Evaluation of a Systematic Method for Risk Stratification and Management of Gastrointestinal Endoscopy Patients

Farhad Sahebjam 1, Paul Yeaton 1, Deborah D. Copening 2, Deborah Hodges 3, Todd Lasher 4, Neil MacDonald 4, Kevin Ashley 5, M. Jonathan Bern 1

1 Virginia Tech Carilion School of Medicine (Carilion Clinic), Gastroenterology Division, Roanoke, Virginia

2 Surgical Services Quality, Carilion Clinic, Roanoke, Virginia

3 CARES Pre-Surgical Testing Department, Carilion Clinic, Roanoke, Virginia

4 Anesthesiology Consultants of Virginia, Roanoke, Virginia

5 Perioperative Clinical Informatics Department, Carilion Clinic, Roanoke, Virginia

## Abstract

# Evaluation of a Systematic Method for Risk Stratification and Management of Gastrointestinal Endoscopy Patients

The goal of this study was to assess outcomes with respect to significant cardiopulmonary complications following endoscopy. Post-procedural cardiopulmonary complications were chosen as a marker for preprocedural preparedness. This study compares annual data before and after a systematic approach to preprocedural risk stratification and management was instituted at the Carilion Clinic, a large integrated health care system with a medical draw area of over 1 million patients serving a wide geographic area. Procedures were performed by gastroenterologist, surgeons and trainee physicians under the supervision of staff physicians at 8 endoscopy facilities. The management algorithms used for this study were developed by a multi-disciplinary task force that included gastroenterologist, anesthesiologists, Carilion Registration and Education for Surgery (CARES) nurses, appointment schedulers and information technology specialists.

**Study hypothesis:** A systematic approach to preprocedural risk stratification and management will not increase the rate of postprocedural cardiopulmonary events.

## **Results:**

There were 14,358 cases performed between September 1, 2013 and August 31, 2014 which represents baseline annual data before the systemic approach to risk stratification and management was initiated (group 1). Of these cases, 53 had cardiopulmonary complications or a complication rate of 0.37%. There were 13,685 cases performed between September 1, 2015 and August 31, 2016, which represents annual data after the systemic approach was started (group 2). There were 41 cardiopulmonary complications, or a complication rate of 0.30%. There were no significant differences between these two groups with respect to cardiopulmonary complications with p value of 0.1571, thus confirming the study hypothesis.

Group 1 patient had 53 cardiopulmonary complications with most of these seen with esophagogastroduodenoscopy (EGD) 40, colonoscopy accounted for 9 and endoscopic retrograde cholangiopancreatography (ERCP) 4. A similar pattern for cardiopulmonary complications was seen for group 2 patients with 30 of 41 patients having EGD, colonoscopy 9 and ERCP 2.

#### Discussion

Our results confirm the hypothesis that a systematic approach to endoscopic preprocedural risk stratification and management will not increase postprocedural cardiopulmonary complications and in fact there was a trend toward improvement.

Additionally, this systematic method reduced costs by eliminating preprocedural testing and CARES office nursing visits for ASA I and II patients undergoing colonoscopy and EGD.

The pattern of cardiopulmonary complications suggests that EGD carries the greatest risk. The risk for ERCP is very low in our experience compared to historical data and may be related to our practice of intubated general anesthesia for all ERCP patients.

We hope the methods developed by this task force and presented in this article will be useful to other institutions interested in developing a systematic approach to preprocedural preparedness

#### Introduction

It is difficult to get a good estimate for the number of endoscopic procedures performed per year in the United States but it is clearly a very large number. The best data we found comes from 2009, which estimates that 6.9 million upper endoscopies (EGD), 11.5 million colonoscopies, and 228,000 biliary endoscopies were performed per year in the United States.(1). One suspects that the number is higher in 2017. Despite the large number of endoscopic procedures performed, there is little literature that informs best practices for preprocedural risk stratification, evaluation and management. What follows is an evaluation of a systematic approach to preprocedural preparedness. To develop this approach available literature was reviewed and expert opinion was sought. Extensive multi-disciplinary meetings were conducted that resulted in the methods articulated in this manuscript.

Prior to the systematic management approach we describe, we sought expert opinion from centers of endoscopic excellence. We were surprised to see a wide range of preprocedural evaluation and management practices ranging from open access with essentially no preprocedural risk stratification (especially in the case of open access screening colonoscopy) to a required nurse practitioner office visit by a nurse practitioner specializing in preprocedural evaluations. These preprocedural nurse practitioners were required to complete a one year mentorship under the anesthesiology department prior to seeing patients independently. While we laude the personalized care afforded by the nurse practitioner model, this is not practical for a large institution such as ours and would be cost prohibitive. Most importantly our survey failed to show a consistent (systematic) approach for risk stratification, preprocedural laboratory testing, colonoscopy preparation or medication management. Preprocedural medication management is particularly important for anticoagulant therapy, anti-platelet therapy, preprocedural antibiotics and colonoscopy preparation. This paper focuses on ambulatory endoscopy safety and preparedness. The treatment algorithms contained in this paper represents consensus opinion developed by a multi-disciplinary task force at the Carilion Clinic. The task force included gastroenterologists, anesthesiologists, registered nurses from the Carilion Assessment, Registration, and Education for Surgery (CARES) unit, appointment schedulers and information technology specialists. The group met monthly for 1 year to develop these practice guidelines.

Literature that focused on various aspects of preprocedural preparedness was reviewed prior to multidisciplinary team meetings. In many cases the available literature gives little guidance to inform best practice and therefore expert opinion was used to formulate some of these recommendations. Finally, input from clinical staff members directly involved with the preprocedural evaluation and management process was important in shaping these guidelines.

Patient safety was the primary focus of our recommendations. Reducing costs by eliminating unnecessary preprocedural testing and improving patient convenience and compliance were important secondary goals. Patient convenience and compliance were especially important considerations in developing standardized colonoscopy preparations.

The goal of this study was to assess outcomes with respect to significant cardiopulmonary complications following endoscopic procedures performed at the Carilion Clinic. The study compares annual data before and after an enterprise wide standardized program for preprocedural preparedness was started. This standardized program addressed preprocedural risk stratification, medication management, testing and colonoscopy preparations. The recommendations presented in this article have been implemented at the Carilion Clinic for the past 2 years.

The Carilion Clinic is a Roanoke, Virginia-based integrated health care organization with seven hospitals, 685 physicians and cares for more than 1 million patients over a wide geographic area including southwest Virginia and eastern West Virginia. The Virginia Tech Carilion School of medicine is an integral part of our organization. We have active post-graduate training programs in internal medicine and surgery including subspecialty fellowship training. Relevant to this article, surgical residents and gastroenterology fellows perform procedures under the direction of staff physicians. The Carilion Clinic performs approximately 14,000 endoscopies annually including advanced biliary procedures at 8 separate endoscopy facilities.

**Study hypothesis**: A systematic approach to preprocedural risk stratification and management will not increase the rate of postprocedural cardiopulmonary events.

