伊利沙伯醫院
QUEEN ELIZABETH HOSPITAL

How the Palliative Performance Scale Might Signal the End

A Pilot Study of Evaluating the Effectiveness of PPS as a Prognostication Tool to Identify Imminent Death in Acute Care Setting

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Background

- **Variety of prognostication Tools**
(e.g. Palliative Prognostic Index, Palliative prognostic score, Palliative performance scale, Glasgow Prognostic Score, Early warning score, Charlson Comorbidity Index, ePrognosis, etc.)

- **Limited numbers of short–term prognostication tools**
e.g. **Cri**teria for Screening and **T**riaging to **A**ppropriate a**L**ternative care(CriSTAL)
, Prediction of 3–day Impending Death–Decision Tree, Investigating the Process of Dying model

1) Bischoff, K. E., Patel, K., Boscardin, W. J., O'Riordan, D. L., Pantilat, S. Z., & Smith, A. K. (2024). Original Investigation | Geriatrics Prognoses Associated With Palliative Performance Scale Scores in Modern Palliative Care Practice
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Why predicting death is important in Acute care setting?
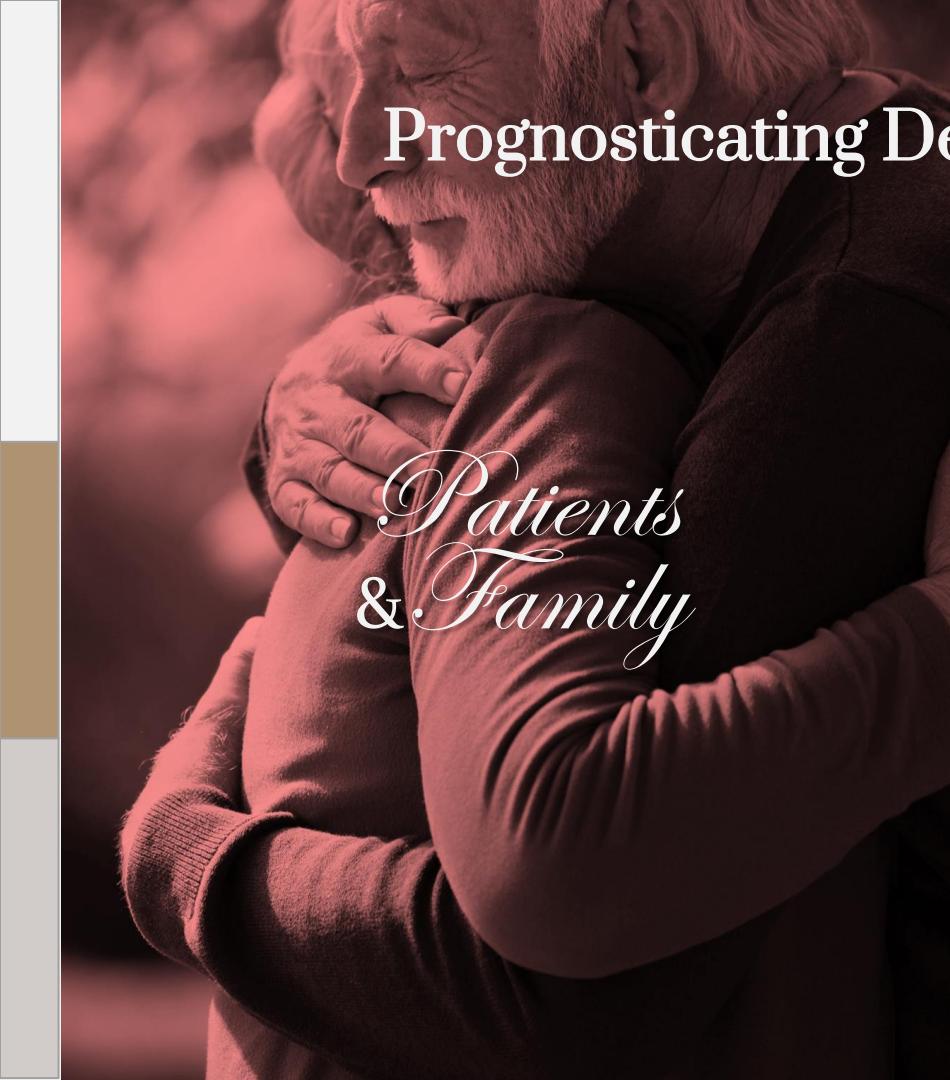
Prognosticating Death is important to

