Preoperative Evaluation

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Discussion Outline

• Preoperative evaluation clinic overview
• Perioperative surgical home
• Preoperative testing
• Preoperative cardiac evaluation for noncardiac surgery
• Postoperative pulmonary complications
• Obstructive sleep apnea
• Diabetes mellitus
• Prehabilitation
• Medication management

Preoperative Evaluation Clinic

• Goals:
  • Improve experience of care
  • Improve health of populations
  • Reduce per capita costs
• Benefits:
  • Fewer cancellations
  • Shorter length of stay
  • Improved OR efficiency
  • Reduction in mortality
• Value Added:
  • Value=Quality/Cost

• Improving Quality:
  • Safety
  • Efficiency
  • Patient-centeredness
  • Efficacy
  • Equity
  • Timeliness of care
• Reducing cost:
  • Many preoperative clinics do not generate revenue
  • Decrease costly day of surgery case cancellations
  • Minimize unanticipated, prolonged patient admissions or ICU admissions
  • Avoid tests that are not indicated
Preoperative Evaluation Clinic

- Design and execution of clinic varies based on institution resources
- Standardizing the process can help ensure regulatory and reimbursement requirements are being met
- Develop standardized perioperative assessments and management guidelines specific to patient risk factors or type of surgery
  - Make available online so all providers can refer to institutional guidelines
- Triage, prioritizing high risk patients to facilitate timely clinic visits and appropriate preoperative optimization
- Low risk patients can be screened via chart review or phone visit

Perioperative Surgical Home

- Perioperative Surgical Home model is a patient-centric, multidisciplinary team-based model of care advocated by the American Society of Anesthesiologists. (Zafirova, 2018)
- Spans the entire experience from decision of the need for any invasive procedure—surgical, diagnostic, or therapeutic—to discharge from the acute-care facility and beyond—usually 30 days post discharge
- Multidisciplinary team may include:
  - Anesthesiologists
  - Surgeons
  - Medical sub-specialists
  - Mid-level practitioners
  - Nurses
  - Nutritionists
  - Physical/occupational therapists
  - Patient
  - Patient’s social supports

Perioperative Surgical Home

- Goal is to achieve TRIPLE AIM:
  - Better patient experience
  - Improved quality of care
  - Cost savings
Perioperative Surgical Home

- **Better Patient Experience**
  - Avoid day of surgery cancellations
  - 1-8% fewer cancellations of surgery (Lee et al., 2011)
  - Educate patient about anesthesia plan
  - Set expectations for pre, intra, and postoperative course
  - Ankuda found 50% of patients scheduled for postop ICU admission were not aware of plan
  - Discuss most likely disposition plan for discharge from hospital
  - Engage patient and patient’s family in shared medical decision
  - Discuss patient’s goals and treatment preferences, including advance directives
    - Sinha et al. looked at 492 patients and found only 38% of patients had advanced directives
    - prior to surgery; only 13% had advanced directives that were in the EMR prior to surgery

- **Improved Quality of Care**
  - Qiu et al. looked at the effects of a PSH model on 1,900 patients undergoing outpatient laparoscopic gallbladder removals; found that the implementation of the PSH was responsible for:
    - Decreased length of stay
    - Fivefold decrease in unplanned hospital admissions
    - 25% decrease in median pain scores (Qiu, 2017)
  - Another study by Qiu and colleagues looked at acute hip fracture patients who received an accelerated PSH consult with the goal of being optimized for surgery within 24hrs; compared with standard of care group, the PSH consult group:
    - Decreased in-hospital, 30d, and 90 day mortality
    - Decreased ED visits post-discharge
    - Increased likelihood of discharge to home rather than to rehabilitation facility (Qiu, 2017)

- **Cost Savings and Improved Reimbursement**
  - Avoid day of surgery cancellations
  - Avoid day of surgery delays
  - Eliminate/reduce unneeded costly testing
    - When compared to traditional preoperative investigations by surgeons, selective ordering by experienced anesthesiologists significantly reduced the number of preoperative tests performed by between 29% and 50% (Kwon, 2018)
  - Minimize unanticipated and prolonged admissions
  - Increase reimbursements via diagnosis related groups coding
Preoperative Testing

- It is estimated that 60-90% of pre-surgical patients have at least one unnecessary test ordered
- Evaluations based on institutional protocols contribute to unnecessary, costly, and potentially harmful testing
- Tests should be individualized to the patient based on comorbidities and/or procedure planned
- Tests should be ordered if the results may impact management
- Avoid repeat testing if results are within six months to one year or if comorbidity management is stable (Edwards, 2018)