Methods:

## Table 1: ASA classification

- Class I A normally healthy patient
- Class II A patient with mild systemic disease (e.g., mild asthma, controlled diabetes mellitus)
- Class III A patient with severe systemic disease (e.g., moderate-tosevere asthma, poorly controlled diabetes mellitus, pneumonia)
- Class IV A patient with severe systemic disease that is a constant threat to life (e.g., severe bronchopulmonary dysplasia, advanced cardiac disease)
- Class V A moribund patient who is not expected to survive without the operation (e.g., septic shock, severe trauma)

# **Risk stratification:**

Risk stratification is particularly important for gastrointestinal endoscopy as many of these procedures can be performed safely and efficiently at an ambulatory surgical center (ASC). In the case of the Carilion Clinic, the Carilion Roanoke Community Hospital (CRCH) serves as our ASC. After review of the available literature we determined that the best method for preprocedural risk stratification was the American Society of Anesthesiologists (ASA) classification(2,3). We felt that most patients classified as ASA I-III could safely have gastrointestinal procedures performed safely at an ASC location with certain specific exclusions. These exclusions are esophageal band ligation for esophageal varices and endoscopic retrograde cholangiopancreatography (ERCP). These procedures are performed at one of our hospital based endoscopy facilities irrespective of ASA classification.

The ASA classification system is presented as table 1. The classification system is a bit subjective and there appears to be significant variation among anesthesiology providers, especially for ASA class III patients. One publication advocates specific patient examples to improve correct ASA classification assignments (6). It is important to note that all endoscopic procedures performed at the Carilion Clinic have an anesthesia provider in attendance, either an anesthesiologist or a nurse anesthetist under the direction of an anesthesiologist.

Initial procedural risk assessment is performed by the ordering endoscopist, who can be a surgeon or gastroenterologist. The endoscopist chooses a facility to perform the procedure understanding that procedures performed at an ASC are intended to carry a lower risk for complications. This risk assessment is complemented by the CARES department. CARES nurses review preprocedural risk in a systematic fashion including a standardized history which is incorporated into the electronic medical record (EMR). This standardized history form is presented in this article as "screenshots" taken directly from the EMR (appendix 6). If questions arise concerning appropriate facility selection, the CARES nurse can consult with an anesthesiologist specifically assigned to handle such inquiries. If the patient needs

to move to a higher acuity facility the CARES nurse will notify the endoscopist and their appointment scheduler.

At the time of the CARES nursing visit additional information can be requested to help stratify patient risk. Such information may include past cardiology evaluations, cardiac testing (i.e. electrocardiogram (ECG), echocardiogram) as well as past pulmonary and renal evaluations.

Endoscopy patients represent a unique case for the CARES evaluation process, specifically, patients that are felt to be ASA I and II undergoing colonoscopy or EGD do not require a CARES office visit but rather have a phone visit performed by a CARES nursing staff. This modification in the protocol is particularly important for patients undergoing screening and surveillance colonoscopy. This change has greatly improved patient satisfaction and compliance as many of our patients travel long distances to have procedures performed.

# **Preprocedural medication management**

At the time of the physician office visit a careful medication history should be obtained. Specific recommendations concerning diabetic medications, anticoagulant medications, antiplatelet drugs, antihypertensive medication and preprocedural antibiotics should be addressed. In addition, appointment schedulers address these issues at the time of the office visit.

At the time of the CARES nursing visit preprocedural medications are again reviewed. Specific medication recommendations are addressed in our systematic management protocol. This management protocol is summarized as a color-coded chart (appendix 7). These recommendations have been formulated by the anesthesiology department with gastroenterology input and in the case of diabetic management with endocrinology input. The importance of not withholding aspirin used as an anti-platelet drug is emphasized. Other antiplatelet drugs such as clopidogrel (Plavix) and prasugrel (Effient) are intentionally not covered by the management algorithm. These more potent antiplatelet drugs are directed by the patient's endoscopist, cardiologist or primary care physician depending on the clinical situation. If management of these drugs is not clear to the patient at the time of their CARES nursing visit, the nurse will contact the appropriate physician for medication management orders. Anticoagulant medication management is directed in a similar manner.

# **Preprocedural testing**

The endoscopy management protocol (appendix 7) specifically addresses preprocedural testing. Of note and specific to gastrointestinal endoscopy at our institution, patients undergoing colonoscopy and EGD that are ASA I or II do not require preprocedural laboratory testing or EKG unless the patient is diabetic, taking diuretics or is on long term corticosteroid therapy. These patients require a basic metabolic profile (BMP). ERCP at our institution is performed with intubated general anesthesia. Prior literature suggests an increase rate of immediate adverse events with ERCP compared to colonoscopy or EGD and as such ERCP patients undergo more extensive preprocedural testing (2).

## **Pre-procedural antibiotics**

Recent literature gives clear guidance for preprocedural antibiotic use with gastrointestinal endoscopy (7,8). We have incorporated these recommendations into our treatment protocols. These guidelines have been formulated as a joint effort of the American Society of Gastrointestinal Endoscopy (ASGE) and

the American Heart Association (AHA). These recommendations are summarized in tabular format below (table 2). This table is taken from Khashab MA et. al. (8).

ABLE 2. Antibiotic prophyla	kis and/or treatment to prevent	local infections	
Patient condition	Procedure contemplated	Goal of prophylaxis	Periprocedural antibiotic prophylaxis
Bile duct obstruction in absence of cholangitis	ERCP with complete drainage	Prevention of cholangitis	Not recommended 4444
Bile duct obstruction in absence of cholangitis	ERCP with incomplete drainage	Prevention of cholangitis	Recommended; continue antibiotics after procedure <b>444B</b>
Solid lesion in upper GI tract	EUS-FNA	Prevention of local infection	Not recommended 4444
Solid lesion in lower GI tract	EUS-FNA	Prevention of local infection	Not recommended <b>444B</b>
Mediastinal cysts	EUS-FNA	Prevention of cyst infection	Suggested 44 BB
Pancreatic cysts	EUS-FNA	Prevention of cyst infection	Suggested 44 BB
All patients	Percutaneous endoscopic feeding tube placement	Prevention of peristomal infection	Recommended 4444
Cirrhosis with acute GI bleeding	Required for all patients regardless of endoscopic procedures	Prevention of infectious adverse events and reduction of mortality	
Synthetic vascular graft and other nonvalvular cardiovascular devices	Any endoscopic procedure	Prevention of graft and device infection	Not recommended 4444
Prosthetic joints	Any endoscopic procedure	Prevention of septic arthritis	Not recommended <b>444B</b>
Peritoneal dialysis	Lower GI endoscopy	Prevention of peritonitis	Suggested 44 BB

To briefly summarize these recommendations, patients undergoing endoscopic procedures do not require antibiotic prophylaxis, including patients with valvular heart disease or prosthetic joints. On the other hand, antibiotics are recommended for procedures associated with a significant risk of infection, or for patients with conditions that make them more susceptible to infection undergoing procedures associated with a high risk of bacteremia. These patients include: patients with significant neutropenia, cirrhotic patients with gastrointestinal bleeding and patients on peritoneal dialysis undergoing colonoscopy.

#### **Colonoscopy preparation**

Key to successful colonoscopy is adequate preparation. This is especially true for adenoma detection rate (ADR). The literature concerning colonoscopy preparation is very helpful in directing management

strategies(9–11) ). Prior to instituting the standardized preparations listed in this manuscript there were at least 10 different preparations in use at the Carilion Clinic. This number has been reduced to 3 specific preparations with modifications based on the procedure time. In keeping with our established protocol (appendix 7), the patient must be NPO for 4 hours prior to the procedure but can have clear liquids prior to that time. The literature suggests that split dose preparations are more effective and better tolerated by patients in general(14,15). On the other hand patient compliance with a split dose prep can be an issue (16). Keeping these factors in mind and especially noting that many our patients travel up to 3 hours for their procedures we chose to start spit dose preparations for colonoscopies starting after noon (12 PM). The 12 PM time was chosen primarily to promote patient compliance.