Patients & Family

Health Care Professional

- **Concordant care** (Mori et al., 2021) (Mori et al, 2022)

Clarify goals of care, promote shared decision-making; avoid unnecessary investigation and aggressive care through ACP discussion

- **Preparation of loss** (Hui et al., 2015) (Mori at al., 2022)

Prepare families for impending loss

- **Good Death** (Mori et al., 2022)

Allow patient and families to complete unfinished business and achieve a good death
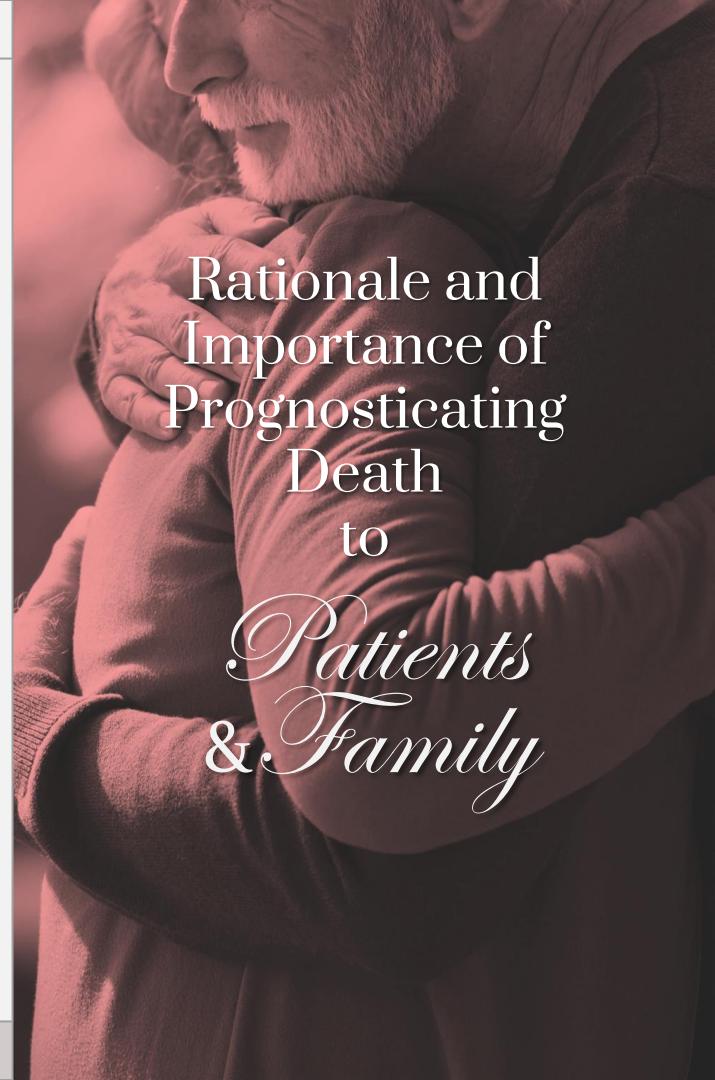
Rationale and Importance of Prognosticating Death to

