Johns Hopkins Medicine
Department of Anesthesiology and Critical Care Medicine

Center for Perioperative Optimization

PREOPERATIVE ROADMAP

For Providers Requiring Anesthesia Services

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Contents

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Preoperative Assessment Roadmap

This summary will provide all surgeons and other providers who require anesthesia services guidance to understand the process by which we hope to facilitate the best possible care for your patients. Following these directions should help ensure your patients are not cancelled or delayed the day of surgery. Please have your patients answer the questions on the Patient Evaluation Screening Form (Appendix A). For all cases scheduled for surgery (or cases you are considering for surgery), please follow the following process:

1. TRIAGE For all patients who answered 'Yes' to any question on the above attachment, please schedule for a Center for Perioperative Optimization (CPO) visit. This will either be an Anesthesia Consult or routine visit with an NP or PA, per the surgeon's discretion. Anesthesia Consult appointments should be reserved for patients with multiple co-morbidities and/or cardiopulmonary disease scheduled for high risk surgery. All Anesthesia Consults should be scheduled by calling (410) 955-6353. Consult appointments must be scheduled at least 48 hours prior to the patient's surgery. All routine visits may be scheduled directly into the EPIC, Outpatient Scheduling system. For patients who did not answer 'Yes' to any question, they may completely bypass the CPO, and simply show up on the day of their procedure. Of note, the Preoperative History and Physical is required within 30 days of surgery.

2. JHOC OUTPATIENT CASES Please review the exclusion criterion for scheduling your outpatients in JHOC (Appendix B).

3. TESTING AND INSTRUCTIONS Follow the Preoperative Testing Guidelines to determine what laboratory studies and additional tests are required; as well as what medications to hold on the day of surgery, and NPO guidelines. When sending patients to the CPO for their preoperative assessment, the CPO practitioners will order appropriate laboratory testing. If you would like specific testing done, please include this request in the display notes of the CPO schedule and enter these orders in Epic. Please only order lab studies that you want, and not ones that you think Anesthesia will want. This will help eliminate unnecessary lab studies and minimize confusion regarding required lab work.

4. OUTSIDE STUDIES If outside facilities are utilized to generate lab studies, other diagnostic tests, or consultation reports, please obtain these results and scan them into Epic so they are available for review. Additionally, the patient should be instructed to bring copies of these results with them to CPO or the OR on the day of the procedure. For every patient requiring an ECG, please inform them to obtain a copy of a previous ECG for comparisons.

5. PEC REVIEW OF OUTSIDE EVALUATION Patients that do not require a CPO visit may still have reports or diagnostic tests, as well as H&Ps that should be made available 72 hours prior to surgery. This will allow a review of their findings preoperatively, and determinations made regarding fitness for procedures. Please scan these documents into Epic.

Please instruct your patients that they will be contacted the day prior to their surgery (Friday for Monday surgery) by a nurse from the Preop area to update their medication list and to relay general preoperative information to your patients. Make certain your patients have valid phone numbers in Epic as to where they may be contacted during the day.

Risk Stratification

- **Low Risk Medical Conditions –** Healthy with no medical problems (ASA I) or well controlled chronic conditions (ASA II)
- **High Risk Medical Conditions –** Multiple medical comorbidities not well controlled (ASA III) or extremely compromised function secondary to comorbidities (ASA IV)
- **Low Risk Surgical Procedure –** Poses minimal physiological stress (ex. – outpatient surgery)
- **Intermediate Risk Surgical Procedure –** Medium risk procedure with moderate physiological stress and minimal blood loss, fluid shifts, or postoperative changes
- **High Risk Surgical Procedure –** High risk procedure with significant fluid shifts, possible blood loss, as well as perioperative stress anticipated. Anticipated ICU stays postoperatively

Medical Conditions that may warrant an ASA III or IV status, and would benefit from a Preoperative Assessment at the CPO:

General Conditions:

- Medical Condition inhibiting ability to engage in normal daily activity – unable to climb two flights of stairs without stopping
- Medical Condition necessitating continual assistance or monitoring at home within the past six months
- Admission to hospital within past two months for acute or exacerbation of a chronic condition
- History of previous serious anesthesia complication or history of Malignant Hyperthermia

Cardio-circulatory:

- History of angina, coronary artery disease or myocardial infarction
- Symptomatic arrhythmias, particularly new onset A-Fib
- Poorly controlled hypertension (systolic > 160 and/or diastolic > 100)
- History of congestive heart failure
- History of significant valvular disease (aortic stenosis, mitral regurgitation, etc)

Respiratory:

- Asthma/COPD requiring chronic medication or with acute exacerbation and progression within past six months
- History of major airway surgery or unusual airway anatomy (History of difficult intubation in previous anesthetic)
- Upper or lower airway tumor or obstruction
- History of chronic respiratory distress requiring home ventilatory assistance or monitoring

Endocrine:

- Insulin dependent mellitus
- Adrenal disorders
- Active thyroid disease
- Morbid obesity

Neuromuscular:

- History of seizure disorder or other significant CNS diseases (multiple sclerosis, muscular dystrophy, etc.)
- History of myopathy or other muscular disorders

Hepatic/Renal/Heme:

- Any active hepatobiliary disease or compromise (hepatitis)
- End stage renal disease (dialysis)
- Severe anemias (Sickle Cell, Aplastic, etc.)

Obese/Obstructive Sleep Apnea

- BMI>35 with poor functional capacity (unable to achieve 4 METS = 2 flights of stairs or 4 city blocks)
- OSA associated with high incidence of respiratory failure post anesthesia
- Please complete the STOP-BANG scoring of your patient (Appendix C) to assess risk of OSA

Preoperative ECGs:

All surgery: Required within 30 days only for anyone with recent changes in functional status, new or unstable angina, or progressive dyspnea.

- Low risk surgery (such as cataracts, endoscopy, superficial procedures or angio) – None required except as noted above. Please forward copy of the most recent, old, EKG you may have on file.

- Intermediate risk surgery – Required within 6 months for anyone with history of coronary heart disease, other significant structural heart disease such as arrhythmias, valvular disorders, peripheral vascular disease, cerebrovascular disease, insulin dependent diabetes, chronic kidney disease (creatinine > 2 mg/dL.), or extremely poor functional capacity.

- High risk surgery – Required within 6 months for anyone with anticipated ICU postop. Also, anyone with a history of diabetes, hypertension, morbid obesity, HIV, ESRD or poor functional capacity.

Preoperative Testing Guidelines

In an effort to reduce unnecessary testing, we are recommending utilizing the following approach:

For all patients scheduled for low or intermediate risk surgery, only the following labs are necessary:

- Hb/HCT on any menstruating female. For minor procedures on healthy patients, we may be able to check Hb the morning of surgery.
- Urine pregnancy test on the morning of surgery for any menstruating female.
- ECG on any patient described above in ECG Recommendations, unless we are provided with a previous tracing within six months.
- No CxR indicated unless a history of pleural effusion or current URI with fever.
- No PT/PTT unless a patient or family history of bleeding or easy bruising. If ordering these tests, only order the PT, not PTT (reserved for patients on Heparin).