It is clear from the literature that polyethylene glycol (Miralax) based preparations are better tolerated and equally effective compared to large volume preparations for average patients undergoing colonoscopy (8,9). Bisacodyl (Dulcolax) tablets were originally part of this preparation. Dulcolax does not seem to improve bowel preparation compared to Miralax alone but is associated with significantly more side effects compared to the Miralax alone (9,13). For this reason, Dulcolax is not used for our colonoscopy preparations. The Miralax preparation is our standard preparation with the 4-liter polyethylene glycol electrolyte preparations (Golytely, Trilyte) reserved for patients with significant constipation or for patients that previously failed the Miralax preparation.

For documentation purposes we are in the process of changing from the Aronchick bowel preparation scale(17) to the better validated Boston bowel preparation scale(18)but at the time of this publication this transition has not yet occurred system wide.

Colonoscopy preparation and patient instructions are presented as appendix 2 through 5. (For completeness, patient instructions for EGD are also listed as appendix 1)

# **Evaluation of Cardiopulmonary complication rates**

To evaluate post procedural cardiopulmonary complications the EMR was queried for International Classification of Diseases (ICD) 9 codes applicable to post-procedural cardiopulmonary complications (table 3). When the ICD9 coding system changed to the ICD 10 system in the United States, these codes were mapped to the new coding system.

The rates of endoscopy related cardiopulmonary complications were compared for procedures performed between September 1, 2013 and August 31, 2014 (baseline annual data before the systematic management approach) and compared to endoscopies performed between September 1, 2015 and August 31, 2016 (annual data after the systematic management approach was in use).

Statistical analysis was performed using paired T test comparing aggregate cardiopulmonary complication rates for baseline data compared to the systematic management approach. A p value of greater than or equal to 0.05 was felt to show no significant difference between the two groups (non-inferiority).

Table 3. ICD 9 codes used to identify cardiopulmonary complications
425.4:CARDIOMYOPATHY, PRIMARY NEC
425.8:CARDIOMYOPATHY IN DISEASES CE
427.0:TACHYCARDIA, PAROXYSMAL ATRIAL
427.1:TACHYCARDIA, PAROXYSMAL VENTRICULAR
427.5:ARREST, CARDIAC,
427.89:DYSRHYTHMIAS, CARDIAC NEC
429.3:CARDIOMEGALY
785.0:SYMPTOM, TACHYCARDIA NOS
785.9:SYMP INV CARDIOVASCULAR SYSTEM NEC
997.1:COMPLICATIONS, CARDIAC
415.0:COR PULMONALE, ACUTE
518.0:COLLAPSE, PULMONARY
518.82:INSUFFICIENCY, PULMONARY NEC
518.51:ACUTE RESP FAIL FOLLW TRUMA/SURGEY
518.81:FAILURE, ACUTE RESPIRATORY
518.84:RESPIRATORY FAILURE, ACUTE & CHRONIC
786.09:SYMP ABNORMALITY, RESPIRATORY NEC

# Results:

Table 4. Cardiopulmonary complications before and after systematic approach to preprocedural management

	Before systematic approach	After systematic
approach*		
Total cases	14,358	13,685
Cardiopulmonary complications	53	41

Percent total cases with		
cardiopulmonary complications	(%) 0.37	0.30
		*p value = 0.1571
Table 5. Procedures associated v	5	
Procedure	Before systematic approach	After systematic approach

Colonoscopy / flexible sigmoidoscopy	9	9
EGD	40	30
ERCP	4	2

#### Discussion

This article presents a systematic approach for preprocedural risk assessment and management of patients undergoing gastrointestinal endoscopy. The data is derived from patients undergoing gastrointestinal procedures at a large integrated health care system with a wide variety of physicians performing endoscopy at multiple sites. The endoscopists performing these procedures included gastroenterologists, surgeons and physician trainees under the supervision of staff physicians.

Our results confirm the hypothesis that a systematic approach to endoscopic preprocedural risk stratification and management did not increase postprocedural cardiopulmonary complications and in fact there was a trend toward improvement. We chose post-procedural cardiopulmonary complications as an objective marker for preprocedural preparedness.

The systematic approach presented in this article more appropriately utilized the CARES nursing staff by allowing ASA I and II patient to undergo telephone nursing visits rather than requiring a CARES office visit. This management change did not increase postprocedural cardiopulmonary complications but was more convenient for patients and improved patient satisfaction and compliance. While this probably reduced nursing costs, this may also have indirectly improved patient care by allowing CARES nursing staff more time to evaluate and manage sicker ASA III and IV patients with office visits. This is particularly germane for patients undergoing screening and surveillance colonoscopy.

Though not proven, we believe that unifying preprocedural management may have reduced additional adverse outcomes such as medication errors. Certainly, there was greater accessibility for patients undergoing CARES telephone nursing visits which may have improved patient compliance and reduced "no-show" rates. This is supported by a recent article demonstrating a 33% reduction in "no-show" rates with telephone reminder calls by a nurse one week prior to outpatient colonoscopy(19).

It was surprising to see that EGD was more often associated with cardiopulmonary complications when compared to colonoscopy. We don't have a clear explanation for this finding but wonder if airway irritation induced by EGD scope insertion could have resulted in laryngospasm. Another possible cause is pharyngeal irritation associated with scope insertion triggering vomiting with resultant aspiration. Finally, it is possible that patients presenting for EGD are more likely to have pulmonary complications from aspiration because of their underlying gastrointestinal problems (e.g. gastroesophageal reflux or a gastric emptying disorder).

It is also interesting to note the low rate of cardiopulmonary adverse events with ERCP, as ERCP cases tend to last longer and are typically performed on very ill patients. As previously noted all ERCP patients at our institution receive intubated general anesthesia for their procedures and we wonder if this level of airway management accounts for these excellent outcomes.

One area we believe could improve our systematic management model is the development of a more objective ASA classification tool. The ASA class serves as the cornerstone of our risk assessment protocol yet in many instances the ASA class seems somewhat arbitrary and subjective with significant interobserver variation even among anesthesia providers. Despite these shortcomings, the ASA classification system is widely accepted by anesthesiologists and appears to be the best validated risk assessment tool for endoscopy related cardiopulmonary complications. It is our opinion that a more objective ASA classification tool based on validated data inputs would be possible and helpful especially for care team members that are not anesthesia providers. Non-anesthesia staff members (CARES nurses) are often tasked with preprocedural risk assessment. We can envision a widely available validated phone or computer application for this purpose. This application could integrate with the EMR to bring in data that is already being entered as part of the preprocedural nursing visit.

Risk stratification is much better characterized for surgery patients as compared to endoscopy patients. Surgical risk stratification tools include surgical risk calculators but it is unclear if these risk calculators can be applied to endoscopy patients that have a much lower risk of cardiopulmonary complications (20,21).

The management strategies presented in this paper were the work product of a multidisciplinary team. The management recommendations incorporated available literature, expert opinion and input from clinical team members. We believe that institutions will find our methods helpful and we hope they will further refine and expand on our recommendations.

