Surgical Oncology Resident Handbook

Division of Surgical Oncology
Department of Surgery
East Carolina University, Brody School of Medicine
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**Surgical Oncology Rotation Schedule for Residents**
North Carolina Tissue Bank:

The Division of Surgical Oncology supports the North Carolina Tissue Consortium, a tissue bank sponsored by the UNC Lineberger Comprehensive Cancer Center. The objective of the NCTC is to promote cancer-related and basic science research by providing a facility for procurement, processing, and storage of normal and malignant human specimens. Patients are approached for consent to participate in research during their clinic visit prior to surgery. No specimen is procured unless the patient has been appropriately informed and signed a consent form for procurement. On the day of surgery, tissue bank staff is paged by a circulating nurse to retrieve the specimen and transport it to the pathology department for assessment. Tissue is only procured after the pathologist has obtained the appropriate specimen information for patient care (e.g. diagnosis, inking of margins, etc.). All samples are frozen and stored at the Brody School of Medicine until requested for use by an investigator.
COMMUNICATION
Communication is first in this manual for a reason. COMMUNICATION is always first. When in doubt, call. When not in doubt, call. You will receive a call schedule at the beginning of the rotation – attending call coverage begins during the week when that attending leaves the hospital and from that time Friday evening until 7 am Monday. You are only responsible to communicate with the on-call attending during off hours – they will decide whether to contact the patient specific off call attending. During business hours, communicate directly with the attending of record.

Text messaging:
Texting is here to stay but until a text message is acknowledged it is only a ONE WAY form of communication. This is due to different attending preferences about carrying cell phones and sporadic cellular coverage at PCMH. Please, do not communicate or report your intention to carry out a test or procedure by text message unless that text is acknowledged as received by the intended recipient. Absence of this acknowledgement can be regarded as the message not being received or communicated.

Pagers:
Since we all carry pagers and pager coverage is universal, this form of communication does not require acknowledgement of receipt. Remember, when in doubt, communicate. You will NEVER be discouraged from doing so. Paging is the preferred method by which to contact the attending.

Cell Phones:
Cell phone calls are the easiest method of communication provided the phone is answered or within range. Again, don’t assume that any voice message left on a cell phone has been received or appropriately communicated for the reasons stated above. Paging is the only foolproof method of one-way communication.
PATIENT ADMISSIONS

If you are not notified of a patient transfer after hours, discuss this with the on call attending. Ideally, any patient accepted from an outside hospital or asked to go to the ER will be discussed with the on call resident before that patient arrives. Regardless of time of day, after you have had a chance to meet the patient and go over their records, contact the responsible attending to discuss the plan of care. This can save hours, if not days from the ensuing hospitalization as the accepting attending may be privy to information or details of the patient’s illness that are not apparent in the patient’s record and may have a specific plan of care in mind.

If an attending is out of town, you can not admit a patient under their name regardless of whether or not there is an established relationship with that patient. Admit those patients to the responsible covering physician.

DEPORTMENT

Cancer is a serious illness. On this service it is commonly a terminal diagnosis. Many of you have been touched by cancer either personally or though family. Please keep in mind the following general guidelines:

When a patient is informed of a cancer diagnosis, they will remember the exact words in which it is imparted to them for the rest of their life. It is important to keep this in mind in patients who do not yet know their diagnosis or pathology. Unless you are asked directly by a patient, and you feel comfortable, do not discuss pathology or new diagnoses of cancer until the attending has a chance to do so. Simply state that “The pathology is complete and Dr. _____ will discuss it with you when he or she rounds.” Discussion of intraoperative findings “his belly was ate up with cancer” with patients or family members may be taken out of context and create insurmountable obstacles in subsequent care and treatment planning. As with anything else in life, presentation is everything, learn from your attending in this regard so that you can add this skill to your armamentarium. This is the art of medicine, and is not easily taught. Complete understanding of the implications of a diagnosis or pathology report is crucial in having a meaningful discussion about pathology.

Similarly, present yourselves with the necessary countenance to impart your seriousness about the task at hand. Do not laugh, joke or carry on in patient care areas, that is anywhere on 1 south, the ASU, the recovery room.
Anywhere that a patient or patient’s family might have opportunity to observe or overhear. Keep this in mind regardless of the patient’s state of consciousness or even their own frame of mind. You would be surprised what a patient is capable of comprehending despite being seemingly oblivious.