<table>
<thead>
<tr>
<th>Test</th>
<th>Consideration</th>
</tr>
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<tbody>
<tr>
<td>CXR</td>
<td>Consider in new or unstable cardiopulmonary signs or symptoms that would likely require additional medical management or delay of surgery.</td>
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<tr>
<td>ECGs</td>
<td>Consider in patients at risk for cardiac disease (e.g., CAD, CHF).</td>
</tr>
<tr>
<td>Echocardiogram</td>
<td>Consider in patients at risk for heart failure (e.g., HF, DOF, NYHA III-IV).</td>
</tr>
<tr>
<td>Cardiac stress test</td>
<td>Consider in patients at risk for coronary artery disease (e.g., CAD, CHF).</td>
</tr>
<tr>
<td>BNP (preoperative)</td>
<td>Consider in patients at high risk for cardiac events (e.g., ACS, CHF).</td>
</tr>
<tr>
<td>Troponin</td>
<td>Consider in patients at high risk for cardiac events (e.g., ACS, CHF).</td>
</tr>
<tr>
<td>Pregnancy test</td>
<td>Consider in women of childbearing age.</td>
</tr>
<tr>
<td>Renal function test</td>
<td>Consider in patients at risk for renal failure (e.g., CKD, AKI).</td>
</tr>
<tr>
<td>LFTs</td>
<td>Consider in patients with liver disease.</td>
</tr>
<tr>
<td>Blood glucose test</td>
<td>Consider in patients with diabetes mellitus.</td>
</tr>
<tr>
<td>Preoperative urine analysis</td>
<td>Consider in patients with urinary tract symptoms.</td>
</tr>
<tr>
<td>Hemoglobin/hematocrit</td>
<td>Consider in patients with anemia.</td>
</tr>
<tr>
<td>Coagulation analysis</td>
<td>Consider in patients with bleeding disorders.</td>
</tr>
</tbody>
</table>

(Adapted from American Society of Anesthesiologists Task Force on Preanesthesia Evaluation, 2012)
Cardiac Evaluation

- All patients scheduled for noncardiac surgery should have a cardiovascular risk assessment performed preoperatively
- AHA/ACC 2014 guidelines describe the preoperative cardiac risk assessment and perioperative management in noncardiac surgery
- History and physical
- Functional status

Cardiac Evaluation

- Step 1: Patient with known CAD or risk factors for CAD
- Risk factors for CAD are not explicitly defined in the 2014 guidelines, most cardiovascular disease risk calculators include:
  - Age (Male>45yoa; Female>55yoa)
  - Gender (Male)
  - Family history of premature CAD (Male relative<65yoa; Female relative<55yoa)
  - HTN
  - HLD
  - DM
  - Smoking
  - Obesity
  - Sedentary lifestyle
Cardiac Evaluation

- Determining preoperative cardiac risk
  - RCRI
  - NSQIP

Cardiac Evaluation - RCRI

Estimated preoperative risk of MACE based on combined pre-surgical risk (Step 2)

- Low risk (11%)
- Elevated risk (Step 2)

<table>
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<tr>
<th>RCRI</th>
<th>Values</th>
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<tr>
<td>Age over 70</td>
<td>Yes/No</td>
</tr>
<tr>
<td>History of myocardial infarction</td>
<td>Yes/No</td>
</tr>
<tr>
<td>History of congestive heart failure</td>
<td>Yes/No</td>
</tr>
<tr>
<td>History of cardiac arrhythmias</td>
<td>Yes/No</td>
</tr>
<tr>
<td>History of cerebrovascular disease</td>
<td>Yes/No</td>
</tr>
<tr>
<td>History of peripheral vascular disease</td>
<td>Yes/No</td>
</tr>
<tr>
<td>History of cerebrovascular disease with stroke</td>
<td>Yes/No</td>
</tr>
<tr>
<td>Diabetes mellitus requiring treatment with insulin</td>
<td>Yes/No</td>
</tr>
<tr>
<td>Severe chronic obstructive pulmonary disease</td>
<td>Yes/No</td>
</tr>
<tr>
<td>Severe chronic obstructive pulmonary disease with exacerbations</td>
<td>Yes/No</td>
</tr>
<tr>
<td>Severe chronic obstructive pulmonary disease requiring treatment with oxygen therapy</td>
<td>Yes/No</td>
</tr>
<tr>
<td>Severe chronic obstructive pulmonary disease on home oxygen therapy</td>
<td>Yes/No</td>
</tr>
<tr>
<td>Severe chronic obstructive pulmonary disease on home oxygen therapy who discontinued therapy</td>
<td>Yes/No</td>
</tr>
<tr>
<td>Severe chronic obstructive pulmonary disease on home oxygen therapy who discontinued therapy with complications</td>
<td>Yes/No</td>
</tr>
<tr>
<td>Severe chronic obstructive pulmonary disease on home oxygen therapy who discontinued therapy with complications and subsequent death</td>
<td>Yes/No</td>
</tr>
<tr>
<td>Severe chronic obstructive pulmonary disease on home oxygen therapy who discontinued therapy with complications and subsequent death and rehospitalization</td>
<td>Yes/No</td>
</tr>
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Cardiac Evaluation - NSQIP