Finally, it is important to note that successful implementation of a systemic management approach requires "buy in" from a wide variety of clinical staff members in several clinical departments. We recommend a standardized educational format delivered to the entire clinical team to facilitate this process. In our case, we used a standardized power point lecture delivered by the director of ambulatory endoscopy in partnership with an anesthesiologist. We found this lecture format with a long question and answer period worked well and encouraged clinical team members to contribute useful ideas that were subsequently incorporated into our final management algorithms.

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## Disclosures:

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#### Appendix 1

**EGD Instructions** 

DO NOT eat anything solid after midnight.

You may have clear liquids (see below list).

You may have clear liquids up to 6 hours before the time to arrive for your procedure.

## MEDICATIONS:

• If you take any "blood thinners" to prevent blood clotting for any kind of heart, lung, or blood vessel condition you must have specific instructions from your physician about the use of these medications before you have your procedure.

- You may continue to take aspirin up to the day of your procedure
- If you take iron supplements, do NOT take 3 days prior to your procedure.

• If you take INSULIN, take only ½ your usual dose both the evening before and the morning of your procedure.

• Take ½ doses of hypoglycemic agents the day before and hold the day of procedure.

• Unless otherwise instructed, take All your other medications both the day before and the day of your procedure.

## CLEAR LIQUID DIET LIST:

Beverages: Soft drinks (orange, ginger ale, cola, Sprite, 7 UP, Coke, Pepsi, etc.), Gatorade (NO red, blue or purple), Crystal Light, Kool-Aid, strained fruit juices without pulp (apple, white grape, orange, lemonade, etc.), water, tea or coffee without milk or non-dairy creamers.

Soup: Fat-free, low sodium chicken or beef bouillons or broth

Desserts: Hard candies, Jell-O (NO red, blue or purple) (Lemon, Lime or Orange with no fruit or toppings), Popsicles, Italian Ice (NO red, blue or purple, no sherbets or fruit bars)

## Appendix 2

# Miralax (polyethylene glycol) Bowel Prep for patients scheduled before 12 pm

Before beginning your prep, you will need to purchase the following items:

- 238-gram bottle of Miralax (generic/store brand is okay)
- 64-oz bottle of Gatorade (NO RED, BLUE OR PURPLE)

DO NOT drink anything colored red, blue or purple. Milk & dairy products are NOT allowed. Drink plenty of clear liquids throughout day. DO NOT eat anything solid.

#### THE DAY BEFORE THE PROCEDURE

In the morning, empty the entire 238-gram bottle of Miralax and the 64-oz. bottle of Gatorade into a separate container shake well and refrigerate. Have a clear liquid (see list below) breakfast. DRINK PLENTY THROUGHOUT THE DAY TO KEEP WELL HYDRATED.

Have a clear liquid lunch. Continue drinking plenty of clear liquids.

At approximately 6:00 pm, begin drinking your Gatorade/Miralax preparation.

Drink 8 oz. every 10-15 minutes until the bottle is empty and rectal effluent is clear. Drink plenty of clear liquids.

You may use a straw to help get more liquid down easier and quicker

You will experience diarrhea, which may persist during the night.

Have a clear liquid dinner and continue drinking clear liquids until bedtime.

## **MEDICATIONS:**

If you take any "blood thinners" to prevent blood clotting for any kind of heart, lung, or blood vessel condition you must have specific instructions from your physician about the use of these medications before you have your procedure.

You may continue to take aspirin up to the day of your procedure

If you take iron supplements, do NOT take 3 days prior to your procedure.

If you take INSULIN, take only ½ your usual dose both the evening before and the morning of your procedure.

Take  $\frac{1}{2}$  doses of hypoglycemic agents the day before and hold the day of procedure.

Unless otherwise instructed, take all your other medications both the day before and the day of your procedure.

#### CLEAR LIQUID DIET LIST:

Beverages: Soft drinks (orange, ginger ale, cola, Sprite, 7 UP, Coke, Pepsi, etc.), Gatorade (NO red, blue or purple), Crystal Light, Kool-Aid, strained fruit juices without pulp (apple, white grape, orange, lemonade, etc.), water, tea or coffee without milk or non-dairy creamers.

Soup: Fat-free, low sodium chicken or beef bouillons or broth

Desserts: Hard candies, Jell-O (NO red, blue or purple) (Lemon, Lime or Orange with no fruit or toppings), Popsicles, Italian Ice (NO red, blue or purple, no sherbets or fruit bars)

You may have clear liquids up to 6 hours before the time to arrive for your procedure.

If you have any questions about these instructions you may call: XXX-XXX-XXXX

On the day of the procedure at the time of check-in

Please notify the nursing staff if you had any difficulty completing your colon preparation.

# Appendix 3

# Miralax (polyethylene glycol) Bowel Prep for patients scheduled after 12 pm

Before beginning your prep, you will need to purchase the following items:

- 238-gram bottle of Miralax (generic/store brand is okay)
- 64-oz bottle of Gatorade (NO RED, BLUE OR PURPLE)

DO NOT drink anything colored red, blue or purple. Milk & dairy products are NOT allowed. Drink plenty of clear liquids throughout day. DO NOT eat anything solid.

## THE DAY BEFORE THE PROCEDURE

In the morning, empty the entire 238-gram bottle of Miralax and the 64-oz. bottle of Gatorade into a separate container shake well and refrigerate. Have a clear liquid (see list below) breakfast. DRINK PLENTY THROUGHOUT THE DAY TO KEEP WELL HYDRATED.

• At approximately 4:00 pm, begin drinking your Gatorade/Miralax preparation. Have a clear liquid dinner. Continue drinking plenty of clear liquids.

• Drink 8 oz. every 10-15 minutes until ½ the bottle is empty and rectal effluent is clear. Drink plenty of clear liquids.

- You may use a straw to help get more liquid down easier and quicker
- You will experience diarrhea, which may persist during the night.

## THE MORNING OF THE PROCEDURE:

• 5 hours prior to your procedure, drink the remaining ½ of your Gatorade/Miralax preparation.

- Drink 8 oz. every 10-15 minutes until the bottle is empty and rectal effluent is clear. Drink plenty of clear liquids.
- Do not have anything else by mouth after you are done drinking this.

#### **MEDICATIONS:**

If you take any "blood thinners" to prevent blood clotting for any kind of heart, lung, or blood vessel condition you must have specific instructions from your physician about the use of these medications before you have your procedure.

You may continue to take aspirin up to the day of your procedure

If you take iron supplements, do NOT take 3 days prior to your procedure.

If you take INSULIN, take only ½ your usual dose both the evening before and the morning of your procedure.

Take  $\frac{1}{2}$  doses of hypoglycemic agents the day before and hold the day of procedure.

Unless otherwise instructed, take all your other medications both the day before and the day of your procedure.

## CLEAR LIQUID DIET LIST:

Beverages: Soft drinks (orange, ginger ale, cola, Sprite, 7 UP, Coke, Pepsi, etc.), Gatorade (NO red, blue or purple), Crystal Light, Kool-Aid, strained fruit juices without pulp (apple, white grape, orange, lemonade, etc.), water, tea or coffee without milk or non-dairy creamers.

