Perioperative Medicine in Older Adults

Bernardo Reyes, MD

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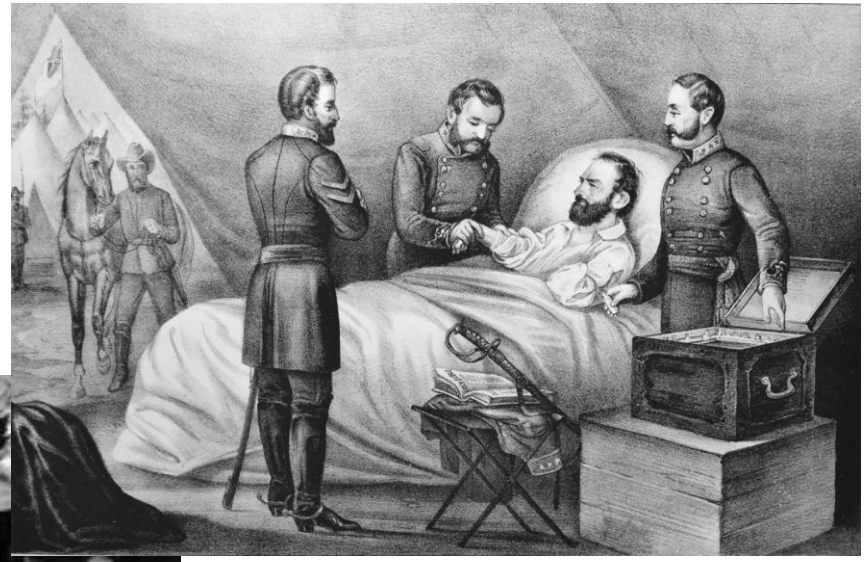
The Real History



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The Real History

THE

MEDICAL AND SURGICAL HISTORY

OF THE

WAR OF THE REBELLION.

PART III.

VOLUME II.

SURGICAL HISTORY.

Prepared, under the direction of JOSEPH K. BARNES, Surgeon General United States Army,

by

GEORGE A. OTIS, Surgeon United States Army,

and

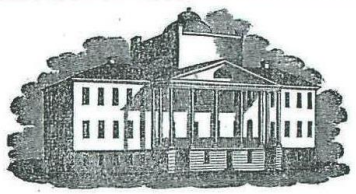
D. L. HUNTINGTON, Surgeon United States Army.

SECOND ISSUE.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1883.

THE

BOSTON MEDICAL AND SURGICAL JOURNAL.



DEATHS BY CHLOROFORM.

To the Editor of the Boston Medical and Surgical Journal.

SIR,—After having seen so frequently in our public prints the records of "Death from the use of Chloroform," one might perhaps inquire—Why is it thus? Some who are constantly in the use of this article, and have been since its first introduction to the profession, have had no occasion for regretting its employment in a single case. Such has been my own experience with it, as spectator, exhibitor and operator, that when I see these announcements, the query involuntarily comes up, ought it not rather to read thus, "Death from the careless use or abuse of Chloroform"? I make this query, because I am well aware that there are practitioners who would resent the appellation of "Quacks," but who make indiscriminate use of chloroform. Many of your readers will doubtless recollect one or more of such, who, though graduates from respectable schools, act the quack with the article by administering it at all times without any consideration whatever, and on the slightest occasions. In the hands of such men it is unsafe and dangerous; but in judicious and careful hands, it is a blessing to mankind.

One reason why so many fatal results arise from its use, is, that it is not in safe hands. The only instance of fatal issue which has come un-

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Collaboration Brainstorm

- Please go to https://answergarden.ch/524441
- Type in one word that describes surgery in older adults.
- You may submit multiple answers!