The ACS NSQIP Surgical Risk Calculator incorporates 21 preoperative risk factors to predict 13 perioperative complications.

Cardiac Evaluation

- Functional capacity assessment
- Duke Activity Status Index (DASI)
Cardiac Evaluation – Duke Activity Status Index

<table>
<thead>
<tr>
<th>Item</th>
<th>Activity</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Can we do some of your usual activities without getting tired?</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>2</td>
<td>Can you walk two blocks without stopping?</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>3</td>
<td>Can you climb one flight of stairs without stopping?</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>4</td>
<td>Can you get up and down the steps in your home?</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>5</td>
<td>Can you run or play sports?</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>Can you go up and down the stairs without stopping?</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>7</td>
<td>Can you go up and down the stairs without stopping?</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>8</td>
<td>Can you do household chores without rest?</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>9</td>
<td>Can you carry groceries without rest?</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>10</td>
<td>Can you do simple activities without rest?</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

Cardiac Evaluation

- Determine if further testing will impact decision
- Consult with patient and perioperative team
- Will testing affect decision to perform original surgery?
- Patient willingness/ability to undergo CABG or PCI?
- Will revascularization improve outcomes?

- Coronary artery revascularization before elective vascular surgery did not significantly alter the long-term outcome (McFalls, 2004)
Cardiac Evaluation - Preoperative ECG

- Reasonable for patients with:
  - CAD
  - Significant arrhythmia
  - PAD
  - Cerebrovascular disease
  - Structural heart disease
  - EXCEPTION if patient is undergoing low risk surgery

- Routine preoperative resting 12-lead ECG is **NOT** useful for asymptomatic patients undergoing low-risk surgical procedures (Tateosian, 2018)

Cardiac Evaluation – History of CAD

- Recommended wait time before elective surgery after:
  - Myocardial infarction without PCI
    - <60 days (Fleisher, 2014)
  - Bare metal stent
    - <30 days (Class I)
  - Drug eluting stent
    - <6 months (Class I)
    - <6 months if delay in surgery risk is greater than stent thrombosis risk (Class III) (Levine, 2016)
Cardiac Evaluation – Valvular Disease

- Patients with suspected moderate or greater degree of valvular stenosis or regurgitation should undergo preoperative echo (unless most recent echo <1yr prior and no significant clinical changes) (Fleisher, 2014)
- In patients who met criteria for a valve intervention before elective noncardiac surgery, a clinically significant perioperative risk reduction was seen (Nishimura, 2017)
- Patients with severe asymptomatic valvular disease, it is appropriate to proceed with elective noncardiac surgery
- Infectious endocarditis prophylaxis must be considered in this population

Cardiac Evaluation – Heart Failure

- Active heart failure is an independent risk for perioperative morbidity
  - Also, increased 30-day all-cause readmission rate in patients with heart failure undergoing major noncardiac surgery
- Patients with dyspnea of unknown origin and those with history of heart failure with worsening dyspnea should undergo preoperative evaluation of LV function
  - Just remember that heart failure is not only low ejection fraction; diastolic heart failure may cause symptoms and increasing morbidity (Toteosian, 2018)

Postoperative Pulmonary Complications

- PPCs predict long-term mortality more accurately than cardiac complications
- PPCs are associated with increased:
  - Hospital duration of stay
  - Rehospitalization rate
  - Mortality
- Conditions included:
  - Respiratory failure
  - Reintubation within 48hrs
  - Weaning failure
  - Pneumonia
  - Atelectasis
  - Bronchospasm
  - Exacerbation of COPD
  - Pneumothorax
  - Pleural effusion