Patients & Family
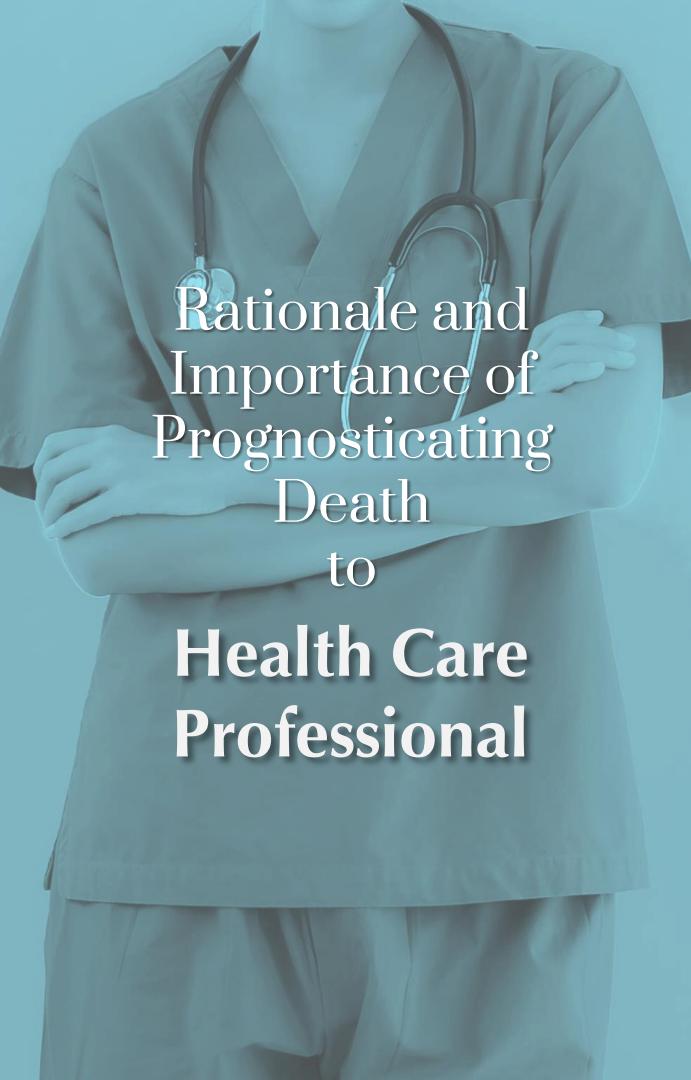
Rationale and Importance of Prognosticating Death to Health Care Professional

- **Enhance communication** (Mori et al. 2022)

  Foster effective communication among health care teams about patient condition

- **Facilitate EOL Care Planning** (Giwangkancana et al. 2024)

  Facilitate timely discussions and the provision of palliative care, fostering a care plan that respects the dignity and preferences of patients and their families

