Prognostication
ACOI 2014

Annette Carron, D.O., CMD, FACOI, FAAHPM
Director Geriatrics and Palliative Care
Botsford Hospital
Definition

-Prognosis: The foretelling of the probable course of a disease; a forecast of the outcome of the disease.
Why talk about it?

- Doctors are not good at it.
- 80% patients in AARP study wish to die at home
- ~ 80% deaths occur in institutions (hospital/nursing home)
- 40% Medicare dollars spent in last month of life
Sudden death, unexpected cause

- < 10%, MI, accident, etc
Steady decline, short terminal phase
Slow decline, periodic crises, sudden death
National data on the experience of dying in 5 tertiary care teaching hospitals

- The SUPPORT Study
- Controlled trial to improve care of seriously ill patients
- Multicenter study funded by RWJ
- 9000 patients with life threatening illness, 50% died within 6 months of entry

- JAMA 1995;274:1591-98
SUPPORT: Phase I Observational Study

• Determine objective measures of quality of death:
  – Presence and timing of written DNR
  – MD awareness of DNR preferences
  – Number of ‘undesirable days
  – Pain levels
  – Costs of Care
SUPPORT: Phase I Results

- 46% of DNR orders written within 2 days of death
- Of patients preferring DNR, <50% of the doctors were aware of their wishes
- 38% of those who died spent > 10 days in ICU
- Half of patients had moderate-severe pain>50% of last 3 days of life
What do patients want?

- Patient Preferences Regarding CPR
  Influence of Survival Probability

<table>
<thead>
<tr>
<th></th>
<th>Acute Illness</th>
<th>Chronic Illness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Estimated probability of surviving after CPR</td>
<td>26% +/- 22</td>
<td>15% +/- 16</td>
</tr>
<tr>
<td>Preferred CPR before knowing probability</td>
<td>41%</td>
<td>11%</td>
</tr>
<tr>
<td>Preferred CPR after learning survival probability</td>
<td>22%</td>
<td>5%</td>
</tr>
<tr>
<td>&gt; 85 years old</td>
<td>6%</td>
<td>3%</td>
</tr>
</tbody>
</table>

- 42% would want CPR if < 50% chance of leaving hospital
- 25% would not want CPR if 100% chance of leaving hospital

Murphy et al NEJM 1994
What to do about it?

• Recognize problem exists

• AMA Recs: “Would I be surprised if my patient died in the next year?” — if no, re-assess current state and immediate future.

• Clinical Predictors

• Second Opinion — Can get prediction based on patient data/information alone.
NHO (National Hospice Organization)
Guidelines for Determining Prognosis: Non-Cancer Diagnoses

• Dementia
  – Functional Assessment Staging
    • Stages
      – 1. no difficulties
      – 2. Subjective forgetfulness
      – 3. Decreased job function and organizational capacity
      – 4. Difficulty with complex tasks, instrumental ADLs
      – 5. Requires supervision with ADLs
      – 6. Impaired ADLs, with incontinence
      – 7. A. speech limited to 6 words
         B. speech single word
         *C. Loss of ambulation
         D. Inability to sit
         E. Inability to smile
         F. Inability to hold up head
NHO Guidelines for Determining Prognosis: Non-Cancer Diagnoses

• Dementia
  – Urinary and Fecal Incontinence
  – Needs assist with all ADLs
  – Presence of Medical Complications
    • Aspiration Pneumonia
    • Recurrent UTIs
    • Sepsis
    • Multiple Decubitus Ulcers
    • Fever after Antibiotics
  – Dysphagia – esp. if not meeting po caloric needs
    • 10% weight loss over 6 months, even with tube feedings
    • Albumin < 2.5 gm/dl
NHO Guidelines for Determining Prognosis: Non-Cancer Diagnoses