Soup: Fat-free, low sodium chicken or beef bouillons or broth

Desserts: Hard candies, Jell-O (NO red, blue or purple) (Lemon, Lime or Orange with no fruit or toppings), Popsicles, Italian Ice (NO red, blue or purple, no sherbets or fruit bars)

You may have clear liquids up to 6 hours before the time to arrive for your procedure.

If you have any questions about these instructions you may call: XXX-XXX-XXXX

On the day of the procedure at the time of check-in:

Please notify the nursing staff if you had any difficulty completing your colon preparation.

## Appendix 4

**Golytely/Trilyte 4-liter Bowel Prep** 

Before beginning your prep, you will need to purchase the following items:

- Pick up your prescription at your pharmacy
- o You may use flavor packets if it is given to you with your prescription.

DO NOT drink anything colored red, blue or purple. Milk & dairy products are NOT allowed. Drink plenty of clear liquids throughout day. DO NOT eat anything solid.

# THE DAY BEFORE THE PROCEDURE

• In the morning prepare your prescription according to the instructions on the package and refrigerate. Have a clear liquid (see list below) breakfast. DRINK PLENTY THROUGHOUT THE DAY TO KEEP HYDRATED.

• At 4:00 pm, begin drinking your prescription.

o Drink 8 oz. every 10-15 minutes until the bottle is empty and rectal effluent is clear. Drink plenty of clear liquids.

- o You may use a straw to help get more liquid down easier and quicker
- Have a clear liquid dinner and continue drinking clear liquids until bedtime.

## **MEDICATIONS:**

• If you take any "blood thinners" to prevent blood clotting for any kind of heart, lung, or blood vessel condition you must have specific instructions from your physician about the use of these medications before you have your procedure.

- You may continue to take aspirin up to the day of your procedure
- If you take iron supplements, do NOT take 3 days prior to your procedure.
- If you take INSULIN, take only ½ your usual dose both the evening before and the morning of your procedure.
- Take ½ dose of hypoglycemic agents the day before and hold the day of procedure.

• Unless otherwise instructed, take ALL your other medications both the day before and the day of your procedure.

# CLEAR LIQUID DIET LIST:

Beverages: Soft drinks (orange, ginger ale, cola, Sprite, 7 UP, Coke, Pepsi, etc.), Gatorade (NO red, blue or purple), Crystal Light, Kool-Aid, strained fruit juices without pulp (apple, white grape, orange, lemonade, etc.), water, tea or coffee without milk or non-dairy creamers.

Soup: Fat-free, low sodium chicken or beef bouillons or broth

Desserts: Hard candies, Jell-O (NO red, blue or purple) (Lemon, Lime or Orange with no fruit or toppings), Popsicles, Italian Ice (NO red, blue or purple, no sherbets or fruit bars)

You may have clear liquids up to 6 hours before the time to arrive for your procedure.

If you have any questions about these instructions you may call: XXX-XXX-XXXX

On the day of the procedure at the time of check-in:

Please notify the nursing staff if you had any difficulty completing your colon preparation.

# Appendix 5

# Two Day Miralax (polyethylene glycol) Bowel Prep with Magnesium Citrate

Before beginning your prep, you will need to purchase the following items:

- 238-gram bottle of Miralax (generic/store brand is okay)
- 64-oz bottle of Gatorade (any color except RED)
- 8 OZ. bottle of magnesium citrate

DO NOT drink anything colored red, blue or purple. Milk & dairy products are NOT allowed. Drink plenty of clear liquids throughout day. DO NOT eat anything solid.

## TWO DAYS PRIOR TO YOUR PROCEDURE:

- Clear liquids whole day (see list below)
- At 6:00 pm, take whole bottle of magnesium citrate.

## THE DAY BEFORE THE PROCEDURE

• In the morning, empty the entire 238-gram bottle of Miralax and the 64-oz. bottle of Gatorade into a separate container shake well and refrigerate. Have a clear liquid (see list below) breakfast. DRINK PLENTY THROUGHOUT THE DAY TO KEEP WELL HYDRATED.

- Have a clear liquid lunch. Continue drinking plenty of clear liquids.
- At approximately 6:00 pm, begin drinking your Gatorade/Miralax preparation.

o Drink 8 oz. every 10-15 minutes until the bottle is empty and rectal effluent is clear. Drink plenty of clear liquids.

- o You may use a straw to help get more liquid down easier and quicker
- o You will experience diarrhea, which may persist during the night.
- Have a clear liquid dinner and continue drinking clear liquids until bedtime.

# **MEDICATIONS:**

• If you take any "blood thinners" to prevent blood clotting for any kind of heart, lung, or blood vessel condition you must have specific instructions from your physician about the use of these medications before you have your procedure.

- •
- You may continue to take aspirin up to the day of your procedure
- If you take iron supplements, do NOT take 3 days prior to your procedure.

• If you take INSULIN, take only ½ your usual dose both the evening before and the morning of your procedure.

• Take ½ doses of hypoglycemic agents the day before and hold the day of procedure.

• Unless otherwise instructed, take all your other medications both the day before and the day of your procedure.

## CLEAR LIQUID DIET LIST:

Beverages: Soft drinks (orange, ginger ale, cola, Sprite, 7 UP, Coke, Pepsi, etc.), Gatorade (NO red, blue or purple), Crystal Light, Kool-Aid, strained fruit juices without pulp (apple, white grape, orange, lemonade, etc.), water, tea or coffee without milk or non-dairy creamers.

Soup: Fat-free, low sodium chicken or beef bouillons or broth

Desserts: Hard candies, Jell-O (NO red, blue or purple) (Lemon, Lime or Orange with no fruit or toppings), Popsicles, Italian Ice (NO red, blue or purple, no sherbets or fruit bars)

You may have clear liquids up to 6 hours before the time to arrive for your procedure.

If you have any questions about these instructions you may call: XXX-XXX-XXXX

On the day of the procedure at the time of check-in:

Please notify the nursing staff if you had any difficulty completing your colon preparation.