PPCs predict long-term mortality more accurately than cardiac complications. PPCs are associated with increased hospital duration of stay, rehospitalization rate, and mortality. Conditions included in PPCs are respiratory failure, reintubation within 48hrs, weaning failure, pneumonia, atelectasis, bronchospasm, exacerbation of COPD, pneumothorax, and pleural effusion.
Postoperative Pulmonary Complications

- **Risk factors:**
  - **Patient-related:**
    - Advanced age
    - Chronic lung disease
    - COPD
    - Poor functional status
    - ASA >/= 3
    - Anemia
    - Altered mental status
    - OSA
    - Cigarette use
    - Obesity
    - Respiratory infection in last month
  - **Procedure-related:**
    - Major upper abdominal surgeries
    - Esophagectomy
    - Aortic aneurysm repair
    - Thoracic surgery
    - Neurosurgery
    - Head and neck surgery
    - Vascular surgery
    - Emergency surgery
    - Prolonged surgery
  - **Laboratory testing-related (rarely useful):**
    - Spirometry
    - CXR
    - ABG
    - Serum albumin (<3.5)

- **Preoperative strategies to minimize/prevent complications**
  - Smoking cessation (at least 4 weeks; 8 weeks is optimal)
    - Systematic review of 25 studies on the optimal timing of smoking cessation (Wong, 2012) concluded that at least 4 weeks of abstinence from smoking reduced respiratory complications, and abstinence of at least 3 to 4 weeks reduced wound healing complications
  - Decrease bronchial hyperreactivity in those with obstructive lung disease (inhaled beta agonists, +/- steroids)
  - Treat lower respiratory tract infections
  - Incentive spirometry, cough and deep breathing, suctioning, ambulation, high-flow nasal cannula, CPAP
Postoperative Pulmonary Complications

- **Smoking Cessation and Outcomes**
  - 6 months of cessation: restores antimicrobial and inflammatory alveolar macrophage function; underlying lung disease from chronic tobacco use remains
  - 6-8 weeks of cessation: improves pulmonary function and decreases cardiovascular and wound complications
  - 3 weeks of cessation: reduces incidence of impaired wound healing
  - 1 day of cessation: reduces carboxyhemoglobin levels, but may increase bronchial reactivity and mucus secretions; exposes patient to withdrawal symptoms; may increase pulmonary complications?

Obstructive Sleep Apnea

- OSA increases the risk for:
  - Postoperative hypoxemia
  - Respiratory failure
  - Unplanned reintubation
  - Intensive care unit (ICU) admission
- Many patients with OSA are undiagnosed (Subramani, 2018)
- Screen patients for obstructive sleep apnea (OSA) before surgery

Obstructive Sleep Apnea

STOP-Bang score of 5–8 identified patients with high probability of moderate/severe OSA

STOP
- **S**: Do you sleep loudly, loudly enough to be heard through closed doors or louder than talking?
  - Yes
  - No
- **O**: Do you often feel tired, fatigued or sleepy during the day?
  - Yes
  - No
- **P**: Does anyone ever observe you stop breathing or gasping during your sleep?
  - Yes
  - No
- **B**: Do you have or are you being treated for high blood pressure?
  - Yes
  - No
- **E**: Are you over 60 years old?
  - Yes
  - No
- **N**: Neck circumference is > 17” if you are male or > 16” if you are female
  - Yes
  - No
- **G**: Gender – are you a woman?
  - Yes
  - No

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Obstructive Sleep Apnea

- Determine whether procedure is most appropriately performed on an inpatient or outpatient basis
- Consider regional analgesia to reduce or eliminate opioid requirements
- Administer NIPPV postoperatively especially to patients who used NIPPV preoperatively (Subramani, 2018)
- Patients who are at increased risk of respiratory compromise from OSA should have continuous pulse oximetry monitoring after discharge from the recovery room (ASA Task Force, 2014)

Diabetes Mellitus

- In 2015, 30.3 million Americans, or 9.4% of the population, had diabetes (CDC, 2017)
- Perioperative hyperglycemia with or without diabetes is associated with increased length of stay and mortality after noncardiac surgery (Sreedharan, 2018)

