Using Palliative Performance Scale

Suandok Palliative Care Day, June 22th
2010

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Palliative Medicine; Dir of Res. & Dev.; Victoria Hospice Society
WHERE DID PPS COME FROM? …

- In early 1980’s, some oncologists in Canada used Karnofsky Performance Scale
- In looking at KPS, I liked the structure of 10% changes but it seemed deficient
- KPS next slide
<table>
<thead>
<tr>
<th>Score</th>
<th>Karnofsky Performance Status (KPS) Scale</th>
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</thead>
<tbody>
<tr>
<td>100%</td>
<td>Normal; no complaints; no evidence of disease</td>
</tr>
<tr>
<td>90%</td>
<td>Able to carry on normal activity; minor signs or symptoms</td>
</tr>
<tr>
<td>80%</td>
<td>Normal activity with effort; some signs or symptoms of disease</td>
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<tr>
<td>70%</td>
<td>Cares for self; unable to carry on normal work or to do active work</td>
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<tr>
<td>60%</td>
<td>Requires occasional assistance but is able to care for most of his personal needs</td>
</tr>
<tr>
<td>50%</td>
<td>Requires considerable assistance and frequent medical care</td>
</tr>
<tr>
<td>40%</td>
<td>Disabled; requires special care and assistance</td>
</tr>
<tr>
<td>30%</td>
<td>Severely disabled; hospital admission is indicated, although death is not imminent</td>
</tr>
<tr>
<td>20%</td>
<td>Very sick; hospital admission necessary; active supportive treatment is necessary</td>
</tr>
<tr>
<td>10%</td>
<td>Moribund; fatal processes progressing rapidly</td>
</tr>
<tr>
<td>0%</td>
<td>Dead</td>
</tr>
</tbody>
</table>

WHERE DID PPS COME FROM? ...

• Main problem
  • At KPS 20% it said that hospitalization was necessary
  • But this is not what our palliative program wanted
• Also, it seemed to me that other factors of intake & conscious level were also important
• Therefore, I added 2 columns & changed the bottom KPS levels to create PPS
<table>
<thead>
<tr>
<th>PPS</th>
<th>Ambulation</th>
<th>Activity &amp; Evidence of Disease</th>
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<td>10%</td>
<td>Total 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>x</td>
<td>x</td>
<td>x</td>
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</table>
… WHERE DID PPS COME FROM?

- PPSv2 has only minor changes in adding confusion at PPS 60% to include early dementia
- PPS published in 1996 [10 years later]
- Formal reliability and validity study in 2006
USING PPSv2

- No tool is ‘perfect’
- One looks horizontally to find the “best fit”
- Start at left column and go down until appropriate level
- Then go the next column and read down to fit
- Etc

- A ‘diagonal’ decline as in next slide
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Palliative Performance Scale (PPSv2)
HOW MANY LANGUAGES?

• English
• French
• Japanese
• **Thai**
• Portuguese
• Spanish & Catalan - current reliability testing
• German
• Arabic
USES OF PPSv2

- Communication
  - Verbal
  - Charting
- Service allocation
  - Plan P
  - Registration
  - Service monitoring eg. LOS
  - Workload eg. Home Care and weekend visits
- Prognosis
- Care models
  - Eg. Suandok Collaborative Care
  - Cancer Care Ontario, Canada
- Psychosocial transition support
- Research – demographic, prognostic, etc
IS PPS\textsuperscript{v2} RELIABLE?

- Reliability study in Victoria
- Reliability study in Chiang Mai study
- Validation by other programs
  - Australia – Dr. P Glare
  - Japan – Dr. Morita
  - US – Dr. Olajide (N. Carolina); Dr. Harrold (U of Kentucky); Dr. Head (Pennsylvania)


COMMUNICATION
<table>
<thead>
<tr>
<th>Room #</th>
<th>PPS %</th>
<th>Bed Type</th>
<th>Family</th>
<th>Doctor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Room # 311 Mrs. S. with PPS 50% Admitted to “A” Acute palliative bed Reason: metastatic cancer breast with severe lumbar bone pain</td>
<td></td>
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</tr>
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</table>
## Patient Assessment

**Date of Assessment:**

**Reason for Assessment at This Time:** (Include patient perception of need)

**Relevant Recent History:** (Include DC Events leading to present situation)

## Functional Review

### Performance Level:

**Palliative Performance Scale (PPS)**

**Rate of Change:**

- **Stable**
- **Improved**
- **Slow Decline**
- **Rapid Decline**

### Death

Is death likely to occur in:

- Days
- Weeks
- Months
- Not Sure

Is Patient aware of prognosis?

- Yes
- No
- Not Sure

Does Patient talk openly/easily about death?

- Yes
- No
- Not Sure

Is Family aware of prognosis?

