



**Clinical Safety & Effectiveness  
Cohort # 24  
Team #4  
Improving Efficiency in Advanced  
Endoscopy**



# The Team

- Division
  - CS&E Participant: Veronica Lao MD, anesthesiologist
  - Sandeep Patel MD, medical director of advanced endoscopy
  - Bob Edwards RN, Clinical and Interventional Endoscopy Coordinator
  - Chris Moreau, GI and transplant coordinator
  - Irene Martinez RN, patient care coordinator
  - Edward Garcia, endoscopy center director
  - Virginia Travieso, director of ancillary nursing
  - Facilitator: Sherry Martin
- Sponsor Department
  - Emily Volk MD

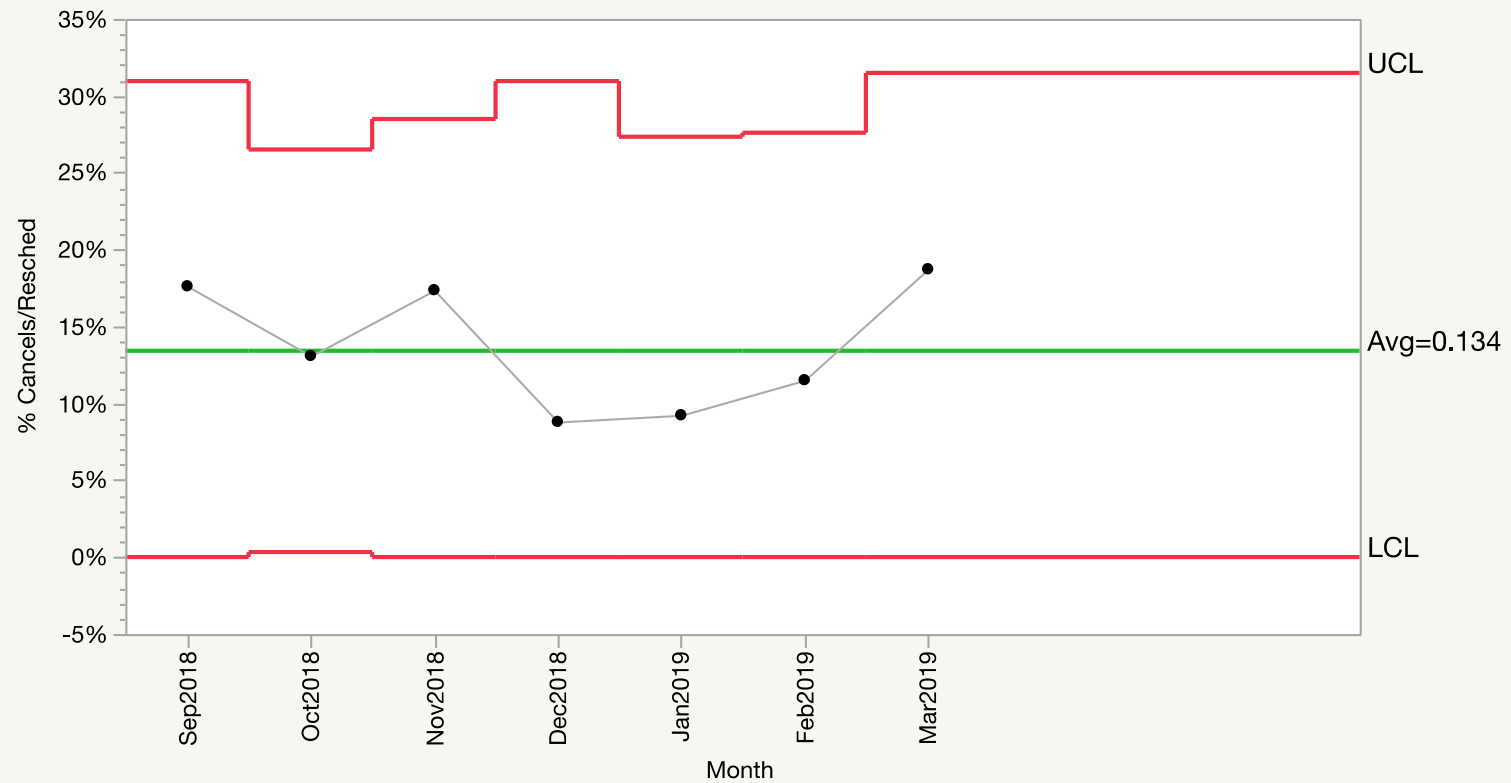
# Background Data

Currently, inpatient advanced endoscopy cases are a struggle to complete and many cases need to be rescheduled or cancelled.