You are our eyes and ears, our representatives when we cannot be there, please act accordingly and, whenever in doubt, just treat the patient or patient’s family the way that you or your family member would wish to be treated under like circumstances.

**PAIN MANAGEMENT**

All laparotomy patients should receive postop pain management in the form of a PCA without basal rate. Do not institute a basal rate without the permission of the attending. A standard PCA dose is 1mg morphine every 6 minutes with a 10 mg lockout. Dilaudid is 0.2-0.4 mg every 6 minutes. Again, basal rates are forbidden unless explicitly requested by the attending. Oncology nurses are acutely aware of pain issues and oftentimes may request that you increase pain medications beyond doses that you feel comfortable with or feel are appropriate. Remember, you are ultimately responsible for the orders that you write. Use discretion and sound medical judgment in deciding how much pain medicine beyond standard doses is appropriate for a given situation.

Patients with epidural catheters should not have PCA pumps. Similarly, unexplained hypotension in a patient with an epidural should be managed initially with cessation of the epidural dose. If this does not correct the problem, contact the attending. Epidurals are generally removed between postoperative days 3-5. Beyond that they generally hinder the progress of the patient. Anticipate removal of epidural catheters in patients tolerating liquids and hold Lovenox or other blood thinners accordingly.
OPERATING ROOM CONDUCT
The operating room is your classroom – treat it accordingly: show up on time and prepare for your case lesson. Your attending will apply the same effort in teaching you a procedure or technique that you demonstrate in preparation for it. If you consistently arrive late or unprepared for your patients’ operations or procedures you will be relegated to the same status as the myriad other individuals that we work with who punch the clock. This will become merely a service rotation for you if you choose not to prepare. You are not here to help or assist, you are here to learn. If you don’t take responsibility for your education seriously, no one else will. Similarly, scrubbing in to a procedure as a second or even third assist will contribute to the education that you are paying for with your time, sweat and youth. Most attendings rise to the occasion when they see demonstrated interest on the part of the junior residency staff. Please help us teach you the fundamentals of the career you have selected.

Your role in the operating room is as important as the primary surgeon. Keep the operation moving along. Don’t wait for the circulating nurse or scrub to prepare the patient, take charge and keep things moving. If you see a problem, point it out. A breech in the sterile field, anesthetic problems, hypotension etc… You are not an observer here, you are an active and valued participant in the surgical care of our patients.

EDUCATION
Teaching conferences are designed for your edification, not the attendings. This is your opportunity to learn and discuss the basic tenets of surgical oncology in a more relaxed setting. The textbook for these conferences is the MD Anderson Handbook of Surgical Oncology. You will receive one when you rotate onto the service – it is provided for you free of charge by the service. Each week we will discuss a different chapter and the schedule will be determined by the chief resident. Similarly, the chief resident will choose the time and place for the conference and will assign the presentation to one of the team members. The on call attending for that week will be responsible for overseeing the teaching conference. All residents are expected to attend above any other obligation including the operating room. This has been stressed with the surgical staff and they know not to expect you in the OR during our mandatory teaching conference. Failure to take advantage of this opportunity to learn will perpetuate a culture of apathy and service alone in our training program. It will discourage your attendings
from putting forth the effort to discuss surgical oncology at a level appropriate for the practicing general surgeon. Please help us make this a valuable experience for you by emphasizing the importance of this conference to all members of the team.

**ROUNDING**

Residents are expected to round on every patient on the service twice a day with SOAP notes written after morning rounds. Notes written by students must contain the phrase “I acted as a scribe for Dr. _____ in writing this note.” The note can then be cosigned by the resident and subsequently signed by the attending to be charged fully. If a patient falls within the global period (90 days after surgery) evaluation and management fees cannot be charged and this phrase is unnecessary. Any change in status of a patient must be reported to the responsible attending as soon as that change is discovered. Examples of change in status include but are not limited to:

- Need for blood product transfusion
- Need to transfer patient to a higher/ lower level of care
- DNR
- Need to intubate, add pressors, place central line, invasive monitoring
- Need to obtain unplanned imaging study: e.g. CTA, swallow study, CT scan etc…
- Need for invasive procedure: chest tube, NG, central line, arterial line
- Change in mental status
- Falls
- New onset of confusion
- Need to bolus patient within 12 hours of receiving Lasix
- Need to diurese patient within 12 hours of receiving bolus
- Family request to speak with attending
- Nursing issues: medication errors etc…
- Cardiac arrhythmias
- Low urine output / No urine output
- Abnormal finding on imaging reported by radiologist or detected by resident
- Need to consult another service

An attending will round on their respective patients during the week either with or without the resident staff but will always discuss (run the list) with a resident to discuss the plan. On weekends, the on call attending will round with the team. The weekend attending will decide with the team on Friday what time rounds will begin on Saturday morning.
Post call residents are expected to round in the morning, help with notes and work and then leave the hospital within the confines of the 80 hour work hour restriction.