- **Optimizing the use of limited resources in acute hospital**

  Guiding professionals in resource allocation based on prognosis to assist families in accessing a single end-of-life room – of which there is only one at QEH, to accompany their loved ones during their final journey
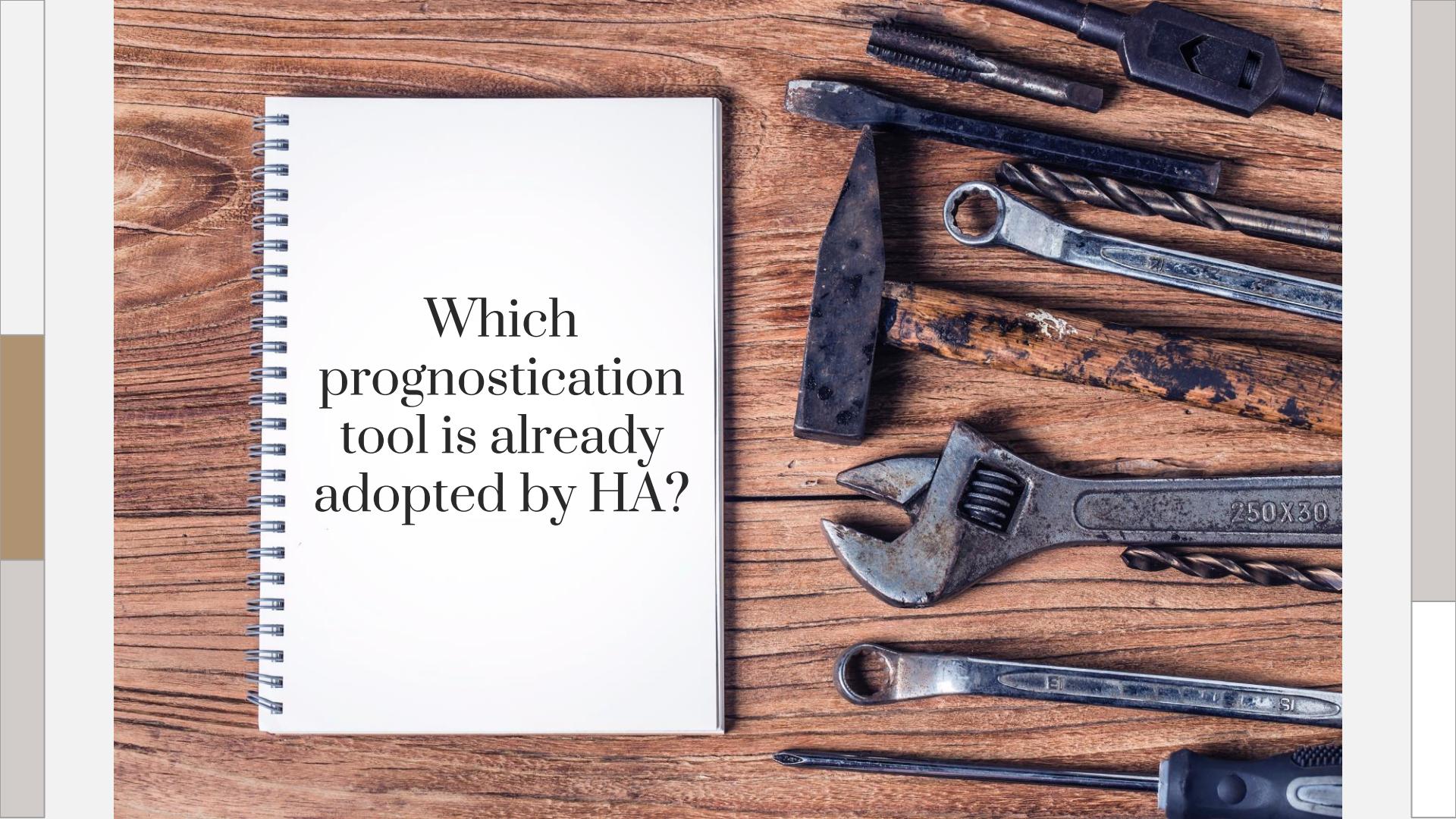
Which prognostication tool is already adopted by HA?
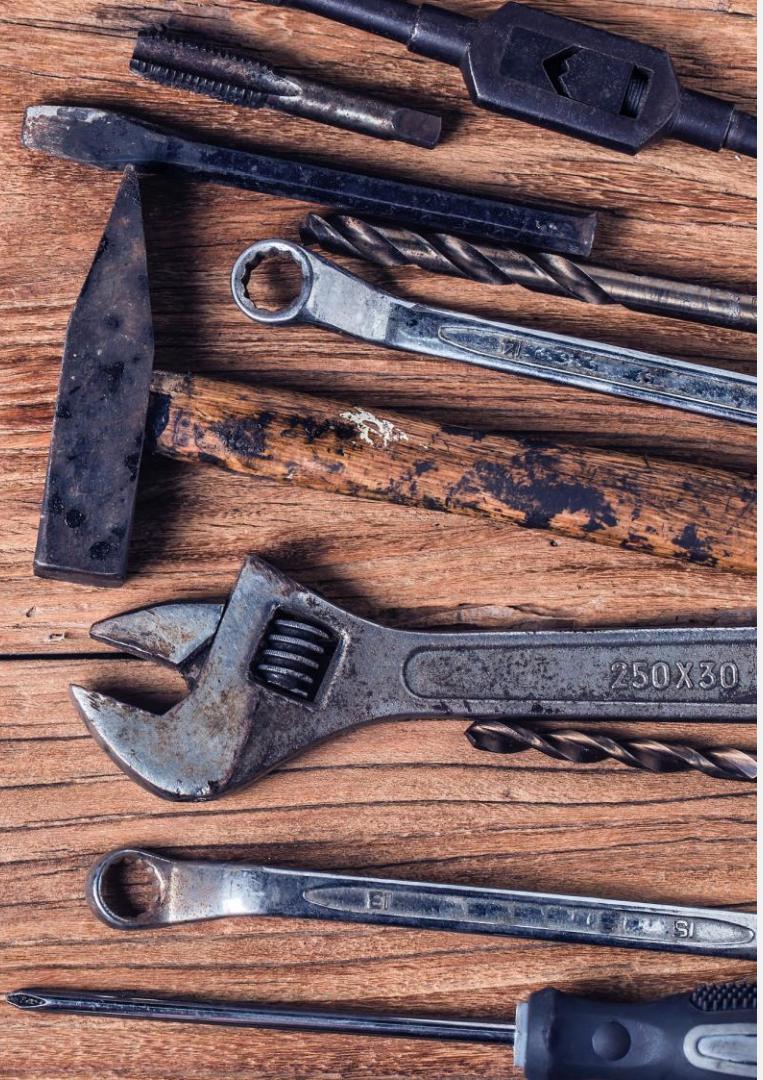
Palliative Performance Scale