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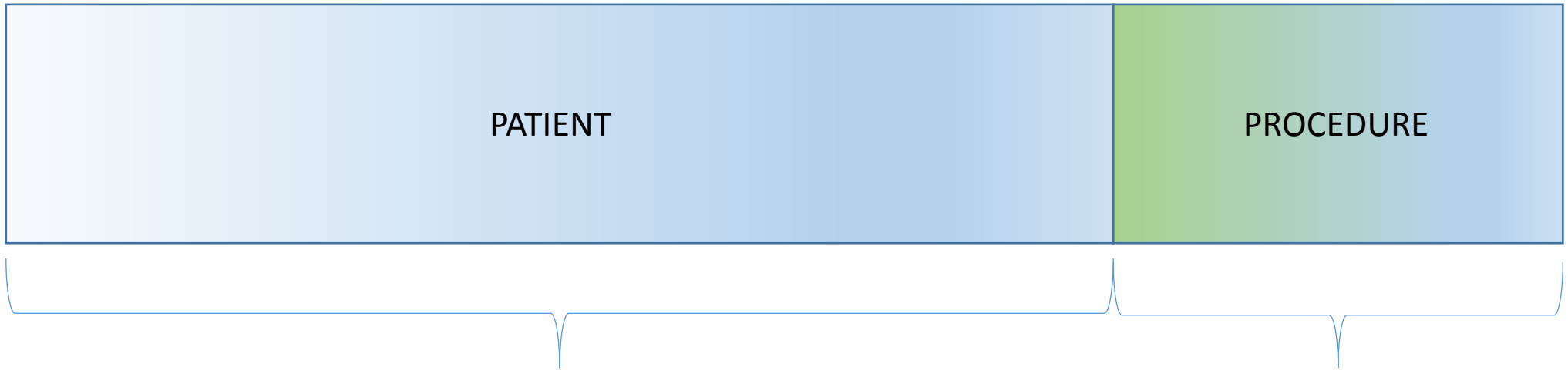
Surgery is Common in the Elderly

- More than 55% of all surgeries are done in patients ≥65 years old
- Advances in care have lowered surgical risks and shifted the risk-benefit ratio to favor surgery in increasingly older patients with more complex conditions
- Postoperative complications remain poorly tolerated and result in substantial morbidity and mortality

Perioperative Risk

RISK= modifying both



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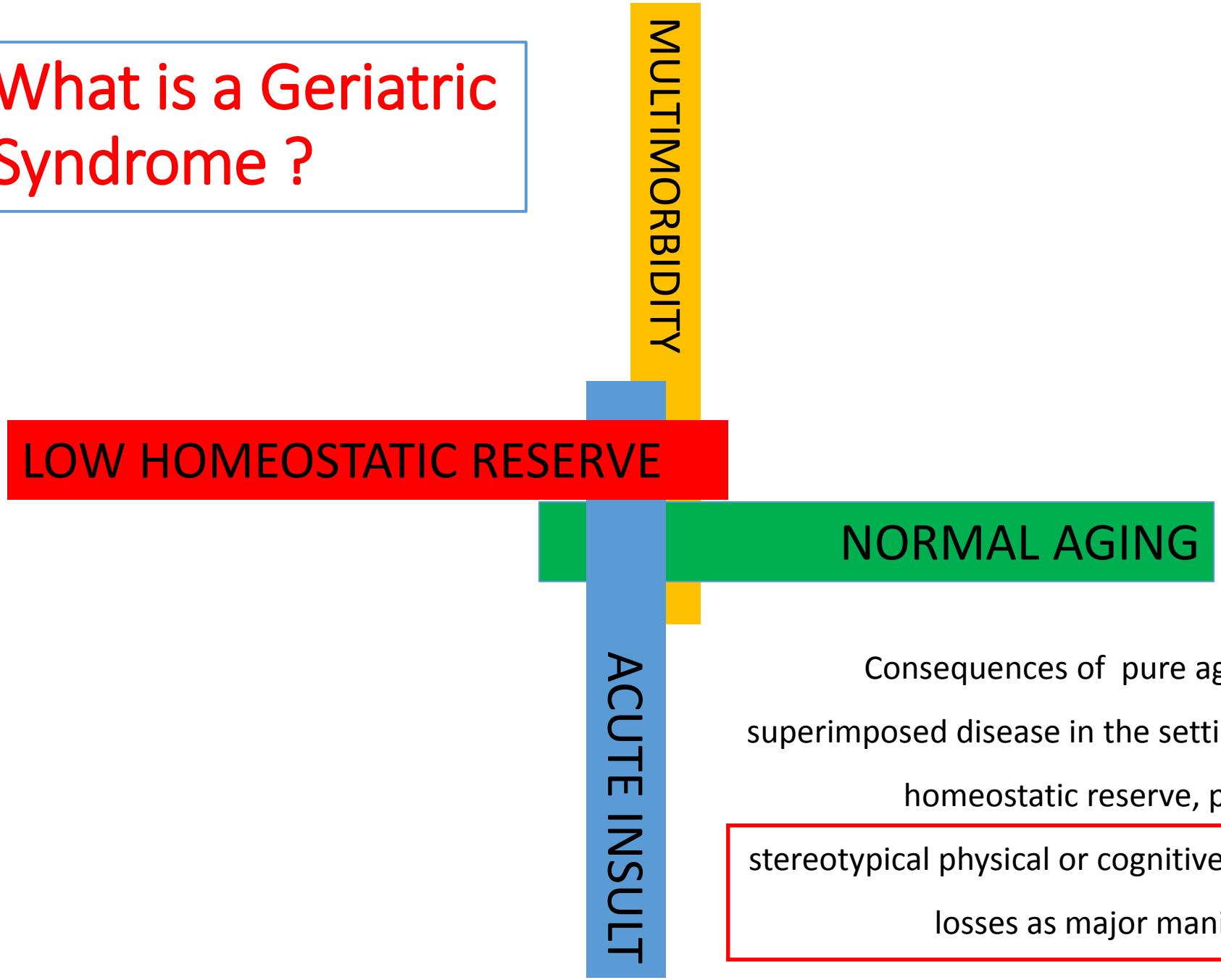
What is a Geriatric Syndrome ?