• CHF
  – NHYA Class IV – symptoms at rest
  – Optimally treated with meds: ACEI, Diuretics, B-Blockers, Vasodilators
  – Symptomatic SVT, resistant ventricular arrhythmias
  – History of Cardiac Arrest
  – History of unexplained syncope
  – Cardiogenic brain embolism
  – EF < 20%
Other Poor Prognostic Factors in CHF

• Recent hospitalization for cardiac event
• BUN >1.4
• SBP < 100 or pulse >100
• Anemia
• Hyponatremia (Na+ < 135-137)
• Cachexia
• Co-morbidities

Lee, Douglas, JAMA, 2003
NHO Guidelines for Determining Prognosis: Non-Cancer Diagnoses

• COPD
  – Dyspnea at rest, poorly responsive to bronchodilators with debility (bed-chair existence) with fatigue and cough
  – FEV 1 < 30% of predicted after bronchodilator
  – Multiple ER visits/hospitalizations
  – Cor Pulmonale/Right Heart Failure
  – Hypoxia at rest on O2
  – pCO2 >50 mm Hg
  – Resting tachycardia >100/min
  – Previous mechanical ventilation
NHO Guidelines for Determining Prognosis: Non-Cancer Diagnoses

• Stroke
  – Acute Phase:
    • Coma or PVS >3days duration
      – Abnormal brain stem response
      – Absent verbal response
      – Absent withdrawal response to pain
      – Serum creatinine > 1.5 mg/dl
      – Age >70
  – Chronic Phase
    • Similar to dementia criteria
NHO Guidelines for Determining Prognosis: Non-Cancer Diagnoses

• Renal Disease
  – Creatinine clearance of < 10cc/min
  – Serum creatinine > 8.0
  – Uremia
  – Urine output < 400cc/24 hrs.
  – Intractable hyperkalemia
  – Intractable fluid overload
NHO Guidelines for Determining Prognosis: Non-Cancer Diagnoses

• Liver Disease
  – End-stage cirrhosis
    • Prolonged PT
    • Albumin <2.5 gm/dl
    • Refractory ascites despite diuretics
    • Spontaneous bacterial peritonitis
    • Hepatic encephalopathy refractory to treatment
    • Recurrent variceal bleeding
  – Worst prognosis
    • Hepatorenal syndrome
NHO Guidelines for Determining Prognosis: Non-Cancer Diagnoses

• HIV
  – CD4 count of less than or equal to 25
  – Viral load of greater than or equal to 100,000 copies/ml
  – Wasting
  – Mycobacterium avium complex
  – Progressive multifocal leukoencephalopathy
  – Kaposis, toxoplasmosis, cryptosporidium
  – Renal failure
NHO Guidelines for Determining Prognosis: Non-Cancer Diagnoses

• ALS
  – Dysphagia
  – Dyspnea at rest (refuses mechanical ventilation)
  – Drooling
  – Vital capacity less than 30% of normal
  – Bedbound
  – Dependency
NHO Guidelines for Determining Prognosis: Non-Cancer Diagnoses

• General Guidelines
  – Progression of primary disease
  – Multiple ED visits or inpatient hospitalizations over prior six months
  – Recent decline in functional status (PPS)
  – Recent impaired nutritional status
    • Unintentional, progressive weight loss of > than 10% over the prior six months
    • Serum albumin <2.5 gm/dl.
General Guidelines for Prognostication: Palliative Performance Scale (PPS)

• Prognostic tool
• Evaluates ambulation, activity level, evidence of disease, self-care, po intake, level of consciousness
• 0-100%
• \(<40\%\) often indicates prognosis less than 6 months
# Palliative Performance Scale