- Yes
- No
- Not Sure

Does Family talk openly/easily about death?

- Yes
- No
- Not Sure

## Comments:

### Palliative Performance Scale

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## Relevant Physical Findings

- Tenderness
- Swelling
- Movement
- Neurologic
- Sensory
- Bradycardia
- Hypertension
- Edema
- Consciousness
- Abdomen
- Resp/Conjunct
- Skin
- Fever
SERVICE ALLOCATION
PPS USED AS A CRITERIA

- Registration with some palliative programs at PPS 60%
- BC Drug Benefits Plan P
  - One criteria is PPS 50%
- Home Care Nursing
  - If a palliative patient PPS 30% or less, then automatic schedule a weekend nursing visit
PROGNOSTICATION
MULTIPLE RESEARCH STUDIES

• Several studies show PPS to be a strong predictor of survival in already identified palliative patients
  • I.e. The patient already has an advanced or terminal illness
• Not tested in non-palliative
  • [but Chiang Mai hospital is using in all wards!!!]
Patients in Crisis (unstable)
i.e. admit to PCU or PRT


Log rank $p < 0.001$
Pair-wise log rank $X^2 < 0.001$

VHS Unit & Home (PRT) - 6,066 - 1st PPS

KM-Curves % Survival

Survival Time (Days)
# PPS Survival Table (%) in days

Lau, Downing et al. J Pain Sympt Management. 2009 July;38(1)

<table>
<thead>
<tr>
<th>PPS</th>
<th>1</th>
<th>3</th>
<th>5</th>
<th>7</th>
<th>14</th>
<th>30</th>
<th>45</th>
<th>60</th>
<th>90</th>
<th>180</th>
<th>365</th>
<th>Total Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>PPS 70%</td>
<td>99%</td>
<td>97%</td>
<td>96%</td>
<td>95%</td>
<td>87%</td>
<td>77%</td>
<td>62%</td>
<td>51%</td>
<td>35%</td>
<td>16%</td>
<td>7%</td>
<td>150</td>
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<td>97%</td>
<td>95%</td>
<td>92%</td>
<td>83%</td>
<td>64%</td>
<td>49%</td>
<td>41%</td>
<td>29%</td>
<td>12%</td>
<td>5%</td>
<td>487</td>
</tr>
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“Mary, we don’t know for sure how long John may live, but as he has just come into the Unit (at PPS 40%), about ½ of patients like him live > 2 wks, but ½ will also die sooner than that.”

“In fact, about 1/3 of patients die in < 7 days”

“There are only a very few (about 1%) who will live 1 year, ... but it is possible for some”

“However, John now has pneumonia, he has become very confused and is quite short of breath ... I think he is on the ‘short side’ of 2 weeks ... and I’m not even sure about this week ... what do you think? ... Let’s talk again tomorrow; we may know more then”

“10% of patients will live for 3 months or more”
1. Sudden PPS drop is not good

**Sudden PPS drop as sentinel event within first 3 days admission to PCU**

[# cases 3,349 in 13-year data]

**More likely to drop at least one level if:**

1. Men vs women \( p=0.000 \)
2. Older vs younger \( p=0.000 \)
3. Lower PPS on admission \( p=0.000 \)
   
   [PPS 10-20 then 80%; PPS 40-50 then 30%]
4. Disease signif. but not strong \( p=0.0319 \)
   
   [non-cancer 50% vs cancer 39-45%]
5. Tertiary bed vs LTC bed \( p=0.000 \)

*Point 1 of 3*
2. Higher increment drop = shorter survival [using PPS 40% here as example]

Overall survival KM-graph for 6,000 Pts

Sentinel event occurs at PPS 40%

PPS 40% with no drop within 3 days admission to PCU

with 10% drop to PPS 30%
with 20% drop to PPS 20%
with 30% drop to PPS 10%
with 40% drop to PPS 0%
1. The lower the initial PPS at admission, the higher the likelihood of an abrupt drop.

2. An abrupt decline in function appears to imply shorter survival.

3. The greater the increment change in PPS, the shorter the likelihood of survival.

4. The lower the PPS on admission, the shorter the likelihood of survival.

5. When dropping a specific increment amount, the new survival projection appears similar to the PPS level dropped to.

6. Sudden or abrupt functional decline may be a sentinel event.
• Forms the basis of our palliative program and service
• Used in cancer and non-cancer patients
• PPS was intended for ‘palliative’ patients but can be used as a ‘functional assessment’ tool in others
  • Eg. Maharaj Nakorn in all hospital wards
CONCLUSION

• PPSv2 is a valuable tool
• You can use PPSv2 Adult Suandok if you would like to
• Dr Busyamas and research team at Chiang Mai are completing a reliability and validity study, available shortly [preliminary looks good!!]