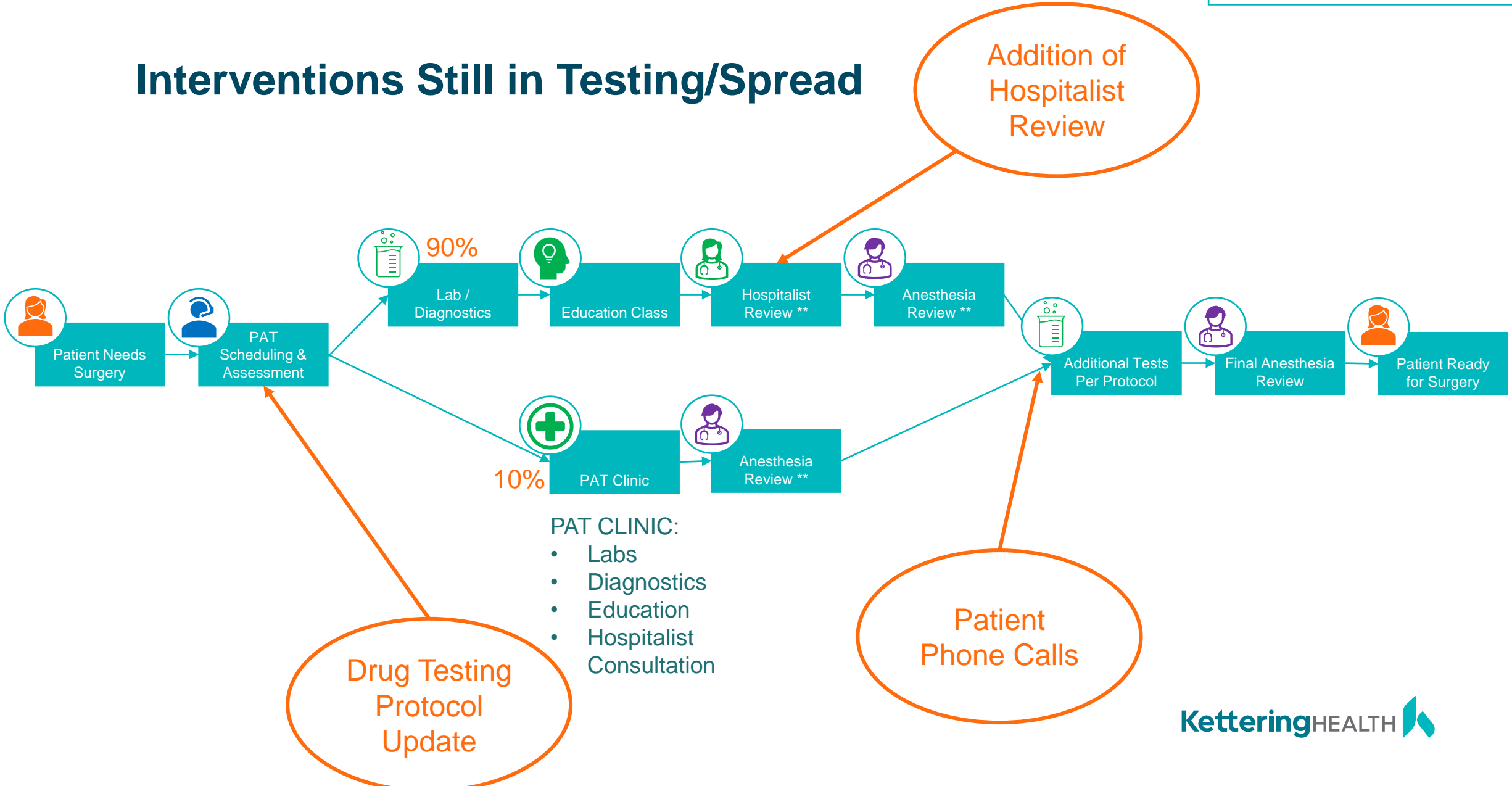


Decreased Variation:

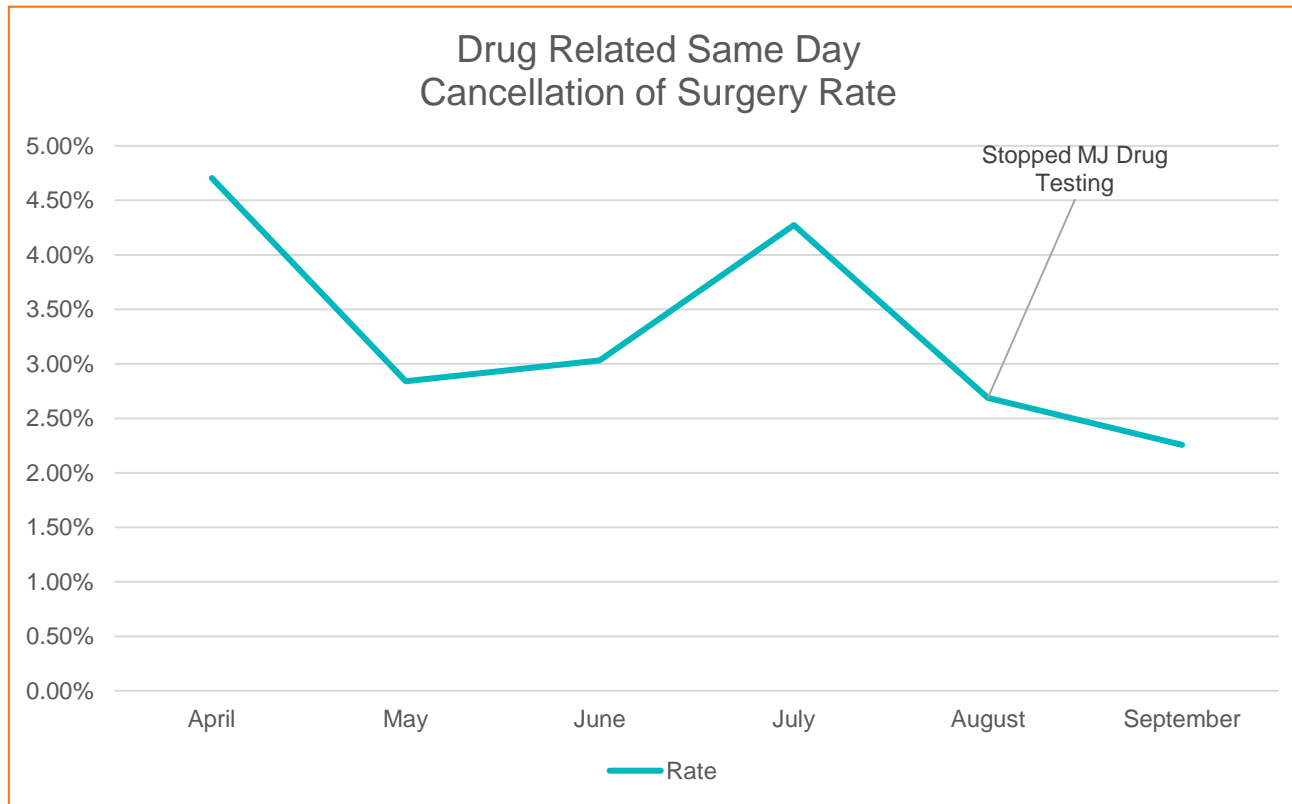
- Methods of Request
- Methods of Acceptance
- Location in EMR