<table>
<thead>
<tr>
<th>%</th>
<th>Ability to Ambulate</th>
<th>Activity and Evidence of Disease</th>
<th>Self-Care</th>
<th>Intake</th>
<th>Level of Conscious.</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>Full</td>
<td>Normal activity, no evidence of disease</td>
<td>Full</td>
<td>Normal</td>
<td>Full</td>
</tr>
<tr>
<td>90</td>
<td>Full</td>
<td>Normal activity, some evidence of disease</td>
<td>Full</td>
<td>Normal</td>
<td>Full</td>
</tr>
<tr>
<td>80</td>
<td>Full</td>
<td>Normal activity with effort, some evidence of disease</td>
<td>Full</td>
<td>Normal or reduced</td>
<td>Full</td>
</tr>
<tr>
<td>70</td>
<td>Reduced</td>
<td>Unable to do normal work, some evidence of disease</td>
<td>Full</td>
<td>Normal or reduced</td>
<td>Full</td>
</tr>
<tr>
<td>60</td>
<td>Reduced</td>
<td>Unable to do hobby or housework, Evidence of significant disease</td>
<td>Occasional assist necessary</td>
<td>Normal or reduced</td>
<td>Full or confusion</td>
</tr>
<tr>
<td>50</td>
<td>Mainly sit/lie</td>
<td>Unable to do any work, extensive disease</td>
<td>Considerable assistance required</td>
<td>Normal or reduced</td>
<td>Full or confusion</td>
</tr>
<tr>
<td>40</td>
<td>Mainly in bed</td>
<td>Unable to do any work, extensive disease</td>
<td>Mainly assistance</td>
<td>Normal or reduced</td>
<td>Full, drowsy, or confusion</td>
</tr>
<tr>
<td>30</td>
<td>Totally bed bound</td>
<td>Unable to do any work, extensive disease</td>
<td>Total care</td>
<td>Reduced</td>
<td>Full, drowsy, or confusion</td>
</tr>
<tr>
<td>20</td>
<td>Totally bed bound</td>
<td>Unable to do any work, extensive disease</td>
<td>Total care</td>
<td>Minimal sips</td>
<td>Full, drowsy, or confusion</td>
</tr>
<tr>
<td>10</td>
<td>Totally bed bound</td>
<td>Unable to do any work, extensive disease</td>
<td>Total care</td>
<td>Mouth care only</td>
<td>Drowsy or coma</td>
</tr>
<tr>
<td>0</td>
<td>Death</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
General Guidelines for Prognostication: Morbidity

• ICU scoring tools that exist to predict morbidity
  – APACHE III
  – Glasgow Coma Scale
  – PIM 2
  – SAPS III

• NHLBI – National Heart, Lung and Blood Institute –

• Multiple comorbidities can add to poor prognosis
Determining Prognosis in Advanced Cancer

How long do I have, doc?

Most predictive factor in cancer is Performance Status/Functional Ability
- Karnofsky Index (100 = normal; 0 = dead)
- ECOG Scale (Eastern Cooperative Oncology Group), (0 = normal; 5 = dead)
- Median survival of 3 months roughly correlates with Karnofsky < 40 or ECOG > 3
<table>
<thead>
<tr>
<th>Description</th>
<th>Percent (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal; no complaints; no evidence of disease</td>
<td>100</td>
</tr>
<tr>
<td>Able to carry on normal activity; minor signs or symptoms of disease</td>
<td>90</td>
</tr>
<tr>
<td>Normal activity with effort; some signs or symptoms of disease</td>
<td>80</td>
</tr>
<tr>
<td>Cares for self; unable to carry on normal activity or do work</td>
<td>70</td>
</tr>
<tr>
<td>Requires occasional assistance, but is able to care for most personal needs</td>
<td>60</td>
</tr>
<tr>
<td>Requires considerable assistance and frequent medical care</td>
<td>50</td>
</tr>
<tr>
<td>Disabled; requires special care and assistance</td>
<td>40</td>
</tr>
<tr>
<td>Severely disabled; hospitalization indicated although death not imminent</td>
<td>30</td>
</tr>
<tr>
<td>Very sick; hospitalization necessary; requires active support treatment</td>
<td>20</td>
</tr>
<tr>
<td>Moribund; fatal processes progressing rapidly</td>
<td>10</td>
</tr>
<tr>
<td>Dead</td>
<td>0</td>
</tr>
</tbody>
</table>
Determining Prognosis in Advanced Cancer

