

"IF ONLY SOMEONE HAD WARNED US"

How to recognize pre-terminal patients and the potential harms caused by continuing traditional care.

Daniel R. Hoefler, M.D.
CMO Outpatient Palliative Medicine
Sharp HealthCare

Cardiac Case Study

Chief Complaint

86 Year old female comes in to see you for passing out after picking something up off the ground while walking her poodle in the backyard. She has stable substernal discomfort with exertion as well. She is occasionally light headed.

History of Present Illness

Known AS for 10 years; now with dyspnea walking across a room with a cane and ankle edema. Has a FWW but “never uses it”. Feels generally more fatigued, weaker and has lost 12 pounds over the last year due to change in appetite. Work up for weight loss was unrevealing. Denies palpitations. 2 stents placed 7 years earlier for CAD. H/O DM, Htn, CAD, a-fib and mild diastolic failure. She also is being treated for gout, moderate osteoarthritis pain and depression.

She has a BMI of 21. She is generally inactive and rarely gets out because she is “not up to it.” She states she hasn’t had the energy she used to for years. Does not smoke or drink.

Description - Continued

She has lived with her daughter and son-in-law for 2 years. Both work. Does not drive, cook or pay bills. She is mildly demented with a MMSE of 22, 6 months ago. Her family states that she is just a little forgetful. She wears glasses (20/100 without) and hearing aids (when she remembers). Daughter states she needs more help since she is losing her strength.

Previous Surgical History

- TAH
- Lap chole
- ORIF with stage 3 heel ulcer (resolved) and delirium

Medication Table

ASA	325 mg	Oxybutynin	5 mg bid
Atorvastatin	10 mg	Paxil	20 mg
Metoprolol	50 mg bid	Flexeril	10 mg qhs
Lisinopril	20 mg	Hydrocodone	5/325 tid prn
Digoxin	0.250 mg	Ibuprofen	600 mg tid
Metformin	500 bid	Tylenol PM	
Allopurinol	300 mg	MVI	
Furosemide	20 mg	Potassium ER	20 meq
Aricept	5 mg qd	Pantoprazole	40 mg

Vitals

Vitals: BP 100/50, HR 52, RR 16, Temp 97.8

Alert and oriented but easily distracted. No JVD at 90 degrees. Heart is irregular with a 2/6 SEM at the RSB, Lungs are CTA with diminished AE. Abd is soft, NT and NABS. No HJR. No focal neuro deficit. +1 bilateral ankle/le edema.

CXR - Poor inspiration but NED

ECHO - Mod Severe AS, diastolic failure, mild decrease in LVF.