In 2016, the average number of inpatient cases per month was 25.5 and in 2018, the average number of inpatient cases was 35.5.

# Background Data

SPC p-Chart - Percent Cancellations / Rescheduled



# What We Are Trying to Accomplish?

## OUR AIM STATEMENT

Our goal is to reduce the percentage of cancellations and rescheduling of inpatients from baseline of 13.4% to 10.7% (reduction of 20%) in advanced endoscopy by May 14, 2019.

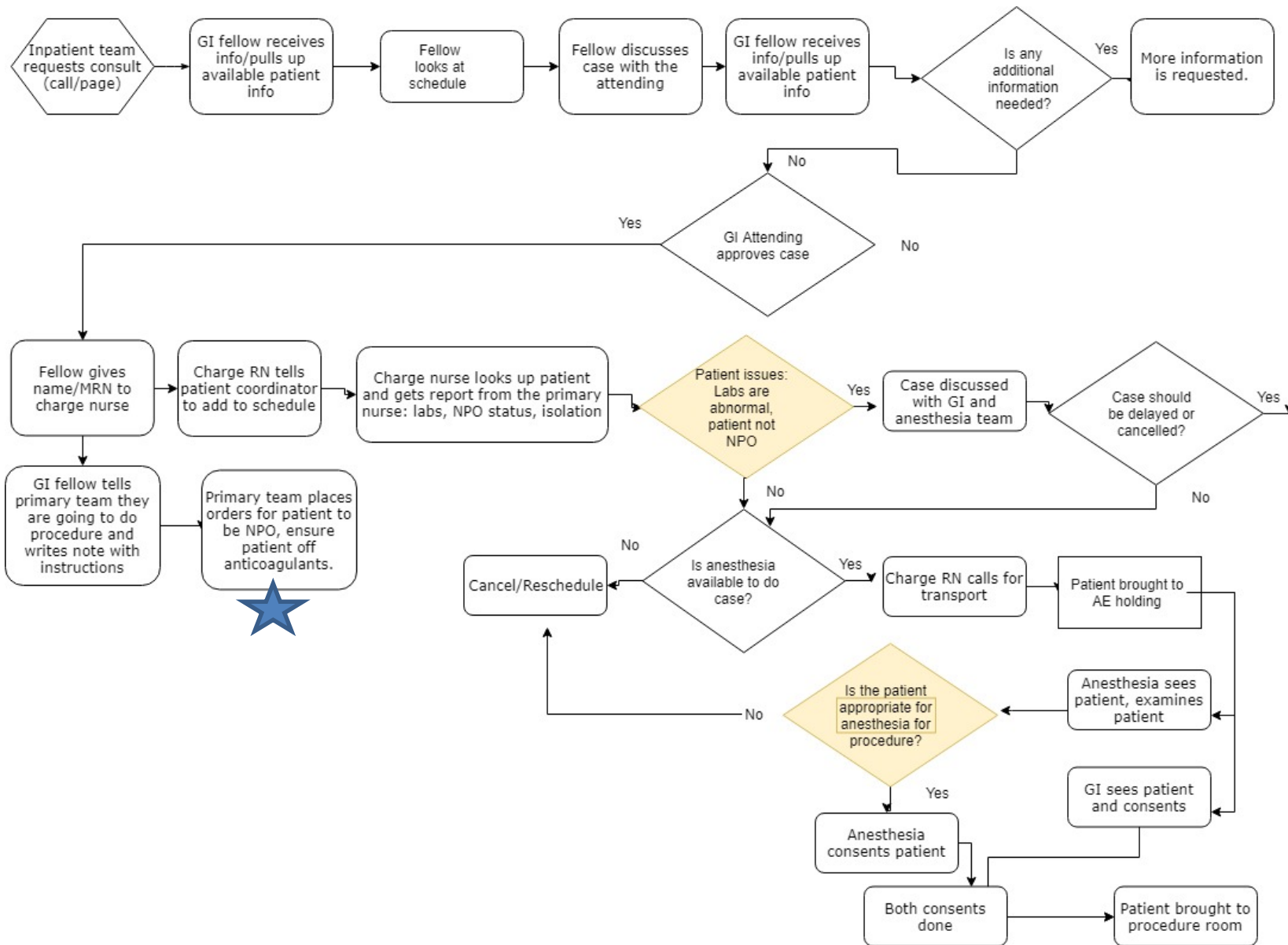
The process begins with the initial call for a consult to the GI fellow and ends with the patient being brought into the room for the procedure. This is important to improve because cancellations and rescheduling causes delays in patient care (diagnosis, treatment, and discharge) and prevents clinicians from being efficient.