Notify Dr. Zervos immediately if any resident is approaching violation of the work hour restrictions.

Students are a vital part of our mission- please treat them as colleagues and allow them as much latitude (with proper supervision) to learn from our patients by: performing physical examination, simple procedures (foley, NG, a-line, debridement, dressing changes), writing notes and formulating a treatment plan. Remember to treat all students with respect regardless of knowledge base or ability – keep in mind that not all students want to be surgeons and this is one of our only opportunities to impress upon them our passion for what we do and dispel some of the negative preconceived notions that non-surgeons have about us. Inasmuch as possible, make them a part of the team, not just observers.
CONSULTATIONS
Do not consult another service without notifying the attending of record first. Appropriate consultations include:

- Cardiology: new onset arrhythmia not responsive to simple maneuvers; troponin elevation, unexplained angina. EKG changes suggesting myocardial infarction.

- Critical care: any anticipated prolonged (>24-48 hour) stay in the ICU; need for multiple pressors; need for mechanical ventilation.

- Nephrology: unexplained renal failure (rising creatinine despite volume or discontinuation of nephrotoxic medications); need for dialysis.

- Endocrine: uncontrolled insulin resistance.

- Infectious disease: Need for multiple antibiotics; need for multiple antifungals or amphotericin B; need for restricted antibiotic.

- Psychiatry: suicidal ideation; depression; patient or family request.

- Risk management: any time unexpected serious adverse outcome occurs: death, medication error; transfusion error; wrong site surgery or procedure (notify the responsible attending prior to consulting risk management).

FORBIDDEN MEDICATIONS
As a general rule toradol and bumex are medications that should not be used on this service without the expressed knowledge and consent of the attending of record.

CLINIC
Clinic is one of the best opportunities to learn the process of working up, treatment planning and following the surgical oncology patient. It is of vital importance to your education. A clinic schedule is included in this manual and, at least one resident should be present in each attending’s scheduled clinic. You should be on time and dressed appropriately (tie, dress shoes, shaven, skirt etc.- NO SCRUBS). Clinic is your opportunity to follow up on patients that you’ve operated on or taken care of in the hospital. In addition, there are multiple minor procedures (mediport removal, biopsy etc...) that are carried out in the clinic. We need your help to keep the clinic running on schedule and to perform these procedures. Admittedly, much of this exercise is mundane or service oriented, but it is our stock and trade. We can not train you to be surgeons without patients and patients enter our practices through the clinic. Your timely presence in our clinic is not only expected, it is appreciated.

TUMOR BOARD
There are 2 tumor boards that are organized and run by the Division of Surgical Oncology: Breast (Tuesday at 8 am) and GI (Thursday at 7 am). You are expected to be present at these tumor boards above all other obligations. Again, it is an opportunity to learn the art and science of cancer surgery from not only your attendings but also our colleagues in the other disciplines. It provides you the opportunity to review cases, ask questions, review pathology and discuss the evidence based rationale for treatment decisions made for our patients. Please be prompt and on time to these conferences. Beginning in July of 2009, the chief resident will be responsible to present 1 case a week at GI Tumor Conference- this will be assigned by the attending and should represent a patient that this resident will be operating on.

CHAIN OF COMMAND
Please follow the proper chain of command in managing patient related issues. Interns and 4th years should communicate directly with the chief resident who will then, in turn, communicate with the attending. As long as you communicate up the chain of command, you will not be held responsible for any act, or failure to act. It is expected that the chief resident will manage all aspects of the service: scheduling, assignment of daily tasks and or responsibility, appropriate conduct and so on.

