Treating the patient

the difference of chronology and frailty

Dr.Robert lindau

“Youth is a gift of nature; age is a work of art.”

-Stanislaw Jerzy Lec

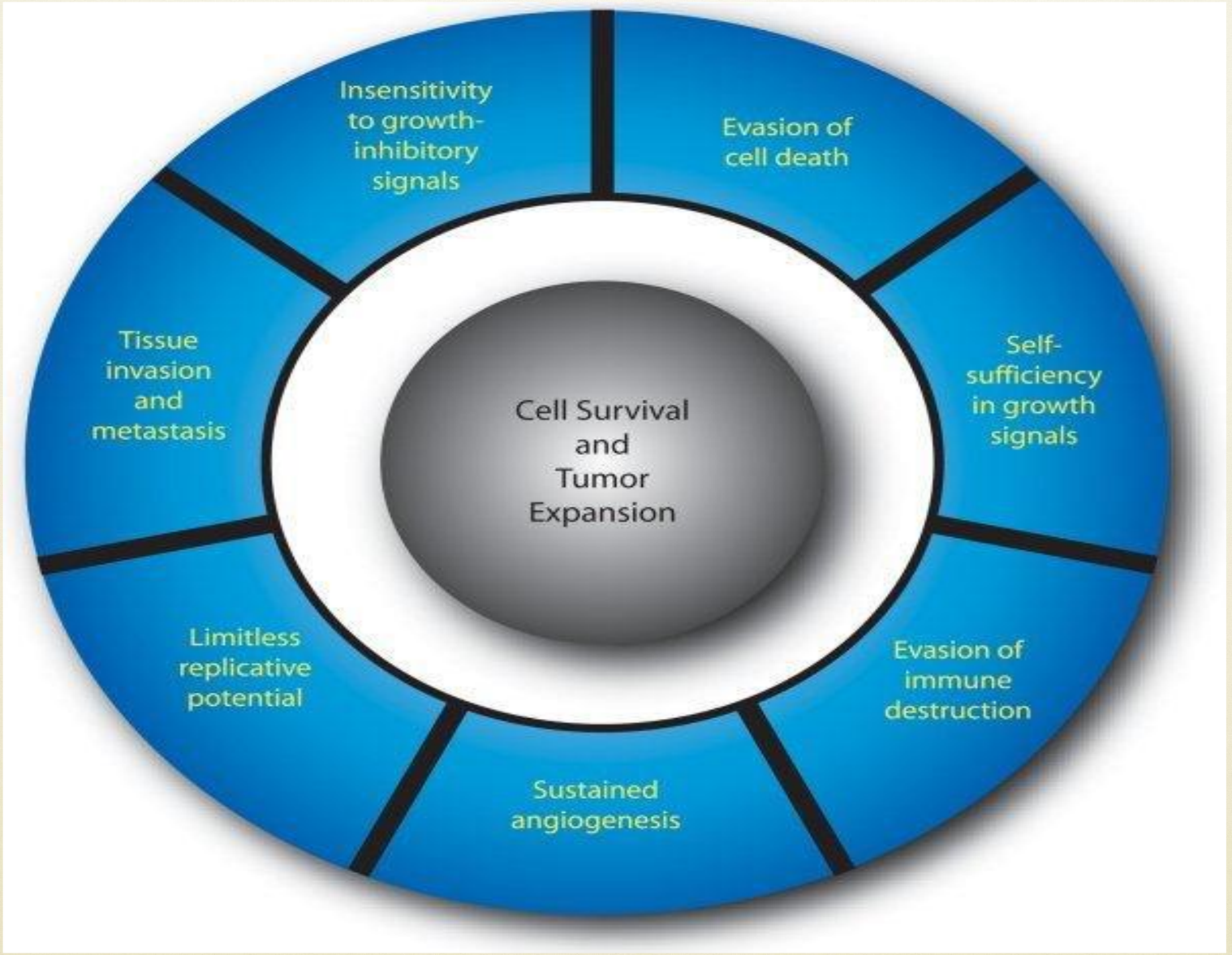
“Youth is a gift of nature; age is...

a hell of a thing.”

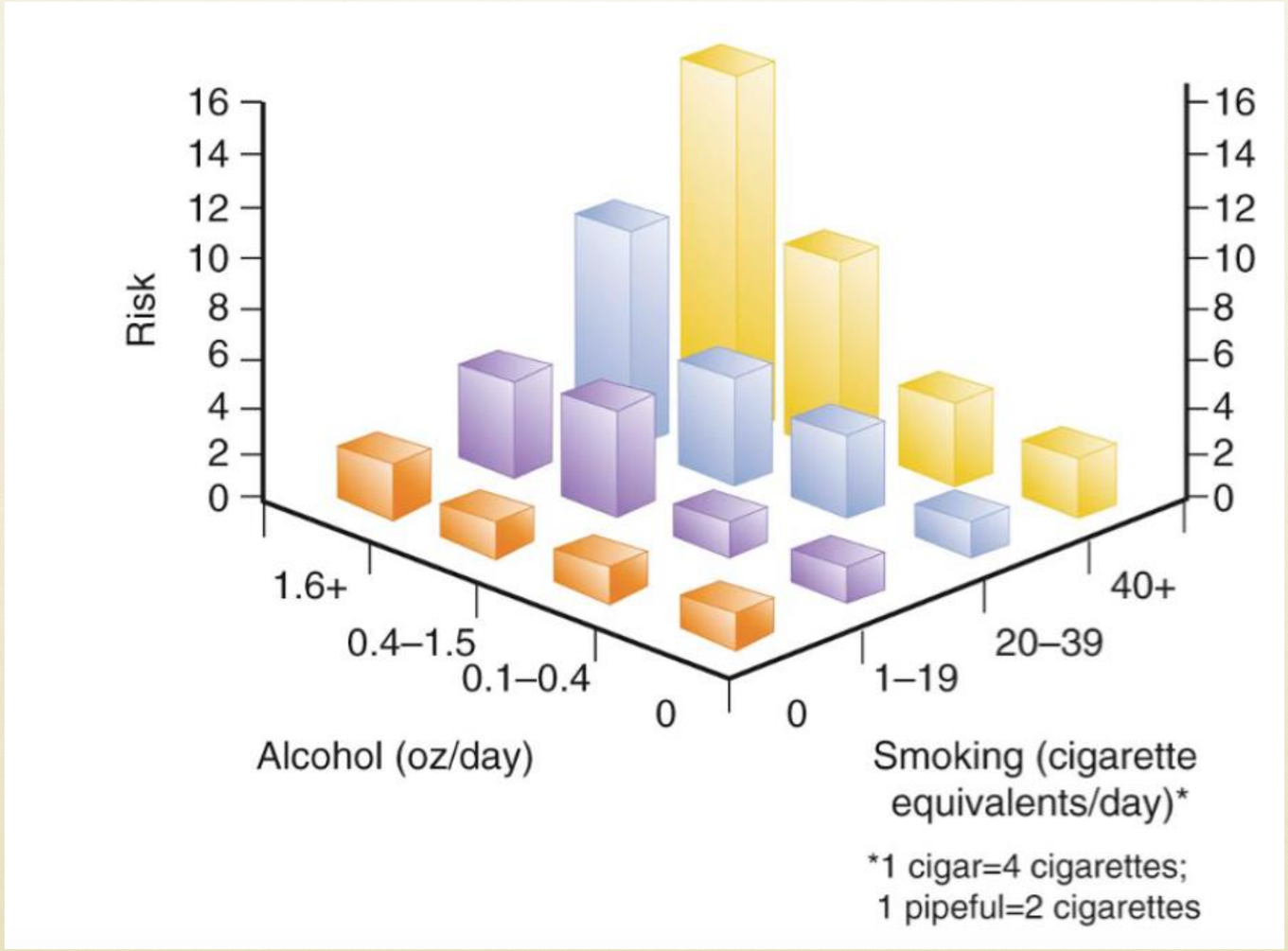
-Phyllis Gough, age 99

Objective

- Gain an insight of the ramification of head and neck cancer and cancer treatment
- Understand the fundamentals difference of age and frailty
- Demonstrate the impact of age on treatment
- Demonstrate the impact of frailty on treatment