# How Will We Know That a Change is an Improvement?

- Types of measures: the percentage of inpatient cases that are cancelled or rescheduled compared to prior our intervention.
- How you will measure: Outcome measure – cancellations =Self coded sheet, cancellations and reasons for each
- Process measure- reasons: change of care plan, schedule management, abnormal labs, cardiac issues, not NPO
- Specific targets for change: targets include INR>1.5, platelets<50, etc to reduce cancelled/rescheduled cases from a baseline of 13.4% to 10.7% (reduction of 20%) in advanced endoscopy by May 14, 2019.

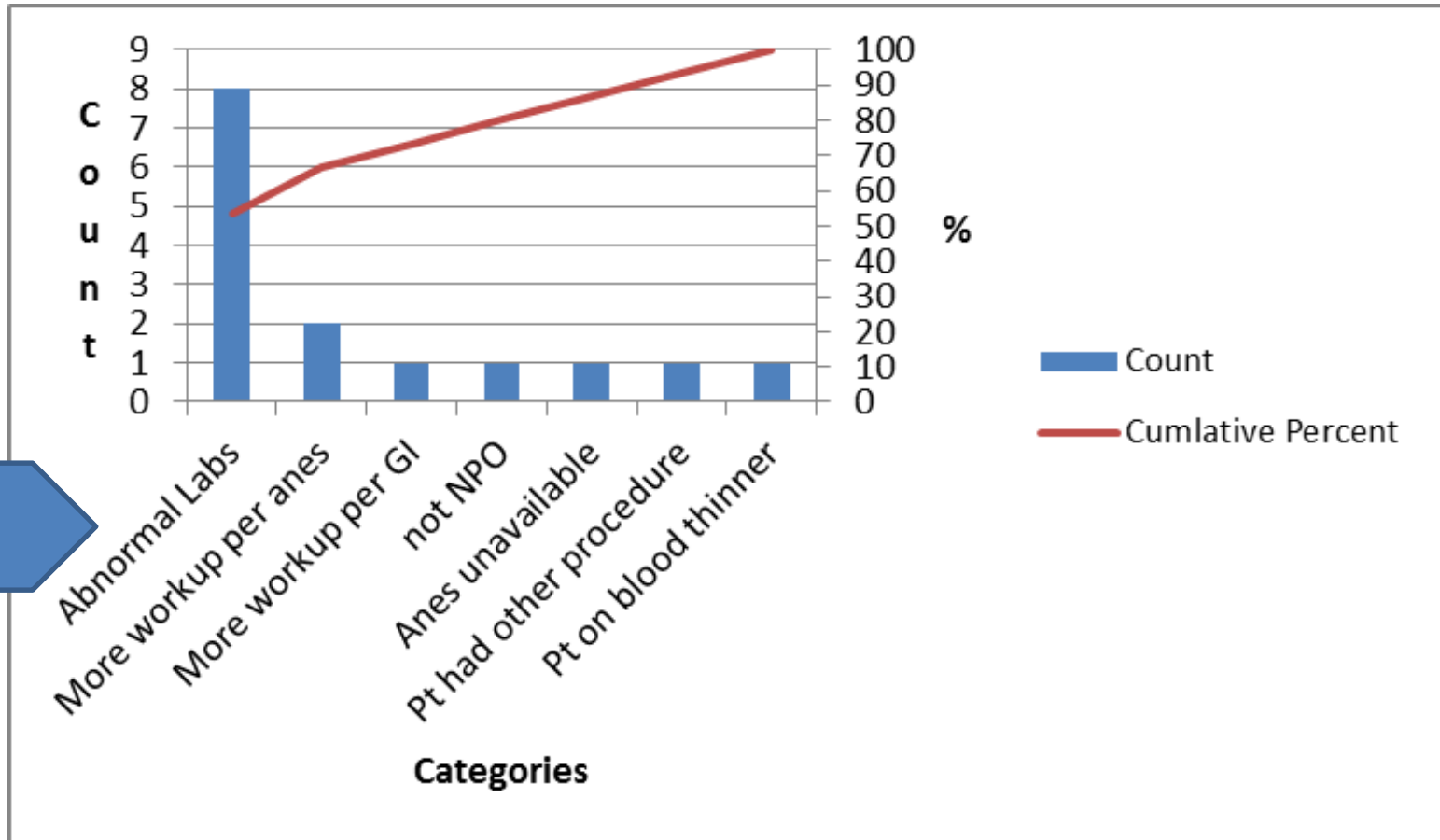
# Data Collection

Type of Measure	Measure	Data Elements	Data Category		Data Source	Data Frequency	Data Steward
Outcome	# of scheduled inpatients		existing	Manual	IDX	monthly	Bob Edwards
Outcome	# cancelled/rescheduled inpatients		existing	Manual	self-coded data sheet	monthly	Fellow
Process	Percent CR inpatients	#CR/#inpatients on schedule	existing	Manual	self-coded data sheet	monthly	Charge nurse
Process	% Change of care plan	#Change of care plan /#CR	existing	Manual	self-coded data sheet	monthly	Charge nurse
Process	% Schedule management	#Schedule management/#CR	existing	Manual	self-coded data sheet	Monthly	Bob Edwards
Process	% Abnormal labs	#Abnormal labs/#CR	existing	Manual	self-coded data sheet	Monthly	Bob Edwards
Process	%Cardiac Issues	#incomplete cardiac workup/#CR	existing	Manual	self-coded data sheet	Monthly	Bob Edwards
Process	%Not NPO	#Not NPO/#CR	existing	Manual	self-coded data sheet	monthly	Bob Edwards





