Preop Medical Co-Morbid Condition Optimization

Avital Y. O'Glasser, MD, FACP, SFHM, DFPM
Professor of Medicine
Preop Clinic Medical Director
Depts of Medicine and Anesthesiology & Periop Medicine; OHSU
President, Society for Perioperative Assessment and Quality Improvement (SPAQI)

Disclosures

- No financial disclosures

Objectives

- Introduce optimization opportunities for frequently encountered medical comorbid conditions
- Examine optimization opportunities for any patient before elective surgery
- Explore themes in geriatric optimization preop

Preop Optimization

optimization noun

op·ti·mi·za·tion ˌäp-tə-mə-ˈzā-shən

: an act, process, or methodology of making something (such as a design, system, or decision) as fully perfect, functional, or effective as possible

Preop Optimization

- BEYOND “clearance” →
- BEYOND “stable for surgery” and “risk appropriate for surgery” →

Preop Optimization

- BEYOND "clearance" →
- BEYOND "stable for surgery" →
- Dynamically reduce risk, prevent complications, proactively identify developing complications, and harness opportunities for a patient to become healthier and stronger for surgery
- Identify opportunities in the preop setting to improve patient outcomes driven by comorbid conditions as well as other variables associated with periop outcomes

“Clearance”? Assessment and Optimization

Quantify and qualify the known co-morbid conditions, and perform a detailed investigation for the as yet undiagnosed risk factors.

“Clearance”? Assessment and Optimization

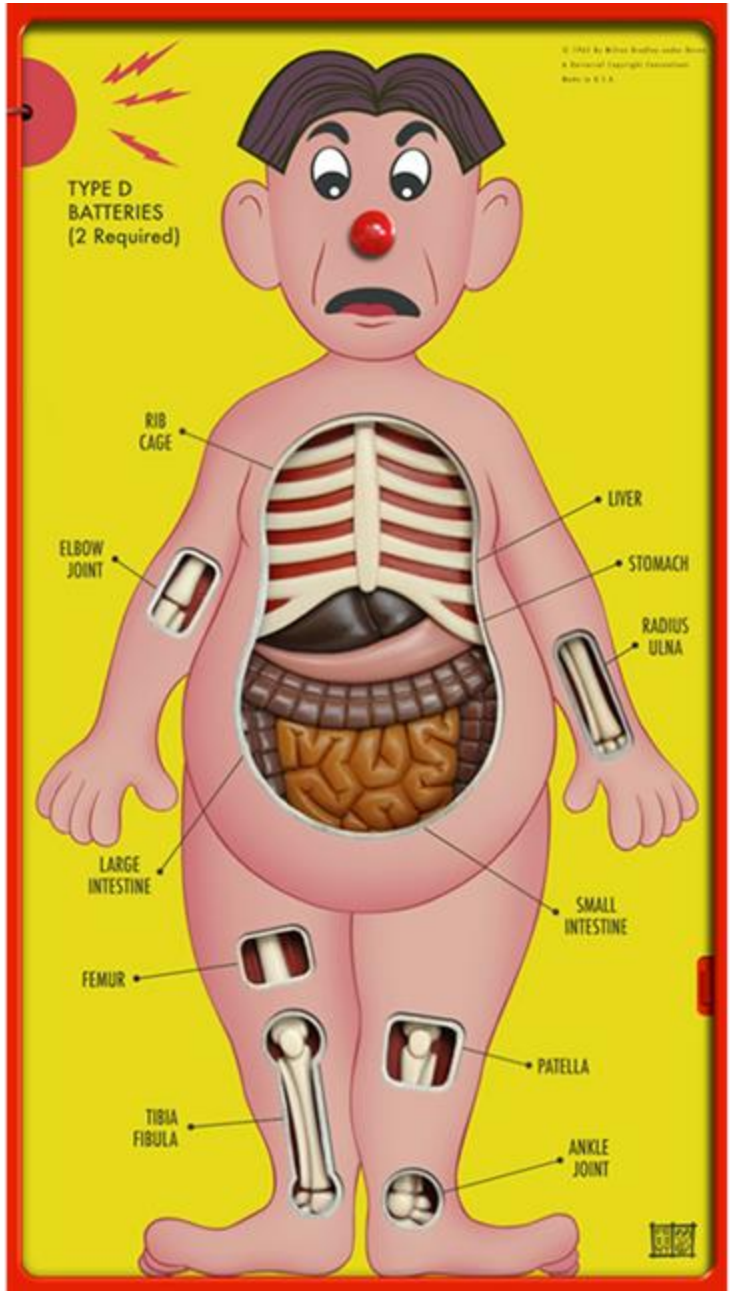
Knowledge is ~~Power~~ Empowering

Cardiac:
--ischemic disease
--CHF
--valvular disease
--arrhythmias

Endocrine:
--diabetes
--thyroid disease
--chronic steroid use/adrenal insufficiency