Insensitivity to growth-inhibitory signals
Evasion of cell death
Self-sufficiency in growth signals
Evasion of immune destruction
Sustained angiogenesis
Limitless replicative potential
Tissue invasion and metastasis
Cell Survival and Tumor Expansion

Etiology of Head and Neck Cancer



Head and Neck Cancer in the Elderly

- In 1971, Abdel Omran coined the term "**epidemiological transition**" to explain the changes in population with respect to mortality and disease patterns. According to this theory, all societies experience a shift from infectious (cholera and tuberculosis) to chronic and degenerative diseases (cardiovascular and neoplastic), which is paralleled by increasing life expectancy.

Issues to Address

Figure 1. Number of deaths due to heart disease and cancer: United States, 1950–2014

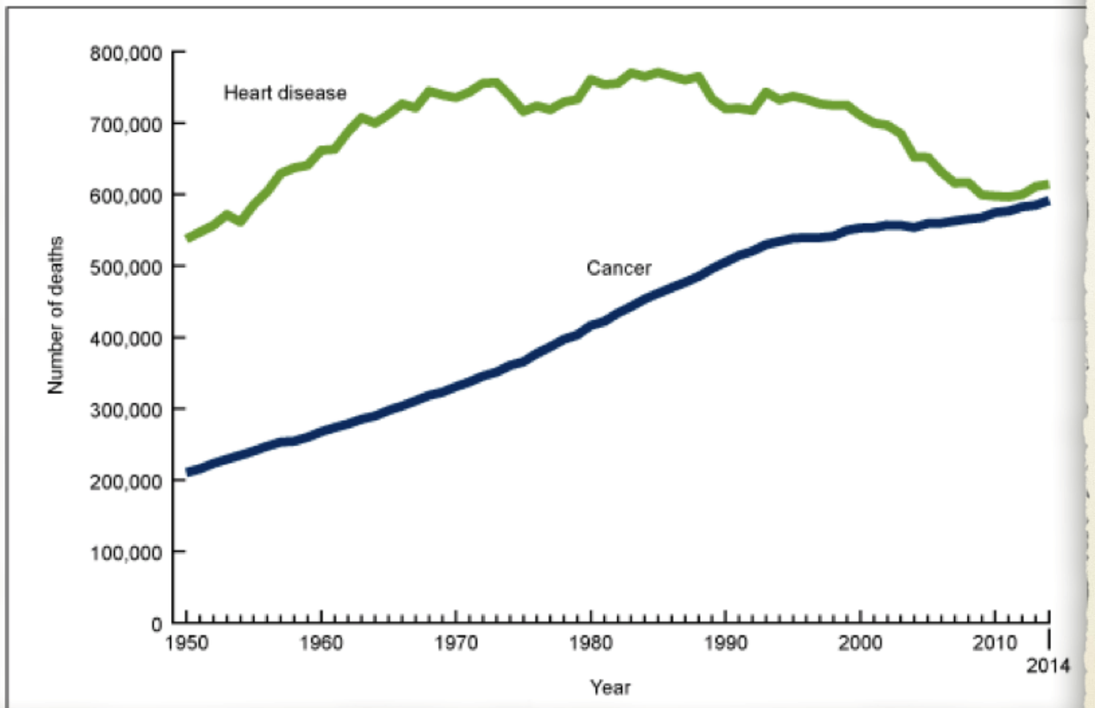
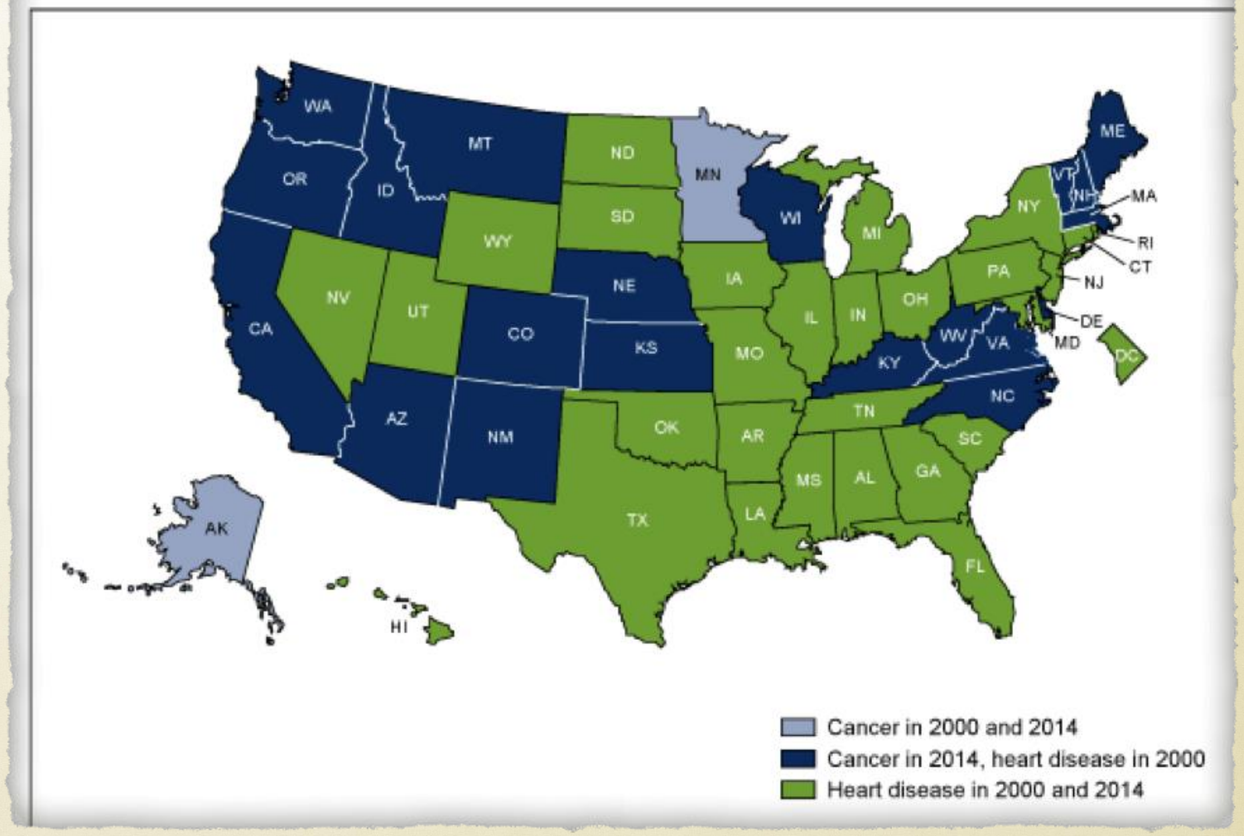