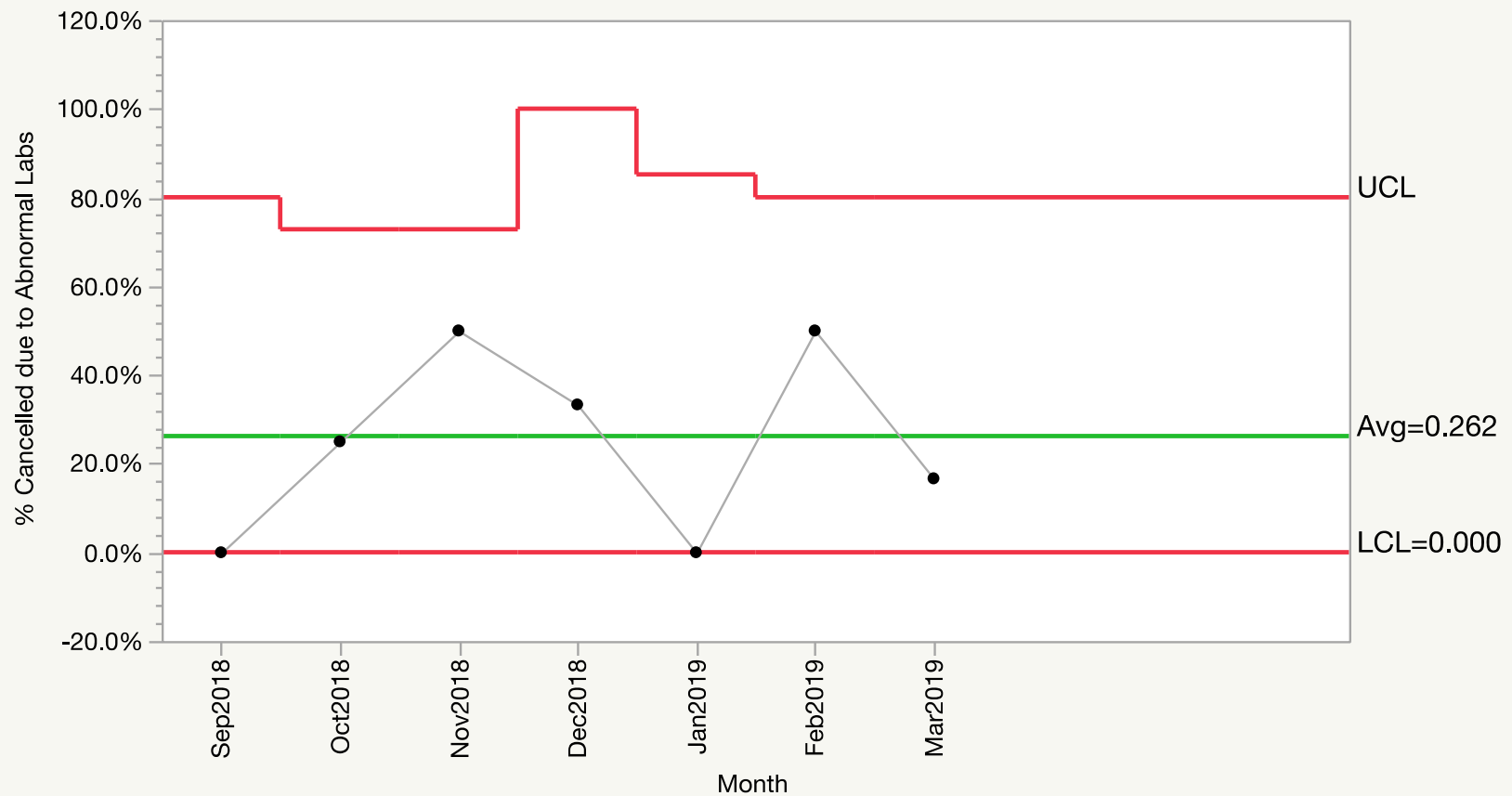
# Reasons for Cancellation/Rescheduling



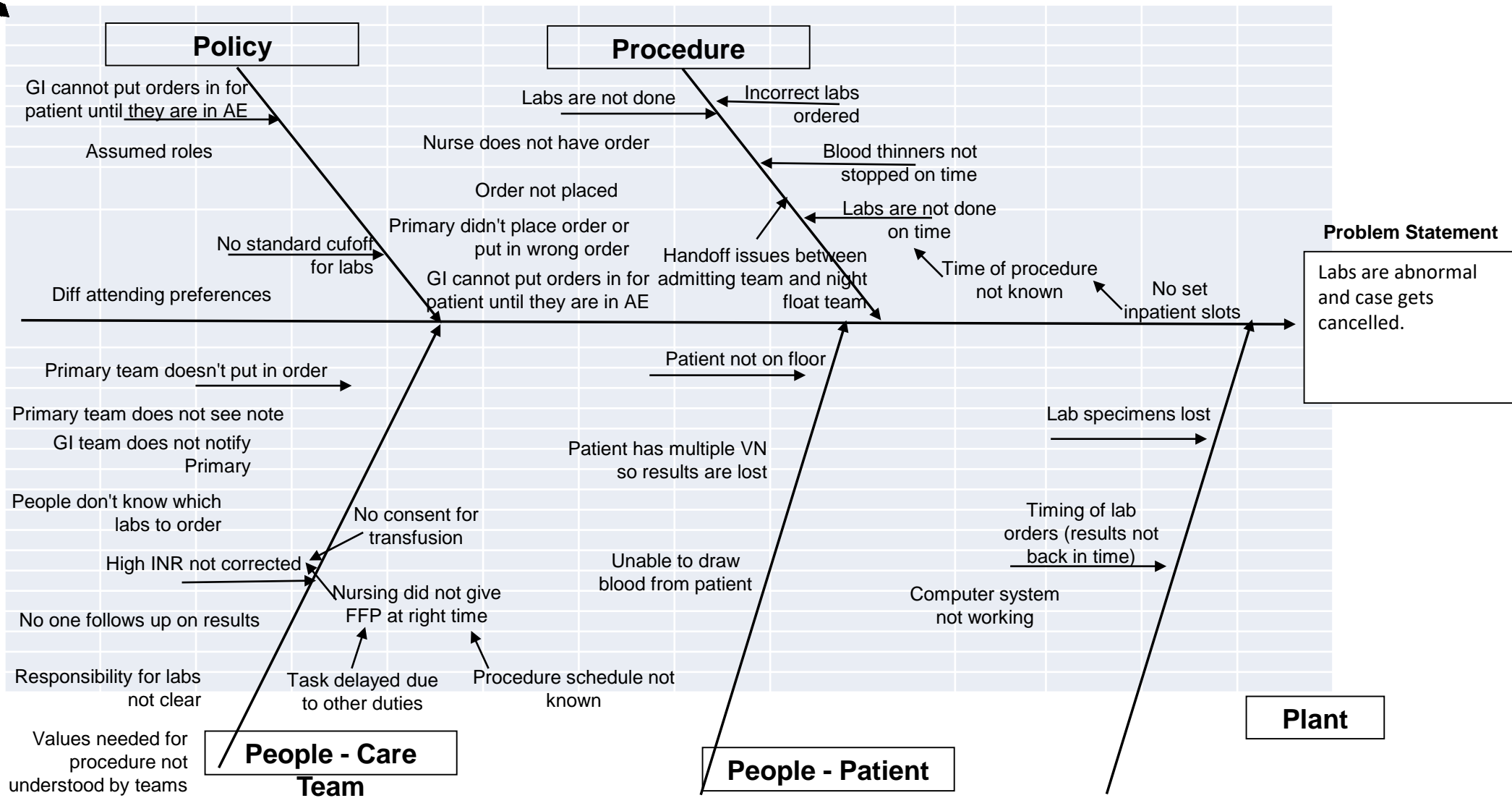
INR and  
Platelets

# Background Data

**SPC p-Chart - Percent Cancelled due to Abnormal Labs**



# Contributors to Abnormal Labs Causing Case Cancellation



Aim	Primary drivers	Secondary Drivers	Interventions
<p>Aim: To reduce the percentage of cancelled and rescheduled inpatients in advanced endoscopy from baseline of 13.4% to 10.7% (reduction of 20%) in advanced endoscopy by May 14, 2019</p>	<p>Labs are abnormal at the time of procedure.</p>	<p>Correct labs not ordered (no INR drawn).</p>	<p>GI team takes role of entering required labs – T&amp;S, INR, CBC. Educating GI fellows and nurses on order set. Completed May 14.</p>
		<p>Schedule not known so timing for correction of abnormal labs is difficult (administration of FFP for coagulopathy or RBCs for anemia).</p>	<p>Building in inpatient slots to schedule to help better define a set procedure time. Completed April 22.</p>
		<p>Cutoffs for acceptable lab work differ between attending endoscopists.</p>	
		<p>Relying on primary team to place orders.</p>	<p>GI team takes role of entering required labs. Education of floor nurses to carry out order set and what to do with abnormal lab values. Completed May 2.</p>
	<p>Anesthesiologist needing additional information.</p>	<p>Patients added to schedule not known until the day of.</p>	
		<p>No set screening in process for patients with complex medical issues that need to be addressed prior to general anesthesia.</p>	<p>Build into order set indications for more cardiac information (if has CEID will need indication/interrogation, if CAD/MI/CHF will need EKG from last year, if ESRD will need potassium day of procedure)</p>
		<p>Abnormal vital signs not seen until patient arrives in holding area.</p>	<p>Build into order set acceptable VS criteria.</p>