This approach is only applicable on patients who have no significant comorbid conditions (ASA I or II). Any presence of significant medical conditions may require **additional testing**, and specific guidance is provided in Preoperative Guidelines on each condition. General guidelines listed below can be used to determine appropriate preoperative tests. **To help facilitate a more efficient evaluation at the CPO visit, we recommend obtaining these tests prior to the patients visit with the CPO.**

- ***Diabetes –*** Fasting BMP; ECG for all patients with evidence of end organ damage or compromised exercise capacity. We also recommend HgA1C to assess control of diabetes (see Appendix E).
- ***HTN of 5 yrs. duration and/or requiring two or more meds; or Cardiac Dx*** – CBC; BMP; ECG; consider ECHO, Stress Test, and/or Cardiac evaluation if symptoms significant and no previous studies within one year.
- ***COPD*** – PFTs if symptoms are significant; including home O2 or shortness of breath with exertion.
- ***Anemia and/or Bleeding Hx –*** CBC; Consider PT. Auto-donors need to have Hb/Hct post donation.
- ***Liver dysfunction or Malnutrition –*** CMP, CBC. Consider PT/INR.
- ***High Surgical Risk Procedures –*** CBC; CMP; Consider ECHO, Stress Test, and/or Cardiac evaluation if medical condition warrants, and no previous studies within the past year.
- ***Poor Exercise Tolerance –*** CBC; CMP; ECG; PMD evaluation; Consider ECHO, Stress Test, and/or Cardiac evaluation if no previous studies within the past year.
- ***Morbid Obesity –*** CBC; CMP; ECG; Consider ECHO, Stress Test, and/or Cardiac evaluation if poor exercise tolerance, and no previous studies within the past year.
- ***End Stage Renal*** (dialysis and/or renal failure patients) – Post dialysis labs to include CBC, post-dialysis labs; Hemoglobin and BMP at a minimum; Na/K morning of surgery.
- ***Pacemakers and AICDs*** (Full Guidelines in Appendix G)
  - Must be interrogated at JHH and have report in Epic.
  - Patients with pacemakers must be interrogated **within 6 months** of surgery.
  - Patients with AICDs must be interrogated within **3 months** of surgery.
  - To schedule the interrogation, please refer to Appendix G.
  - Exceptions are those patients scheduled for EGD/colonoscopies/procedures that do NOT use bovie; these procedures do not require any changes to the pacemaker or AICD.
  - If there is any change to the date/time of where the surgery is being performed after the interrogation has been done, please inform the Device Clinic.
- For patients with ***cardiac stents***, **PLEASE** continue 81 mg ASA up to day of surgery (see Appendix H).
- **Type & Cross/T&S** must be done at Hopkins within 30 days of surgery. Must meet two criteria to qualify as 30 day sample: no transfusions or pregnancy within past 3 months and date of surgery. Please refer to our web site or Appendix I for which cases require T&S.

Preoperative Medications

As a general rule, for patients scheduled for surgery with anesthesia, we recommend all medications should be continued on the day of surgery to be taken with a sip of water prior to coming to the hospital. Exceptions to this recommendation are summarized below:

CLASS OF MEDICATIONS	MEDICATION	RECOMMENDATIONS
Oral Hypoglycemic Agents	Metformin/Glucophage Actos/ Glyburide/ Tolinase/ Avandia/ Amaryl/ all others	Hold at least 8 hours pre-op. Recommend holding am dose, day of surgery.
Diuretics	Lasix/HCTZ	Hold am day of surgery, *unless* prescribed for CHF – these patients should take their am dose of diuretics.
ACE/ARB	Lisinopril/Lotrel/Captopril/Lotensin/ Monopril/ Prinzide/ Atacand/ Benicar/ Diovan/ Avalide / Losartan	Hold am of surgery for all patients.
Insulin	Lantus, Levemir, Humulin, Novalog, Humalog, etc.	See Appendix E for recommendations regarding Insulin.
Prescription Blood Thinners	Plavix, Brilinta, Warfarin/Coumadin, Pradaxa, Xarelto, Eliquis, Effient, Aggronox, Pletal, Lovenox, etc.	Decision when to stop preop is made between the surgeon and the physician prescribing the medication.
All Herbal and Alternative Supplements		Stop all Herbal/Alternative Supplements and preparations containing Vitamin E one week prior to surgery.

*** In particular, it is very important for patients to take their am dosage of the following medications:**

- Beta blockers and any antiarrythmics such as Digoxin or Calcium Channel blockers.
- Asthmatic medications including daily, rescue and as needed inhalers, Advair, Singulair and/or steroids.
- GERD medication.
- Statins such as Lipitor, Zocor, Crestor, etc.
- Aspirin – stop as instructed by your surgeon, UNLESS you have heart stents. IF you have cardiac stents, please continue ASA 81 mg through day of surgery.
- ACE/ARB – If patient has history of hypertension difficult to manage, you should instruct the patient to not take these medications the morning of surgery; however, please bring the medication with them to the hospital in the prescription bottle.

Please advise patients to take these medications with a sip of water prior to coming to the hospital.
Refer to Appendix J: Medication Use Before Surgery

NPO Guidelines

ADULT FASTING INSTRUCTIONS
PLEASE READ BEFORE DAY OF PROCEDURE

Please note, patients are normally told to arrive **2 hours prior to their surgery start time**. If you have not yet been given your surgery start time, please contact your surgeon's office.

Clear Liquids

THE ONLY CLEAR LIQUIDS ALLOWED ARE:

- Water
- Gatorade®
- CLEAR Apple Juice (no pulp or cider)

NO other clear liquids allowed including alcohol

***See Exceptions Below**

STOP 1 hour before you are told to arrive at the hospital:

- You may **ONLY** have a total of 20 ounces of allowed clear liquids between midnight and 1 hour prior to your arrival
- You may **ONLY** have 8 ounces of allowed clear liquids in the last hour you are allowed to drink

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ALL other foods and non-clear liquids

All solid food, all liquids you are unable to see through, all candy, chewing gum and mints

***See Exceptions Below**

STOP 8 hours before you are told to arrive at the hospital

*** Exceptions:**

- Patients with **End Stage Kidney Disease**, scheduled for a **kidney transplant**, have **gastroparesis** (slow emptying of the stomach) or if you are **pregnant** - CLEAR LIQUIDS MUST STOP SIX (6) HOURS BEFORE YOU ARE TOLD TO ARRIVE AT THE HOSPITAL

- If you are having surgery under the **E**nhanced **R**ecovery **A**fter **S**urgery **(ERAS)** protocol, please disregard these instructions and follow the instructions given to you by your surgeon