Figure 2. Leading cause of death for each state: United States, 2000 and 2014



Issues to Address

- In accordance with demographic projections showing the steadily growing number of the elderly people, the global cancer burden will nearly double in the near future with a preferential increase in the developing world.
  - By 2030, up to 22 million new cases (12 million in those 65 years or older) and 13 million cancer deaths (8.4 million in those 65 years or older) are to be expected worldwide each year
- Squamous cell carcinoma of the head and neck follows the same epidemiologic trends. According to the 2010 cancer incidence projections for the United States, 54% of malignant head and neck cancer cases occurred in patients older than 65 years of age. By 2030, the proportion is expected to rise to 66%
- Although the major risk factors for SCCHN in the elderly are still tobacco and alcohol consumption, their prevalence is lower than in an unselected population (40 versus 70%), underscoring age alone as an important risk factor.
- Aging population who have been treated by cancer and will have to deal with late complications of treatment
- The “elderly” are represented in only 3.4% of studies worldwide

How to Treat the Patient

Age vs Frailty

Treatment of Older Patients With Head and Neck Cancer: A Review

NOAM A. VANDERWALDE, MARY FLEMING, JARED WEISS,BHISHAMJIT S. CHER. The Oncologist 2013;18:568 –578

- **Do older patients have worse survival rates?**
  - Surgery, radiation, and chemoradiation appear to be **equally efficacious** in older and younger patients. Treatment recommendations should not be influenced by a perception that one modality may not be efficacious in older patients.
- **Do older patients experience worse toxicities?**
  - Older patients **experience greater acute and late toxicity** as the intensity of treatment increases. Specifically, the addition of chemotherapy to radiation increases toxicity and reduces tolerance to therapy. The belief that cetuximab (when given concurrently with radiation) is less toxic than cisplatin may not be true. Reirradiation with/without concurrent chemotherapy in the recurrent/ previously irradiated setting should be avoided.

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- **Should comorbidity influence treatment recommendations?**
  - Older patients with more comorbidities experience more treatment-related toxicity and poorer outcomes. Intensification of treatment (i.e., adding chemotherapy to radiation) should only be in carefully selected patients and done when absolutely necessary.
- **Do older patients require more social support during their treatment?**
  - Older patients with HNC require more supportive care. We recommend prophylactic feeding tubes. We also recommend coordinating care with the patient's other general practitioners and specialists. Specifically, we recommend increased interval of follow-up with patients' other physicians during cancer treatment. Efforts should be made by the oncologist to communicate regularly with other providers.

SURGICAL OUTCOMES IN HEAD AND NECK CANCER PATIENTS 80 YEARS OF AGE AND OLDER

Gary L. Clayman, DDS, MD, Susan A. Eicher, MD, Michael W. Sicard, MD, Ebrahim Razmpa, MD, Helmuth Goepfert, MD. Head Neck 20: 216–223, 1998.

- Results:
  - Median overall survival for the patients over 80 years of age was significantly lower than that for the controls ($p = .001$). **However, their overall survival was similar to the actuarial survival for the general octogenarian population.**
  - Advanced age also adversely **affected local control** ($p < .001$) and **disease- specific survival** ($p = .041$).
  - Although the older age group had a higher frequency of morbid preoperative conditions, there were no significant differences in perioperative or postoperative complications between the two groups.

- The higher incidence of positive margins and less frequent use of adjuvant therapies in the octogenarians
  - Although the control group was matched to the elderly group by TNM stage, **44.1%** of the controls were treated with combined therapy, whereas only **23.3%** of the octogenarians received adjuvant therapy.

Table 2. Operative comparison.

	Group 1 (no. of patients/%)	Group 2 (no. of patients/%)
Surgical procedures*		
Wide excision†	21 (48.8)	28 (35.4)
Maxillectomy	5 (11.6)	13 (16.5)
Laryngectomy	8 (18.6)	19 (24.0)
Mandibulectomy	13 (30.2)	13 (16.5)
Laryngopharyngectomy	3 (7.0)	4 (5.1)
Neck dissection	27 (62.8)	49 (62.0)
Reconstruction		
Regional flap	3 (7.0)	6 (7.6)
Free tissue transfer	2 (4.6)	14 (17.7)

Surgical Outcomes in the Elderly Patient After Osteocutaneous Free Flap Transfer Laryngoscope 124: November 2014

Objectives/Hypothesis: Morbidity of free tissue transfer in the elderly patient is controversial. Recent studies have shown no significant difference in elderly fasciocutaneous free-flap donor site morbidity. The purpose of this study is to assess surgical outcomes in elderly patients receiving osteocutaneous free-tissue transfer.

Study Design: Retrospective chart review of patients 70 years and older undergoing osteocutaneous free flaps from 2000 to 2013.

Methods: Fibular, radial forearm, and scapular flaps were reviewed. Younger patients randomly selected from the same time period served as controls. Data collected included donor site morbidity, flap complications, feeding tube and tracheostomy dependence, and hospital stay.

Results: Forty-four osteocutaneous free flaps were performed in elderly patients. Overall, there was no significant difference in donor site morbidity between older and younger patients ($P = 0.50$) (tendon exposure, $P = 1.00$; split-thickness skin graft loss, $P = 0.36$; infections, $P = 0.52$; dehiscence, $P = 1.00$; and seroma, $P = 1.00$). There was no significant difference between older and younger patients being decannulated ($P = 0.61$) or the time to decannulation ($P = 0.24$). There was no difference in those who returned to baseline diet ($P = 0.67$). All patients returned to baseline ambulatory and shoulder status. Length of postoperative hospitalization ($P = 0.78$) and intensive care unit stay ($P = 0.94$) were also equal. The only significant difference was that more elderly patients were discharged to skilled nursing facilities (SNF) (40.9% vs. 15.9%, $P < 0.01$).

Conclusion: Elderly patients undergoing free tissue transfer have similar flap and donor site outcomes, feeding tube and tracheostomy outcomes, ambulatory status, and hospital stays compared to younger patients. They are, however, more likely to require SNF care posthospitalization.