- Evaluate for complications of diabetes:
  - Cheiroarthropathy -> limited joint ROM, difficult intubation -> care w/ positioning, prepare for difficult airway
  - CAD -> IDDM is risk factor for major adverse cardiac event -> appropriate preoperative cardiac evaluation, increased vigilance for MACE perioperatively
  - Nephropathy -> progressive renal dysfunction, often on ACEi for renal protection -> avoid NSAIDs, hold ACEi day of surgery
  - Autonomic neuropathy -> significant hypotension due to poor vascular compensation, heart rate, arrhythmia, gastroparesis -> consider invasive blood pressure monitoring, preoperative prokinetic agents and H2 blockers/PPi
  - Peripheral neuropathy -> increased risk for pressure injuries/ulcerations -> care with positioning
Diabetes Mellitus

- There is no consensus on whether or not to proceed with elective surgery in the case of a significantly elevated HgbA1c.
- Strongly consider delaying elective surgery if blood glucose concentration is >350mg/dL.
- Most agree elective surgery should be delayed in a patient with DKA or HHNS.

**Diabetes Mellitus**

- **Insulin pump management**
  - **Short (<1hr) procedure**
    - Continue insulin pump with basal rate
    - If blood glucose >300, stop pump and start insulin infusion.
  - **Intermediate (1-3hr) procedure**
    - Patient should give bolus equivalent to pump basal rate, then discontinue insulin pump.
    - If blood glucose >300, major bleeding, fluid shifts, or temperature swings, then start insulin infusion.
  - **Long (>3hr) procedure**
    - Discontinue insulin pump.
    - Start insulin infusion.

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**Table 1:** Anti-diabetic agents and their preoperative management:

<table>
<thead>
<tr>
<th>Agent</th>
<th>Type</th>
<th>Pharmacologic effect</th>
<th>Risk of hypoglycemia</th>
<th>Use on the Day Before Surgery</th>
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<tr>
<td>Glibizide</td>
<td>Sulfonylurea</td>
<td>Increase insulin sensitivity</td>
<td>Low</td>
<td>Continue regular use</td>
<td>Stop dose</td>
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<td>SGLT2 inhibitors</td>
<td>Glitazones</td>
<td>Decrease hepatic glucose output, increase muscle sensitivity</td>
<td>Moderate to high</td>
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**Notes:**
- Use of insulin analogues and insulin during surgery should be carefully monitored.
- Patients on glitazones should be aware of the risk ofVolume 10, Number 4, 2018

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**Notes:**
- Use of insulin analogues and insulin during surgery should be carefully monitored.
- Patients on glitazones should be aware of the risk of...
Prehabilitation

• Exercise
  • Prepares patient for physiologic stressor of surgery
  • Improvements can occur after just 3 weeks of exercise initiation
  • Systematic review of exercise prehabilitation in non-cardiac surgery showed decreased complications and decreased length of stay
  • Greatest benefit of exercise interventions is in the least physically fit patients: elderly, frail, and sedentary (Whittle, 2018)

Prehabilitation

• Nutrition
  • Malnourished surgical patients are three times more likely to experience morbidity and five times more likely to die (Wischmeyer, 2018)
  • Wischmeyer et al found there is a downstream cost saving of $52 in hospital costs for every $1 spent on appropriate nutritional intervention (Wischmeyer, 2018)
  • The increase in cost of care for the malnourished is significant, while the intervention is economical and has almost zero risk of harm
  • Perioperative nutritional interventions reduce surgical site infections and other morbidity by 20-40%
  • The Perioperative Nutrition Screening (PONS) score can help identify patients who should have a formal nutritional assessment and/or intervention (Whittle, 2018)
Summary

- The Perioperative Surgical Home is a patient centered model of coordinated care starting at the decision to have surgery, and continuing through the intra and postoperative periods until 30 days post discharge.
- Tests ordered for preoperative evaluation should only be ordered if the results may impact management.
- New recommendations suggest surgery may be considered as early as 3 months after placement of drug eluting stent.
- By 2035, there will be more people over the age of 65 than under 18; with advanced age comes increased comorbidities; understanding how to evaluate and manage comorbidities in the preoperative setting will help to provide higher quality care with improved outcomes.

References

Medication Management

Continue on DOS:

SSRIs – QT prolongation; increased surgical bleeding and transfusion; serotonin syndrome

TCAs – exaggerated or reduced response to sympathomimetics

MAOIs – CNS excitation or depression; significant orthostatic hypotension; hyperadrenergic crisis with sympathomimetics; serotonin syndrome

Neuroleptic Agents – decreased seizure threshold; extrapyramidal side effects; neuroleptic malignant syndrome

Medication Management

Continue on DOS:

SSRIs – QT prolongation; increased surgical bleeding and transfusion; serotonin syndrome

TCAs – exaggerated or reduced response to sympathomimetics

MAOIs – CNS excitation or depression; significant orthostatic hypotension; hyperadrenergic crisis with sympathomimetics; serotonin syndrome

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Medication Management

Hold Prior to DOS:
Chronic Pain and Substance Abuse

• In 2008, according to the Medical Expenditure Panel Survey (MEPS), about 100 million adults in the United States were affected by chronic pain.