- If your surgeon has instructed you to stay on a clear liquid diet prior to day of surgery, follow your surgeon's instructions and avoid all food and non-clear liquids

If you have any questions, call the Center for Perioperative Optimization at 410-955-8533; Monday-Friday 7:30AM- 4:00PM

Appendices

Contents

Appendix A: Patient Evaluation Screening Form

JOHNS HOPKINS MEDICINE

PATIENT IDENTIFICATION INFORMATION

DATE: _____ **Patient Evaluation Screening Form**

Please answer the following questions:		
1. Do you have sleep apnea; use CPAP or Bi-PAP and or told you need a "sleep study"?	□YES	□NO
2. Do you have difficulty climbing stairs or walking 4 blocks? ➢ If YES, what stops you? *(Check all that apply)*	□YES	□NO
Chest pain □YES | Shortness of breath □YES | Pain □YES | Other:		
3. Do you have high blood pressure that requires three or more medications to manage?	□YES	□NO
4. Have you ever had a blood clot, stroke, carotid blockage or TIA (mini stroke)?	□YES	□NO
5. Are you currently taking blood thinners, such as Aspirin, Coumadin, Plavix, etc.?	□YES	□NO
6. Do you have problems with bleeding after surgical or dental procedures?	□YES	□NO
7. Do you have a history of liver disease or cirrhosis?	□YES	□NO
8. Have you ever had a heart attack, or problems with your heart?	□YES	□NO
9. Do you have diabetes that requires insulin treatment?	□YES	□NO
10. Have you had any problems with anesthesia other than nausea or vomiting? For example, difficult airway or awareness during surgery.	□YES	□NO
11. Do you have kidney problems (except for kidney stones or recurrent infections) that require treatment by a kidney specialist or are you on dialysis?	□YES	□NO
12. Are you pregnant or is there a chance you are pregnant?	□YES	□NO
13. Do you have or have you had any Implantable devices? ➢ If yes identify which device(s) below:	□YES	□NO
□ Pacemaker/Defibrillator | □ Cardiac Stent Year: | □ Ventricular Assist Device Year: | □ Insulin Pump		
14. Currently smoking 1 pack per day or more?	□YES	□NO
15. Current Alcohol: More than 2 drinks a day?	□YES	□NO
16. Current Recreational Drug use?	□YES	□NO

To be completed by clinical staff:

Any YES answers to the questions above indicate a patient requires a PEC visit;
All NO answers to the questions above indicate no PEC visit is required.

If the surgeon requires a PEC visit for another reason, please fill in the information below.

Surgeon Request:

Patient to be scheduled for: ☐ Anesthesiologist Consult ☐ Pre Evaluation Center visit

REASON: _____

Please indicate reason when requesting consult with anesthesiologist and or Pre Evaluation Center Appointment

Surgeon/Designee: Name: _____ Date_____

(Please Print Clearly)

Appendix B: Exclusionary Criterion for JHOC

These conditions preclude scheduling your outpatients in JHOC:

1. Inpatients are excluded; with the exception of those inpatients who will be discharged from the hospital prior to the OR procedure, and who will be discharged to home following their operative procedure.

2. Patients in whom there is a reasonable chance of requiring administration of blood products are excluded.

3. All ventilator dependent patients are excluded.

4. Patients with moderate to severe Pulmonary Hypertension (RVSP by echocardiogram 50mmHg or greater) are excluded.

5. Any case where the patient would require intra-operative invasive monitoring devices are excluded.

6. Patients with severe cardiac valvular heart disease, as defined by the American Heart Association, are excluded.

7. Patients with a Ventricular Assist Device (VAD) are excluded.

8. Patients receiving supplemental home oxygen therapy or who have a left ventricular ejection fraction (LVEF) <30% by echocardiogram may be scheduled if having very minor surgery; however must be seen in the CPO for determination of appropriateness.

9. Patients less than 15 years of age, are excluded. However, exceptions may be made at the discretion of the Medical Director of Perioperative Services or designee, on a case by case basis, as special exceptions. Please refer to the "Child Centered Care Guidelines".

10. Patients with a BMI ≥ 50 are excluded.

11. Patients with OSA or those with a high risk of OSA will be allowed to be done in JHOC; however if a room air trial is not successful, these patients must be transported to the main hospital PACUs for extended recovery.

Updated, October 2018

Appendix C: Special Considerations

1. **Patients receiving Hemodialysis:** These patients must have their dialysis done the day prior to scheduled surgery or the surgery may be cancelled. If the patient's regular dialysis day falls on the day of surgery, work with the patient's dialysis center to arrange for the patient's session to be moved to the day before surgery. We are being strongly discouraged from using Sunday dialysis, since this requires a hospital admission that is now primarily being denied. If at all possible, please avoid Monday surgery on patients with a Monday dialysis schedule. In addition to the issue of the need for Sunday dialysis before Monday surgery is the similar need for routine dialysis on a holiday the day before surgery. Both dilemmas need to be worked out with the dialysis center or there must be a change in the day of surgery.

2. **Patients with Pulmonary Hypertension:** These patients should see their cardiology/pulmonary specialist preop and be seen in CPO to assess need for Cardiac Anesthesia. Please note that JHOC excludes patients with RVSP (Right Ventricular Systolic Pressure) that is greater than 50.

3. **Patients with Myasthenia Gravis:** These patients should always be first case and should be instructed to take their Mestinon medication the morning of surgery.

4. **Patients with a Transplant having non transplant surgery**: Assure that the patient's transplant team is aware the patient is having surgery.

5. **Patients who are Jehovah's Witness**: PING "Jehovah's Witness JHH Bloodless" to alert the team well before day of surgery for planning purposes.

6. **Patient with Hematologic Disorders**: Some Hematologic diseases require specific treatments prior to surgery or on the morning of surgery before proceeding. Planning for this is extremely important so make sure patients with Hematologic disorders see their Hematologist prior to surgery for optimization and recommendations.

7. **Patients who are under the Guardianship of the Department of Social Services (DSS):** Whether pediatric or adult, these patients require separate consents for both their surgical procedure and their anesthesia. These consents require signatures from the patient's authorized DSS Representative and must be secured before the actual day of surgery.

8. **Patients with pacemakers:** All patients with pacemakers must be seen in our Pacer Clinic prior to surgery. Please attempt to schedule these visits on the same day as the CPO visit. This is NOT required if not using bovie; or using bipolar bovie (see Appendix G).

9. **Any patient with a Pheochromocytoma:** These patients should all be scheduled as an Anesthesia Consult more than 48 hours prior to surgery.

10. **Patients on Methadone:** All patients taking Methadone need to take their am dose of Methadone on the day of surgery. We strongly recommend these patients get an appointment in the Pain Clinic prior to surgery (see Appendix K).

