University of Virginia Health System
Clinical Pathway: Whipple Enhanced Recovery After Surgery (ERAS)
LOS: 4-5 days
Date of Origin/Revision: June 29, 2016/September 6, 2017/January 31, 2018

	SURGICAL CLINIC	**PETC**	**Day Prior to Surgery**	**Day of Surgery: SAS**	**Day of Surgery: Operating Room**	**Day of Surgery: PACU**	**Day of Surgery: Acute Care – 5W**	**POD1**	**POD2**	**POD 3/ Day of Discharge**
Assessment	- Identify pt as **ERAS Whipple** – create episode in EPIC -Vital signs, baseline height/wt -Screen for OSA, VTE, and diabetes -Assess for chronic narcotic use, tobacco and alcohol use -Screen for malnutrition -Verify home medications	- Link PETC visit to **ERAS episode** -Stratify cardiac risk -Screen for OSA -Screen for aspiration -Screen for malnutrition -Screen for tobacco use, diabetes -Identify patient with positive antibody screen -Review home medications	-Phone screening and readiness assessment by ERAS nurses	- Link SAS visit to **ERAS episode** -Vital signs -Med weight		-Vital signs and monitoring per PACU standards	-VS (with MAP) Q2h x2 and then then Q4h -Document ETCO2 Q4 with VS -UOP Q4h -Continuous pulse oximetry with capnography x24hrs -Drain care as needed	-VS Q4 -Daily weights -Strict I/O -Drain care as needed	-VS Q4 -Daily weights -Strict I/O -Drain care as needed	-Drain care/removal as needed
Consults & Referrals	-Ambulatory RD consult if screen positive for malnutrition -Cardiology if necessary	-Cardiology if necessary		-Notify cardiology for pacemaker patients			-Consult ERAS Pain NP for lidocaine infusion -Inpatient Nutrition/RD -Consult -Notify LIP if O2 <92% or ETCO2 >60 or <10, MAP <60, T>38.5, UOP <120 cc over 4 hours, or change in neuro status	-Assess for inter-disciplinary consult needs: RT, SW, Nutrition, Chaplain, PT/OT		-Finalize plan for community or home health needs with Case Manager

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Tests & Orders	-Use “ERAS Whipple General” under the ordersets tab -EKG (M>50, F>60) -Labs: CBC, CA199, CEA, CMP, Pt/PTT, T&H (0 units) -HgB A1c if diabetic -XR Chest PA or AP and Lateral -Post case with “ERAS Spinal” indication in case request	Complete: -EKG (M>50, F>60) -Labs: CBC, CA199, CEA, CMP, Pt/PTT, T&H (0 units) -HgB A1c if diabetic -XR Chest PA or AP and Lateral		-Type and hold (0 units) if not done -Stat PT if patient is on Coumadin -Finger stick if diabetic		- Use designated orderset “ERAS PACU Focused” with specific section for Whipple - Labs: CBC	-Use “Surg ERAS Whipple Post Op” for postop orders -Labs: BG AC/HS -Abdominal binder	Labs: CBC, -BG AC/HS	-Labs: BG AC/HS	-No additional labs unless indicated -Use “Whipple ERAS and Non-ERAS Discharge” orderset for discharge orders
Add’l Actions	-Give CHG information for shower night before and morning of surgery	-Reinforce CHG shower night before and morning of surgery	-Reinforce CHG shower night before	-Confirm CHG shower the morning of surgery		-Stand patient for weight in PACU	-Incentive spirometry Q1 hour	-DC foley unless poor UOP -Incentive spirometry Q1 hour	-DC foley if remaining -Incentive spirometry Q1 hour	
Activities							-Walk on night of surgery within 6hrs of arrival to unit -Head of bed at 30 degrees at all times	-Pt stands for am weight -OOB to chair at least 6 hours -Ambulate in hall X3	-Pt stands for am weight -OOB to chair at least 6 hours -Ambulate in hall X3	-Pt stands for am weight -OOB to chair at least 6 hours -Ambulate in hall X3

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Fluid management		-Instruct pt on oral fluids prior to surgery – clear fluids/Gatorade up until 2hrs before scheduled surgery	-Reinforce oral fluids prior to surgery – clear fluids/Gatorade up until 2hrs before scheduled surgery	-Carbohydrate drink 2 hours before surgery (Gatorade 20 ounces (50 grams of carbohydrate)) -Insert PIV and saline lock	-Fluid management is Goal-directed intravenous fluid guided by Pleth Variability Index	-LR at 125 cc/hr	-LR at 125 cc/hr	-LR at 125 cc/hr	-LR at 100 cc/hr	-DC LR once patient is taking PO fluids
Medications	-Place intraop phase of care orders for VTE and ABX: -Cefazolin 2g and Metronidazole 500mg -Heparin - 5000U SQ immediately after spinal	-Preop instructions for diabetic and anticoagulation patients	-Follow orders re: diabetic and anticoagulation medications	-Hypertension meds with sip of water -SAS nurse to release preop to intraop phase of care meds for OR – VTE and ABX	-Ancef injection 2g 0-60 minutes before incision; Metronidazole 500mg upon entry into the room -DVT prophylaxis with 5000U heparin immediately after spinal -Induction: Propofol, ketamine 0.5 mg/kg, magnesium 30 mg/ kg bolus		-Postop Antibiotics: Cefazolin 1g IV Q8 x 2 doses and Metronidazole 500mg IV Q8 -Pepcid 20mg IV BID -Begin bowel regimen – Dulcolax 10mg rectal suppository PRN, Senna 2 tabs PO nightly, Milk of Magnesia 10mL PO Nightly PRN -VTE prophylaxis based on risk stratification	-Restart additional home medications -Pepcid 20mg IV BID -Continue bowel regimen	-Restart anticoagulation if appropriate -Pepcid 20mg IV or PO BID -Continue bowel regimen	-Pepcid 20mg IV or PO BID -Continue bowel regimen