Consequences of pure aging, with superimposed disease in the setting of low homeostatic reserve, producing stereotypical physical or cognitive function losses as major manifestation

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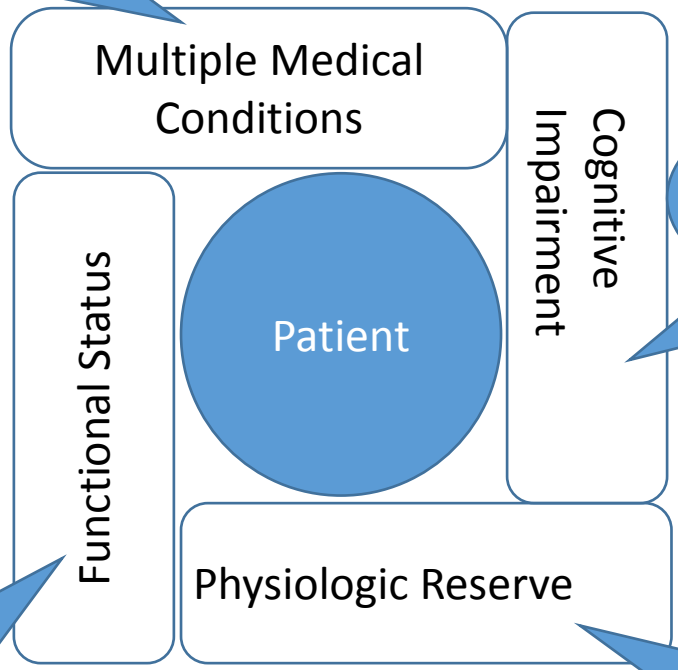
PATIENT

MODIFIABLE RISK FACTORS ?

Elderly patients undergoing surgery have an average of 6 conditions



MCI has been associated with worse outcomes

Needing assistance or being dependent for ADL and IADL

Reserve:
Cognitive
Renal
Cardiac

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How fast you need surgery?

PROCEDURE

TIMING - TECHNIQUE

Might Need Surgery Soon

Needs surgery As Soon As Possible

Might need surgery eventually

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Collaboration Brainstorm

- Please go to https://answergarden.ch/524443

- Would you avoid surgery in older adults?
  - Never
  - Always
  - Sometimes

- Vote only once!

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Case: Abdominal Pain

- 92 y/o male presents to our emergency department with lower abdominal pain and sporadic episodes of hemesis for the last three weeks.
- Very active, bikes 4 miles a day
- Hx of CAD, HTN, CHF, Afib, back pain
- Hx Right inguinal hernia (Lichtenstein technique) 6 years ago

From: J of Med Cases. 4,1, Feb2013

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Discussion

Is the surgery an emergency?

What is the surgical risk?

Are there any contraindications for surgery?

What are the patient's comorbid conditions?

Which conditions **should** be optimized?

What tests do I **REALLY** need?

What's the next step?