EKG; a fib with HR 54

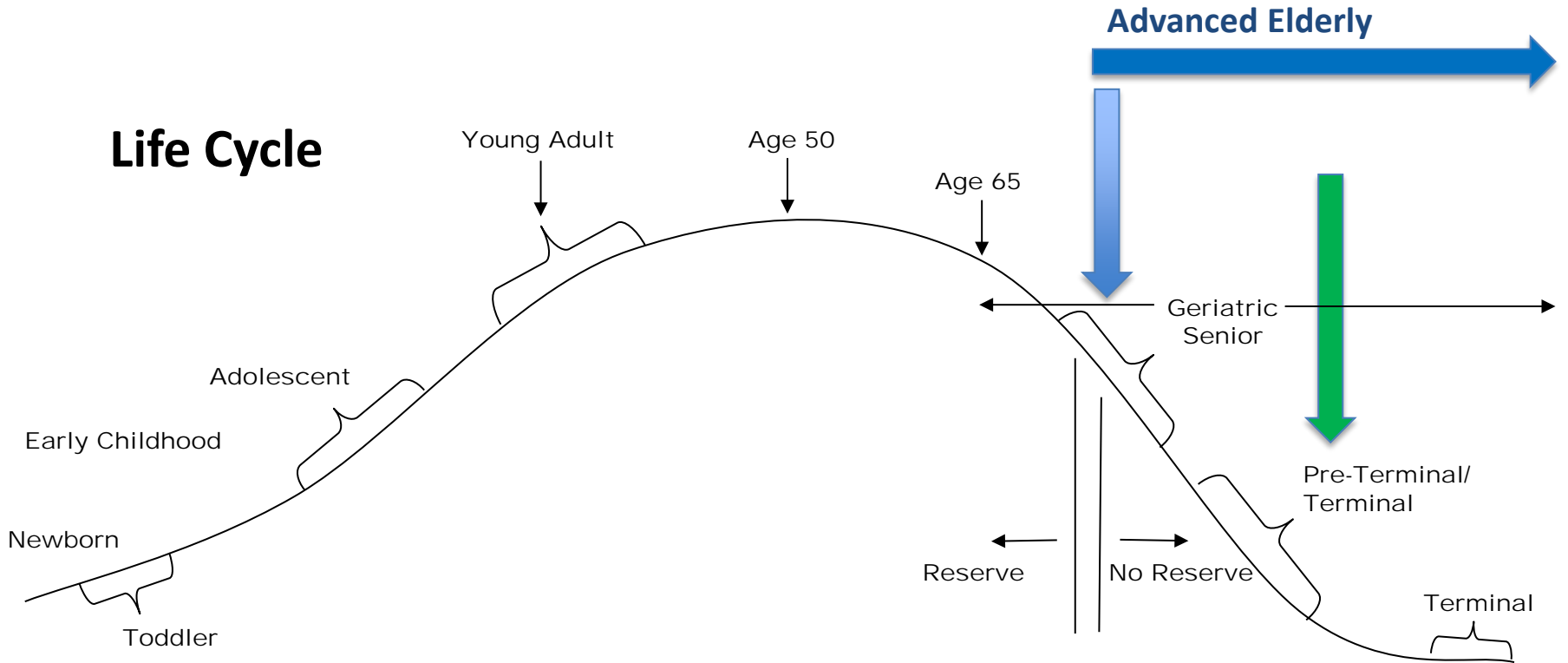
Lab Data

Abnormal for hemoglobin 11.2, total chol 110 (was 150 the previous year)/ LDL 43 (was 65), pro-BNP 537, albumin 3.3, BUN 24/Cr 0.7, hgbA1c 6.0

**A Decision is made to consider surgery
after an angiogram is obtained.**

Before you proceed...
Here are some questions to ask.

Up to Date: Physiology and Goals of Care for the Pre-terminal Populations are Not the Same as a Younger and Healthier Geriatric Patient



Hoefler, Daniel, M.D.

Identifiers of a Pre-terminal patient:

Weight loss (Wallace, JAGS 1995) – 2 year follow up

No loss 11%

Involuntary loss 28%

Voluntary loss 36%

Heel ulcer (Malik, JAMDA 2013) – 1 year

Stage 1 or 2, 55%

Stage 3 or 4, 70%

All stages without vascular intervention 68%

All stages with vascular intervention 59%

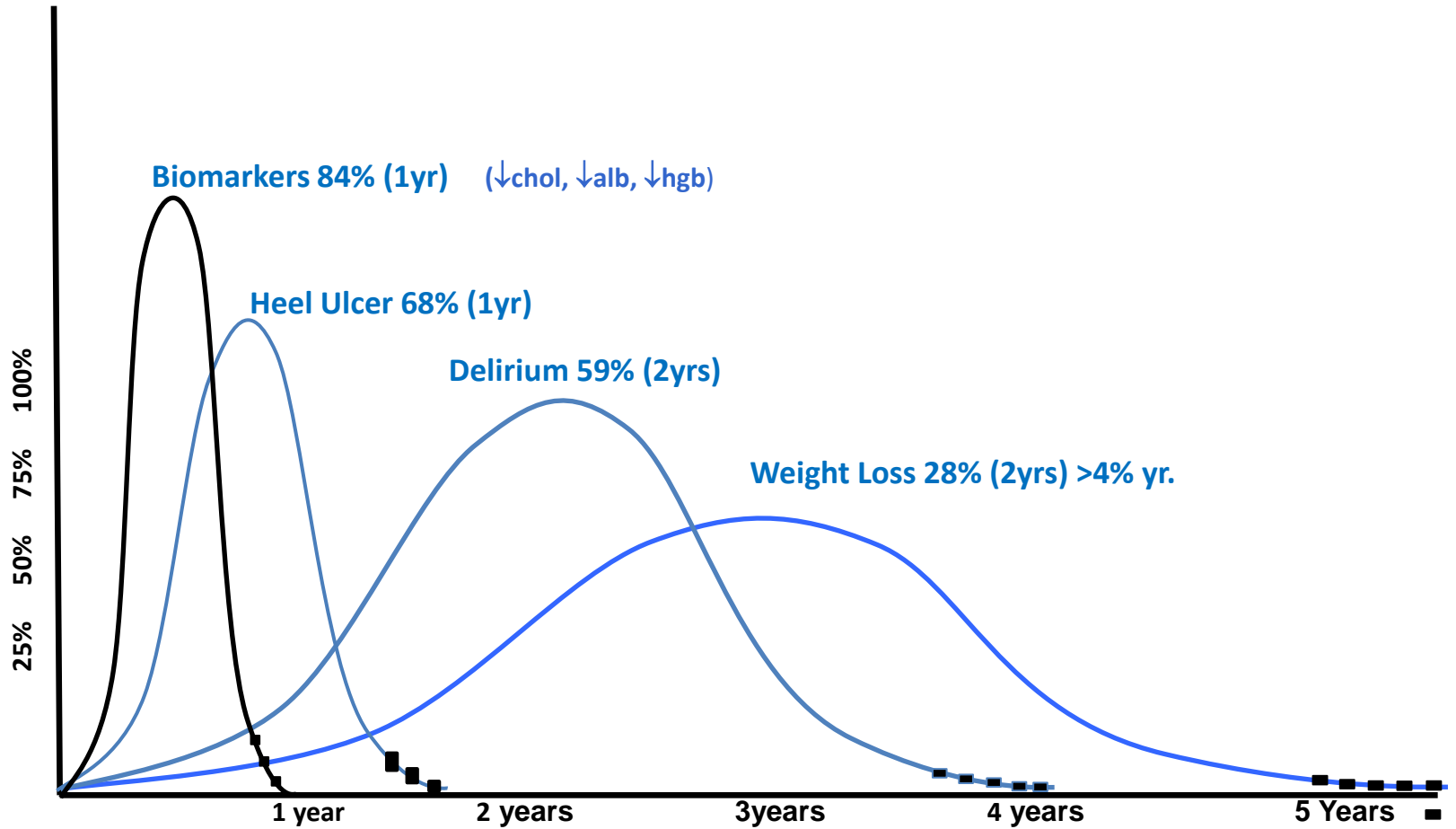
Delirium (multiple articles)

30% at 3 mo. to 78% at 34 mo.

Biomarkers (Verdery 1991 J of Gerontology)

84% 1 year mortality for patients with low cholesterol (<160) plus low albumin and hemoglobin versus 7% if none were low. For stable custodial patients.

Mortality



Hoefler, Daniel, MD

Other Risk Factors for this patient:

- Cognitive Decline
- Depression
- Social Isolation
- Polypharmacy

What is this patient's biggest concern?

How much does the patient's cardiac condition really play into her health status?

Do providers want to know what stage of advanced age their patient belongs to?

This patient's risk of developing hospital induced delirium is:

- a. 23%
- b. 33%
- c. 53%
- d. 63%
- e. 83%

Inouye, Sharon, MD, *Risk Factors for Delirium at Discharge*, Arch Intern Med 2007; 167(13)

Incident delirium

Risk Factors:

1. Dementia
2. Vision worse than 20/70
3. Functional Impairment
4. High comorbidities
5. Any Restraint

0-1 Low

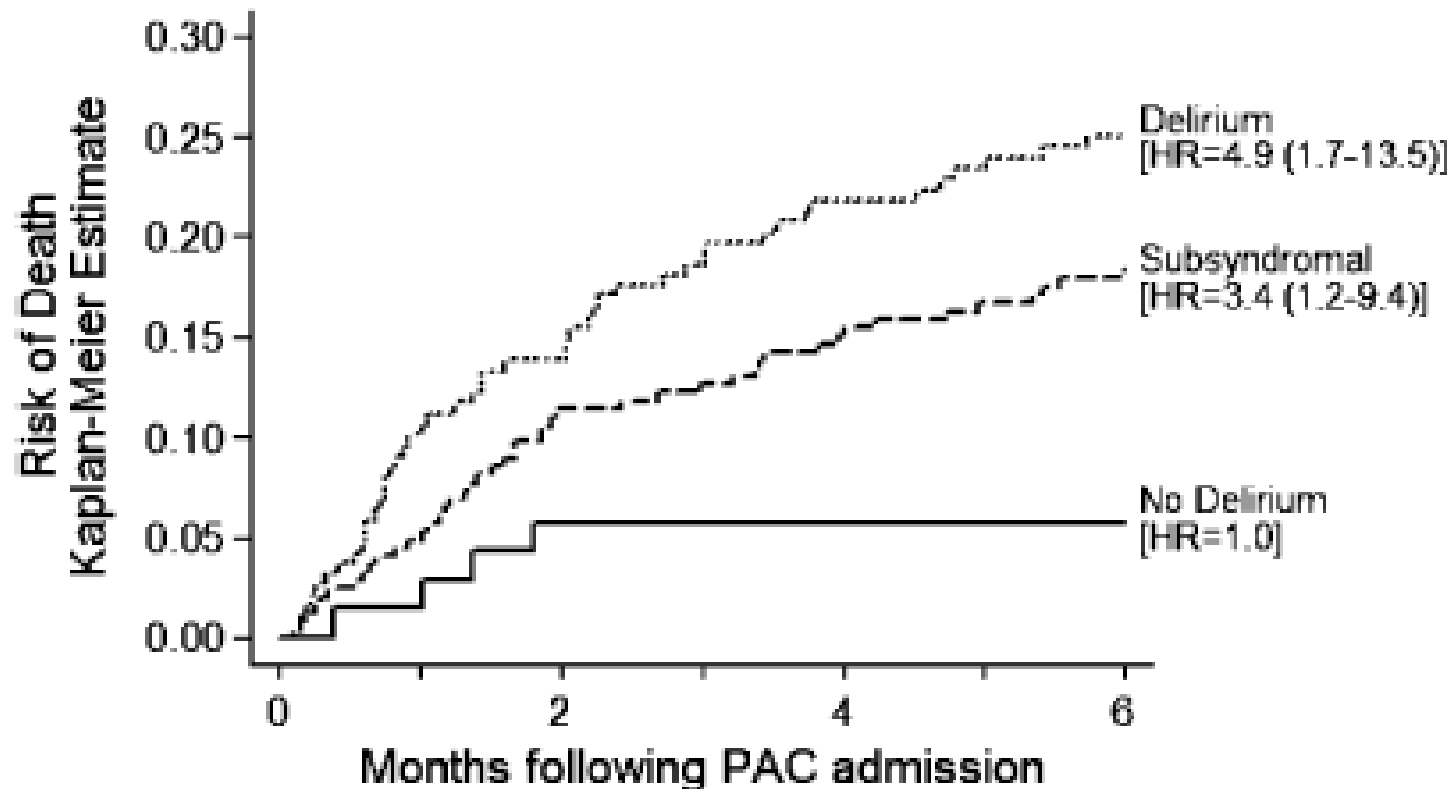
2-3 Intermediate

4-5 High

	Delirium	Death or NH Placement
Low risk	4%	15%
Intermediate	18%	39%
High	63%	64%

It is important to recognize who might develop delirium because delirium is associated with all of the following long term consequences except:

1. Delirium is only associated with short term but not long term consequences
2. Higher mortality
3. Longer lengths of stay
4. Higher rates of Readmissions
5. Permanent functional decline
6. Permanent Cognitive decline
7. Higher rates of institutionalization



HR=unadjusted hazard ratio (95% confidence interval)

NEJM Cognitive Decline Post Cardiac procedure 2012

- 60 years of age or older
- Statistically significant decrease in MMSE scores at 12 months for status post operative cardiac procedures
 $p < 0.001$
- 31% vs. 20% : delirious vs. non delirious patients
 $p = 0.055$

Saczynski, Jane, PhD, et Al. *Cognitive trajectories after post operative delirium* 2012, NEJM 367(1):30-39

Wacker, Priscilla, et al, *Post-Operative Delirium is Associated with Poor Cognitive Outcomes and Dementia*, *Dement Geriatri Cogn Disord* 2006; 21:221-27

Is delirium the precursor for dementia?

