The path forward would seem obvious, if only I knew how many months or years I had left. Tell me three months, I’d just spend time with family. Tell me one year, I’d have a plan (write that book). Give me 10 years, I’d get back to treating diseases.

The prospect of recovery as anticipated from the usual course of a disease
A judgment about what is going to happen in the future

Prognostic awareness is a patient’s capacity to understand his or her prognosis and the likely illness trajectory.
When patients hold an inaccurate perception of their goals of treatment or the likely outcome of their illness, we consider them to have low or poor prognostic awareness.
**Prognostic Awareness Impacts Communication About Hospice**

<table>
<thead>
<tr>
<th>Self-Reported Prognosis</th>
<th>Discussed Hospice (%)</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 1 year</td>
<td>44.8</td>
<td>0.001</td>
</tr>
<tr>
<td>≥ 1 year but &lt; 2 years</td>
<td>37.8</td>
<td></td>
</tr>
<tr>
<td>≥ 2 years but &lt; 5 years</td>
<td>16.0</td>
<td></td>
</tr>
<tr>
<td>≥ 5 years</td>
<td>11.7</td>
<td></td>
</tr>
<tr>
<td>‘in god’s hands’</td>
<td>15.7</td>
<td></td>
</tr>
<tr>
<td>Do not know</td>
<td>18.5</td>
<td></td>
</tr>
</tbody>
</table>


---

**Prognostication Consists of Two Parts**

1. foreseeing (estimating prognosis)
2. foretelling (discussing prognosis).

---

**Last Chapter of Life Is Characterized by 3 Major Deficiencies**

1. unnecessary suffering
2. unacceptable variation in treatment with striking excesses in non-beneficial treatment
3. unsustainable costs


---

**Palliative Care in the Intensive Care Unit**

- In US: 26% increase in the number of intensive care beds.
- One in five patients receives terminal care in the intensive care setting.
- Of all hospital deaths, 47% receive intensive care services during the terminal admission with less than 20% of these patients having completed an advance directive.
- Do-not attempt resuscitation orders are often written within days of death.
- Conversations occur late in the disease trajectory, patients and families perceive have an emotional distress.


---

**What's the Problem with Waiting?**

Patients and their families don't know unless you tell them.

[Image showing the problem with waiting]
Clinician must
• Have knowledge of prognosis
• Be willing to share that knowledge
• Offer that knowledge when the patient can hear it
• Use language the patient can understand
• Communicate this information compassionately

Ask yourself,
“Would I be surprised if my patient died in the next year?”
Answering “no” should trigger a reassessment of the patient’s current state and immediate future.

Reasons Why Physicians Do Not Have Discussions About Poor Prognosis, Why It Matters, and What Can Be Improved

- We Do Not Really Know a Patient’s Prognosis
- True

- Talking About Prognosis Is Not Culturally Appropriate
  - Incorrect
  - different preferences by ethnicity should not dictate communication with individuals.

- We Do Not Like to Have These Discussions?
  - True: Most oncologists find breaking bad news to be stressful, and few find it satisfying

Clinician must
• Have knowledge of prognosis
• Be willing to share that knowledge
• Offer that knowledge when the patient can hear it
• Use language the patient can understand
• Communicate this information compassionately
DOCTORS ARE POOR PROGNOSTICATORS

Clinician predicted survival (CPS) is formulated solely on the basis of the clinician's knowledge and experience.

FORESEEING

- Requires knowledge of the natural history of disease (trajectory) and an understanding of how treatment could modify survival—an appreciation of individual patient-related factors such as comorbidities.

TOOLS FOR DO THE PROGNOSTICATION

1. Clinical prediction of survival (CPS) erroneous 30% of the time in expert hands.

- A study by Christakis. He asked 343 physicians to provide survival estimates for 468 terminally ill patients at the time of hospice referral.
  - Only 20% of predictions were accurate (as defined as within 33% of actual survival).
  - Overall, doctors overestimated by a factor of 5.3

BMJ. 2000; 320:469-472

DISEASE TRAJECTORY

Several common cancers: prognosis

- Malignant hypercalcemia: 8 weeks, except newly diagnosed breast cancer or myeloma
- Malignant pericardial effusion: 8 weeks
- Carcinomatous meningitis: 8-12 weeks
- Multiple brain metastases: 1-2 months without radiation; 3-6 months with radiation.
- Malignant ascites, malignant pleural effusion or bowel obstruction: <6 months.