Case Summary

- 92 y/o male presents to our emergency department with lower abdominal pain and sporadic episodes of hemesis for the last three weeks.
- Very active, bikes 4 miles a day
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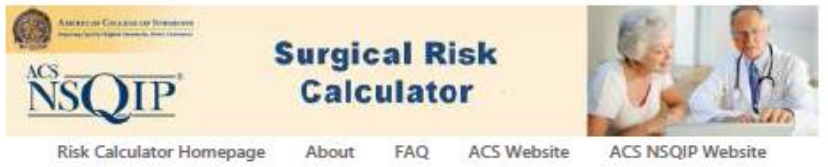
Approach to Pre-op Assessment

Is the surgery an emergency?
What is the surgical risk?



Are there any contraindications for surgery?

ACC/AHA Clinical Practice Guideline

2014 ACC/AHA Guideline on Perioperative Cardiovascular Evaluation and Management of Patients Undergoing Noncardiac Surgery: Executive Summary

A Report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines

What are the patient's comorbid conditions?
Which conditions **should** be optimized?
What tests do I **REALLY** need?

Have a complete list including geriatric related issues
What condition can affect the surgical outcome?

What's the next step?

Surgery as soon as possible

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Risk Scores are great tools to drive the informed consent and decision making

Eagle's Cardiac Risk Index

ACC/AHA Cardiac Risk Classification

Review

Open Access

Pre-operative risk scores for the prediction of outcome in elderly people who require emergency surgery

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ELSEVIER

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Original scientific article

Frailty as a Predictor of Surgical Outcomes in Older Patients

Martin A. Makary MD, MPH, FACS [a, d], Dorry L. Segev MD, PhD, FACS [a, e], Peter J. Pronovost MD, PhD [a, c, d], Dora Syin MD [a], Karen Bandeen-Roche PhD [f], Purvi Patel MD, MPH [a], Ryan Takenaga MD [a, b], Lara Devgan MD, MPH [a], Christine G. Holzmueller BLA [c], Jing Tian MS [b], Linda P. Fried MD, MPH [b]

Goldman Risk Index

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Risk Calculator

ACS NSQIP® | **Surgical Risk Calculator** | American College of Surgeons — Inspiring Quality: Highest Standards, Better Outcomes

Patient Name: John Doe

Procedure: 43334 - Repair, paraesophageal hiatal hernia (including fundoplication), via thoracotomy, except neonatal; without implantation of mesh or other prosthesis

Risk Factors: 75-84 years, Partially dependent functional status, Emergent, Mild systemic disease, Diabetes (Oral), HTN, Class2 Obese

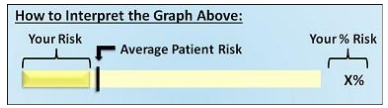
Note: Your Risk has been rounded to one decimal point.

Outcomes	Your Risk	Average Risk	Chance of Outcome
Serious Complication	24.1%	16.8%	Above Average
Any Complication	26.7%	18.3%	Above Average
Pneumonia	3.9%	2.9%	Above Average
Cardiac Complication	1.4%	0.8%	Above Average
Surgical Site Infection	5.0%	3.7%	Above Average
Urinary Tract Infection	5.2%	2.8%	Above Average
Venous Thromboembolism	2.9%	1.9%	Above Average
Renal Failure	1.1%	0.6%	Above Average
	3.8%	7.4%	Above Average
	3.1%	5.1%	Above Average
	3.8%	0.5%	Above Average
	2.1%	7.9%	Above Average

ACS NSQIP® Surgical Risk Calculator

Risk Calculator Homepage | About | FAQ | ACS Website | ACS NSQIP Website

How to Interpret the Graph Above:



Disclaimer: The ACS Surgical Risk Calculator estimates the chance of an unfavorable outcome (such as a complication or death) after surgery. The risk is estimated based upon information the patient gives to the healthcare provider about prior health history. The estimates are calculated using data from a large number of patients who had a surgical procedure similar to the one the patient may have. Please note the risk percentages provided to you by the Surgical Risk Calculator are only estimates. The risk estimate only takes certain information into account. There may be other factors that are not included in the estimate which may increase or decrease the risk of a complication or death. These estimates are not a guarantee of results. A complication after surgery may happen even if the risk is low. This information is not intended to replace the advice of a doctor or healthcare provider about the diagnosis, treatment, or potential outcomes. ACS is not responsible for medical decisions that may be made based on the risk calculator estimates, since these estimates are provided for informational purposes. Patients should always consult their doctor or other health care provider before deciding on a treatment plan.