# Appendix 6

# CARES evaluation taken from the EMR (screenshots)

nale, 43 y.o., 1 t PSTI	2/14/1973 Bed None	MRN: 651 CSN: 38035 EMPI: None				Infection: None Isolation: None FYI: None	MyChart: None Diff Air: None Adv Dir Filed?: Private?:	Admit Date: 05/17/2017 LOS: 0 Minutes New Rsit/Order?: 장 Registries: None	Enhanced Recovery: No DRG EDD Date Only: None DRG LOS: None
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	Manage Orders	Appendectomy		Yes No	Discectomy - Lumi			Yes No	Kidney Transplant	Yes No	_
Review	Release Held Ord	CABG		Yes No	Discectomy - Thor			Yes No	Knee Arthroscopy	Yes No	-
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ation	Home Meds	Carotid Endardectomy		Yes No				Yes No	Lung Transplant	Yes No	-
ge Orders	VITALS/DB/ASSESS1	Cataract removal/IOL in	Gastric Bypass		Mastectomy	Yes No					
nizations	Adult Vitals	Cholecystectomy		Yes No	Gastric Surg Lap E	Band		Yes No	Rotator Cuff Repair	Yes No	
6	Adult DB Gen Info Anesthesia Compl	Colon Resection		Yes No	Heart Transplant			Yes No	Shoulder Arthroscopy	Yes No	-
avigator	History	Colonoscopy		Yes No	Hernia Repair			Yes No	Tonsillectomy		Yes No
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I.	Symptoms ROS	> Other Surgical History	No other history on file								
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artespon	Flu Assessment	Anes Complication		Yes No	Delayed Emergend	ce.		Yes No	Postop Nausea and Vomit	ng Yes No	n
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	CARE MGMT PRESCREEN	Awareness under Anesi		Yes No	maighant riyperar	CTTTTC			1 ostoperative contrasion	163 10	
	Care Mgmt Prescr	Awareness under Anes	ulesia	Tes No							
	B PASS/CAREPLAN/EDU	Neurological									
	Boarding Pass	Alzheimer's		Yes No	Head Injury			Yes No 🗋	Parkinson's	Yes No	D
	Care Plan	Autism		Yes No	Headaches			Yes No	Seizures	Yes No	D
	Patient Education	Carpal Tunnel		Yes No	Memory Loss			Yes No	Spina Bifida	Yes No	D
	Progress Notes	Cerebral Aneurysm		Yes No	Migraines			Yes No	Stroke	Yes No	
	OTHER	Cerebral palsy		Yes No	Multiple Sclerosis			Yes No	Syncope	Yes No	
	Sedation Assess	Confusion		Yes No	Myasthenia Gravis	3		Yes No	TIA	Yes No	n
	Critical Results	Dizziness		Yes No	Neuroleptic Malign	nant Syndrome		Yes No	Traumatic Brain Injury	Yes No	
		Guillain Barre		Yes No					····,		
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eets	ORDERS	Cholelithiasis		Yes No	Hemorrhoids		Yes No	Liver Failure		Yes No
Dutput	Sign/Held Orders	Cirrhosis of the Liver		Yes No	Hepatitis A		Yes No	Pancreatitis		Yes No
	Manage Orders	Clostridium Difficile (	C-Diff)	Yes No	Hepatitis B		Yes No	Peptic Ulcer		Yes No
s Review	Release Held Ord	Crohn's Disease		Yes No	Hepatitis C		Yes No	Ulcerative Colitis		Yes No
sis	ALLERGIES/MEDS	Diverticulitis		Yes No						
lan	Allergies									
ion	Home Meds	GU / GYN								
e Orders	VITALS/DB/ASSESS1	Abnormal Vaginal Ble	eeding	Yes No	Hemodialysis		Yes No	Polycystic Ovaries		Yes No
izations	Adult Vitals	Acute Renal Failure		Yes No	Human Papilloma Virus (HPV)		Yes No	Pyelonephritis		Yes No
	Adult DB Gen Info	Benign Prostatic Hyp	erplasia	Yes No	Hyperemesis Gravidarum		Yes No	Recent UTI		Yes No
vigator	Anesthesia Compl	CAPD (cont amb per	itoneal dialysis)	Yes No	Neurogenic Bladder		Yes No	Renal Calculi		Yes No
ion	History	CCPD (cont cycling p	peritoneal diaylisis)	Yes No	Ovarian Cyst		Yes No	STD		Yes No
NUT	Device/Implants/Tx Symptoms ROS	Chronic Kidney Disea	ase	Yes No	Polycystic Kidneys		Yes No	Urinary Retention		Yes No
rge	LMP									
	Potential Risks	Musculoskeletal								
	Pre-hab Checklist	Arthralgia		Yes No	Joint Pain		Yes No	Osteoporosis		Yes No
Code	Adlt Rsk Assess(All)	Arthritis		Yes No	Malignant Hyperthermia		Duplicate	Rheumatoid Arthritis		Yes No
Respon	Adlt Rsk Assess(	Back Pain		Yes No	Muscular Weakness		Yes No	Scoliosis		Yes No
Naviga	Flu Assessment	Contractures		Yes No	Myalgia		Yes No	Spasms		Yes No
rvaviya	Pneumo Assesment	Cramps		Yes No	Neck Pain		Yes No	Stiff Joint		Yes No
	CARE MGMT PRESCREEN	Degenerative Joint D	isease	Yes No	Osteoarthritis		Yes No	Unsteady Gait		Yes No
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	B PASS/CAREPLAN/EDU	Endocrine								
	Boarding Pass				a n		v v D	11 AL 11		
	Care Plan Patient Education	Diabetes		Yes No	Hyperparathyroidism		Yes No	Hypoparathyroidism		Yes No
	Progress Notes	Gestational Diabetes		Yes No	Hyperpituitarism		Yes No	Hypopituitarism		Yes No
		Graves Disease		Yes No	Hyperthyroidism		Yes No	Hypothyroidism		Yes No
	OTHER Sedation Assess	Growth Hormone Dis	ease	Yes No	Hypoglycemia		Yes No	Precocious Puberty		Yes No
	Critical Results	Gynecomastia		Yes No						
		Hematology								
		Agranulocytosis		Yes No	HIV		Yes No	Sickle Cell Anemia		Yes No
tomics		AIDS		Yes No	Hypercoagulable Disorder		Yes No	Sickle Cell Crisis		Yes No
stomize						172		Sickle Cell Trait		
ore 🔸	2	Anemia		Yes No	Immune Thrombocytopenic Purp	ла	Yes No	SICKIE CEILI FAIT		Yes No