TOOLS FOR DO THE PROGNOSTICATION

2. Statistical estimate of survival:
   - Performance status (PS): ECOG, KPS; A median survival < 3 months roughly correlates with a Karnofsky score <40 or ECOG > 3
   - Multiple demographic factors tools: PaP, PPS, PPI

ECOG SCORE
(EASTERN COOPERATIVE ONCOLOGY GROUP)

- 0 – Asymptomatic
  - (Fully active, able to carry on all pre-disease activities without restriction)
- 1 – Symptomatic but completely ambulatory
  - (Restricted in physically strenuous activity but ambulatory and able to carry out work of a light or sedentary nature. For example, light housework, office work)
- 2 – Symptomatic, <50% in bed during the day
  - (Ambulatory and capable of all self-care but unable to carry out any work activities. Up and about more than 50% of waking hours)
- 3 – Symptomatic >50% in bed, but not bedbound
  - (Capable of only limited self-care; confined to bed or chair 50% or more of waking hours)
- 4 – Bedbound
  - ( Completely disabled. Cannot carry on any self-care. Totally confined to bed or chair)
- 5 – Death

KARNOFSKY SCORING

- Dr. David A. Karnofsky, who described the scale with Dr. Joseph H. Burchenal in 1949 has proposed to evaluate a patient’s ability to survive chemotherapy for cancer.
- A median survival of 3 months roughly correlates with a Karnofsky score <40 or ECOG > 3.

http://www.mypenow.org/blank-hh45g

PROGNOSTIC FACTORS

- Laboratory variables
  - Leukocytosis
  - Lymphocytopenia
  - Hypoalbuminemia
  - Elevated lactate dehydrogenase (LDH)
  - Elevated C-reactive protein (CRP)

PALLIATIVE PERFORMANCE SCALE (PPS)

- (PPS) is a modification of the KPS
- PPS is a reliable and valid tool and correlates well with actual survival and median survival time for cancer patients.
- The Palliative Performance Scale (PPS) uses five observer-rated domains correlated to the Karnofsky Performance Scale (100-0).

EXERCISE

- 77 years old, Prostate cancer patient with bone, liver metastases,
- clinical: fatigue from cancer, usually stay on bed, need help in a short distance walking, able in self care, conscious, normal eat function.
- Underlying disease: DM, COPD
Exercise

Using the PPS

1. Prostate cancer patient with bone metastases, clinical: fatigue from cancer, usually stay on bed, need help in a short distance walking, able in self care, conscious, normal eat function.

PPS 40 = 18-41 days

PALLIATIVE PROGNOSTIC INDEX (PPI)

<table>
<thead>
<tr>
<th>PPI</th>
<th>Mean survival (± standard error) (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-2</td>
<td>134 ± 11 (113-155) days</td>
</tr>
<tr>
<td>2-4</td>
<td>89 ± 7.0 (74-103) days</td>
</tr>
<tr>
<td>&gt;4</td>
<td>35 ± 2.9 (17-29) days</td>
</tr>
</tbody>
</table>

PALLIATIVE PROGNOSTIC SCORE (PAP)

- The PaP uses the Karnofsky Performance Score (KPS) and 5 other criteria: Dyspnea, Anorexia, Cramps, Clinical Prediction of Survival (weeks), Total WBC (x109/L), Lymphocyte Percentage.

Generate a numerical score from 0 to 17.5 to predict 30 day survival (higher scores predict shorter survival).

PROGNOSIS WEB TOOL

- Adjuvant online: breast cancer
- ePrognosis: www.epronosis.org
Tools have high sensitivity and specificity when time were < 3 months

- The delivery of prognostic information in a clear, sensitive, and compassionate manner and represents a longitudinal process of communication rather than a single discussion.

**FORETELLING**

- Confirm that the patient/family are ready to hear prognostic information.
- Present information using a range: a few days to weeks; 2-4 months, etc.
- Allow silence after you provide information; respond to emotion.
- Use prognostic information as a starting point for eliciting end-of-life goals

DISCUSSING PROGNOSIS

- Guessing doesn't work
- Avoiding doesn't help.
- Bluntness almost always injure
- Be culturally and individually careful

**PITFALL IN TELL PROGNOSIS**

- Setting up the interview
- Perception of the patient
- Invitation by the patient
- Knowledge to the patient
- Emotions of the patient
- Strategy and summary

THE MEDIAN IS NOT THE MESSAGE

- Technical language frequently unclear
- 100 women with breast cancer: 73% misunderstood “median survival”
- No agreement on what a “good” chance of survival meant numerically
- Medical jargon can make bad news worse

**Technical language frequently unclear**

- 100 women with breast cancer: 73% misunderstood
- "median survival" - No agreement on what a "good" chance of survival meant numerically. Medical jargon can make bad news worse.