Appendix D: OSA Screening

Have you ever been diagnosed with Obstructive Sleep Apnea (OSA) by undergoing a sleep study or Polysomnogram?	YES	NO
If YES, were you prescribed a CPAP or a dental device?	YES	NO

If you answered YES to BOTH of the above, SKIP the following questionnaire.
Otherwise, please answer the questions below

Snoring? Do you **Snore Loudly** (louder than talking or loud enough to be heard through closed doors)?	YES	NO
Tired? Do you often feel **Tired, Fatigued, or Sleepy** during the daytime?	YES	NO
Observed? Has anyone **Observed** you **Stop Breathing** during your sleep?	YES	NO
Pressure? Do you have or are being treated for **High Blood Pressure**?	YES	NO
Body Mass Index more than 35?	YES	NO
Age older than 50?	YES	NO
Neck size large? Do you have a **Neck that Measures** more than 16 inches / 40 cm around (measure at Adam's Apple)	YES	NO
Gender = Male?	YES	NO

Low risk of OSA: Yes to 0-2 questions
Intermediate risk of OSA: Yes to 3-4 questions
High risk of OSA: Yes to 5-8 questions.

STOP-BANG SCORE / 8

CHECK if you have any of the following medical problems

- ☐ Asthma or COPD/Emphysema
- ☐ Heart Failure
- ☐ History of stroke
- ☐ I currently smoke
- ☐ Atrial Fibrillation
- ☐ Peripheral Vascular Disease
- ☐ Muscular dystrophy / Myasthenia
- ☐ I have had pain for ≥ 3 months for which I take opioid medications at least every other day

Chung F et al. Anesthesiology 2008; 108: 812-821, and Chung F et al Br J Anaesth 2012; 108:768–775.

Appendix E: Diabetic Management

General Considerations for the Diabetic Patient:

- Schedule insulin-dependent diabetic patients early in the day (by noon). If unable to schedule by noon, please have patient arrive at hospital by 9 am regardless of the time of their surgery. Instruct the patient to bring their Glucometer with them. The patient most likely will not be able to be taken back to the PREP area any earlier but it is safer for the patient to be at the hospital in case the patient becomes symptomatic from an abnormal blood sugar reading.
- Have patients bring short acting insulin medications to the facility
- Preoperative evaluation may include the level of glycemic control, i.e. by blood glucose (BG) levels and glycosylated hemoglobin A1c. Patient's with an A1c > 8.5% may benefit from further evaluation prior to elective surgery in an attempt to reduce surgical site infections.
- Optimal intraoperative BG level: 180 mg/dL or less
- Have the patient take BG at bedtime; if > 180 mg/dL take insulin according to patient's individualized instructions[2].
- Elective cases should be postponed in patients with fasting BG>400 mg/dl or in patients with significant complications of hyperglycemia such as severe dehydration, ketoacidosis, and hyperosmolar non- ketotic states1. Postponing elective cases is always up to the discretion of the provider.

Table 1 Pre-Operative Antidiabetic Guidelines* [1,2,3]

Type of Medication	DAY & EVENING BEFORE Surgery	MORNING of Surgery
Oral Agents	Continue all oral agents. *If the patient has renal dysfunction or is likely to receive IV contrast, you may want to discontinue metformin 24-48 hours prior to surgery. Hold metformin if undergoing	Hold.
Non-insulin injectable Examples: Byetta (exenatide), Victoza	Continue.	Hold.
Short/rapid- acting Insulin Examples: Novolog (Aspart), Humalog (Lispro), Apidra (Glulisine), Novolin R or Humulin R (Regular)	Maintain usual meal plan & insulin dose.	Hold.
Intermediate-Acting Insulin (taken twice daily) Examples: Novolin-N, Humulin-N (NPH)	Take usual morning dose and 75% of the usual evening dose.	Take 50% of the usual morning dose.
Long-Acting Insulin Examples: Lantus (Glargine), Levemir (Determir)		
➢ **Taken once daily in the morning**	Take usual morning dose.	Take 50% of the usual morning dose.
➢ **Taken once daily in the evening**	Take 75% of the usual evening dose.	Do not take any insulin.
➢ **Taken twice daily**	Take usual morning dose and 75% of the usual evening dose.	Take 50% of the usual morning dose.
Pre-Mixed Insulins (e.g. 70/30; 75/25; 50/50) (taken twice daily)	Take usual morning dose and 75% of evening dose.	Take 50% of the usual morning dose.
Insulin Pump	Maintain usual meal plan & basal rate.	Maintain basal rate.

***Developed in Conjunction with the Johns Hopkins Inpatient Diabetes Management Service**

1. Joshi GP, Chung F, Vann MA, et al. Society for Ambulatory Anesthesia consensus statement on perioperative blood glucose management in diabetic patients undergoing surgery. *Anesth Analg*; 2010; 111:1378-87.
2. Joslin Diabetes Center and Joslin Clinic. Guideline for inpatient management of surgical and ICU patients (pre-, peri and postoperative care). 2009. Available at: http://www.joslin.org/docs/Inpatient_Guideline_10-02-09.pdf
3. Sara M. Alexanian, Marie E. McDonnell, and Shamsuddin Akhtar. Creating a Perioperative Glycemic Control Program. *Anesthesiology Research and Practice*; Vol. 2011, Article ID 465974, 9 pages, 2011.

Appendix F: Insulin Names and Duration of Action

Type of Insulin & Brand Names	Onset	Peak	Duration	Role in Blood Sugar Management
Rapid-Acting				
Lispro (Humalog)	15-30 min.	30-90 min.	3-5 hours	Rapid-acting insulin covers insulin needs for meals eaten at the same time as the injection. This type of insulin is often used with longer-acting insulin
Aspart (Novolog)	10-20 min.	40-50 min.	3-5 hours	
Glulisine (Apidra)	20-30 min.	30-90 min.	1-2 ½ hours	
Short-Acting				
Regular (R) humulin or novolin	30 min-1 hour	2-5 hours	5-8 hours	Short-acting insulin covers insulin needs for meals eaten within 30-60 minutes.
Velosulin for use in the insulin pump)	30 min.-1 hour	2-3 hours	2-3 hours	
Intermediate-Acting				
NPH (N)	1-2 hours	4-12 hours	18-24 hours	Intermediate-acting insulin covers insulin needs for about half the day or overnight. This type of insulin is often combined with a rapid-or short- acting type.
Long-Acting				
Insulin glargine (Lantus)	1-1 ½ hours	No peak time. Insulin is delivered at a steady level	20-24 hours	Long-acting insulin covers insulin needs for about one full day. This type is often combined, when needed, with rapid- or short-acting insulin.
Insulin detemir (Levemir)	1-2 hours	6-8 hours	Up to 24 hours	
Pre-Mixed*				
Humulin 70/30	30 min.	2-4 hours	14-24 hours	These products are generally taken two or three times a day before mealtime.
Novolin 70/30	30 min	2-12 hours	Up to 24 hours	
Novolog 70/30	10-20 min.	1-4 hours	Up do 24 hours	
Humulin 50/50	30 min.	2-5 hours	18-24 hours	
Humalog mix 75-25	15 min.	30 min-2 ½ hours	16-20 hours	
Premixed insulins combine specific amounts of intermediate-acting and short-acting insulin in one bottle or insulin pen. (The numbers following the brand name indicate the percentage of each type of insulin.)				