**Per Protocol*
***Occurs with Variation*

Interventions Still in Testing/Spread



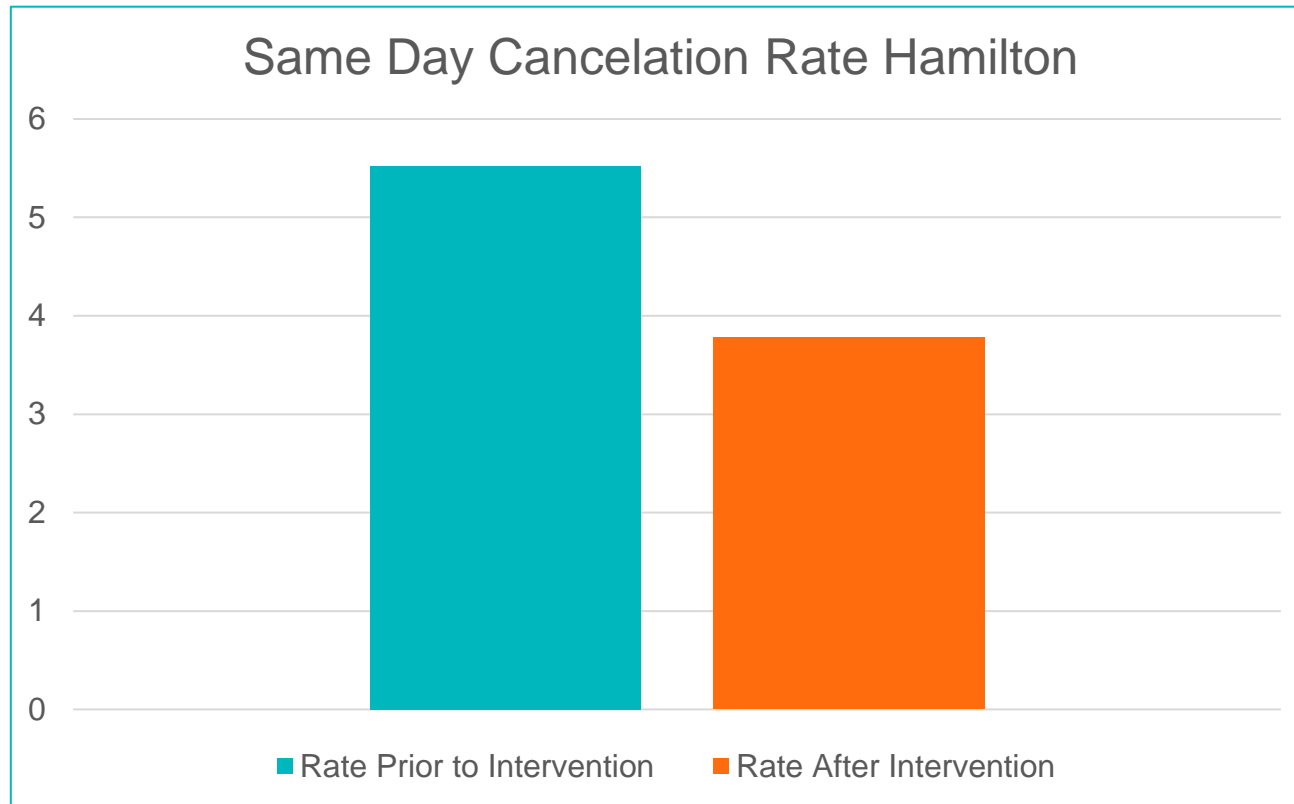
Drug Testing Protocol Update



Updating PAT Protocol

- Eliminating non-value-added lab order for Marijuana testing

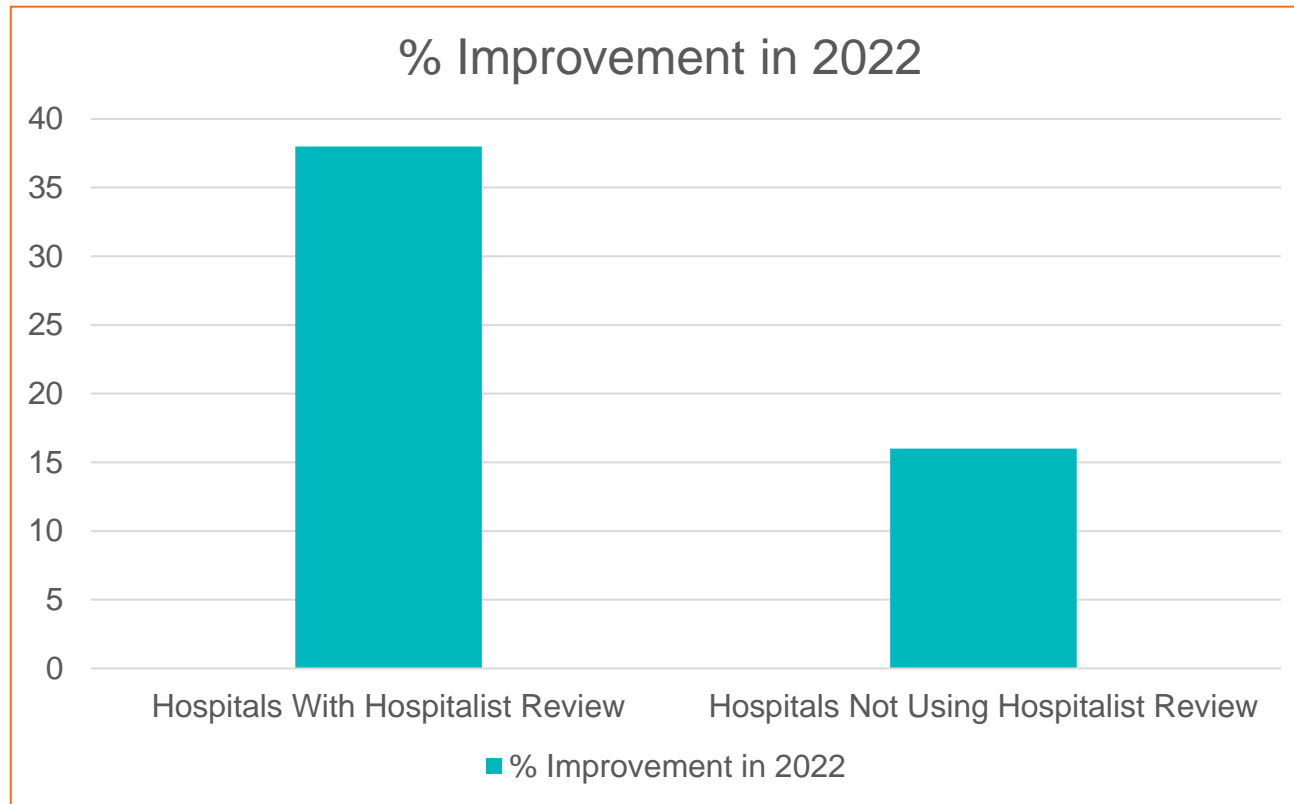
Patient Phone Calls



Standardization

- Pitched to us as “best practice” in other systems
- Phone Call Script:
 - Reminder of location
 - Confirmation of time
 - Sick?
 - Questions?

Hospitalist Review Addition



Elimination of Waste

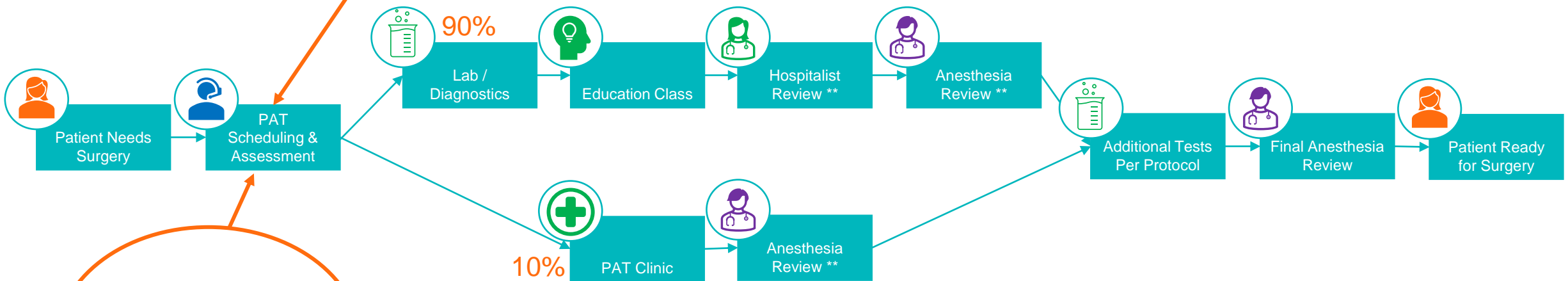
- Only reviewing labs and diagnostics with critical findings
- Hospitalist following up on critical findings >24 hours from surgery
- Anesthesia following up on critical findings with <24 hours to surgery

**Per Protocol*
***Occurs with Variation*

Next Steps

Start Process Further Out in Advance of Surgery

EPIC – 5 Point Questionnaire



- PAT CLINIC:**
- Labs
 - Diagnostics
 - Education
 - Hospitalist Consultation

Project Overview



Project Title: Reducing Day of Surgery Cancellations



Achievement: We successfully reduced day-of-surgery cancellations 48% from a baseline mean of 7.35% to a new mean of 3.90%



Approach: We adopted the Define-Measure-Analyze-Improve-Control (DMAIC) approach which guided us through the project phases.

Key Interventions:

1. Standardizing the Pre-Admission Testing (PAT) protocol
2. Establishing clear documentation requirements for anesthesia and PAT providers
3. Standardizing and enhancing the cardiac risk stratification processes
4. Involving hospitalists to review the critical findings in PAT protocol orders
5. Minimizing drug testing requirements
6. Implementing a proactive approach of calling patient the day before surgery to ensure readiness

Questions