For this study – no pre-existing cognitive, hearing or visual deficit known
Hip or Knee replacement

Fracture – 60% developed delirium
Elective Repair – 24.6% developed delirium.

5 year prospective Study

Results: Patients who developed delirium were 1050% (10.5 times) more likely to have developed dementia than those who did not.

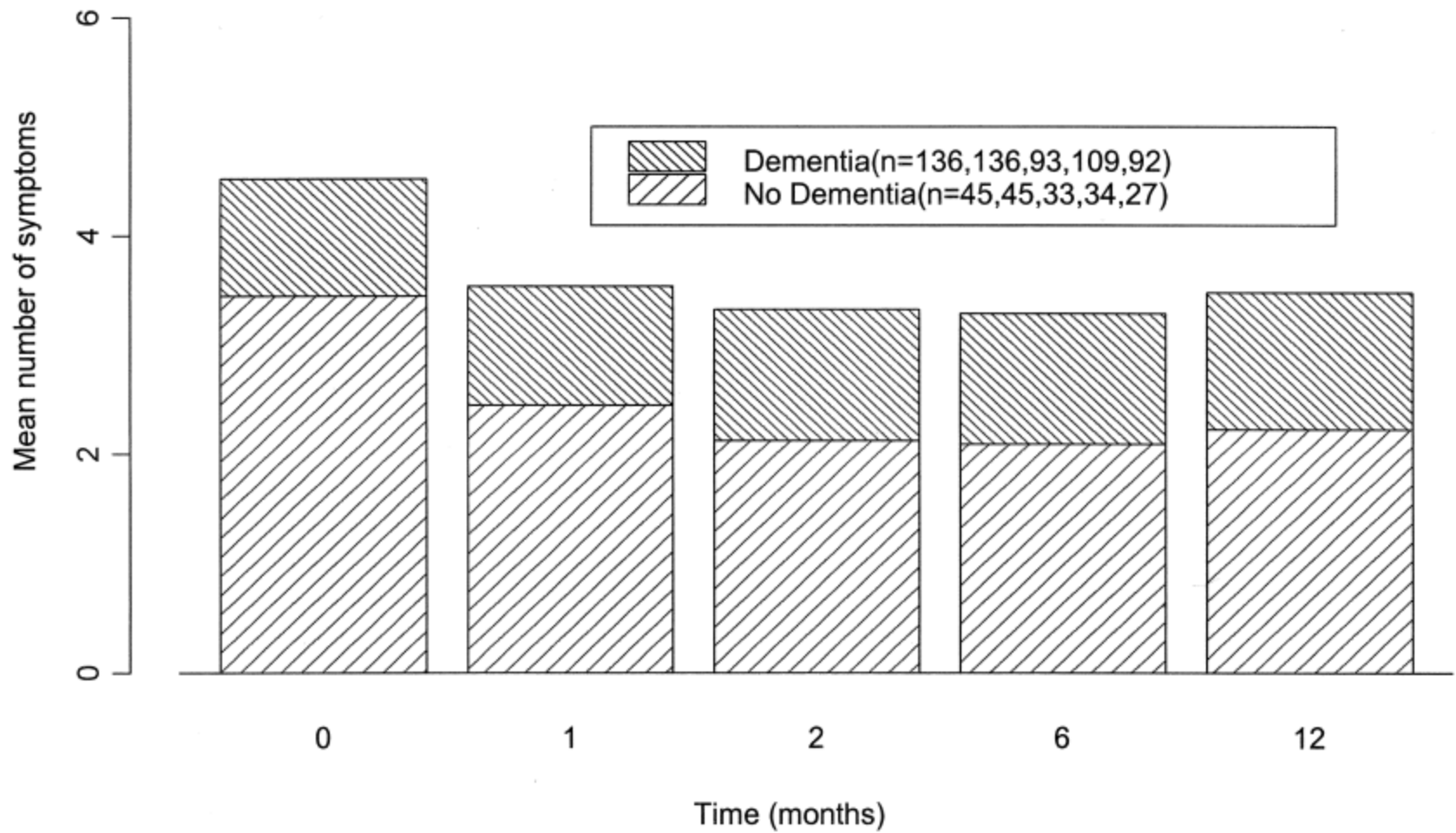


FIGURE 1. Mean number of delirium symptoms at baseline and follow-up in demented and non-demented patients.

Marcantonio, Edward, MD, SM, et al, *Delirium Is Independently Associated with Poor Functional Recovery After Hip Fracture*, JAGS, 2000; 48(6)

Delirium occurred in 52 of 126 patients

After adjusting for risk factors delirium was associated with poor functional outcomes at 1 mo

ADL decline	OR - 2.6
Decrease in ambulatory ability	OR - 2.6
Death or Nursing Home Placement	OR - 3.0

< 50% of patients returned to their pre-fracture level of function.
Followed for 6 months.

Using prognostic modeling, this patient's post hospital risk of functional decline is:

1. 15%
2. 25%
3. 35%
4. 45%
5. 55%

We **can** identify the at risk population for functional decline and provide statistical information:

Developmental Cohort n=448

Validation cohort n=379

3 Risk Factors Identified

1. Increased age
2. Decreased MMSE
3. IADL deficiency

(IADLS – Managing Finances, Taking Meds, Using the phone, Shopping, Transportation deficit, Preparing meals, deficient housework)