Appendix G: Pacemaker/AICD Guidelines

- All patients with a Pacemaker or AICD **must be interrogated at JHH** prior to any surgical or interventional procedure requiring electrocautery. This means that minor procedures (like endoscopy, bronchoscopy, or other minor procedures) that do NOT use bovie are not required to be seen.
- Pacemakers must be interrogated **within 6 months** of the procedure date. AICDs must be interrogated **within 3 months** of the procedure date.
- If the patient comes through the CPO, it is the responsibility of the Surgical MOC or OR Scheduler to arrange the Device Check for the day of the CPO appointment.
- To schedule a device check, please follow these steps
    - Email the Device Clinic at device-service@jhmi.edu
    - Include in the body of the note:
        - Pt name and Hx#
        - DOS/Time/OR Venue
        - Name of manufacturer of device
        - Surgeon's name and contact information – the Device Clinic will get the cautery information from the surgeon's office directly
        - Indication for the device (if you know)
        - Your name and phone # in case they have any questions
- Once you email them, call them directly at 5-1143 to see if and when they may be able to accommodate the patient.
- If the OR date, time or venue changes after the interrogation has been completed, you must notify the Device Clinic (5-1143) of the changes.

Appendix H: Patients with Cardiac Stents

The Johns Hopkins Hospital Antiplatelet Bridging for Patients with Cardiac Stents

Cardiac stent patients on dual antiplatelet therapy (DAP - aspirin & antiplatelet agents) pose a clinical challenge during surgeries or invasive procedures. The risk of uncontrolled bleeding if DAP therapy is continued versus acute stent thrombosis if DAP is discontinued in the perioperative period presents a clinical dilemma. To help guide perioperative DAP therapy and improve clinical outcomes for patients with coronary stents, a JHH multidisciplinary task force has developed the following one-page decision support tool (please see below).

In addition, the CPO has agreed to assist the attending providers with perioperative management of patients on DAP therapy. A mandatory field in ORMIS for documenting whether the patient has a coronary stent will be used to help facilitate the scheduling of pre-operative/pre-procedural CPO appointments for these patients. If the scheduled case will occur within one week of the posting, the CPO clinic coordinator should be called (410-283-3510) to facilitate a stent patient appointment.

If you would like someone from the task force to present the program goals and assist with staff education, please contact the task force chair, Sean Berenholtz, MD, MHS at sberenho@jhmi.edu. If you have questions regarding this information, please contact Steven Jones, MD, Cardiology (sjones64@jhmi.edu); Michael Streiff, MD, Hematology (mstreif@jhmi.edu), or Sean Berenholtz, MD, Anesthesiology and Critical Care Medicine (sberenho@jhmi.edu).

Antiplatelet Bridging Tool for Patients with Cardiac Stents

1. Postpone Elective Procedures until minimum duration of dual antiplatelet therapy (DAP) is complete, unless DAP can be continued without interruption throughout the periprocedure period.

Minimum Duration Stent Implantation	
Bare Metal Stent (BMS)	1 month
Drug Eluting Stent (DES)	12 months

2. High Risk Stent Thrombosis: Consult cardiology and refer to the CPO.

Consult Cardiology and Refer to PEC 14 days prior to procedure for antiplatelet management for:
Surgery required prior to minimum DAP (Bare Metal Stent < 1 month, Drug eluting stent < 12 months)
Any episodes of stent thrombosis

3. For urgent surgery or patient deemed high risk of thrombosis, consider intravenous antiplatelet bridge therapy (IV IIb/IIIb inhibitor) with Cardiology Consult.
4. If minimum antiplatelet duration met and patient does not have high risk factors above, stop antiplatelet according to the table below:

Antiplatelet	Maximum Holding Time
Clopidogrel	5 days
Prasugrel	7 days
Ticagrelor	5 days

5. Continue low-dose aspirin (81 mg) throughout the periprocedure period for all patients, except patients at high risk for bleeding.

High Bleed Risk- Aspirin may be held for maximum of 5 days
Intracranial Procedures
Posterior Chamber of eye
Spinal Canal
TURP, Cystoprostatectomy

6. Post-operative initiation of antiplatelet therapy should begin as soon as adequate hemostasis is achieved. Patients can be restarted on their home dual antiplatelet therapy. A loading dose of their antiplatelet can be considered.

Appendix I: Surgical Blood Order Schedule

SURGICAL BLOOD ORDER SCHEDULE

Cardiac Surgery

Case Category	Rec
Heart or lung transplant	T/C 4U
Minimally invasive valve	T/C 4U
Revision sternotomy	T/C 4U
CABG/valve	T/C 4U
Open heart surgery	T/C 4U
Assist device	T/C 4U
Cardiac/major vascular	T/C 4U
Open ventricle	T/C 4U
CABG	T/C 2U
Cardiac wound surgery	T/C 2U
Percutaneous cardiac	T/C 2U
Pericardium	T/C 2U
Lead extraction	T/C 2U
AICD/pacemaker placement	T/S

General Surgery

Case Category	Rec
AP resection	T/C 2U
Intra-abdominal GI	T/C 2U
Whipple or pancreatic	T/C 2U
Liver resection	T/C 2U
Retroperitoneal	T/C 2U
Substernal	T/C 2U
Bone marrow harvest	T/S
Hernia – Ventral/Incisional	T/S
Hernia – Inguinal/Umbilical	No Sample
Appendectomy	No Sample
Abdomen/chest/soft tissue	No Sample
Lap. or open cholecystectomy	No Sample
Thyroid/parathyroid	No Sample
Central venous access	No Sample
Any Breast – except w/flaps	No Sample

Gynecological Surgery

Case Category	Rec
Uterus open	T/C 2U
Open pelvic	T/C 2U
Uterus/ovary	T/S
Total vaginal hysterectomy	T/S
Cystectomy robotic assisted	T/S
Cystoscopy	No Sample
External genitalia	No Sample
GYN cervix	No Sample
Hysteroscopy	No Sample
Superficial wound	No Sample

Neurosurgery

Case Category	Rec
Thoracic/Lumbar/Sacral fusion	T/C 4U
Spine tumor	T/C 2U
Posterior cervical spine fusion	T/C 2U
Spine Incision and Drainage	T/C 2U
Intracranial tumor / aneurysm	T/C 2U
Laminectomy/discectomy	T/S
Spine hardware removal/biopsy	T/S
ACDF	No Sample
Extracranial	No Sample
Nerve procedure	No Sample
CSF/shunt procedure	No Sample