Hematologic:
--anticoagulation
--thrombocytopenia
--bleeding diathesis
--DVT/PE

Geriatrics:
--frailty
--capacity
--dementia
--delirium risk
--CVA/TIA
--Parkinson's disease



Pulmonary:
--COPD
--asthma
--OSA
--tobacco use

GI:
--cirrhosis
--GERD

Misc:
--substance abuse
--HIV
--immunosuppression
--psychiatric disease
--skin infections

Anesthesia:
--difficult intubation
--malignant hyperthermia
--delayed emergence
--intraop awareness
--PONV

Cardiac Optimization

	Optimized ~	**Opportunities to Optimize**
Medication management	70yo patient s/p MI 5 years ago, s/p CABG. On aspirin 81mg, full dose high potency statin, and all other guideline-indicated cardiac medications including antiHTNives	55yo with premature CAD, positive stress test led to finding of diffuse coronary disease (but no anatomical targets for stent/bypass), diastolic heart failure Declines statin; on furosemide but skips doses because of urinary incontinence
Symptom stability	Started exercising after his MI, graduated from cardiac rehab, goes to the gym 5 days a week	Chronic angina with minimal activity, dyspnea ("I'm out of shape"), (+) LE edema, BP not controlled
Lifestyle modifications	Quit smoking Exercising regularly Lost WT (and gained muscle/stability) Adopted plant based, high protein diet "Best health in decades"	Unsuccessful with tobacco cessation despite multiple tries Unable to exercise Food desert and scarcity, having challenges getting low-salt, non-processed foods
Time as a modifiable risk factor	> 6-12 months from MI	Had another NSTEMI 20 days ago when admitted with sepsis from cellulitis

Diabetes Optimization

	Optimized ~	**Opportunities to Optimize**
Medication management	60yo patient with Type 1 Diabetes, stage 3a CKD, and mild diastolic heart failure. Wears insulin pump with expected insulin doses for Type 1 Diabetes (ie no overlying insulin resistance), on SGLT2 for CKD/CHF; on statin for primary prevention	45yo with Type 2 diabetes On high doses of insulin and oral hypoglycemic (glipizide). Insurance won't cover SGLT2 or GLP1. Unable to tolerate metformin due to GI side effects.
Symptom stability	A1C is 6.6 CGM shows excellent control with CBGs in narrow range	A1C 9.2 Glycemic control is labile, with frequent hypoglycemic episodes leading to glucose supplementation, leading then to spikes to 250-300
Lifestyle modifications	Has never smoked Exercising regularly Avoids simple carbohydrates	Unable to exercise Food desert and scarcity, having challenges getting low-salt, non-processed foods
Time as a modifiable risk factor		Admitted recently after syncope/fall while hypoglycemic

Anemia Optimization

- Preop anemia is associated with increased increase transfusion needs, infection, mortality
  - Transfusions themselves carry associated risk
  - LOS considerations
  - “rehab potential”
- Opportunity to screen AND explore etiology of baseline anemia
- Iron deficiency is underrecognized and undertreated especially in menstruating women

Geriatric Syndrome Optimization

- Frailty assessment and opportunities
- Cognitive assessment
- Advanced care planning and surrogate decision maker identification
- Delirium and postop cognitive dysfunction optimization
    - Preop interventions
    - Preop optimized postop milieu

Geriatric Syndrome Optimization

- **High risk medication reduction**

Association of Preoperative Anticholinergic Medication Exposure With Postoperative Healthcare Resource Use and Outcomes

A Population-based Cohort Study

Daniel I. McIsaac, MD, MPH, FRCPC,†‡§ Coralie A. Wong, MSc,‡ Deric Diep, MD,* and Carl van Walraven, MD, FRCPC, MSc†‡§¶*

- Anticholinergic therapy was associated with INCREASED:
  - LOS
  - Mortality
  - institutional discharge
  - Readmission
  - Costs of care

Ann Surg. 2019 Dec;270(6):1049-1057. doi: 10.1097/SLA.0000000000002765.

Geriatric Syndrome Optimization

- **Cognitive "Prehab"**

Home | JAMA Surgery | Vol. 156, No. 2

Original Investigation FREE

Effect of Cognitive Prehabilitation on the Incidence of Postoperative Delirium Among Older Adults Undergoing Major Noncardiac Surgery

The Neurobics Randomized Clinical Trial

Michelle L. Humeidan, MD, PhD[1]; Joshua-Paolo C. Reyes, BS[1]; Ana Mavarez-Martinez, MD[2] ; et al