Sager, Mark A MD, et al, *Hospital Admission Risk Profile (HARP): Identifying Older Patients at Risk of Functional Decline Following Acute Medical Illness*, JAGS, 1996;44(3): 251-57

Risk of long term functional decline

	Development	Validation
Low (0-1)	17%	19%
Intermediate (2-3)	28%	31%
High (4-5)	56%	55%

This patient has how many characteristics of geriatric Frailty Syndrome? And why should we care?

1. 1:5
2. 2:5
3. 5:5
4. 3:8
5. 6:8

Frailty As A Predictor of Surgical Outcomes

LOS for Major Procedures

No Frailty	4.2 days
Intermediate	6.2 days
Frail	7.7 days

Surgical Complications Major Procedures

No Frailty	19.5%
Intermediate	33.7%
Frail	43.5%

Martin A Makary, MD, MPH, Am Coll Surg. 2010 Jun;210(6):901-8. doi: 10.1016

Discharge Disposition (Assisted Living or SNF)

Minor Procedure

No Frailty	0.8%
Intermediate	0%
Frail	17.4%

Major Procedure

No Frailty	2.9%
Intermediate	12.2%
Frail	42.1%

The Benefits of the Geropalliative Physical

1. Predicting who is likely to develop hospital-induced delirium
2. Identifying who is likely to be institutionalized after hospitalization
3. Identifying who will be discharged with psychotropic medications.
4. Identifying who will likely develop cognitive and/or functional decline regardless of the outcome of the organ system treated
5. Identifying who is at high risk of post hospital mortality
6. Identifying who is at high risk of prolonged hospital stay
7. Identifying who is at high risk of hospital complications
8. Identifying before hospitalization who is at risk of rehospitalization.