Obstetrics

Case Category	Rec
Complex Cesarean (Accreta, Percreta, Previa, etc.)	T/C 4U
Repeat Cesarean	T/C 2U
Routine Primary Cesarean	T/S
Vaginal Delivery	T/S
D&C/D&E/Genetic Termination	T/S
Tubal Ligation	No Sample
Cerclage	No Sample

Orthopedic Surgery

Case Category	Rec
Thoracic/Lumbar/Sacral fusion	T/C 4U
Pelvic orthopedic	T/C 4U
Open hip	T/C 2U
Femur open	T/C 2U
Above/below knee amputation	T/C 2U
Humerus open	T/S
Fasciotomy	T/S
Shoulder Incision & Drainage	T/S
Tibial/fibular	T/S
Total knee replacement	T/S
Shoulder open	T/S
Knee open	T/S
Thigh soft tissue	No Sample
Ortho external fixation	No Sample
Peripheral nerve/tendon	No Sample
Lower extremity I&D	No Sample
Hand orthopedic	No Sample
Upper extremity arthroscopy	No Sample
Upper extremity open	No Sample
Podiatry/Foot	No Sample
Hip closed/percutaneous	No Sample
Lower extremity arthroscopic	No Sample
Shoulder closed	No Sample
Tibial/fibular closed	No Sample

Otolaryngology Surgery

Case Category	Rec
Laryngectomy	T/C 2U
Facial reconstruction	T/C 2U
Cranial surgery	T/C 2U
Radical neck dissection	T/C 2U
Carotid body tumor	T/C 2U
Mandibular surgery	T/S
Neck dissection	T/S
Mastoidectomy	No Sample
Parotidectomy	No Sample
Facial plastic	No Sample
Oral surgery	No Sample
Sinus surgery	No Sample
Thyroid/parathyroidectomy	No Sample
Suspension laryngoscopy	No Sample
Bronchoscopy	No Sample
Cochlear implant	No Sample
EGD	No Sample
External ear	No Sample
Inner ear	No Sample
Tonsillectomy/adenoidectomy	No Sample
Tympanomastoid	No Sample

Thoracic Surgery

Case Category	Rec
Esophageal open	T/C 2U
Sternal procedure	T/C 2U
Chest wall	T/C 2U
Thoracotomy	T/C 2U
Pectus repair	T/C 2U
VATS	T/S
Mediastinoscopy	T/S
EGD/FOB	No Sample
Central venous access	No Sample

Urology

Case Category	Rec
Cystoprostatectomy	T/C 2U
Urology open	T/C 2U
Nephrectomy	T/C 2U
Lap/Robotic kidney/adrenal	T/S
RRP	T/S
Percutaneous nephrolithotomy	T/S
Robotic RRP	No Sample
External genitalia/Penile	No Sample
TURP	No Sample
Cysto/ureter/urethra	No Sample
TURBT	No Sample

Vascular/Transplant Surgery

Case Category	Rec
Liver transplant	T/C 15U
Thoracoabdominal aortic	T/C 15U
Major liver resection	T/C 4U
Major vascular	T/C 4U
Exploratory lap. vascular	T/C 4U
Kidney pancreas transplant	T/C 2U
Major endovascular	T/C 2U
Above/below knee amputation	T/C 2U
Nephrectomy/kidney transplant	T/C 2U
Organ procurement	T/C 2U
Peripheral vascular	T/C 2U
Vascular wound I and D	T/C 2U
Carotid vascular	T/S
AV fistula	T/S
Peripheral endovascular	T/S
Angio/Arteriogram	No Sample
Peripheral wound I&D	No Sample
1st rib resection/thoracic outlet	No Sample
Superficial or skin	No Sample
Foot/toe amputation/debride	No Sample
Central venous access	No Sample

If the procedure you are looking for is not on this list then choose the procedure that most closely resembles that procedure.

*Emergency Release blood is available for ALL cases and carries a risk of minor transfusion reaction of 1 in 1,000 cases.

Appendix J: Medication Use Before Surgery

CARDIOVASCULAR

1. Beta Blockers Metoprolol, Atenolol, Carvedilol, Nadolol, Bisiprolol, Sotolol, etc.)
   - Continue and TAKE morning of surgery
2. Calcium Channel Blockers (Nifedipine, Diltiazem, Amlodipine, Verapamil, etc)
   - Continue and TAKE the morning of surgery
3. ACE Inhibitors (ACEi) and Angiotensin Receptor Blockers (ARB) (Captopril, Lisinopril, Benazepril, Enalapril, Ramipril, Losartan, Valsartan, Irbisartan, Candasartan, etc.)
   - Continue through evening prior to surgery. HOLD morning of surgery for all patients, however, ask patient to bring the medication in the prescription bottle on morning of surgery.
4. Diuretics (Hydrochlorthiazide (HCTZ), Furosemide, Chlorthalidone, Amiloride, etc.)
   - Continue through evening prior to surgery. HOLD morning of surgery.
   - EXCEPTION: If taking for CHF, the patient should TAKE morning of surgery
5. Nitrates (Imdur, Isosorbide, Nitrogylcerin Patch)
   - Continue and TAKE (or wear patch) morning of surgery
6. Cardiac Rhythm Medications (Digoxin, Amiodarone, Flecanide, Quinidine)
   - Continue and TAKE morning of surgery
7. Other Blood Pressure Medications
   - Hydralazine: Continue and TAKE morning of surgery
   - Clonidine: Continue and TAKE morning of surgery
   - Blood Pressure Combination medications: If these combinations have an ACEi or ARB as part of the combination, have patient HOLD the morning of surgery and bring with them to the hospital. All others, patients should take morning of surgery
8. Statins and Cholesterol Medications (Simvastatin, Atorvastatin, Crestor, Lovastatin, Vytorin, Fenofibrate, etc)
   - Continue and TAKE morning of surgery

Appendix J: Medication Use Before Surgery (continued)

BLOOD THINNERS

1. Aspirin

   - Patients taking Aspirin because they have a Coronary Stent should remain on Aspirin 81mg during the perioperative period and should TAKE the morning of surgery. The only exceptions are procedures that have a high risk of bleeding: Intracranial procedures; surgeries involving the Spinal Canal and Posterior Chamber of the Eye procedures. If the patient has stopped their aspirin and are not having a surgery in the Exception Category please make sure the surgeon is aware they take Aspirin 81 mg because they have a coronary stent, get their OK to restart the Aspirin and communicate that to the patient. If the patient was taking 325 mg Aspirin and stopped, have them restart at 81mg. **(SEE Appendix G)**
   - Patients taking Aspirin only for prophylaxis or pain, should follow instructions regarding Aspirin that they were given by their surgeon and if any questions direct them to the surgeon's office.

2. Prescription Antiplatelet Medications (Plavix ŧClopidogrel), Prasugrel, Ticagrelor). SEE Appendix G in the Preoperative Roadmap

   - Patients should have received instructions from their surgeon and/or Cardiologist regarding when to stop preoperatively. NONE of these medications should be taken the morning of surgery unless the surgeon has specifically instructed the patient to remain on such medications (i.e. Vascular surgical procedures).