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Pain Management	-Place SAS orders: -Celecoxib 200 mg PO (not given to patient with Coronary artery disease) -Gabapentin 600 mg PO -Acetamin-ophen 975mg PO	-Chronic pain patients should continue home pain medications until surgery	-Chronic pain patients should continue home pain medications until surgery	-Multimodal analgesia: 1.Celecoxib 200 mg PO (not given to patient with CAD/CKD) 2.Gabapentin 600 mg PO 3. Acetamin-ophen 975mg PO	-250mcg Intrathecal morphine prior to induction (no epidural) -No intraoperative opioids without attending approval -IV analgesia: lidocaine 40 ucg/kg/min, ketamine 10 ucg/kg/min -Infiltrate wound with 30cc Marcaine	-Continue lidocaine infusion at 0.5-1mg/min -Ketamine 20mg/40mg IV bolus with midazolam 0.5mg/1.0mg IV PRN for pain as first line treatment (VAS 4-6/VAS 7-10)	-Lidocaine infusion at 0.5-1mg/min - Acetaminophen 650mg rectal Q6 hours -Ketorolac 30mg IV ONCE followed by Ketorolac 15mg IV Q6 PRN analgesia to include: Dilaudid 0.2/0.4mg IV Q2 PRN (VAS 4-6/VAS 7-10) while pt unable to take PO **No additional opioids, no PCA, no epidurals** (without attending's approval)	-Continue lidocaine gtt (for open cases) -Continue scheduled non-narcotic meds: -Acetaminophen 650mg rectal Q6 hours -Ketorolac 15mg IV Q6	-Discontinue Lidocaine gtt (for open cases) -Transition to PO scheduled non-narcotic meds: -Acetaminophen 975mg PO TID -Celebrex 100mg BID with meals -Oxycodone 5mg/10mg PO Q4 PRN (VAS 4-6/VAS 7-10)	Use : Acetaminophen 975mg Q8 for one week -Ibuprofen 600mg Q8 for one week -Oxycodone 5mg x30 Q4 PRN -Pepcid 20mg PO forever -Colace 100mg BID PRN
Nutrition	-Screen for malnutrition (if weight loss > 10% body weight or albumin <3.5)		-No food after midnight -Clears until 2 hours p/t surgery	-Clears until 2 hours prior to surgery -Carbohydrate drink for morning of surgery (20oz Gatorade)		-NPO	-NPO	-Sips and chips	-Clear liquids as tolerated	-Transitional diet as tolerated (no bread)
Education	-Provide patient with ERAS notebook -Reinforce expectations around surgery and recovery	-Reinforce diet/NPO for ERAS patients -Smoking cessation information	-Reinforce ERAS expectations -Remind to bring ERAS notebook and (if used) CPAP machine to hospital	-Ask patient if they have their notebook and review ERAS pathway			-Postoperative activity and incentive spirometry	-Postop activity and nutrition goals and progress	-Postop activity and nutrition goals and progress	-Postop activity and nutrition goals and progress

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Discharge Planning	-Assess for discharge needs, social work needs and advanced directives -Schedule patient's postop visit for 2-4 weeks after surgery	-Assess d/c needs including insurance needs						-Case Manager assesses for discharge needs	-DC planning finalized	-Patient meets criteria for discharge
Outcomes	Preop assessment initiated Understanding of procedure	Preop-assessment complete	Patient demonstrates readiness for surgery	Fluid and electrolyte balance maintained Pain management is effective Patient demonstrated hemodynamic stability	Fluid and electrolyte balance maintained Pain management is effective Patient demonstrated hemodynamic stability	Fluid and electrolyte balance maintained Pain management is effective Hemodynamic stability	Fluid balance maintained (< 1 kg wt gain) Pain management is effective Patient demonstrated hemodynamic stability OOB	Fluid balance maintained Adequate pain control OOB > 6 hours	Tolerates clear liquid diet Fluid balance maintained Ambulates Passing gas	Tolerating diet Hydrating Ambulating Bowel functioning

ALTERNATIVE PATHWAY OR PLAN OF CARE INITIATED FOR THIS PATIENT ON: DATE ________________________ INITIALS ______________________

Guidelines are general and cannot take into account all of the circumstances of a particular patient. Judgment regarding the propriety of using any specific procedure or guideline with a particular patient remains with that patient's physician, nurse, or other health care professional, taking into account the individual circumstances presented by the patient.