Frailty

- Fried and colleagues11 defined frailty “as a biologic syndrome of decreased reserve and resistance to stressors, resulting from cumulative declines across multiple physiologic systems, and causing vulnerability to adverse outcomes,”
- In 2013, members of a consensus group reached agreement on the following definition of frailty, “**A medical syndrome with multiple causes and contributors that is characterized by diminished strength, endurance, and reduced physiologic function that increases an individual’s vulnerability for developing increased dependency and/or death.**”

“Age is just a number”; frailty as a marker of peri-operative risk in head and neck surgery: Systematic review and meta-analysis

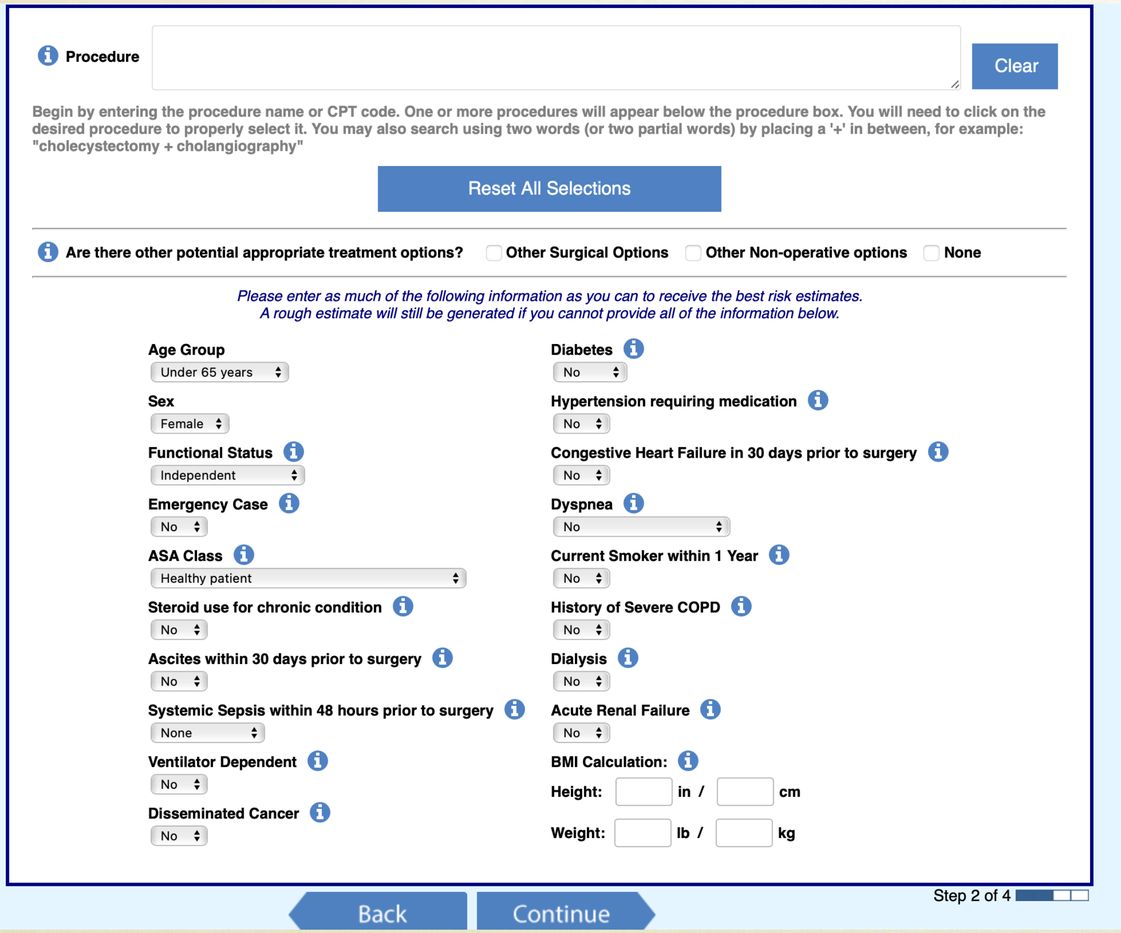
- Head and Neck June 2022
- Methods: Meta-analysis
  - 14 studies with > 180,000 patients
    - 9 post-op morbidity and 6 post-op mortality
- Results:
  - 3x higher 30-day mortality
  - 4x more likely to be discharged to a facility rather than home
  - 2x more likely to be readmitted
  - 2x worse overall survival.

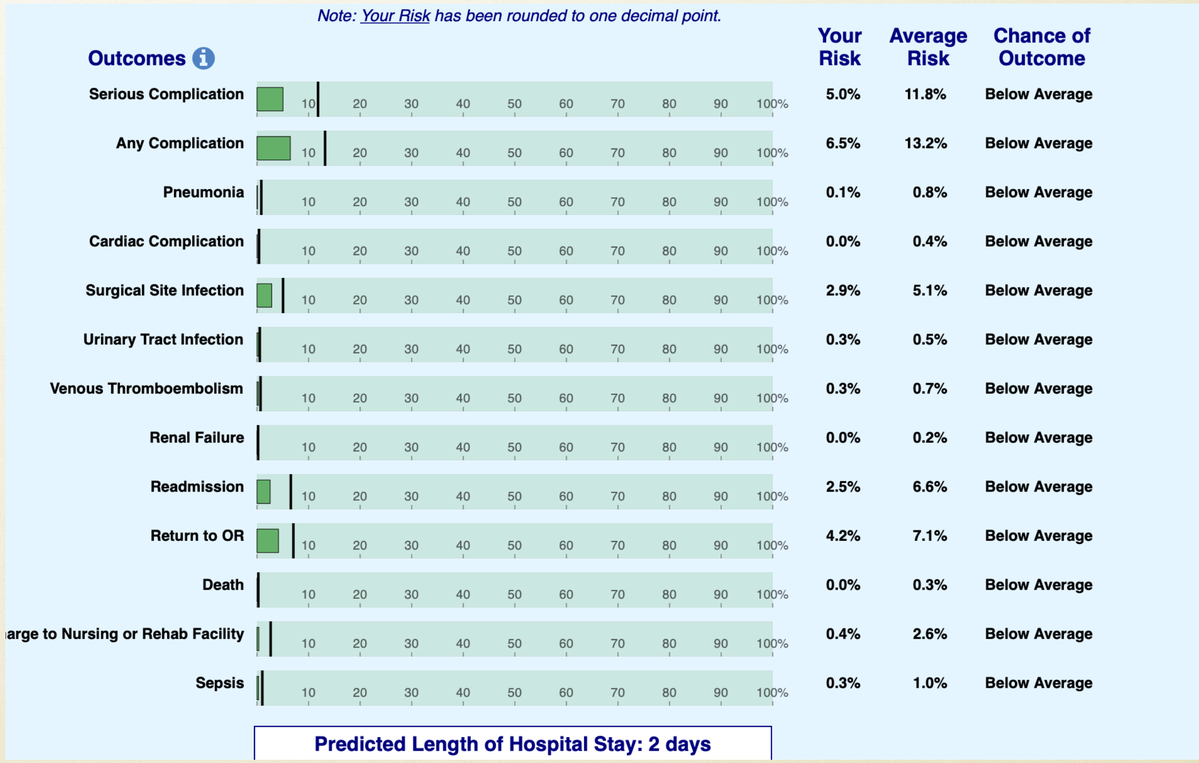
stop thinking like a hammer

- Overall approach
  - Identify frailty
  - Identify corrective factors
  - Identify best modalities to give patient best option