3. Oral Anticoagulants (Warfarin/Coumadin, Pradaxa, Xarelto, Eliquis, etc)

   - Patients should have received instructions from their surgeon and/or PCP or Cardiologist regarding when to stop preoperatively. NONE of these medications should be taken the morning of surgery.

4. Low Molecular Weight Heparin (Lovenox)

   - Stop per surgeon's instructions. HOLD morning of surgery

PULMONARY

1. Asthma and COPD Medication (Singulair, and ALL inhalers)

   - Continue and TAKE the morning of surgery and bring any inhalers on day of surgery

2. Pulmonary Hypertension Medications (Sildenafil, Tadalafil, Vardenafil, Flolan, etc)

   - Continue and TAKE the morning of surgery

ENDOCRINE/METABOLIC

1. Insulin (See Table in APPENDIX D: Diabetic Management for specific instructions)
2. Oral Diabetic Agents (See Table in APPENDIX D: Diabetic Management for specific instructions)
3. Thyroid Medications (Synthroid (Levothyroxine), Armour Thyroid, Tapazol)

Appendix J: Medication Use Before Surgery (continued)

4. Insulin (See Table in APPENDIX E: Diabetic Management for specific instructions)
5. Oral Diabetic Agents (See Table in APPENDIX D: Diabetic Management for specific instructions)
6. Thyroid Medications (Synthroid (Levothyroxine), Armour Thyroid, Tapazol)
   - Continue and TAKE morning of surgery
7. Steroids (Prednisone, Cortef, etc.)
   - Continue and TAKE morning of surgery
8. Gout Medications (Allopurinol only)
   - Continue and TAKE morning of surgery
9. Osteoporosis Medications
   - Hold on morning of surgery

CENTRAL NERVOUS SYSTEM

1. Anticonvulsants (Dilantin, Tegretol, Keppra, Lamictal, Trileptal, Depakote, etc.)
   - Continue and TAKE morning of surgery
2. Antidepressants (Prozac, Paxil, Zoloft, Celexa, Lexapro, Pristiq, Cymbalta, Effexor, Wellbutrin etc.)
   - Continue and TAKE morning of surgery
3. Antianxiety Medication (Lorazepam, Diazepam, Alprazolam, Clonazepam)
   - Continue and TAKE morning of surgery
4. Antipsychotics (Risperidal, Haldol, Geodon, Serequel, Abilify, etc)
   - Continue and TAKE morning of surgery
5. Lithium
   - Continue and TAKE morning of surgery
6. Parkinson's Medications (Sinemet (Carbadopa/Levadopa)
   - Continue and TAKE morning of surgery
7. Sleeping Medications
   - May be taken evening before surgery if needed
8. ADD/ADHD Medications
   - HOLD morning of surgery

Appendix J: Medication Use Before Surgery (continued)

GASTROINTESTINAL

1. Gastroesophageal Reflux (GERD) Medications (Ranitidine, Prilosec, Nexium, Prevacid, etc.)
   - Continue and Take morning of surgery
2. Antinausea Medications (Ondansetron, Metoclopramide, Phenergan, etc.)
   - Continue and TAKE morning of surgery

RENAL

1. Renal vitamins, Phosphate binders, iron, erythropoietin, etc.
   - Continue up through the day before surgery then HOLD the morning of surgery

UROLOGY/ GYNECOLOGY

1. Prostate Medications (Flomax, Proscar)
   - Continue and TAKE morning of surgery
2. Overactive Bladder Medications (Ditropan/Oxybutynin, Detrol, etc.)
   - Continue and TAKE the morning of surgery
3. Hormonal Medications (Estrogen, Progesterone, Testosterone)
   - Continue and TAKE morning of surgery unless otherwise directed to stop at a specific time prior to surgery by your surgeon
4. Oral Contraceptives/Birth Control Pill
   - Continue and TAKE morning of surgery

ANALGESICS AND PAIN MEDICATIONS

1. Narcotics/Opioids (Codeine, Hydrocodone, Oxycodone, Vicodin, Percocet, Methadone, etc.)
   - Continue and TAKE morning of surgery
2. Neuropathic Pain Medications (Gabapentin, Lyrica)
   - Continue and TAKE morning of surgery
3. NSAIDs (Ibuprofen, Advil, Motrin, Aleve, Naprosyn, Diclofenac, Meloxicam)
   - Should be discontinued at least five days prior to planned surgery or per surgeon's direction

Appendix J: Medication Use Before Surgery (continued)

4. Muscle Relaxants (Baclofen, Cyclobenzaprine/Flexeril, Tizanidine/Zanaflex, etc.)
    - Continue and TAKE as needed only on morning of surgery
5. Antirheumatic Medications (Azathioprine/Imuran, Hydroxychloroquine/Plaquenil)
    - Continue and TAKE morning of surgery

IMMUNOSUPRESSANTS/ANTI-REJECTION MEDICATIONS

1. Prednisone, Medrol, Tacrolimus, Cellcept, Sirolimus, etc.
    - Continue and TAKE morning of surgery

VITAMINS/SUPPLEMENTS

1. Multivitamins Containing Vitamin E and Dedicated Vitamin E
    - Stop one week prior to surgery
2. Dietary Supplements (Fish Oil, COQ10, Garlic, Gingko, Ginsing, etc.)
    - Stop one week prior to surgery
3. Weight Loss Medications (OTC or Prescribed)
    - If possible, would prefer stopped one week prior to surgery

MISCELLANEOUS MEDICATIONS

1. Allergy Medications (Allegra, Claritin, Zyrtec, Sudafed)
    - TAKE if needed the morning of surgery
2. Nasal Sprays (Nasacort, Flonase) and Eye Drops
    - Continue and TAKE morning of surgery
3. Topical Medications
    - Continue and use morning of surgery unless it is a topical NSAID (i.e.Voltaren gel)
4. Migraine Medications
    - Daily Prophylactic Medications (**Topamax, Propranolol**): Continue and use morning of surgery
    - As needed “triptans” (**Sumatriptan, Rizatriptan**): Continue and may use morning of surgery if needed

Appendix K: Perioperative Pain Clinic

Johns Hopkins Medicine
Department of Anesthesiology
and Critical Care Medicine

Perioperative Pain Clinic

NEW SERVICE & APPOINTMENT OFFERINGS

Johns Hopkins Hospital

601 N. Caroline Street

Neurosurgery Suite, 5th Floor

Baltimore, MD 21287

Contact Information

Grace Attwa

410-955-5608

gattwa1@jhmi.edu

Faculty

Marie Hanna,MD

Ronen Shechter, MD

Christopher Wu, MD

Traci Speed, MD

The Department of Anesthesiology and Critical Care Medicine is pleased to announce a new service for patients at the Johns Hopkins Hospital beginning June 1, 2017. The Perioperative Pain Clinic will provide consultation service that evaluates and adjusts a patient's chronic pain management prior to surgery and manages their analgesic regimen post operatively.