Definitions

Serious Complication includes important problems that occur after surgery including:

- Heart complication: Includes heart attack or sudden stopping of the heart
- Pneumonia: Infection in the lungs
- Kidney failure: Kidneys no longer function in making urine and/or clearing the blood of toxins
- Blood clot: Clot in the legs or lungs
- Return to the OR: The need to go back to the operating room due to a problem after the prior surgery
- Wound infection: An infection at or near the area where the surgery was performed
- Sepsis: Whole-body infection
- Intubation: The need to put the breathing tube back in after surgery to help breathing

Serious Complication (Continued):

- Urinary tract infection: Infection of the bladder and kidneys
- Wound disruption: Separation of the layers of a surgical wound

Any Complication also includes:

- Wound infection: An infection at or near the incision
- Extended time on the ventilator: Ventilator assistance for breathing longer than 48 hours
- Stroke: An interruption in blood flow to the brain

Discharge to Nursing or Rehab facility: Discharge to a facility other than home

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Contraindications

Is the surgery an emergency?
What is the surgical risk?

Are there any contraindications for surgery

What are the patient's medical comorbid conditions?
Which of those **should** be optimized?
What tests do I **REALLY** need?

What's the next step?

- 92 y/o male presents to our emergency department with lower abdominal pain and sporadic episodes of hemesis for the last three weeks.
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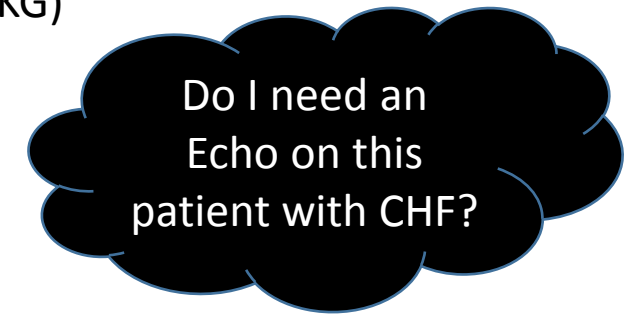
AHA/ACC Pre-op Guidelines 2014 Update

Unstable Coronary artery disease

- ACS: 14-28 days previous
  Definition (Troponin CKmb EKG)
- Angina (unstable)
- PTCA 14 days prior (Plavix)



Decompensated CHF

- JVD S3
- Pulmonary Edema CXR
- Elevated BNP (predict cardiovascular events in the first 30 days)

Severe Valvular Disease

- Ao Valve Area <0.5
- Symptoms (exercise capacity <4 mets)
- Concomitant CHF Afib

Uncontrolled Arrhythmia

- **Afib (HR>110),** SVT
- AV block (except 1st degree)

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Never order a test that will not change the peri-operative management!

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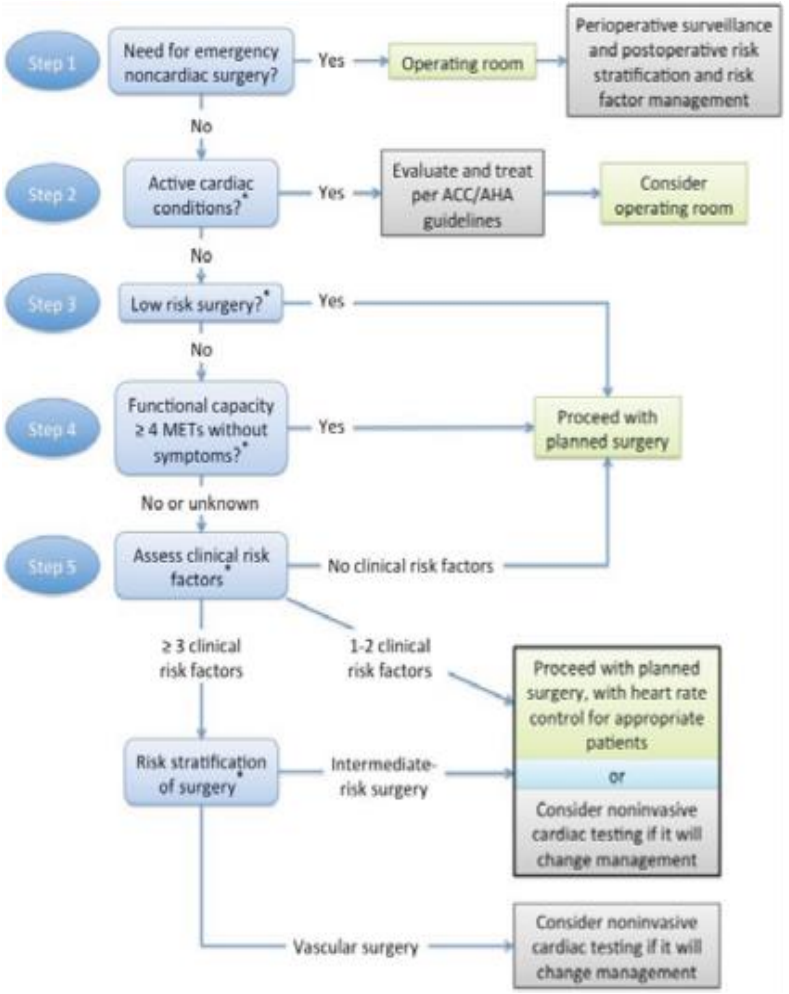
Who Really Needs Further Worked Up?