- A prognostication tool has been widely adopted in all palliative care units and on the HA electronic platform – Patient assessment form (Palliative care) since 2023

- To provide a standardized and objective assessment of a patient's functional status in order to estimate survival

- Helps tailor patient care and interventions

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Palliative Performance Scale (PPSv2)
version 2

PPS Level	Ambulation	Activity & Evidence of Disease	Self-Care	Intake	Conscious Level
100%	Full	Normal activity & work No evidence of disease	Full	Normal	Full
90%	Full	Normal activity & work Some evidence of disease	Full	Normal	Full
80%	Full	Normal activity with Effort Some evidence of disease	Full	Normal or reduced	Full
70%	Reduced	Unable Normal Job/Work Significant disease	Full	Normal or reduced	Full
60%	Reduced	Unable hobby/house work Significant disease	Occasional assistance necessary	Normal or reduced	Full or Confusion
50%	Mainly Sit/Lie	Unable to do any work Extensive disease	Considerable assistance required	Normal or reduced	Full or Confusion
40%	Mainly in Bed	Unable to do most activity Extensive disease	Mainly assistance	Normal or reduced	Full or Drowsy +/- Confusion
30%	Totally Bed Bound	Unable to do any activity Extensive disease	Total Care	Normal or reduced	Full or Drowsy +/- Confusion
20%	Totally Bed Bound	Unable to do any activity Extensive disease	Total Care	Minimal to sips	Full or Drowsy +/- Confusion
10%	Totally Bed Bound	Unable to do any activity Extensive disease	Total Care	Mouth care only	Drowsy or Coma +/- Confusion
0%	Death	-	-	-	-

Instructions for Use of PPS (see also definition of terms)

1. PPS scores are determined by reading horizontally at each level to find a 'best fit' for the patient which is then assigned as the PPS% score.

2. Begin at the left column and read downwards until the appropriate ambulation level is reached, then read across to the next column and downwards again until the activity/evidence of disease is located. These steps are repeated until all five columns are covered before assigning the actual PPS for that patient. In this way, 'leftward' columns (columns to the left of any specific column) are 'stronger' determinants and generally take precedence over others.

   Example 1: A patient who spends the majority of the day sitting or lying down due to fatigue from advanced disease and requires considerable assistance to walk even for short distances but who is otherwise fully conscious level with good intake would be scored at PPS 50%.