Surgical System wide Palliative Consultation and Frailty Screening:
Ernst, KF, et al, *Surgical Palliative Care Consultations Over Time in
Relationship to System wide Frailty Screening*, 2014 JAMA Surg

**33% reduction in 180-day mortality (p<0.001) even
after controlling for age, frailty or whether the
patient had surgery if the patient receives a
(physician led) palliative consultation.**

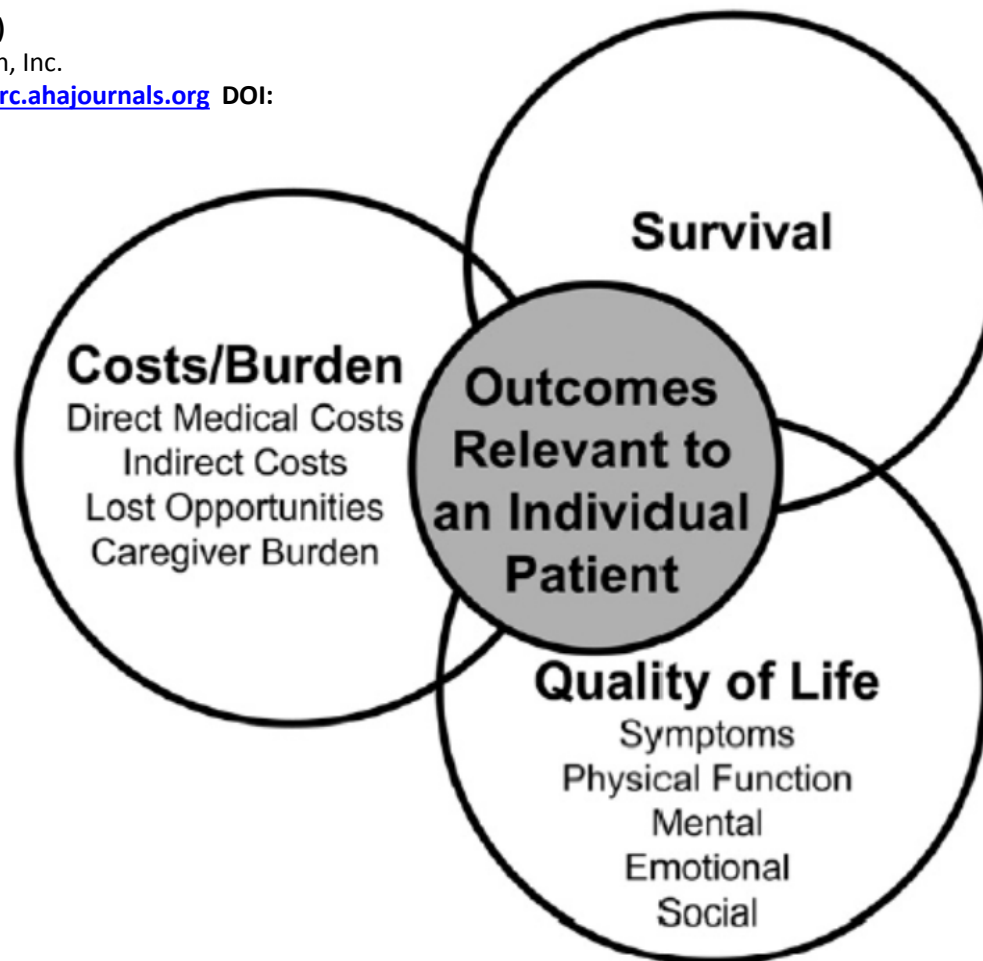


Figure 2. Prognosis is not only about expectations for survival. There are multiple domains that are of varying importance to individual patients. Adapted from Spilker.^{38]}

When a patient has lost their physiologic reserve decisions regarding care plans must involve Patient centered quality outcomes (PCQOs) vs Organ system directed interventions (OSDIs)

PCQOs

1. Worsening Symptoms
2. Preventing cognitive decline
3. Preventing Functional decline
4. Preventing Institutionalization
5. Not being an emotional and
6. financial burden to the family.

Versus

OSDIs

1. Improving Symptoms
2. Improving Function
3. Maintaining Status

OWNERSHIP

We are not only responsible for the acute outcomes of our patients but the long term consequences of that same care.

By using our professional skill of palliative prognostication we can foresee the risks of the unintended consequences of our care. We can then, at the least, offer them an alternative aggressive patient centered pathway.

Conclusion

The new paradigm: Integrating the Outcome goals of the advanced elderly is possible. Prognostication will be mandatory. Regaining this professional tool and the multiple diverse benefits will improve care for this demographic.

Thank you!