MISCELLENOUS
NG tubes are to be kept at low wall suction unless otherwise specified by the attending of record.
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Oncology Investigations
Title: A Phase 2 Double-Blind, Placebo Controlled, Multi-center Adjuvant Trial of the Efficacy, Immunogenicity, and Safety of GI-4000; an Inactivated Recombinant Saccharomyces cerevisiae Expressing Mutant Ras Protein Combined with Gemcitabine Regimen Versus a Gemcitabine Regimen with Placebo, in Patients with Post-resection R0/R1 Pancreatic Cancer with Tumor Sequence Confirmation for Ras Mutation

Sponsor: GlobeImmune
PI: Emmanuel Zervos, MD

Objectives: This research study seeks to enroll up to 200 evaluable participants randomized in a 1:1 fashion to Gemcitabine therapy with study drug or placebo after pancreatic surgical resection in 40 sites across the US. The research design is a double-blinded, placebo controlled study to evaluate the efficacy of weekly and then monthly doses of GI-4000 series (GI-4014, GI-4015, GI-4016, GI-4020) plus 6 monthly cycles of Gemcitabine versus placebo plus Gemcitabine therapy in patients that have undergone a R0 (no residual tumor) or R1 (microscopic residual tumor) pancreatic tumor resection via a Whipple procedure, with or without pylorus preservation. Secondary efficacy endpoints include: duration of recurrence-free survival, overall survival at 15 months, duration of overall survival, longitudinal changes in CA 19-9, longitudinal changes in symptoms scores via EORTC Quality of Life Questionnaire C30 and ECOG performance status. Immunological endpoints include evaluating Ras antigen specific T cell responses. Safety and tolerability endpoints include: evaluating serious adverse events, deaths, discontinuation or interruption or reduction of drug dosing secondary to adverse events and local injection reactions. The study duration is 3 years.

Inclusion Criteria
- Subjects with resectable pancreas adenocarcinoma
- Confirmed product related mutation in Ras from tumor sample: G12V, G12C, G12D, Q61L or Q61R.
- ECOG performance status (PS) of <2 prior to randomization.
- Confirmed R0 (no residual tumor) or R1 (microscopic residual tumor) status post-resection.
- Negative scratch test (immediate hypersensitistify, IgE mediated) to Saccharomyces cerevisiae
Exclusion Criteria
- Prior chemotherapy, radiation therapy, targeted therapy, or immunotherapy for pancreatic cancer.
- History of another cancer within the last 5 years with the exception of localized basal or squamous cell carcinoma of the skin, Stage 1A cervical cancer, or melanoma in situ.
- Concurrent or chronic therapy with corticosteroids (>10mg/day of prednisone) or other immunosuppressives
- Alcohol and/or IV drug abuse within the past year.
- History of autoimmune disease, Crohn’s, ulcerative colitis splenectomy or major organ transplantation

Title: A Randomized Phase II/III Study of TNFeradeTM Biologic with 5-FU and Radiation Therapy for First-Line Treatment of Unresectable Locally Advanced Pancreatic Cancer

Sponsor: Genvec
PI: Emmanuel Zervos, MD

Objectives: This study is a randomized, multiple-site clinical trial with the primary objective of determining whether TNFeradeTM in conjunction with standard of care improves 12-month survival rate as compared to standard of care alone using endpoints: tumor response, surgical down-staging, overall survival and Progression Free Survival, CA19-9 levels, PK profile levels, and QOL questionnaires. 330 participants will be randomized in 2:1 ratio based on study center and the Karnofsky Performance Scale (KPS) to either 5 weekly injections of 4 x 1011 PU of TNFerade deliver via EUS or PTA plus standard of care or standard of care alone, which consists of 5-FU at 200mg/m2/day + 50.4 Gy radiation divided into 20 1.8 Gy treatments followed by maintenance gemcitabine at 1000mg/m2 with or without Erlotinib at 100-150 mg.