   Example 2: A patient who has become paralyzed and quadriplegic requiring total care would be PPS 30%. Although this patient may be placed in a wheelchair (and perhaps seem initially to be at 50%), the score is 30% because he or she would be otherwise totally bed bound due to the disease or complication if it were not for caregivers providing total care including lift/transfer. The patient may have normal intake and full conscious level.

   Example 3: However, if the patient in example 2 was paraplegic and bed bound but still able to do some self-care such as feed themselves, then the PPS would be higher at 40 or 50% since he or she is not 'total care.'

3. PPS scores are in 10% increments only. Sometimes, there are several columns easily placed at one level but one or two which seem better at a higher or lower level. One then needs to make a 'best fit' decision. Choosing a 'half-fit' value of PPS 45%, for example, is not correct. The combination of clinical judgment and 'leftward precedence' is used to determine whether 40% or 50% is the more accurate score for that patient.

4. PPS may be used for several purposes. First, it is an excellent communication tool for quickly describing a patient's current functional level. Second, it may have value in criteria for workload assessment or other measurements and comparisons. Finally, it appears to have prognostic value.

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Advantages of PPS

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0%	Death	-	-	-	-

Multi-dimensional
(Baik et al., 2018)

Ease to use
(Stone et al., 2008)

Validated
(Bischoff et al., 2024)

Reliable
(Bischoff et al., 2024)

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Use and Interpretation of PPS

Start from the left column

Palliative Performance Scale (PPSv2)
version 2

Find a 'best fit'

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0%	Death	-	-	-	-

Stable

Transitional

End-of Life

Aims

Objective

- To improve the accuracy of survival predictions among terminally ill patients to facilitate EOL planning among clinical team, patients and families in acute care setting

- To assess the effectiveness of the PPS as a short-term prognostic tool

- To analyze the correlation between initial PPS scores and length of survival of patients

Study Design

- This study **retrospectively review** and analyze patient who receive shared care from the Palliative Care Consultative Service in the year of 2024. (01/01/2024 – 31/12/2024).

- Findings will be analyzed by **Chi–square test** and **Fisher's exact test**
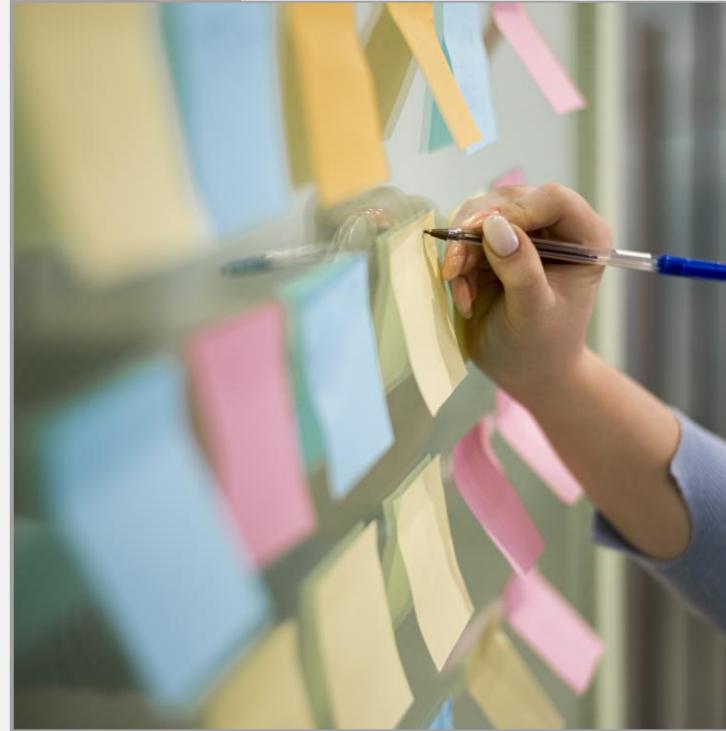
Outcome Measurement