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**CANCER DIAGNOSIS AND PROGNOSIS IN TAIWAN: PATIENT PREFERENCES VERSUS EXPERIENCES**

Table 4. Comparison of preferences of information disclosure to self or family

<table>
<thead>
<tr>
<th>WHO: บอกใคร ผู้ป่วย VS ครอบครัว</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Information to self</em></td>
</tr>
<tr>
<td>Inform-self</td>
</tr>
<tr>
<td>Inform-family</td>
</tr>
<tr>
<td>Inform-self prior to informing family</td>
</tr>
<tr>
<td>Inform-family prior to informing self</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Progress</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inform-self</td>
</tr>
<tr>
<td>Inform-family</td>
</tr>
<tr>
<td>Inform-self prior to informing family</td>
</tr>
<tr>
<td>Inform-family prior to informing self</td>
</tr>
</tbody>
</table>

---

**INFORMATION NEEDS OF CANCER PATIENTS IN WEST SCOTLAND: CROSS SECTIONAL SURVEY OF PATIENTS' VIEWS**

Table 5—Responses of 200 cancer patients to specific questions about need for information. Values are numbers (percentages)

<table>
<thead>
<tr>
<th>Question</th>
<th>Do not want to know</th>
<th>Would like to know</th>
<th>Absolute need to know</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whether their disease is cancer</td>
<td>11 (58)</td>
<td>107 (54)</td>
<td>92 (46)</td>
</tr>
<tr>
<td>What is the specific medical name of the person?</td>
<td>62 (31)</td>
<td>116 (58)</td>
<td>74 (37)</td>
</tr>
<tr>
<td>What is the stage of the disease</td>
<td>34 (17)</td>
<td>105 (53)</td>
<td>71 (35)</td>
</tr>
<tr>
<td>What are the chances of cure</td>
<td>25 (13)</td>
<td>77 (39)</td>
<td>146 (73)</td>
</tr>
<tr>
<td>What are some possible treatments</td>
<td>94 (47)</td>
<td>92 (46)</td>
<td>186 (93)</td>
</tr>
<tr>
<td>What are all possible side effects of treatment</td>
<td>14 (7)</td>
<td>52 (26)</td>
<td>68 (34)</td>
</tr>
<tr>
<td>Exactly how treatment works to treat disease</td>
<td>197 (100)</td>
<td>91 (46)</td>
<td>108 (54)</td>
</tr>
</tbody>
</table>

BMJ 1996;313:724-6

---

**Steps to Achieve Prognostic Awareness**

- Patient must:
  - Understand and accept what they have been told
  - Feel comfortable writing it down on a piece of paper

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**Patients' Role**


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**Patients' Preference for Prognostic Disclosure**

[Graph showing patient and family preferences for information disclosure]

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**Presented By Jennifer Temel at 2016 ASCO Annual Meeting**
WHEN FAMILY SAYS: “DON’T TELL”

- Family: “It would kill him – I don’t want you to tell him”
- Can be avoided if patients are consulted first about their diagnosis
- Gain the relatives trust
- Assess the relatives understanding of the disease and reason for not telling the patient
- What does the patient know?
- Discuss the consequences of not telling
- Establish ground rules with the family

DEALING WITH COLLUSION

- Family: “It would kill him – I don’t want you to tell him”
- Can be avoided if patients are consulted first about their diagnosis
- Gain the relatives trust
- Assess the relatives understanding of the disease and reason for not telling the patient
- What does the patient know?
- Discuss the consequences of not telling
- Establish ground rules with the family

NOT ONLY PATIENTS EVALUATED FAMILY, TOO

Burden and Depression Among Caregivers of Patients with Cancer at the End-of-life

Barbara Gries, Ph.D., R.N., F.A.A.N. (University Distinguished Professor), Michigan State University
Gwen Waye, Ph.D., R.N. (Associate Professor), Michigan State University
Charles Trieno, Ph.D. (Professor), Michigan State University
Audrey St. John, Ph.D., R.N., F.A.A.N. (Professor and Associate Dean), Michigan State University
P. Sherwood, Ph.D., R.N., C.N.R.N. (Doctoral Candidate), Michigan State University
Danielle Vittoria, Ph.D. (Assistant Professor), and Michigan State University
Mohamed Rashid, Ph.D. [Biosatistics]
Michigan State University

Key Points

- Increasingly, cancer care is provided in the home, with family members taking on the role of primary caregivers, assisting patients with activities related to everyday tasks and with medical procedures at home.
- The effectiveness of providing care for patients with cancer at the end-of-life on caregiver burden and depression has not been adequately explored.