Inclusion Criteria
- Biopsy proven unresectable, locally advanced adenocarcinoma of the pancreas w/o evidence of mestastatis
- Karnofsky performance status equal to or greater than 70%
- Life expectancy greater than 3 months

Exclusion Criteria
- Patients with clinically significant ascites or bulky celiac adenopathy (i.e., > 2.5 cm)
- Previous 2 year history of cancer except: cervix, bladder, non-melanomatosus skin, or early stage prostate
- Previous chemotherapy or radiation for pancreatic cancer
- Liver enzymes >3 x ULN, coagulopathy (INR >1.5, PTT ratio >1.5), or elevated serum creatinine (>2.0 mg/dL)
- Anemia (e.g. Hct<28% or Hb <9 g/dL), thrombocytopenia (plt<100,000/µL); or neutropenia (ANC <1500/µL)
- Patients with clinically significant pancreatitis within 12 weeks of treatment or pancreatic pseudocyst
- Patients with history of pulmonary embolus or <1 year history of DVT requiring >6 months of anticoagulation
- Clinical evidence of active infection of any type, including hepatitis B or C virus
- Experimental medications within the last 4 weeks prior to Day 1
- Surgery within the last 4 weeks prior to Day 1 (unless patient ambulatory within 48 hours of surgery)
- Chronic systemic corticosteroid use at superphysiologic doses (greater than 10mg prednisone per day)

**Title:** A Phase II Study of Apoptosis induction through Direct Tumor Injection of TNFerade™ or Radiation Alone Followed By KLH-Pulsed Autologous Dendritic Cells in Patients with Unresectable Pancreatic Cancer

**Sponsor:** NIH

**PI:** Emmanuel Zervos, MD

**Objectives:** In this protocol, TNFerade™ or radiation will be used to induce apoptosis/necrosis in an unresectable pancreatic tumor; KLH-pulsed dendritic cells will then be injected into the tumor to phagocytize the apoptotic bodies and present tumor antigen to circulating immune cells in the local lymphatic basin. The dendritic cell vaccine may direct a distant and lasting effective anti-tumor immune response to achieve a local and systemic clinical benefit. The samples size is 35, with 16 participants previously enrolled at Moffitt Cancer Center. All patients enrolled will receive 3 weekly intratumoral dendritic cell vaccines timed 24 hours post radiation. The TNFerade arm will receive 3 weekly vector intratumoral injections at a dose of 4 x 1011 on Monday, with daily radiation of 2 Gy Monday
through Wednesday for a total of 18 Gy. The radiation alone arm will receive radiation Monday through Thursday at 1.9 Gy. Patients will then move onto standard of care Gemzar therapy.

**Inclusion Criteria**

- Biopsy proven, unresectable pancreatic cancer with an intact primary tumor accessible to intratumoral injection
- Low volume metastatic disease defined as radiographically occult disease or ≤4 radiographically detected metastasis ≤2 cm in greatest dimension
- Good overall health with a Karnofsky performance status of 70% or greater and life expectancy > 3 months
- No evidence or history of an autoimmune dysfunction
- No previous or concurrent chemotherapy, immunotherapy or XTR for primary pancreatic cancer
- Liver enzymes ≤ 3 times upper limit of normal: Tbili ≤ 3.9 (biliary stents are allowed), AST ≤ 177, ALT ≤ 198
  Alk phos ≤ 378
- Adequate pretreatment organ function: Creatinine no greater than 1.5mg/dL, total calcium no greater than 11.0mg/dL, PT no greater than 14 seconds, and PTT no greater than 40 seconds
- Adequate baseline hematopoietic function: total white blood cell count equal to or greater than 3,000/mm3, absolute granulocyte count greater than 1,500/mm3, absolute lymphocyte count greater than 500/mm3, and platelet count equal to or greater than 100,000/mm3

**Exclusion Criteria**

- Patients requiring regular corticosteroids within the past year are ineligible or any use within 4 weeks.
- Active bacterial, fungal or viral infection
- Active bleeding
- Patients requiring anticoagulation
- Evidence of DVT or prior history of DVT

**Title:** Hepatic Research Registry  
**Sponsor:** CellzDirect, Inc.  
**PI:** Emmanuel Zervos, MD
Objectives: The purpose of the Hepatic Research Registry is to establish a nationwide program to procure resected liver tissue and to gather critical patient and research information to supply scientists worldwide for further biomedical and clinical research in liver biology, toxicology and pathology. After informed consent is given, a portion of the additionally healthy liver tissue, which is normally taken with liver resections and is discarded, will be collected after appropriate inspection by the pathologist. The liver tissue sample collected will then be flushed with appropriate cold preservation solution to remove excess blood and ensure adequate preservation of the tissue during transport. Cell isolation, cryopreservation and other research studies will be conducted by the sponsor using established in-house methods and others published in the literature.