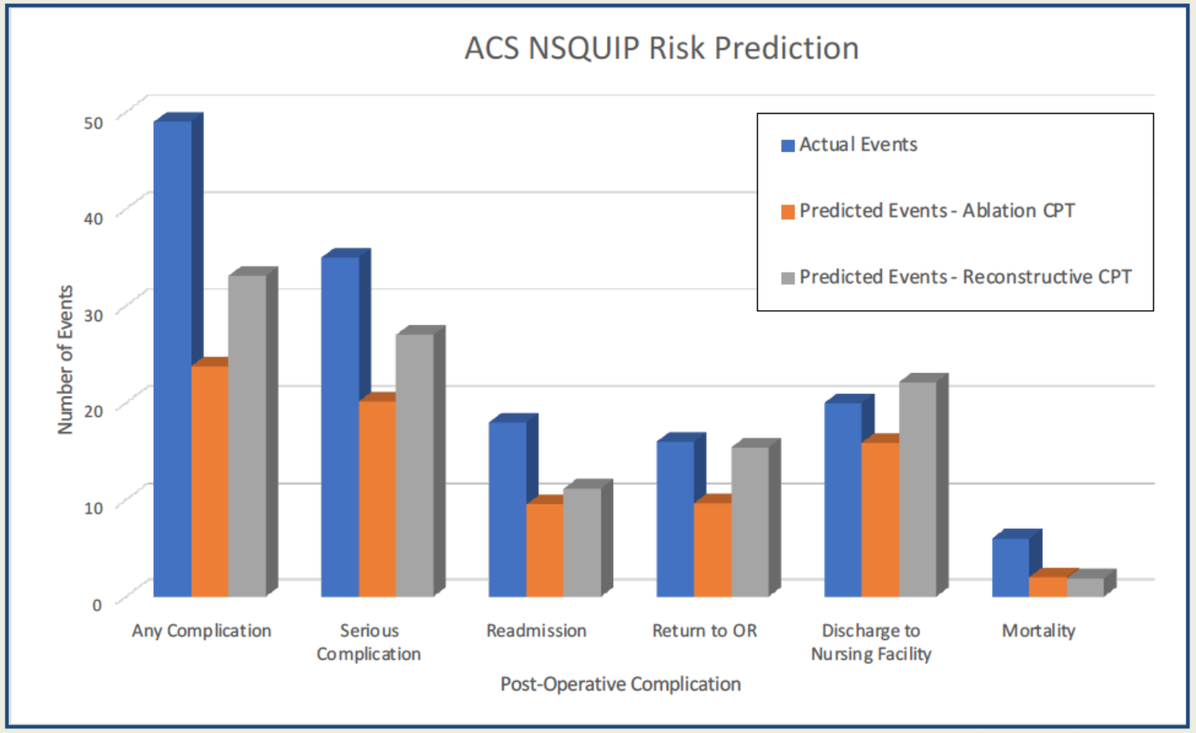
Identifying frailty

ACS Surgical risk calculator





ACS SURGICAL RISK CALCULATOR



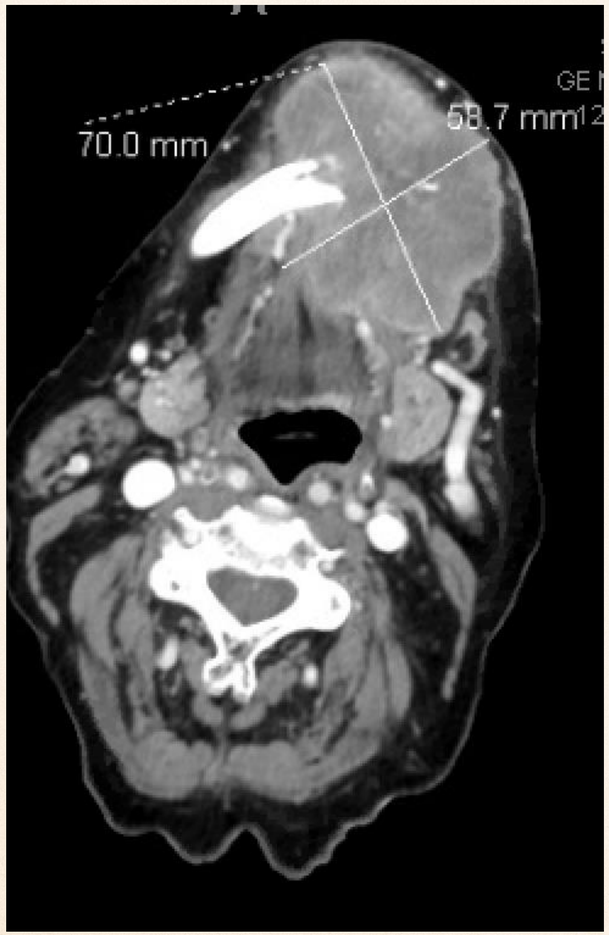
	Actual Events		SRC Risk Estimate							
			Ablative CPT Code				Reconstructive CPT Code			
Morbidity	*n*	*%*	*mean (%)*	*SD*	*p*	*AUC*	*mean (%)*	*SD*	*p*	*AUC*
Any Complication	49	50.0	24.25	13.65	0.012*	0.631	33.77	9.46	0.086	0.587
Serious Complication	35	35.7	20.56	11.26	0.022*	0.655	27.56	7.9	0.011*	0.655
Readmission	18	18.4	9.71	5.27	0.065	0.588	11.39	4.27	0.005*	0.727
Return to OR	16	16.3	9.85	5.62	0.13	0.603	15.72	4.27	0.678	0.577
Discharge to Nursing Facility	20	20.4	16.21	16.33	0.001*	0.727	22.58	15.97	0.006*	0.603
Mortality	6	6.1	2.08	3.38	0.371	0.622	1.92	2.51	0.163	0.677

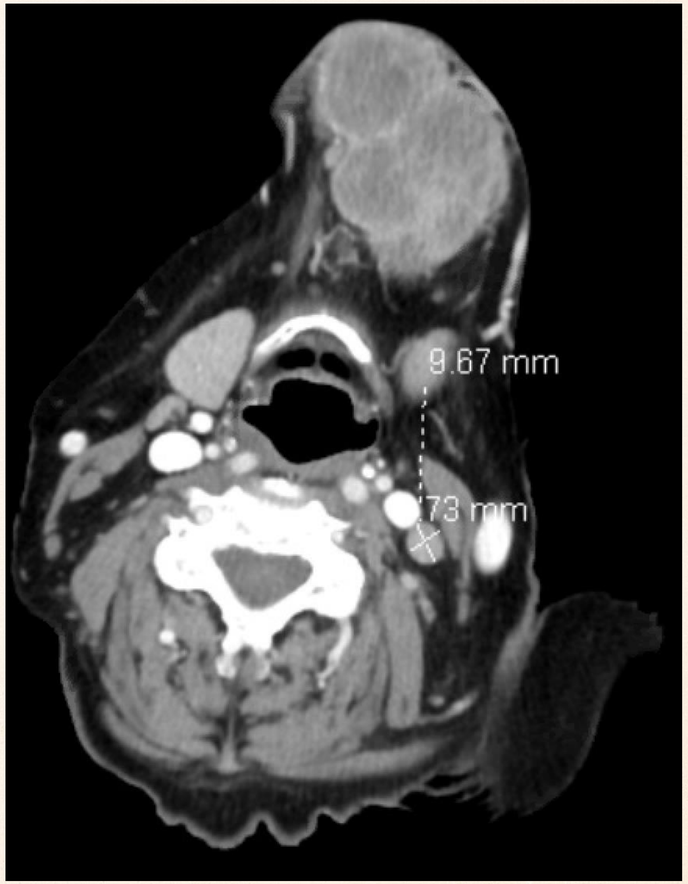
	Average (day)	SD	R^s	p
Actual Events	6.6	3.56		
SRC Ablative CPT	8.3	5.17	0.5	<0.001
SRC Reconstructive CPT	10.9	3.06	0.26	<0.001

Identifying frailty

ACS Surgical risk calculator

- Defect
- Pathology
- Patient





Procedure 20955 - Bone graft with microvascular anastomosis; fibula

Begin by entering the procedure name or CPT code. One or mor
desired procedure to properly select it. You may also search usi
"cholecystectomy + cholangiography"

R

Are there other potential appropriate treatment options?