# Interventions:

- Developing and implementing an order set that GI fellow places into EHR for inpatients to ensure correct labs are ordered.
  - Order set to include agreed upon cutoffs for abnormal values.
- Building a checklist for patients with cardiac issues to decrease additional information anesthesiologist needs at last minute.
- Creating dedicated inpatient slots to establish a better timeframe for scheduling.

# Interventions

EGD	EUS	ERCP	ESD/EMR upper/lower	Flex Sig Colonoscopy	Retrograde Enteroscopy	Antegrade Enteroscopy
Prep: Lower Procedures -Golytely 1/2 Gallon 6pm 1/2 Gallon 11pm night before- Clear Liquid Diet day before						
NPO status	Patient needs to be NPO 8 hours pre procedure including any tube feedings (Golytely is considered CLD-2 hours pre procedure) (Chewing gum-up to anesthesia discretion)					
Isolation	Contact Isolations -last case of the day (unless otherwise coordinated to be 1st case of the day)					
Allergies	O2/Room Air	Telemetry Pacemaker/Defibrillator	Code Status	Glucose (accu check/time)	Dentition	
Anticoagulation	HOLD-Lovenox/Heparin SQ day of procedure. Heparin Drip- Hold 6 hrs or discretion of MD Coumadin/Plavix 5-7 days. Eliquis 1-3 days					
Heart Disease Cardiopulmonary Status	If so, needs recent EKG, ECHO, STRESS TEST and/or CARDIOLOGY NOTE (Clearance)					
LABS (Any abnormal results will need to be reported to Primary Team ASAP for possible correction)	HCG (within admission) H&H (Hemoglobin) < 7.0 -7.5 (PRBC transfusion -anesthesia discretion) and/or Type & Screen available. K+ < 3.0 will need replacement > 5.0 (depending on patient's Renal history/anesthesia discretion) Note: that only IV replacement is to be used for correction of abnormal low results. Platelets < 50 (Platelets transfusion) INR > 1.5 (FFP transfusion) Any other pertinent labs depending on patients health conditon Accu check range (60 to 250)					
	AM -					

AM -

# Interventions

- Order Set which fellow will place once determining patient should be scheduled for procedure.  
Implemented May 14, 2019.
- Educating nurses on 5ACU about new order set.  
Completed May 2, 2019.
- Reserving first case of the day at 7:30 for inpatient consults. Started April 22, 2019.

# Return on Investment

Each extra day in the hospital: \$1410 floor,  
\$4043 ICU.