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Epic 🔻 🐻	Schedule 🚦 Patient Lists	📕 Front Desk 📓 Unit Sched	🧛 RMH OR SUITE 🏠 Pt Station 👩 Pre-op and Po	ist-op Appointments  🙍	My Reports  🤤 M	licromedex 纋 My:	SmartPhrases 📃 CPGs 🏠 House	Census 🏹 Unit Manager 🗳 In Basket 😤 Chart Ce	entral 📋 De	pt Appts	
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Flowsheets	ORDERS	Alcohol Use:	X N	Drug Use:							
Intake/Output	Sign/Held Orders	Drinks/Week:	Yes No Glasses of wine	Types:	Yes 1						
Notes	Manage Orders	DIIIKS/Week.	Cans of beer		IV Co		Methamphetamines				
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Synopsis	ALLERGIES/MEDS		Shots of liquor	Comments:							
Care Plan	Allergies		Standard drinks or equivalent								
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Manage Orders	VITALS/DB/ASSESS1	oonmento.									
Immunizations	Adult Vitals	Sexually Active:									
Letters	Adult DB Gen Info		Yes No Not Currently								
	Anesthesia Compl	Birth-Control/Protection:	Condom Pill IUD Surgical Spermicide Rhy	thm Injection Abstiner	nce						
PST Navigator	History	Partners:	Female Male								
Admission	Device/Implants/Tx	Comments:									
Arrival	Symptoms ROS										
Discharge	LMP	Smoking Status:	A 🔎	Smokeless Tobacco	o: Unknow	'n	Q				
-	Potential Risks	Quit Date:		Types:	Snuff (	Chew					
History	Pre-hab Checklist	Types:	Cigarettes Pipe Cigars E-Cigarettes Vaping	Quit Date:							
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	CARE MGMT PRESCREEN		25								
	Care Mgmt Prescr	Comments:									
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	Care Plan	robacco cessation coun	sening sup these siquestions in puteric inte	inco do incital of i	onknown stat	65.					
	Patient Education							Mark as Reviewed	Never		
	Progress Notes	Last T	obacco Use		Use	d any form of tobac	co within past 30 days Smoked within	n past 12 months			
					Not	form of tobacco use	ed in past 12 months				
	OTHER	Meets	Criteria for Counseling		Mur	se provided counse	ling				
	Sedation Assess				NUR	se provided counse	any				
	Critical Results				Ref	erred for additional	counseling				
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SAMMY CALABR	RIA MO										
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sis	ALLERGIES/MEDS	Eyes	_	al disturbance Irritation R	edness Discharge	Strabismus Othe				
Plan	Allergies	Ear/Nose/Mouth/Throat	None Hear	ing loss Tinnitus Ear drain	age Earaches I	Nasal congestion Epi	taxis Sore mouth	Sore throat Hoarsness	Voice change Other	
tion	Home Meds	Last Dental Exam	۵							
e Orders	VITALS/DB/ASSESS1	Respiratory	None Coug	h Sputum Hemoptysis	Wheezing Dyspnea	a Other				
izations	Adult Vitals	Cardiovascular	D							2
	Adult DB Gen Info		None Ches	t pain Chest pressure/discor	mfort Dyspnea	Palpitation Irregula	heart beats Near	-syncope Shortness of b	eath - climbing one flight of stairs $~~$	
	Anesthesia Compl	GI	None Cha	nge in bowel habits Melena	Nausea Vomiting	Diarrhea Constip	ation Abdominal pa	ain Jaundice Other		
vigator	History	GU	None Frequ	uency Dysuria Nocturia	Urinary incontinence	Hesistancy Dec	eased stream Hen	naturia Genital lesions	aginal discharge Abnormal menstrual periods Sexual problems	
sion	Device/Implants/Tx		Hot flashes	Missed menstrual periods	Penile discharge	Scrotal pain/swelling	Other			-
	Symptoms ROS	Integument	None Rash	Skin lesions Pruritus (	Dryness Skin color	change Changed m	e Breast lump	Nipple discharge Breast	enderness Other	
arge	LMP	Hematologic/Lymphatic	None Easy	brusing Bleeding Lympha	adenopathy Other					
	Potential Risks	Musculoskeletal	None Myak			1				
	Pre-hab Checklist	Neurological			Other					
t Code	Adlt Rsk Assess(All)		-			ind booling	in Skinderser	Douting Minish Issue	Hilly Tomporature intelegence Other	
Respon	Adlt Rsk Assess(	Endocrine				und healing Polypha	ia Skin dryness	Pruritis Weigh loss Fe	tility Temperature intolerance Other	
e Naviga	Flu Assessment	Allergic/Immunologic	None Urtica	aria High fever Angioedem	a Anaphylaxis					
a ivaviya	Pneumo Assesment	✓ Chronic Pain								
	CARE MGMT PRESCREEN	Ghronic Pain	🗋 yes no	other (see comments)						
	Care Mgmt Prescr									
	B PASS/CAREPLAN/EDU	🕪 Restore 🗸 Cl	lose F9 🗙 Ca	ancel					↑ Previous F7 ↓ Next	F8
	Boarding Pass				0.00/0					
	Care Plan	LMP-DO NOT ENTER	K LMP DATE if j	ot Currently Pregnan	t or OB(4)					
	Patient Education	Never Reviewed								
	Progress Notes									
	OTHER	Potential Risks								
	Sedation Assess	New Reading							rs Flo	wsheets
	Critical Results	No data found.								
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		Destablished as Charles	LP.4							
		Prehabilitation Check	Klist							
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ore 🕨	(?)	No data found								

		TTDS CSI - Training Sandbox - SAMMY CALABRIA	
Epic 🔻 🐻	Schedule == Patient Lists	💑 Front Desk 📓 Unit Sched 🔗 RMH OR SUITE 🏠 Pt Station 🕅 Pre-op and Post-op Appointments 👰 My Reports 🚇 Micromedex 🎪 My SmartPhrases 🗄 CPGs 🏠 House Census 🎘 Unit Manager 🔤 In Basket 🛱 Chart Central 📋 Dept Appls	Ł
📕 🖸 🧕	North Carolina,M	alinda x	
North Carolin		MRN: 651 Allergies: No Known A Attending: None Infection: None MyChart: None Admit Date: 05/17/2017 Enhanced Recovery: No	
Female, 43 y.o., 1 Unit: PSTI	2/14/1973 Bed None	CSN: 38035 Last Height: 1.727 m ( Pref Lang: English [22] Code Isolation: None Diff Air: None LOS: 0 Minutes DRG EDD Date Only: None EMPI: None Wt: FILE NEW WEIGHT No POA FYI: None Adv Dir Filed?: New Rst/tOrder?: [7] DRG LOS: None	
*	None	Last BMI and %ile: 22 Private?: Registries: None	
	PST Navigator	? Close X	
Summary	OR PST Potential Risks		
Chart Review	TIME/CASE INFO	Y Cardiac ▲	
Allergies	Time Capture	Treatment/Device/Implant 🗅 None AICD (automatic implantable cardioverter-defibrillator) pacemater CRT (cardia: resynchronization therapy device) VAD (ventricular assistive device) IV.C (inferior vena cava filter)	
MAR	Procedure	TeamentoCenceminant - Teamento and a second	
Flowsheets	ORDERS	Have you seen a D yes no	
Intake/Output	Sign/Held Orders	Tar hare you seen a lifes no Cardiologist?	
Notes	Manage Orders	× HEENT	
	Release Held Ord	Device/Implant D none bite splint braces bridge(s) cochlear implants contacts crown(s) dental appliance dental implants glasses hearing aid lens implant electrolarynx lower denture	
Results Review		Device/impaint Vere des given desses engines concert concert concert concert concert concert concert and and and and and minimum concertainty or an ending of the concertainty of the conc	
Synopsis	ALLERGIES/MEDS		
Care Plan	Allergies	Yeripheral Neurovascular	
Education	Home Meds	Treatment/Device/Implant D none angioplasty antiembolic stockings antienovenous graft anteriovenous fistulia femoral-popilized bypass (fem-pop) stent vascular access device other (see comments)	
Manage Orders	VITALS/DB/ASSESS1	✓ Respiratory	
Immunizations	Adult Vitals	Treatment/Device/Implant none BIPAP CPAP VPAP DPI home 02 home vertilator IPPB IPV MDI with or without spacer monitor nebulizers speaking valve suction machine tracheostomy vest therapy	
Letters	Adult DB Gen Info	The antenio device in the second	
PST Navigator	Anesthesia Compl		
	History	Y Musculoskeletal	
Admission	Device/Implants/Tx	Treatment/Device/Implant D none cast brace cervical collar external fixator halo vest orthosis pain pump pins prosthesis rods strew(s) other (see comments)	
Arrival	Symptoms ROS	✓ GI/GU	
Discharge	Potential Risks	Do you have a Dyes no	Þ
History	Pre-hab Checklist	feeding tube?	
Patient Code	Adlt Rsk Assess(All)		ī.
Rapid Respon	Adlt Rsk Assess(	Device/Implant D none treast implant(s) other(comment)	
Tapla Toopon	Flu Assessment	× Endocrine	
Charge Naviga	Pneumo Assesment		
	CARE MGMT PRESCREEN Care Mgmt Prescr	other (see comments)	
	oure wight react	Oncology	
	B PASS/CAREPLAN/EDU	Treatment/Procedures	
	Boarding Pass	Received none blood product(s) bone merrow transplant brachytherapy cesium implant chemoembolization chemotherapy external beam radiation hormone therapy immunotherapy ×	
	Care Plan Patient Education	Chemo/Radiation,	
	Progress Notes	Last Treatment	
	T TOGTESS TROLES	× Skin	
	OTHER	Treatment/Device/Implant D none pressure relief device speciality bed negative pressure wound therapy device other (see comments)	
	Sedation Assess	The Do you have body D Yes No	
	Critical Results	piercing(s)?	
		He Restore V Close F9 X Cancel	
𝒫 Customize		Symptoms ROS	
More +	Opening: Device/Implan	♣ New Reading	
SAMMY CALABR			۲
🖉 Start 🖉 🦉			