Please enter as much of the following
A rough estimate will still be gener

Age Group
75-84 years

Sex
Female

Functional Status
Partially Dependent

Emergency Case
No

ASA Class
Severe systemic disease/constant threat to life

Steroid use for chronic condition
Yes

Ascites within 30 days prior to surgery
No

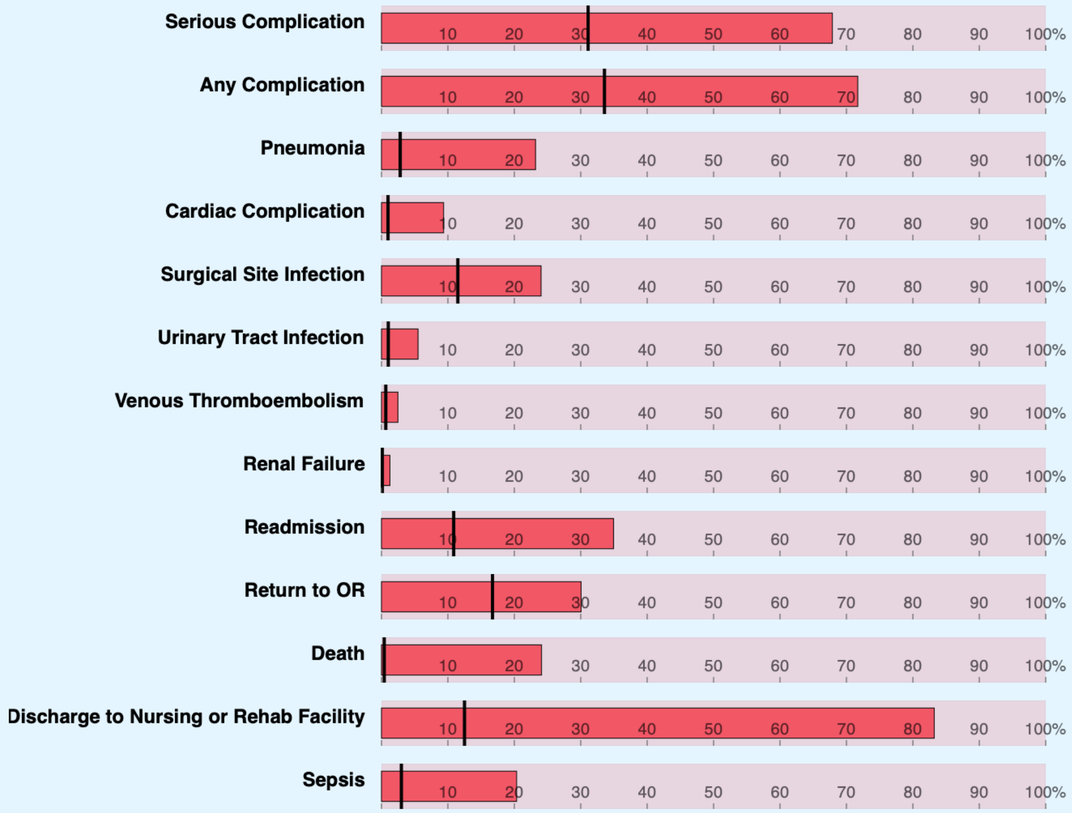
Systemic Sepsis within 48 hours prior to surger
None

Ventilator Dependent
No

Disseminated Cancer
Yes

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

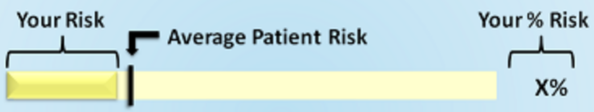
Outcomes



Outcome	Your Risk	Average Risk	Chance of Outcome
Serious Complication	67.9%	31.1%	Above Average
Any Complication	71.7%	33.6%	Above Average
Pneumonia	23.2%	2.8%	Above Average
Cardiac Complication	9.4%	1.0%	Above Average
Surgical Site Infection	24.0%	11.5%	Above Average
Urinary Tract Infection	5.5%	1.0%	Above Average
Venous Thromboembolism	2.5%	0.6%	Above Average
Renal Failure	1.3%	0.1%	Above Average
Readmission	34.9%	10.9%	Above Average
Return to OR	30.1%	16.7%	Above Average
Death	24.1%	0.4%	Above Average
Discharge to Nursing or Rehab Facility	83.2%	12.5%	Above Average
Sepsis	20.3%	3.0%	Above Average

Predicted Length of Hospital Stay: 27.5 days

How to Interpret the Graph Above:



Surgeon Adjustment of Risks

This will need to be used infrequently, but surgeons may adjust the estimated risks if they feel the calculated risks are underestimated. This should only be done if the reason for the increased risks was NOT already entered into the risk calculator.

1 - No adjustment necessary

Procedure

41150 - Glossectomy; composite procedure with resection floor of mouth and mandibular resection, without radical neck dissection

Clear

Begin by entering the procedure name or CPT code. One or more procedures will appear below the procedure box. You will need to click on the desired procedure to properly select it
"cholecystectomy + cholangiography"