• How do you spend your time: how much time do you spend in bed or laying down?
  – if > 50% and is increasing, prognosis likely 3 months or less
  – Decreased survival time with increased symptoms

• Pts with solid tumors typically lose ~ 70% of functional ability in last 3 months of life

• Pt with mets solid cancer, acute leukemia or high-grade lymphoma, who will not be receiving systemic chemo has prognosis < 6 months
  – (usually except breast & prostate ca with good performance status)
Determining Prognosis in Advanced Cancer

• How do you spend your time: how much time do you spend in bed or laying down?
  – if > 50% and is increasing, prognosis likely 3 months or less
  – Decreased survival time with increased symptoms

• Pts with solid tumors typically lose ~ 70% of functional ability in last 3 months of life

• Pt with mets solid cancer, acute leukemia or high-grade lymphoma, who will not be receiving systemic chemo has prognosis < 6 months
  – (usually except breast & prostate ca with good performance status)
Determining Prognosis in Advanced Cancer

- Oral intake
- Edema
- Dyspnea
- Delirium
- WBC count
- % lymphocyte count
- Clinician’s estimation
Miscellaneous prognostic markers

• Stopping dialysis = 7 – 14 days
• Not eating / no tube feeds = weeks to months
• Not drinking / no IV fluids = weeks
CPR Survival in the Hospital Setting

- National Registry of CPR - 20 min. after CPR survival 44%, only 17% of all CPR patients survived to discharge
- Meta Analysis – 1998 - Factors predicting a failure to survive to discharge include:
  - Sepsis one day prior to CPR event
  - Serum Cr > 1.5 mg/dl
  - Mets Cancer – (2-6% survived to discharge)
  - Dementia
  - Dependent status
- Dialysis pts -14% survival to discharge
- On average overall – 15% (1 in 6) may survive to discharge, worse survival with increased co-morbidities and/or CPR related complications
The “Goals of Care” Discussion

• Can apply to discussing Morbidity, Mortality and Prognosis

• Participants (Six Step Protocol for Breaking Bad News – Robert Buckman)

• Timing

• Location

• Fact-gathering
  – What they know
  – What they want to know
  – Cultural or religious issues

• Review information – Allow for uncertainty

• Assure continuation of care
Cogent and Compassionate Prognostication

• Sensitively delivered to individuals who want it – confirm they are ready to hear
• Well calibrated best guess – present info using a range: a few days to weeks; 2-4 months, 3-6 months
• Comprehensible by patient and family
• Broaden meaning of hope
• Non-abandonment
• Discussion of pros and cons of therapies
Expression of Wishes in Response to Loss, Futility and Unrealistic Hope

<table>
<thead>
<tr>
<th>Clinical Scenario</th>
<th>Sample Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delivering very bad news</td>
<td>I wish I had better news to give you</td>
</tr>
<tr>
<td>Responding to unrealistic hopes</td>
<td>I wish that were possible. It sounds like all of us would be a lot happier if</td>
</tr>
<tr>
<td>From a patient or family</td>
<td>that were so.</td>
</tr>
<tr>
<td>Responding to demands for Aggressive treatment when</td>
<td>It must be very hard to come to the intensive care unit every day and see so</td>
</tr>
<tr>
<td>Prognosis is very poor</td>
<td>little change. I wish medicine had the power to turn things around</td>
</tr>
<tr>
<td>Responding to expressions of Loss, grief, and</td>
<td>It sounds like a terrible loss for you. I wish it hadn’t turned out this way.</td>
</tr>
</tbody>
</table>
The Death of Ivan Ilych - Tolstoy

- What tormented Ivan Ilych most was the deception, the lie . . . That he was not dying but was simply ill, and that he only need keep quiet and undergo treatment and then something very good would result.
"How do I tell him he's going to die?"

"When will he tell me I'm going to die?"