Geriatric Syndrome Optimization

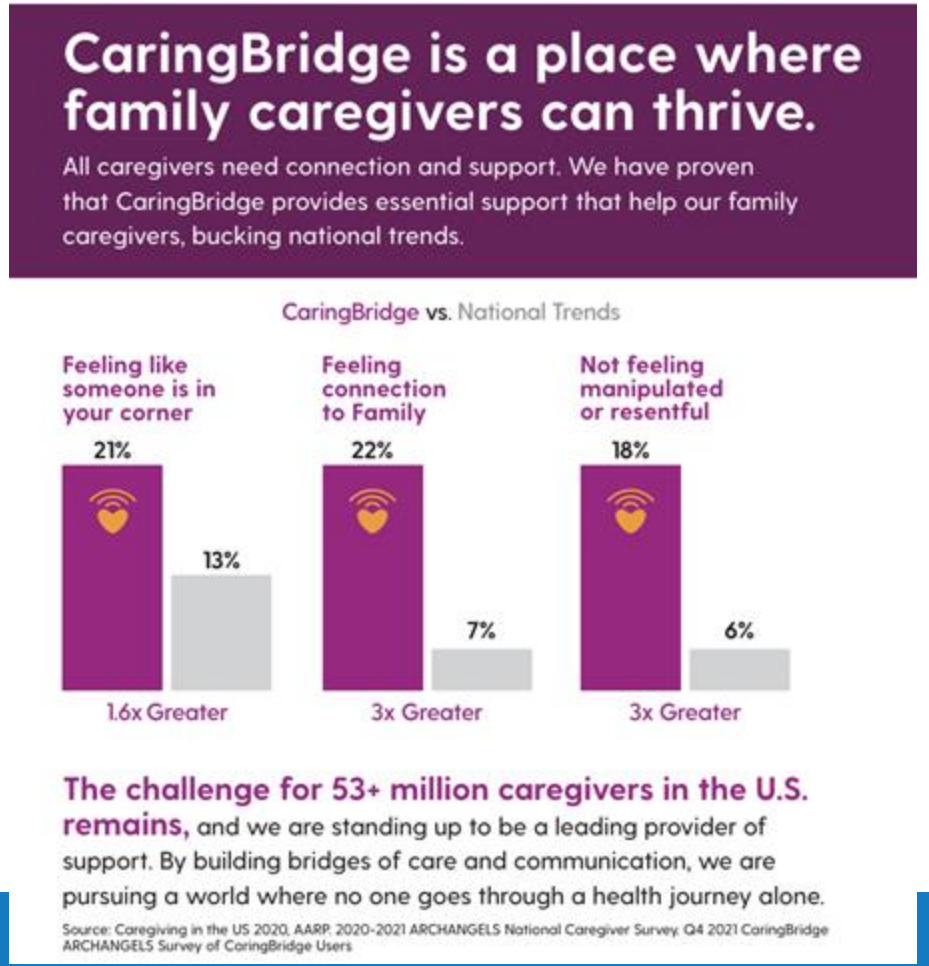
- Unless otherwise instructed by your surgeon, stay active between now and surgery, even striving to increase your activity levels if you can (ex. taking at least one walk daily, even around the block). This can help speed your surgery recovery.
- If you use hearing aids or eyeglasses, please wear them to the day of surgery to improve communication with your healthcare team. Please also bring containers for these devices, labeled with your name and phone number, so they can be kept safe when removed during the procedure.
- "Brain games" and other brain stimulation can be a fun and effective way to help brain health before a surgery. We recommend adding brain game stimulation like cross word puzzles, Wordle, Sudoku, and many other options to your daily routine between now and surgery

Geriatric Syndrome Optimization

- If you need a pain medication for general purposes, use acetaminophen/Tylenol as directed. You can even take it on the morning of surgery, if you need to.
  - Please be careful to avoid tylenol products that also contain benadryl/diphenhydramine (ex. Tylenol PM) as this can lead to sedation/brain fog with surgery
- Please be careful to avoid hidden aspirin or ibuprofen in over the counter pain medications
  - If your joint or muscle pain is not adequately controlled by acetaminophen/Tylenol while holding NSAIDs like advil/ibuprofen/aleve, over-the-counter Voltaren/diclofenac gel is a topical NSAID that is safe to use before surgery. Other over-the-counter topical pain medication options like Salonpas (menthol-based patches), lidocaine patches, Icy Hot, or Bengay products are safe to use before surgery.

“Lifestyle Modifications” = Optimization

- Prehab → and also exercise/activity levels outside of structured PT/prehab
- Nutrition
- Tobacco cessation
- Alcohol reduction/cessation
- Marijuana and other substance use
- Seasonal respiratory illness vaccinations
- Stress reduction/anxiety support
- Sleep cycle
- Psychosocial support and family planning
  - Social and communication networks
  - Meal train



Team-Based Approach

"Don't let perfect be the enemy of good" → i.e. always keep in mind how time sensitive a surgery is and the risk/benefit of DELAYS for optimization

Hip fracture repair v. elective THA

Pathologic humerus fracture v. fracture non-union

Achilles rupture v. partial ACL tear

Conclusions

- Almost every medical condition in the preop setting should have a pause point to ask "is this medical condition optimized"?
- Consider very broadly defined and identified patient-centered optimization opportunities
- Geriatric optimization should be a number priority for clinical evaluation and resource allocation