Are there other potential appropri

Please er
A roug

Age Group
75-84 years

Sex
Female

Functional Status
Partially Dependent

Emergency Case
No

ASA Class
Severe systemic diseas

Steroid use for chroni
Yes

Ascites within 30 day
No

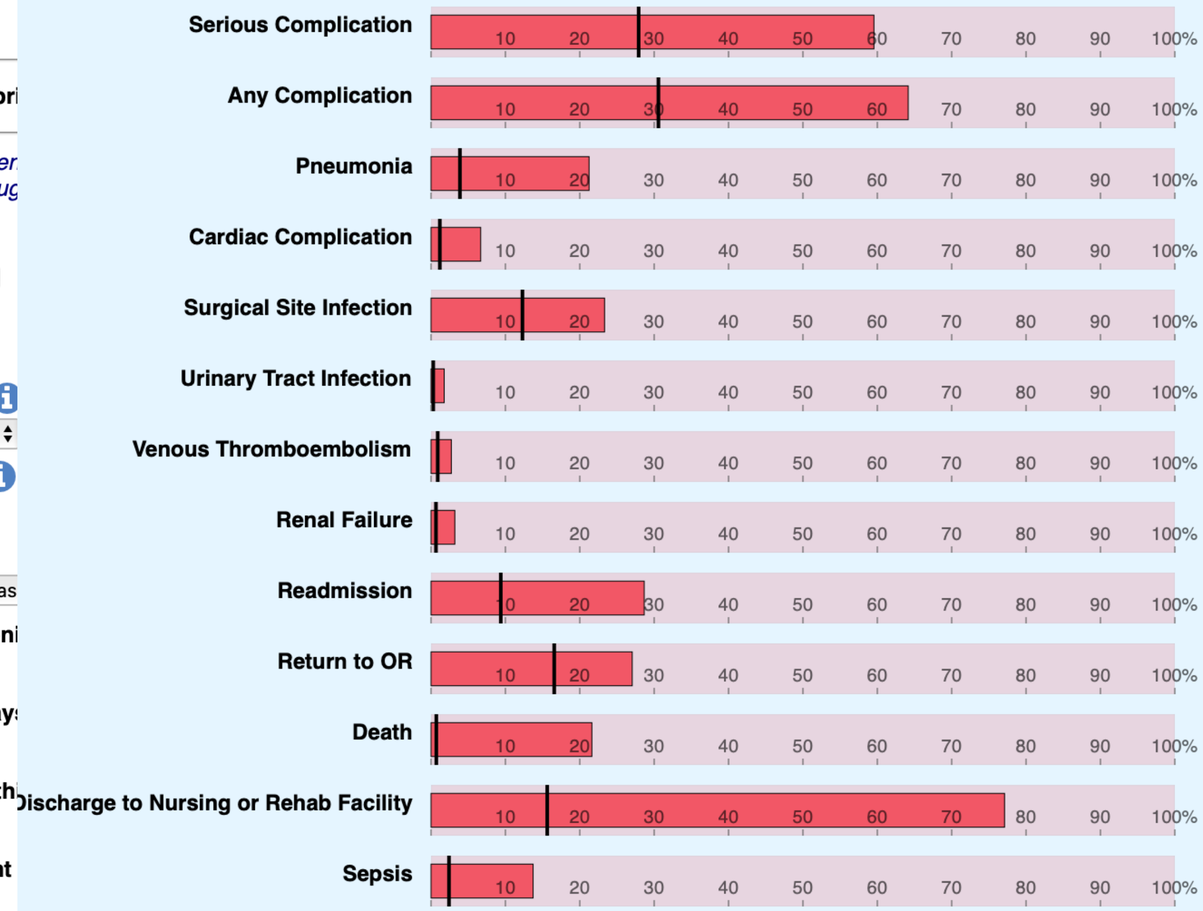
Systemic Sepsis with
None

Ventilator Dependent
No

Disseminated Cancer
Yes

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

Outcomes



	Your Risk	Average Risk	Chance of Outcome
Serious Complication	59.5%	27.9%	Above Average
Any Complication	64.2%	30.6%	Above Average
Pneumonia	21.2%	3.9%	Above Average
Cardiac Complication	6.7%	1.2%	Above Average
Surgical Site Infection	23.3%	12.3%	Above Average
Urinary Tract Infection	1.8%	0.3%	Above Average
Venous Thromboembolism	2.7%	0.9%	Above Average
Renal Failure	3.2%	0.7%	Above Average
Readmission	28.7%	9.4%	Above Average
Return to OR	27.0%	16.6%	Above Average
Death	21.6%	0.7%	Above Average
Discharge to Nursing or Rehab Facility	77.1%	15.6%	Above Average
Sepsis	13.7%	2.4%	Above Average

Predicted Length of Hospital Stay: 23.5 days

stop thinking like a hammer

- Overall approach
  - Identify frailty
  - **Identify corrective factors**
  - Identify best modalities to give patient best option

Identifying corrective factors:

The team approach

Patient and Caregiver/s

Medical Team

- Surgeon
  - APPs
- Radonc
- Medonc
- PCP
- Dentist
- Nursing
- OR Team

Social Team

- Social Work
- Nurse Navigators
- Palliative Care
- Dieticians

Mental Health

- Palliative Care
- Social Work
- Nurse Navigators
- Psychiatry
- Councilling

Rehab

- pre-habilitation
- ST
- OT
- PT
- RT
- Acute Rehab

Identifying corrective factors: The team approach

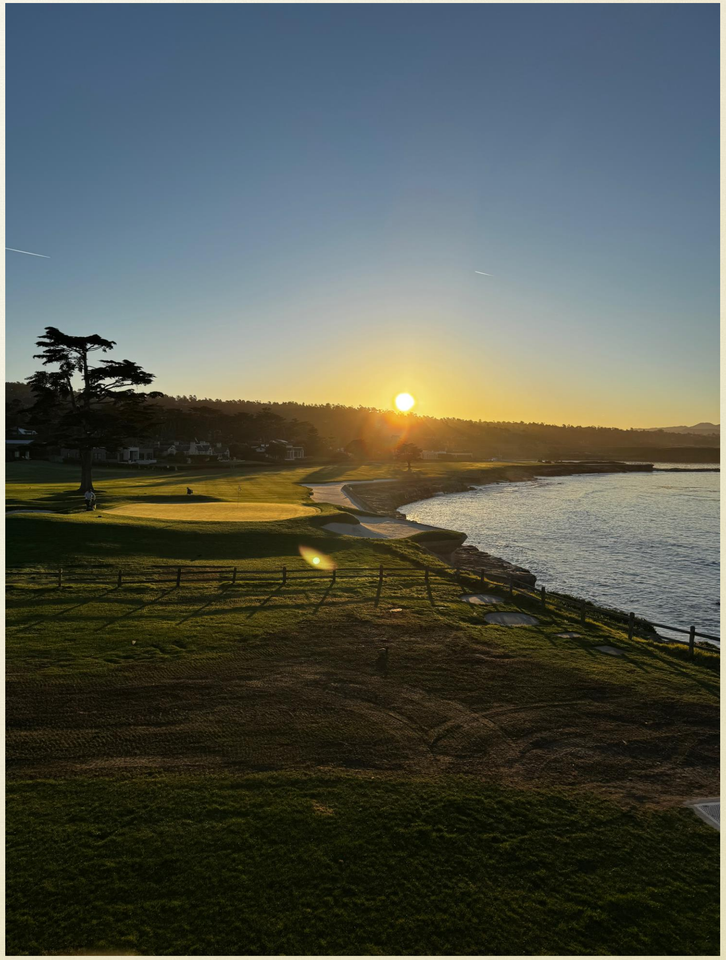
- High Volume Centers = TEAMS
  - Survival benefit
    - Treatment at a high-volume facility was independently associated with **improved overall survival** with 5-year OS of **61.6% vs 55.5%**
    - A surgical NCDB cohort found risk of death fell ~3% for every 10-percentile increase in facility volume; patients at facilities below the 50th percentile had a 23% higher mortality risk versus the top decile.
  - Peri-operative and Surgical Quality
    - **44% lower odds of death** after major complications — despite similar complication rates, suggesting better recognition and management of complications.

stop thinking like a hammer

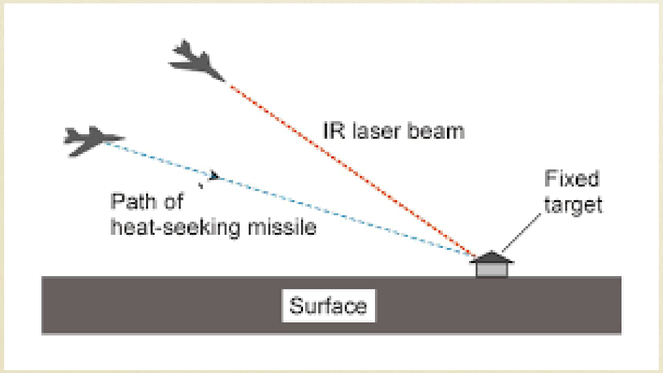
- Overall approach
  - Identify frailty
  - Identify corrective factors
  - **Identify best modalities to give patient best option**