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From: 2014 ACC/AHA Guideline on Perioperative Cardiovascular Evaluation and Management of Patients Undergoing Non-cardiac Surgery

Case: Moving Forward with Surgery

- The patient is evaluated by the internist and after discussing the case with anesthesia, the patient is scheduled for surgery the same afternoon

- The nurse is asking what medications she should give to the patient from his home meds.

- The nurse is also asking if the patient should remain NPO

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Case: Medication List

- What medications are important to continue and what are the ones that should be held?
    1. Percocet
    2. Metformin
    3. Lantus
    4. Metoprolol
    5. Lisinopril
    6. Statin
    7. Lasix

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Medications

1. Percocet
2. Metformin
3. Lantus
4. Metoprolol
5. Lisinopril
6. Statin
7. Lasix

- Rule 1: stop nonessential medications that increase surgical risk (interaction with anesthesia)
- Rule 2: do not start any medications that could harm the patient (miperidine, Benadryl, benzos)
- Rule 3: continue essential medications (beta-blockers) and those with withdrawal potential
- Rule 4: Stop all oral hypoglycemic agents and give half dose of usual long-acting insulin

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NPO?

- There is growing evidence supporting the benefits of limiting the use of extended fasting
- Limit fasting for non-emergency procedures
- Clear liquids up to 2 hours before surgery
- Does not apply to patient with high risk for aspiration (dysphagia, gastroparesis or large hiatal hernias)
- Especial IV fluid consideration for individuals needing bowel prep

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Case: Post-Op

- Patient undergoes surgery. He tolerates the ”procedure well” without complications. He required 1 PRBC during the procedure.

- A nurse call you from the PACU to inform you that the patient failed an extubation trial and now is being moved to the SICU

- Why is more likely unable to be extubated today?

- What could be done to prevent this from happening?

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Pulmonary Complications

- Pulmonary complication rates are up to 15% on patients >70 y/o (sometimes higher than cardiac complications)
- Try to optimize patients with COPD and Asthma.
- Always incentive spirometer
- No rule for routine PFT's
- Other risk factors: OSA, Dementia, Sepsis, Serum albumin < 3.5

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Case: Moved to the Floor

- The patient is finally extubated and is transferred to the floor
- Eight hours after, you are informed that the patient is agitated and is pulling his urinary catheter
- During his ICU stay, he was calm and collaborative on a Fentanyl gtt.
- What you should do?

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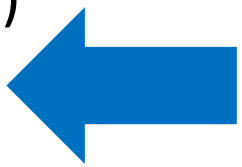
Delirium

- Avoid treating agitation without seeing the patient
- Two major types (hyper- and hypoactive), can co-exist
- Associated with poor outcomes and longer LOS
- Multiple etiologies:
  - Pain (use standard regime)
  - Withdrawals
  - IV's Urinary Catheters
  - Hypoxemia
  - Infection



1. Percocet
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Case: CBC is Back!

- Finally your patient is stable
- Discharge plan includes SNF
- PT eval. showing poor collaboration from the patient due to weakness
- Labs today show Hb of 8.1
- What you should do?