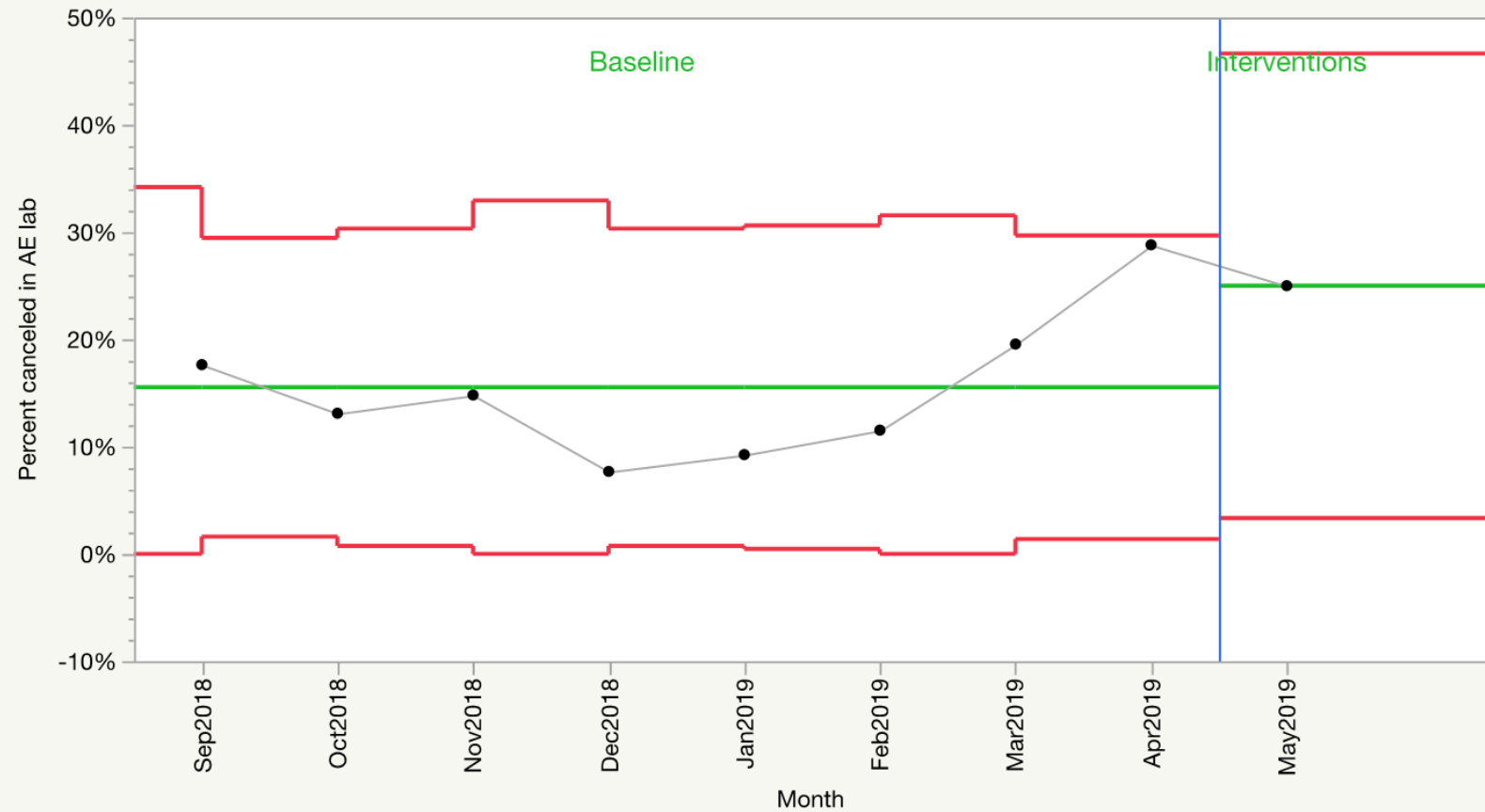
Current C/R rate 13.4%, goal of 10.7%

Average monthly scheduled inpatient cases: 44.

If we reach our goal: savings of \$20100-57600/year.



## SPC p-Chart: Percent Inpatients Canceled in AE Lab



# Lessons Learned

- Challenges of adopting this project from all sides
- Getting everyone to trust the data
- Waiting for approval is a challenge

# What's Next

- Feedback to providers about the new data.
- We will finish our pilot on 5ACU and make changes to roll out the interventions to all the floors
- Re-educating if needed

# Sustainment

- Dr. Sandeep Patel, medical director of advanced endoscopy – continued education of fellows
- Bob Edwards, advanced endoscopy clinical coordinator – data collection
- Irene Martinez, Advanced Endoscopy Charge Nurse – data collection
- Kelly Reyna, advanced GI physicians assistant – data collection and education

# Thank you!