- Middle-aged, adult children, and employed family caregivers reported higher levels of depressive symptoms than their counterparts. Regarding caregiver burden, female, non-spouse, and adult children caregivers reported a high perception of feeling abandoned, and adult children caregivers of patients with early stage cancer and patients with multiple symptoms reported a high perception of disruption in their schedule due to providing care.
Depression and anxiety among caregivers of patients with advanced cancer

Ryan Nipp • Joel Fishbein • Areej El-Jawahri • Bill Pirl • Justin Eusebio
Samantha Moran • Caitlin McCarty • Emily Gallagher • Elyse Park
Vicki Jackson • Joe Greer • Jennifer Temel
Massachusetts General Hospital Cancer Center

Ryan David, J Clin Oncol 33, 2015 (suppl 29; abstr 224)

Early Palliative Care

<table>
<thead>
<tr>
<th>Variable</th>
<th>Usual Care</th>
<th>Early PC</th>
<th>P-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary goal of cancer treatment is cure</td>
<td>34.6%</td>
<td>28.7%</td>
<td>0.29</td>
</tr>
<tr>
<td>Prefer to extend life as long as possible, even if it meant more pain and discomfort</td>
<td>34.5%</td>
<td>33.6%</td>
<td>0.99</td>
</tr>
<tr>
<td>Knowing about prognosis is very/extremely helpful for making decision about treatment</td>
<td>89.8%</td>
<td>96.5%</td>
<td>0.04</td>
</tr>
<tr>
<td>Coping with the disease</td>
<td>83.6%</td>
<td>97.3%</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Discussed wishes about care if dying</td>
<td>14.6%</td>
<td>30.2%</td>
<td>&lt;0.01</td>
</tr>
</tbody>
</table>

Presented By Jennifer Temel at 2016 ASCO Annual Meeting

UNCERTAINLY OF PROGNOSIS IN ONCOLOGY

- Uncertainty has always been a challenge for the oncologists when formulating a prognosis.

STRATEGIES

- Clinician directed interventions
- Early palliative care

a  Before EGFR TKI

b  After EGFR TKI

"Here's my DNA sequence."
PERJETA AND HERCEPTIN BIND TO DIFFERENT DOMAINS ON HER2 AND HAVE COMPLEMENTARY MECHANISMS OF ACTION

PERJETA binds to subdomain II and inhibits ligand-dependent signaling.

HER2

PERJETA – HER2

TRASTUZUMAB binds to subdomain IV and inhibits ligand-independent, intracellular signaling.

The pertuzumab–trastuzumab combination offers a more comprehensive HER2 blockade.

Figure adapted from:
5. Trastuzumab
6. Pertuzumab

CLEOPATRA: CONFIRMATORY OS ANALYSIS OF PHASE III PERTUZUMAB STUDY

A second interim analysis of OS was performed with an additional 1yr of follow-up (Results at median FU of 30 mos)

<table>
<thead>
<tr>
<th>Second Interim OS Analysis</th>
<th>Pertuzumab Arm</th>
<th>Placebo Arm</th>
<th>HR (95% CI)</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-yr estimated, %</td>
<td>66</td>
<td>50</td>
<td>0.66 (0.52–0.84)</td>
<td>.0008</td>
</tr>
<tr>
<td>Median OS, mos</td>
<td>Not reached</td>
<td>37.6</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

OS of 40.8 months in the placebo arm and 56.5 months in study arm

ESMO 2014

PALLIATIVE IN TARGETED THERAPY ERA

- Media and raise hopes in patients and among experts

Patel et al. 2014

- www.mygenecancer.org can check the availability of specific treatment options

Townsley et al. 2005

Patients usually misled by incomplete or wrong information in the lay media. And dream to the new clinical trial.

But, only about 3% of adults with advanced cancer enroll on trials.

Because of:
1. highly selected cases. “Real-life” patients are typically older and have more comorbidities.
2. In addition, clinical trials are usually conducted only in high-volume and highly experienced centers to ensure rapid accrual of patients.
3. Many new drugs usually give shortly time of response.
4. Mostly, the response is just SD or PR and not CR.
No definite guideline of treatment with targeted therapy in patients with Advanced cancer in terminal stage.

A classic “palliative” patient with known targets for drugs who never received these drugs should be informed about these treatment options.

On the other hand, if palliative care without anticancer treatment options is the way to go, it should be palliative care and not leaving the patients alone.

Lester et al. 2013

Only some patients, not all can received the new treatments and mostly of patients have transition to terminal stage.

Assess and follow up the clinical response and take action.

Disclose incurable nature of illness
Refine prognosis and address goals of care
Recommend transition to focusing on comfort

Elements of Palliative Care (PC) vs Oncologic Care Visits at Clinical Turning Points. (End of Life)

Using prognostic tools can improve accuracy and reinforce clinical judgment. “Doctor initiating”

Practice assessing and communicating.

Hope is like dignity and can be crushed in an instant.

Unrealistic hope can destroy dreams and plans.

Closer to death, patients often want less information, whereas families need more.

Toward the end of life, things never stay the same for long; thus, it is crucial to review, revise, and refine.

Assess and follow up the clinical response and take action.

“I remember the moment when my overwhelming uneasiness yielded. Seven words from Samuel Beckett, began to repeat in my head, and the seemingly impassable sea of uncertainty parted: “I can’t go on. I’ll go on.” I took a step forward, repeating the phrase over and over: “I can’t go on. I’ll go on.” And then, at some point, I was through.”