1. The PPS level was documented by PC Nurse upon initial engagement (1st visit).

2. Length of survival from the time of PC team engagement to death.

3. Effectiveness of PPS as a prognostic tool for imminent death in acute care settings.
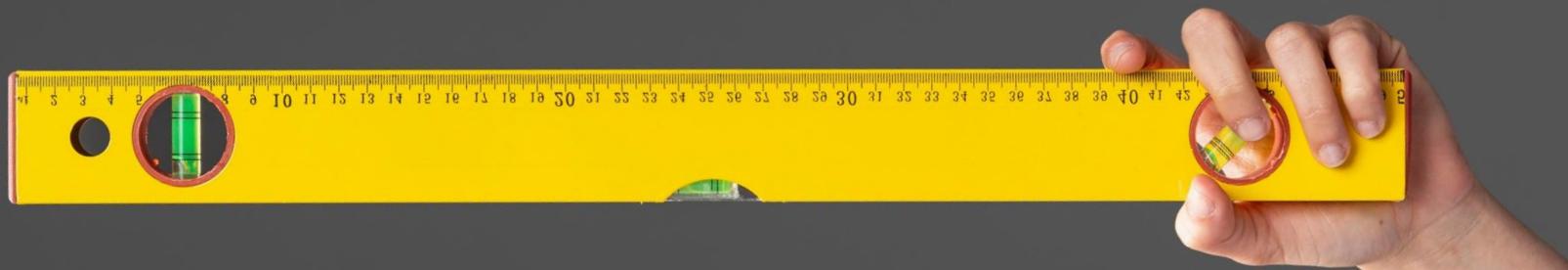
326 patients

Reviewed and analyzed

n (%)	PPS (1st)				Test
Survival time (no. of days)	10%	20%	30%	40% or above	p-value
1 or below	65 (27.54%)	5 (25.00%)	2 (6.06%)	1 (2.63%)	**p=0.00104
2	28 (11.86%)	1 (5.00%)	0 (0.00%)	3 (7.89%)	
3	22 (9.32%)	4 (20.00%)	4 (12.12%)	1 (2.63%)	
4	17 (7.20%)	1 (5.00%)	3 (9.09%)	3 (7.89%)	
5	10 (4.24%)	2 (10.00%)	2 (6.06%)	1 (2.63%)	
6	5 (2.12%)	2 (10.00%)	2 (6.06%)	3 (7.89%)	
7 or above	89 (37.71%)	5 (25.00%)	20 (60.61%)	26 (68.42%)	

* Significant relationship between PPS and survival time by Chi-square test or Fisher's exact test. (* $p<0.05$, ** $p<0.01$)

>60%
Patients

PPS≦20%

<7 days
Survival

Findings

- Mean Life expectancy : 10.79 days

- Statistical tests showed a **significant link** between **PPS** and **survival time** in acute care (p < 0.001).

- This relationship was **stronger in cancer** patients (p = 0.002) than in non–cancer patients (p = 0.02), aligning with previous studies.

- A significant correlation (p < 0.001) was also found between PPS and survival in patients who did **not use mechanical ventilation**, whereas the correlation was not significant for those who did (p = 0.41).

Discussion & Conclusion

✓ Most aims and objective achieved

- PPS is an effective short term prognostication tool to predict survival less than a week.

- Lower PPS score indicates a **higher likelihood** of imminent death.

- PPS would be a **useful** for healthcare professionals in predicting death for both cancer and **non-cancer** patients, especially those **not on mechanical ventilation.**

Limitation

- PPS seems to be limitedly significant among patients who are receiving mechanical ventilation.

- Dying signs and symptoms are not included in this study which may also indicated imminent death

Way Forward

- **Observation of dying symptoms**

Modifications and Observations on dying symptoms may incorporate with PPS to better estimate patient's imminent death.

- **Non–specific prognostication tool**

Further research is needed to develop reliable prognostic tools for routine use in non–palliative settings.

- **Relationship between prognostication and resource utilization**

The effect of early prognostication on utilization of resource such as single room, corner bed or EOL room

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