Inclusion Criteria
- Patient undergoing a partial hepatectomy/liver resection as part of standard care
- 18 years old or older

Exclusion Criteria
- Patients known to be positive for HIV, Hepatitis B or Hepatitis
Breast Specific Issues

Preoperative evaluation:

All patients coming to surgery will have H&P on the chart or in centricity. Please make sure you review the history prior to going into the operating room. Although you may not have been involved in the decision tree to get the patient to the OR today, one day it will be your responsibility to do so, so now is the time to understand all of the workup that has taken place as an outpatient.

Patients with a cancer diagnosis will ideally have a core biopsy diagnosis. There may or may not be a wire localization done on the morning of surgery. This is necessary if the lesion is not palpable. If there is a needle (wire) localization, then when you get into the OR please hang the mammogram films.

All patients are positioned supine with their arms extended out on arm boards, unless a port is being placed. If a port is being placed, then the side of port placement will need to be tucked at the patient’s side.

Dr. Bellin or Fitzgerald will inject the radioisotope and blue dye in the operating room. Dr. Bellin will use 1000 drapes and mark the patients prior to prepping.

Postoperative care:

ALL patients should have steristrips, fluffs and a surgical bra to go home with.

ALL patients can shower 48 hours after the operation with or without a drain. The steristrips may get wet. No patients may tub bathe. After the patients shower at 48 hours, they should wear a bra night and day until seen in the office. They may wear the Surgibra or their own bra. A sportsbra is best. Reinforce to patients that they should not pull on any “strings” hanging near the wounds. These are the sutures which may be sticking out from the ends of the incision. These will be taken care of in the office.

ALL patients should be taught JP care by the nurses, or if the social situation dictates, home health nurse. (this should be rare)

ALL mastectomies and some Axillary dissection patients will stay overnight. They can be admitted to 23 OBS (ASU) unless their insurance or medical comorbidities require an inpatient bed.

Patients with mastectomy should continue to have fluffy support against the chest wall. This can be obtained with a folded washcloth or hand towel to fill the bra. This will minimize the output from the JP’s and allow the skin to coapt to the chest wall.
All port placements need a STAT portable chest XRAY in the Recovery Room, to check the placement of the catheter, and rule out a pneumothorax.

OVERNIGHT: Mastectomy patients stay overnight to observe the flaps for hematoma. If there is considerable swelling of the mastectomy site suggesting a hematoma, make pt NPO, and call the attending. The patient may need to go back to the OR for hematoma evacuation.

Range Of Motion: It is recommended that everyone do normal range of motion activities. It is easiest if the patients simply work on placing the ipsilateral hand on their head and rest it there for 10 seconds, 10 times every hour. This can start the day after surgery. They need to focus on relaxing their shoulder while they do this. No heavy lifting over 10 pounds on the side of a lumpectomy or mastectomy, or sentinel node biopsy.

ALL patients need a follow up appointment in one week. This will usually be the following Wednesday. Both Dr. Bellin and Dr. Fitzgerald see their postops on Wednesday.

Pain meds should always be given. Either Percocet 5/325, or Vicodin ES, or Norco. Percocet is stronger, but will cause more nausea and vomiting. Most patients do well with the less strong Vicodin. Antibiotics will not be given for Dr. Fitzgerald’s patients, but may be given for Dr. Bellin’s patients.

Patient phone calls from home:
1. Abscess- will need to be seen in the office within one to two days, unless there is cellulitis, fevers, or massive swelling. Then they should be directed to the Emergency Department.
2. Postoperative swelling- Should be seen in the Emergency Department or in the office.
3. Fevers- check wounds for redness, swelling. Never prescribe antibiotics over the phone. Ask about dysuria, cough, etc.
4. Fluid from wound. Some patients will have some seroma fluid leak from their lumpectomy, mastectomy or axillary dissection wound. Without redness, or fevers recommend tight support, with dressings, and a sportsbra. They will need to have a follow up appointment in the office that week; at the minimum for reassurance.

