

## *Original Paper*

# What Characteristics are Important to Acute Care Health Professionals in Australia when Choosing a Palliative Care Prognostic Tool

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### **Abstract**

*Prognostic tools can aid acute care health professionals in the recognition of dying and identify when a patient should transition from active treatment to palliative care. The recognition of dying has important implications not only for the patient, but also for their family and others involved in providing care. Several prognostic tools are used in the Australian acute care setting, however they are not yet routine practice. Identifying what characteristics are important to acute care health professionals when choosing a palliative care prognostic tool may inform how the tools are presented and could increase their utilization by non-palliative care specialists. This survey found that the Supportive and Palliative Care Indicators Tool (SPICT) and Surprise Question are the most commonly known prognostic tools and are used in several clinical areas within the acute care setting. Acute care health professionals prefer validated prognostic tools which are easy to use, and are designed to be administered with the patient, substitute decision maker and the clinical team. The survey also identified the need for palliative care prognostic tools to be included within undergraduate teaching programs, further increasing the awareness and utilization of prognostic tools by health professionals working within the acute care setting.*

### **Keywords**

*palliative care, prognosis, acute care*

## 1. Introduction

In acute care hospitals, the service pressure of active treatment to diagnose, treat, and discharge patients, impacts health professional's ability to recognise that a patient may be approaching the end-of-life and require a different care pathway, is often not recognized. (1) (2) (3) Identifying dying requires skills to distinguish between reversible clinical deterioration and deterioration that is part of the dying process. Further, active dying manifests in each patient differently, contributing to the complexity of prognostic assessments. (3) (4) (5) Not all health professionals have the necessary skills, knowledge or training to recognise when a patient is approaching end-of-life. (3) (2) Though the acknowledgement of dying underpins the multidisciplinary team care-planning for end-of-life care. (2) (5) It allows patients to make informed choices (3), and families can be engaged in decision-making as well as be prepared. (1) Most health professionals use multiple approaches to assess patients for signs of dying, including resuscitation plans, treatment limitation forms, clinical indicators, assessments from others and their own intuition. (2) (3) However, Bloomer et. al., 2018, identified that many health professionals have difficulties recognising patients' deterioration towards death, due to uncertainty and inconsistent communication among health professionals. (2) The point at which end-of-life care should begin for patients is often unclear for patients that are older, have a non-malignant diagnosis, or multi-morbidity. (6) As a result of not recognising the signs of dying, many health professionals experience negative consequences such as feelings of guilt, false hope and false choice for patients and families, inappropriate care and care setting or place of death, and lost opportunities to prepare patients, families and other health professionals for the death. (3)

Recognising the importance of providing safe and high-quality end-of-life care, the Australian Commission on Safety and Quality in Health Care released a national Consensus Statement which provides guiding principles and recommendations to improve end-of-life care in acute care settings. (7) One of the essential elements in the Consensus Statement is using triggers to identify when patients need end-of-life care. Routine use of simple trigger tools and questions can prompt clinicians to use their clinical judgment to make a holistic assessment of whether a patient might benefit from end-of-life care. (7) Clinical tools when used consistently can assist in promoting appropriate care for patients by identifying unmet needs, facilitating communication, and ensuring regular monitoring, through a systematic approach. (8) (9)

Currently, there is a lack of awareness and underutilization of prognostic tools. (10) (3) Even for some health professionals who are aware of prognostic tools, a lack of experience with their use, has left them uncertain about their reliability and which are the most appropriate or useful. (8) (3) Current research by Gerber et. al., 2022 (3) highlights the need for interventions that introduce health professionals to prognostic tools which help them go beyond relying on their intuition when making assessments regarding a patient's need for end-of-life care. This study seeks to understand what characteristics are important to acute care health professionals when choosing palliative care prognostic tools. These findings have the potential to identify the tools with the greatest potential to be utilised in

practice, leading to better implementation of prognostic tools by health professionals working within the acute care setting.

## 2. Method

Ethics for this research was granted through the Flinders University Biosafety and ethics committee (Flinders University HREC approval #5650).