# Carilion Clinic <u>ENDOSCOPY</u> Protocol

🖮 Hyperspace - C	arilion Clinic - PRE SURG TE	STING CSI - Training Sandbo>	K - SAMMY CALABRIA								
Epic 🔻 🐻	Schedule 🚦 Patient Lists	🖁 Front Desk 📓 Unit Sche	d 🧕 RMH OR SUITE 🏠 PI	t Station 👩 Pre-op and Po	st-op Appointmen	ts 🙍 My Reports 🝕	ƏMicromedex 🍇 My	SmartPhrases 📃 CPGs 🏠	House Census 😭 Unit Manager 🔛 In Basket 🛱 Chart C	Central 📋 Dep	pt Appts
🔒 🖸 🧕	North Carolina,M	lelinda 🗙									
North Carolin	na, Meli	MRN: 651	Allergies: No Known A			Infection: None	MyChart: None	Admit Date: 05/17/2017	Enhanced Recovery: No		
Female, 43 y.o., 1	12/14/1973 Bed	CSN: 38035	Last Height: 1.727 m (		Code	Isolation: None	Diff Air: None	LOS: 0 Minutes	DRG EDD Date Only: None		
Unit: PSTI	None	EMPI: None	Wt: FILE NEW WEIGHT Last BMI and %ile: 22	NOPOA		FYI: None	Adv Dir Filed?: Private?:	New Rslt/Order?: 🏹 Registries: None	DRG LOS: None		
(€⇒ 🗢	PST Navigator									? Clo	se X
Summary	8										
Chart Review	OR PST Potential Risks										
	TIME/CASE INFO	✓ Obstructive Sleep A	Apnea Screening Tool								-
Allergies	Time Capture	Do you snore loudly	1=Yes 0=No								
MAR	Procedure	(louder than talking									
Flowsheets	ORDERS	or loud enough to be heard through									
Intake/Output	Sign/Held Orders	closed doors)?									
Notes	Manage Orders	Do you often feel	1=Yes 0=No								
Results Review	Release Held Ord	tired, fatigued, or sleepy during									
Synopsis	ALLERGIES/MEDS	daytime?									
Care Plan	Allergies	Has anyone observed you stop	1=Yes 0=No								
Education	Home Meds	breathing during									
Manage Orders		your sleep?	0								
Immunizations	VITALS/DB/ASSESS1 Adult Vitals	Do you have or are you being treated for	1=Yes 0=No								
Letters	Adult DB Gen Info	high blood pressure?									
	Anesthesia Compl	BMI (Calculated)									
PST Navigator	History	BMI more than 35?	1=Yes 0=No								
Admission	Device/Implants/Tx	Age over 50 years	1=Yes 0=No								
Arrival	Symptoms ROS	old?	1=Yes 0=No								
Discharge	LMP	Neck circumference > 15.75 inches									
	Potential Risks	(men's shirt size large or women's top									ľ
History	Pre-hab Checklist	size XL or >)?									
Patient Code	Adlt Rsk Assess	Male gender?	1=Yes 0=No								
Rapid Respon	Adlt Rsk Assess( Flu Assessment	✓ Obstructive Sleep A	Apnea Screening Tool								
Charge Naviga	Pneumo Assesment	Scoring- Total of all									
		"yes" answers									
	CARE MGMT PRESCREEN Care Mgmt Prescr	K Restore	Close F9 X Cancel						↑ Previous F7 ↓	Next F8	
	B PASS/CAREPLAN/EDU	A dlt Dala Assas	242								
	Boarding Pass	Adlt Rsk Assess (SD	(A)							_	
	Care Plan	New Reading								Flowsheets	
	Patient Education	No data found.									
	Progress Notes										
	OTHER	Flu Risk Assessmen	nt								
	Sedation Assess	New Reading								r, Flowsheets	
	Critical Results	No data found.									
		Pneumo Risk Asses	sment								
		+ New Reading								5 Flowsheets	
More +	?										
SAMMY CALABR	RIA ≌0										
🖉 Start 🥖 🌔	📋 🚺 Epic										

# Appendix 7

Carilion Clinic CARES endoscopy protocol

Last Reviewed: August 2016 Final	

	HOLD/STOP	GO	
		Meds with sip of water as instructed	
DIET	Colonoscopy-no solids day prior to procedure.	Clear liquids as instructed by endo provider up to 4 hrs. prior to sched	
	Oral hypoglycemic medications- <i>HOLD</i> on morning of procedure	Antihypertensive meds ( <i>HOLD</i> Ace inhibitors, Angiotensin Receptor In Inhibitors the day prior to the procedure)	

DICATION	Glucophage - <i>HOLD</i> the night before and morning of procedure	Cardiac Meds & Beta Blockers
	Ace inhibitors, Angiotensin Receptor Inhibitors, & Renin Inhibitors day of the procedure	GERD Meds
≥	Methotrexate day before & day of procedure	Usual dose of long acting insulin (Lantus & Levemir)
	5 Days: Herbals	Insulin pump at basal rate on the day of procedure
	NSAIDS except for aspirin	
	14 Days: Phentermine	Aspirin unless greater than 650 mg daily

	ASA 1 & 2	ASA 3 & 4
	No EKG for <u>EGD or Colonoscopy</u> UNLESS patient is having cardiac symptoms or has had change in cardiac status in las	
	No diagnostic testing for ASA 1 or 2 EXCEPT in the following circumstances: BMP for DM, diuretics, & long term steroid use.	EGD & Colonoscopy
		BMP for DM, diuretics, & long-term steroids
		BMP day of procedure for dialysis patients
		CBC with Diff for recent GI bleed or cirrhosis
LABS		<ul> <li>PT/INR for:</li> <li>1. Cirrhosis</li> <li>2. Esophageal varices</li> <li>3. If anticoagulants have been discontinued 72 hours or more</li> <li>4. If still on anticoagulants and will be discontinued prior to pro the day of the procedure</li> </ul>
		ERCP
		BMP for DM, diuretics, & long-term steroids
		CBC with Diff for recent GI bleed and cirrhosis
		PT/INR for:
		1. Cirrhosis
		2. Esophageal varices
		3. If anticoagulants have been discontinued 72 hours or more
		4. If still on anticoagulants and will be discontinued prior to pro the day of the procedure

	ERCP	
	EKG: 60 yrs. or greater & no previous EKG in past 6 m	ionths
	1. History hypertension	
	2. Heart disease	
	3. Arrhythmias	
S ()	4. Chronic obstructive pulmonary disease	
EKGs	5. Diabetes	
	6. Dialysis patient	
	7. Severe vascular disease	
	A copy of EKG done within 6 months with no recent o	change in sympto
/		