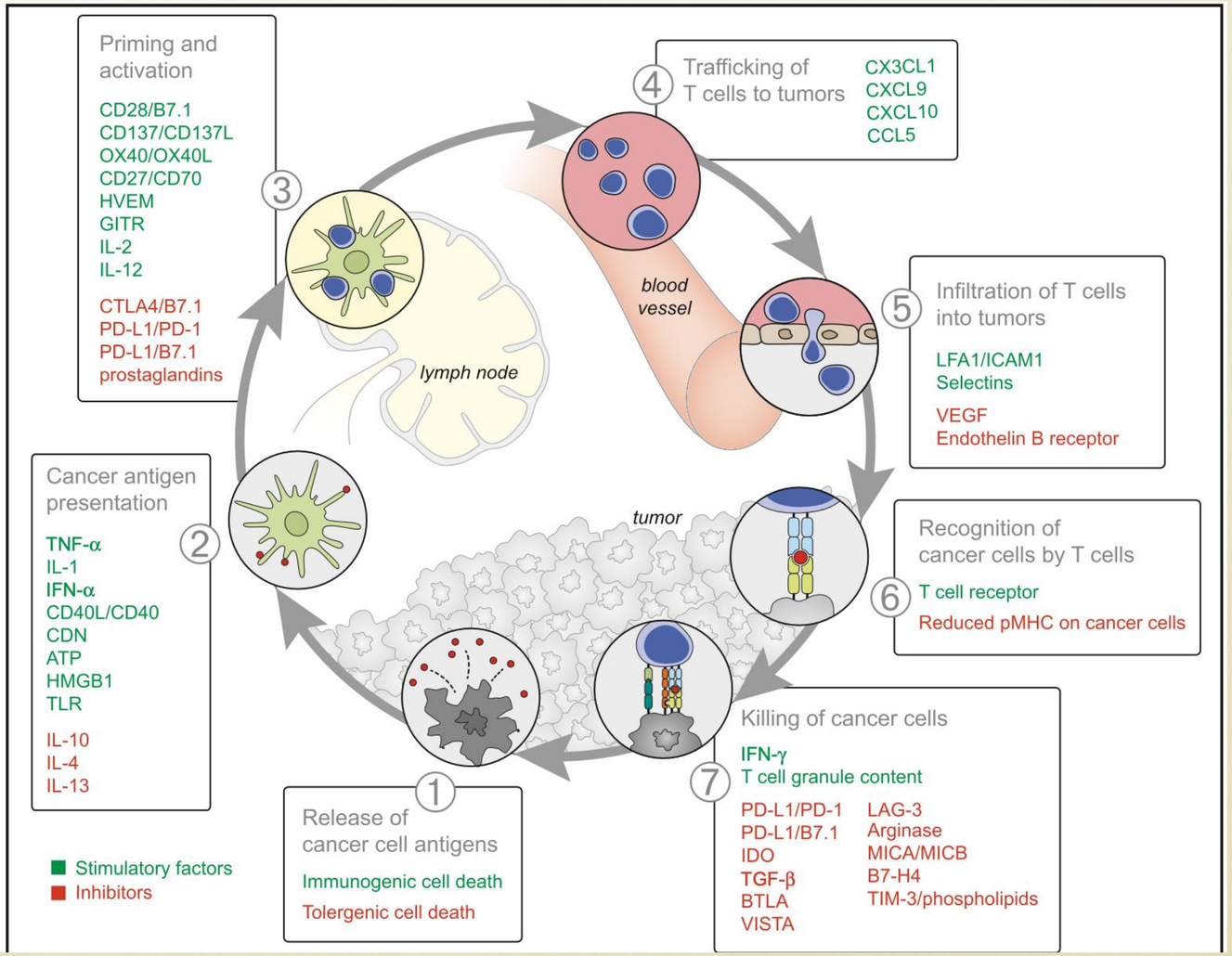
Identify best modalities to give patient best option

- Geriatric Assessment
- Palliative Care Team
- Treatment Options
  - Immunotherapy



Identify best modalities to give patient best option



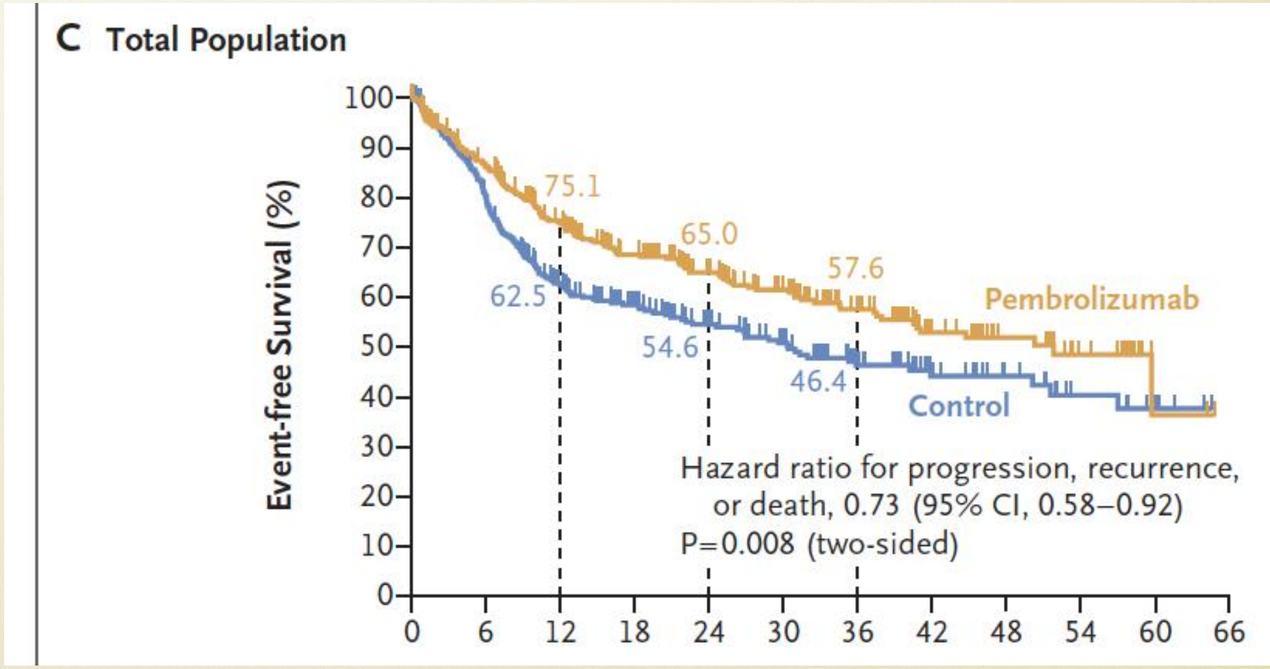


Identify best modalities to give patient best option

- Immunotherapy with Pembrolizumab
  - Check the tumor cells if they could be killed by using immunotherapy
  - You would get two doses of the drug before surgery.
  - Each dose is 3 weeks apart
  - Delays surgery by 6 weeks, but it does not delay treatment
  - Surgery + Radiation + Immunotherapy

Identify best modalities to give patient best option

- Surgery completed at the same rate in each group (88%)
- 10-15% reduction in adverse events
  - progression of disease
  - recurrence of disease
  - Death



Identify best modalities to give patient best option