Clinic
Please be on time and well groomed for clinic. You represent us and may be the patient’s first impression of us. A female proctor is a good idea for male residents when the breast exam is done.
Clinical Pathways
Pancreaticoduodenectomy Pathway

Day of Surgery
- Primary physician consult/referral
- Extubated
- O2 sat and VS per q2h
- Incentive spirometer
- O2 at 6L
- I/O balance q2h
- PT/OT referral
- SCDs continuous
- NPO
- NG tube to low intermittent suction
- Epidural
- JP drain(s) to bulb suction
- Beta blocker prior to OR, if patient on regular dose
- DVT prophylaxis ordered

Post Op Day 1
- VS and O2 sat check q4h
- Wean O2
- Out of bed to chair TID for 1 hour
- Ambulate TID
- Ice chips
- NG tube to low intermittent suction
- Antibiotic discontinued within 24 hours of PACU

Post Op Day 2
- Out of bed to chair minimum of TID
- Ambulate in hallway TID
- PT/OT continues
- SCDs while in bed
- Ice chips
- NG tube to low intermittent suction, consider DC

Post Op Day 3
- VS and O2 spot check q8h
- Incentive spirometer
- Wean O2
- Out of bed to chair minimum of TID
- Ambulate in hallway TID progressing each ambulation

Post Op Day 4
- Wean oxygen to maintain O2 sat ≥ 92%
- IV to saline lock consider if good PO
- Consider clamping/ d/c NG
- Clear liquids
- Reinforce teaching
- Assess for effectiveness of pain management routine
- JP drain(s) to bulb suction
- Referral for anticipated discharge needs
- Social work referral
- Chaplain referral
- Dietitian referral

**Post Op Day 5**
- Out of bed to chair for meals minimum of TID
- Advance diet as tolerated
- Begin discharge teaching
- Plan for removal of epidural per anesthesia if good PO
- JP fluid for amylase/lipase if eating
- Plan for anticipated discharge needs

**Post Op Day 6**
- VS and O2 sat check q8h
- SCDs while in bed
- Diet: low fat/diabetic
- PO pain meds, IV pain med for breakthrough pain (if epidural d/c)
- Consider D/C JP
- Plan for anticipated discharge needs
- Social work referral
- Chaplain referral
- Dietitian referral
- Cancer Center Team referral
Liver Resection Pathway

Day of Surgery
- Primary physician consult/referral
- Extubate
- Incentive spirometer
- O2 at 6L
- IV
- Foley urinary catheter
- I/O balance q2h
- PT/OT referral
- SCDs continuous
- NPO
- NG tube removed
- Maintain epidural
- Beta blocker prior to OR, if patient on regular dose, blood sugar control
- DVT prophylaxis ordered

Post Op Day 1
- VS and O2 sat check q4h
- Wean O2
- Out of bed to chair TID for 1 hour
- Ambulate TID
- Clears if no nausea
- Colace 100mg BID
- Ducolax q day
- Maintain epidural
- Antibiotic discontinued within 24 hours of transfer from OR to PACU

Post Op Day 2
- Consider maintenance IVF
- I/O balance q4h
- Out of bed to chair minimum of TID
- Ambulate in hallway TID
- Advance diet as tolerated
- Maintain epidural
- Referral for discharge needs
Colectomy Pathway

Day of Surgery:
- Primary Physician Consult/Referral
- PCA
- Toradol as ordered
- Pain med IV PRN
- O2 at 6L
- Foley Catheter
- I & O q 4 hours x 24 hours
- NPO/NPO with ice/clears
- IV fluids
- SCDs
- DVT prophylaxis
- Communicate referral for anticipated DC needs
- Pre-op antibiotic administered within 60 min of incision
- Appropriate antibiotic administered

Post Op Day 1:
- PCA
- Toradol per attending
- Wean off O2
- Respirex 10 x q one hour
- CBC
- Clears if no nausea
- IV fluids
- Chair TID
- Ambulate with assistance
- PT/OT
- Colase 100mg PO BID
- Ducolax PR qD
- Discontinue antibiotic within 24 hours of incision

Post Op Day 2:
- Discontinue (DC) PCA
- Pain med IV for break though pain
- DC foley
- DC NG
- I & O q 8 hours
- DC O2
- CBC
- Clears/poss reg. if no nausea
- IV fluids
- CMP/BMP
- Ambulate TID
- Communicate referral for anticipated DC needs
Post Op Day 3:
- Begin discharge teaching
- CBC if ordered
- Regular diet
- Evaluate need for Home Care
- Possible DC

Post Op Day 4:
- D/C instructions
- PO pain meds
- Diet as tolerated
- Ambulate independent if able to do so prior to admission
- Patient able to return to pre-admission environment and continue healing process