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Anemia

- Even mild degrees of preoperative anemia (<38.0%) are associated with an increased risk of 30-day postoperative mortality and cardiac events in older patients
- Treat in advance for elective procedures
- Pre op transfusion for very limited cases
- Plan for peri-op transfusion
- Never use PRBC to treat post op hypotension.

http://jama.jamanetwork.com/article.aspx?articleid=207447

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Other Considerations

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Malnutrition and Poor Appetite Etiology and Treatment

- Older adults' appetite regulatory mechanisms become less responsive; they experience diminished taste and smell, contributing to decreased desire to eat
- Socioeconomic status, stress, depression and illness also may contribute to loss of appetite and weight loss
- Small and frequent meals promote better calorie intake
- Nutritional supplements do not provide significant benefit
- Providing a patient's favorite foods can help
- Appetite stimulants can be considered, but there is conflicting evidence regarding their effectiveness

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Fall Risk

- Initiate Universal Fall Risk Precautions in all older adults (unless it interferes with early mobilization and ambulation)
- Treat underlying conditions associated with falls (hip fracture patients)
- Treatment of osteoporosis
- Home safety evaluation

Pressure Ulcer Prevention

- Assess pressure ulcer risk:
  - Age
  - Geriatric Syndromes
  - Cognitive Impairment (incontinence)
  - Depression
  - Prolonged LOS
- Prevention:
  - Early Mobilization
  - Geriatric Co-management
  - Discharge Planning
  - RN Driven Protocols

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Transitions of Care

- Assess Social Support
- Discuss purpose, dosing, duration and side effects of new drugs
- Assess nutrition, cognition, function the day of discharge
- OK DISCHARGE WITH ANESTHESIA/SURGERY/IM

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Taking home with you!

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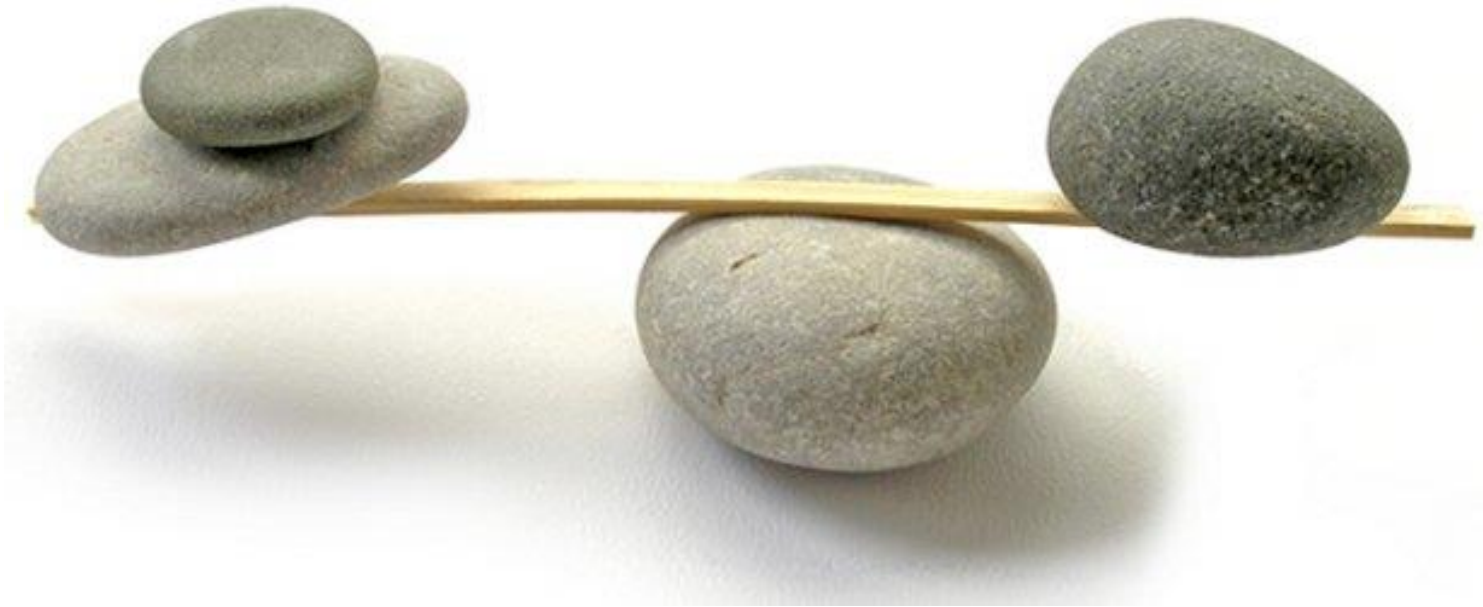
Everything is Important

Comorbid Conditions

Frailty/Polypharmacy
Social issues

Surgery



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Communication is Everything

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Thanks

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