• In 2014, 1 in 12 (8.1%) people over the age of 12 had a substance use disorder (Hedden, 2014).

• In 2016, more than 1 in 10 (10.6%) people aged 12 or older used an illicit drug in the past 30 days (Ahrnsbrak, 2017).
Chronic Pain and Substance Abuse

- Discuss patient's pain regimen and ensure he/she includes any misuse of prescribed medication or illicit drug use
- If significant misuse (addiction, diversion) is suspected, must determine whether interventions are necessary before surgery to optimize outcomes
- Establish appropriate and realistic expectations with regard to the postoperative pain experience
- For the opioid-tolerant pain patient, maintain the preoperative opioid regimen unchanged

Chronic Pain and Substance Abuse

- Patients on therapy for substance use disorder
  - Methadone
    - Unless specifically contraindicated, the patient's outpatient regimen of methadone should be maintained
    - If a parenteral route is mandatory, methadone can be converted from an oral to an intravenous regimen at a 2:1 ratio
  - Buprenorphine
    - Discuss plan with addiction specialist or chronic pain physician
    - See chart on next page
Advanced Age

- 15% of the US population was 65 or older in 2014
- By 2035 there will be more people (>20% of the US population) over the age of 65 in the United States than under 18
- Advanced age is a risk factor for prolonged postoperative length of stay as well as perioperative morbidity and mortality
Advanced Age

- American College of Surgeons and American Geriatric Society
  Recommendations the following lab tests for all geriatric surgical patients:
  - Hemoglobin
  - Baseline renal function
  - Serum albumin
  - Other lab tests should be ordered only if indicated for that patient (Chow, 2013)

Finances

- Two major sources of payments for PSH:
  - Hospital Payments to PSH to achieve overall savings
  - Insurers and Health Plans Payments to PSH to reduce other payer costs, depending on whether they pay for hospital services on a FFS or DRG basis
- PSH aims to add value by increasing care quality and patient experience while decreasing costs
- Why do hospitals and/or insurers pay for this?
  - Performance metrics may include:
    - Clinical outcomes
    - Decreased blood utilization
    - Earlier discharges
    - Reduced lab/imaging services
    - Patient safety
    - Patient satisfaction scores
    - Operational performance
    - Financial goals
    - Surgical care improvement (Zafirova, 2018)

ERAS

- Enhanced Recovery After Surgery (ERAS) clinical pathways have been demonstrated to improve patient outcomes and reduce length of hospital stay. An ERAS program can only be successful if patients are first optimized for surgery and certain necessary interventions take place, such as exercise-based prehabilitation, nutritional supplementation, anemia management, and patient education. (Zafirova, 2018)
Multidisciplinary Decision Making

- Anesthesiologists may be able to offer insight and expertise on how the patient’s comorbidities may compound surgical stress, outcomes, and quality of life after surgery.
- Ideally, for high-risk patients, collaboration by all team members to determine whether proposed surgery is appropriate for the high-risk patient and not simply surgically indicated.
  - Surgeon
  - Surgery chair delegate
  - Anesthesia Preoperative Clinic delegate
  - Anesthesiologist
  - Critical Care physician
  - Palliative care
  - Ethics officer
  - Applicable consultants
  - Engage patient in shared decision making

Costs of Cancelling Case on Day of Surgery

- Patients scheduled for surgery and their family/friends adjusted plans, taken time off from work, psychologically prepared, and sometimes medically prepared (bowel prep, holding medications, etc.)

Purpose of Preoperative Evaluation

- The preoperative assessment process involves making decisions about patient and procedure selection, laboratory testing, optimization of comorbid conditions, efficient and cost-effective management of health care resources, communication among health care providers and with the patients and their social support system, and utilization of modern technological developments. (Zafirova, 2018)
- Surgical preoperative evaluation is occasionally the first time in years a patient will have been evaluated by a physician
Who should run the clinic?

- Medical consultation before major elective noncardiac surgery is associated with increased mortality and hospital stay, as well as increases in preoperative pharmacologic interventions and testing (Wijeysundera, 2010)