We provide world class care by incorporating a multidisciplinary approach to include the **Acute Pain**, **Psychiatry**, and **Integrative Medicine** teams. We hope this service is valuable to you and your patients during this important aspect of their perioperative care.

Operational Details

Available Days: Every Thursday (excluding holidays)

Hours: 8:00 AM – 5:00 PM

Scheduling: Call Grace Attwa at 410-955-5608.

Patient Qualifications:

Patients scheduled for surgical procedures who are:

- ✓ On chronic opioids
- ✓ On partial agonist opioid buprenorphine (including Suboxone)
- ✓ In an addiction maintenance program
- ✓ On multiple illicit substances (i.e. polysubstance abuse)
- ✓ Opioid naïve patients at risk of developing opioid dependence postoperatively

Appendix L: Center for Perioperative Optimization - Obstetrics

Johns Hopkins Medicine
Department of Anesthesiology
and Critical Care Medicine

Center for Perioperative Optimization – Obstetrics

NEW LOCATION & APPOINTMENT OFFERINGS

Johns Hopkins Hospital

600 North Wolfe Street

Nelson 2, Suite 150

Baltimore, MD 21287

Johns Hopkins Hospital

601 N. Caroline Street

The Outpatient Center,

6th Floor

Baltimore, MD 21287

Contact Information

Jamie Murphy, MD

jmurphy@jhmi.edu

Rhonda Thomas

rthomas6@jhmi.edu

The Department of Anesthesiology and Critical Care Medicine is pleased to offer preoperative evaluation appointments for OB patients at the Johns Hopkins Hospital. We hope this service is valuable to you and your patients during this important aspect of their perioperative care.

Operational Details

Available Days: Mondays and Thursdays (excluding holidays)

Hours: 8:00 AM – 5:00 PM

Scheduling: Call 410-502-3200.

Patient Qualifications:

- Pregnant and scheduled for surgery
- Complex pathologies of the spine (scoliosis, vertebral fusion, disc disease, spinal canal defects, neuropathies, and nerve disease, etc)
- Neurologic pathology (cerebral ischemia, tumor, increased intracranial pressure, cerebral vascular disease, etc)
- Cardiac disease (congenital, valvular, PHTN, cardiomyopathy, ischemic disease, arrhythmia, etc)
- Pulmonary disease (H/O PE, interstitial lung disease, severe asthma, cancer, etc)
- Morbid Obesity (OSA, equipment considerations)
- Hematologic Disorders (thrombophilia, coagulopathies, patients on anticoagulation)
- Cancer
- Abnormal placental presentations (accreta/increta/percreta)
- Airway concerns
- Fetal Therapy patients requiring specialized management (EXIT procedures)
- H/O adverse anesthetic reactions or experiences

Appendix M: Center for Perioperative Optimization - Children's Center

Johns Hopkins Medicine
Department of Anesthesiology
and Critical Care Medicine

Children's Center for Perioperative Optimization

LOCATION & APPOINTMENT OFFERINGS

Contact Information

Dr. Sally Bitzer
sbitzer1@jhmi.edu

Dr. Joann Hunsberger
jhunsbe1@jhmi.edu

Providers

Ivor Berkowitz, MD MBA

Sally Bitzer, MD

Joann Hunsberger, MS MD

Rahul Koka, MD MPH

Joanne Shay, MD MBA

Barbara Vickers, MD MPH

Monica Williams, MD

Pediatric Anesthesia Consultation Services Details

Location:
David M. Rubenstein Building, Lower Level Specialty Clinic,
200 N. Wolfe St, Baltimore MD 21287

Patient Qualifications:

- Consider consult for pediatric patients with possible anesthesia management concerns
- See supplemental material for specialty-specific guidelines, "Indications for Children's Center Perioperative Optimization Consult"

Available Days and Hours:

- Mondays, 8:00 AM-5:00 PM
- Wednesdays, 8:00 AM-5:00 PM
- Thursdays, 9:00 AM-5:00 PM
- Friday afternoons, 1:00 PM-5:00 PM

Scheduling:

- Medical Office Coordinators schedule CCPO consult at time of procedural posting in EPIC using "JHDMR Peds Preop Eval"
- For questions regarding scheduling, call Lillian Holliday at 410.955.6353
- For same day appointments, page 3-3510

Indications for Children's Center Consult

Any Patient with anesthesia management concerns

Anesthesia-Related Concerns

- History of difficulty with anesthesia
- Family member with malignant hyperthermia or other significant difficulty with anesthesia

Abnormal Airway Concerns:

- Known difficult airways
- Abnormal airway anatomy or syndrome (e.g. Treacher-Collins, Goldenhar, Pierre-Robin, Cornelia de Lange, Hurler's, Hunter's)
- Obstructive sleep apnea OSA or central apnea for procedure other than tonsillectomy

Respiratory Disease

- Cystic fibrosis
- Oxygen dependent/ home CPAP/ventilator dependent
- Pulmonary hypertension
- Poorly-controlled or steroid dependent asthma
- Former premature infant with ongoing oxygen requirement or severe chronic lung disease

Neuromuscular / Orthopedic Disease

- Muscular dystrophies
- Skeletal dysplasia
- Progressive severe weakness
- Cervical spine instability/prior neck surgery/in neck brace
- Scoliosis: neuromuscular or curve >60 degrees
- Wheelchair-bound
- Significant limitation in physical activity/exercise tolerance

Neurologic Disorders

- Seizures: frequent or poorly controlled

Metabolic / Gastrointestinal Disorders

- Metabolic disorders / storage disorders (e.g. Hunter's, Hurler's, mitochondrial disorder)
- Diabetes- insulin therapy
- Morbid obesity
- Renal or Hepatic failure

Transplant-Related Concerns

- Have had or will have organ transplant

Hematologic Disease

- Hemoglobinopathy
- Sickle cell disease
- Coagulopathy

General / Other Concerns

- DSS custody/foster care
- Ethical concerns: Do-Not-Resuscitate, Jehovah's Witness for major surgery

Cardiology:

CCPO Consult:

- Consider for all patients with symptomatic or complex congenital heart disease

Cardiology consult also requested for:

- Patients with ***unevaluated or new*** heart murmur
- If patient has known congenital heart disease:
  a. With ***asymptomatic ASD or VSD***, Cardiology evaluation should be within one year of procedure date
  b. Complex congenital heart disease s/p cardiac surgery totally ***asymptomatic***, routine scheduled follow-up should occur prior to procedure date
- If patient has ***symptomatic or complex congenital heart disease***
  a. Patients should be seen by cardiology *within 30 days* of procedure
  b. Additionally, inform cardiologist of patient's procedure date and if patient is admitted, inform cardiology service about any child with symptomatic or complex congenital heart disease.

Please ensure cardiac consult and related tests are available in EPIC.