Prognostic tools which were identified as appropriate for use in a hospital setting in the rapid review, “Tools to Aid Clinical Identification of End of Life: An Evidence Check Rapid Review” that was commissioned by the Sax Institute, were included. (10) Tools which could be used across multiple settings (e.g., both Primary Care / GP and Hospitals) were also included.

Full text articles of the 37 tools identified in the SAX Institute report were sourced and data of interest were extracted for each tool, including: author, year, context, disease, data input requirements and characteristics, prognostic time period, interpretation and tool structure, and diagnostic accuracy. This extracted data was combined with the list of predictors included in tools from the Sax Institute rapid review (10) to create a total list of 32 characteristics / predictors (Appendix 1). This list was refined to 28 characteristics through grouping similar characteristics / predictors, such as laboratory results, as appropriate. This formed the main question within the “What Characteristics are Important to Acute Care Health Clinicians When Choosing a Palliative Care Prognostic Tool Survey” (Appendix 2).

The survey included six open ended questions to gather participant demographic data (occupation, length of time working in acute care, and department / ward in which they work), and their prior knowledge of palliative care prognostic tools within the acute care setting. Prior to distribution, the survey was reviewed by a palliative care nurse, a palliative care research fellow, and a clinical palliative care occupational therapist. Based on the reviewers comments the survey was revised.

Survey participants were recruited through the CareSearch, and Research Centre for Palliative Care Death and Dying webpages, and the End-of-Life Essentials newsletter. Potential participants could access the survey through an online link to the survey which was developed using the Qualtrics XM Platform. Participant responses were collected from the 27<sup>th</sup> of September 2022 to 24<sup>th</sup> of November 2022.

## 3. Results

### 3.1 Participant Demographics

The participants who completed the survey identified as various types of nurses (n = 11), a doctor or emergency medicine physician (n = 2), or as a nurse educator (n = 2) (Table 1). All participants have worked longer than 2 years in acute care, with most (n = 10) with 13 or more years of experience. Many participants have worked in multiple departments or wards within acute care, with palliative care (n = 7) being the most common.

**Table 1. Survey Participant Demographics**

Total No. Participants (n = 15)	
Occupation	Registered Nurse (n = 5) Nurse Educator (n = 2) Palliative care Clinical Nurse Consultant (n = 1) Prof in Critical Care Nursing (nurse) (n = 1) Nurse Practitioner (n = 1) Palliative Care CN (n = 1) Emergency medicine physician (n = 1) Doctor (n = 1) Nurse (n = 1) CNC/RN (n = 1)
Department or ward within acute care that they work	Palliative care department (in-patient consulting service) (n = 1) Renal Medicine (n = 1) Oncology Gynaecology (n = 1) Education and research (n = 1) ICU (n = 1) All departments (22 different specialities) End-of-life and palliative care service (n = 1) Palliative Care Education (n = 1) Medicine/surgery (n = 1) ICU and ED (n = 1) All acute and community based palliative care. Some ED presentations (n = 1) Palliative Care Unit. Oncology/haematology Unit (n = 1) Educator in subacute services (primary position) also palliative nurse educator for the whole hospital (acute care, ED and ICU) (n = 1) Emergency department (n = 1) Palliative Care (n = 1) Main ward (n = 1)
Length of time working in acute care	2 – 5 years (n = 3) 7 years (n = 2) 13 years (n = 1) 20 years (n = 1)

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25 – 27 years (n = 6)

30 years (n = 1)

40 years (n = 1)

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Abbreviations: RN: registered nurse, CNC: Clinical Nurse Consultant, NP: Nurse Practitioner, ED: Emergency Department, ICU: Intensive Care Unit

### 3.2 Ranking of Palliative Care Prognostic Tool Characteristics

Table 2 shows the average of participants' ranked scores of palliative care prognostic tool characteristics where 1 is the most important and 28 was the least important. This identifies which of the tools characteristics participants found as most and least important to them when choosing a palliative care prognostic tool. Eleven of the 15 participants nominated "prognostic tool has been validated" as the number one most important characteristic. Length of time taken to complete survey was in the top 3 most important characteristics for 30% (n = 5 of 15) participants. However, the importance of this characteristic ranged widely among participants, ranked between 2 and 28 (least) important.

**Table 2. Average and Standard Deviation of Participant Ranking of Palliative Care Prognostic Tool Characteristics**

Palliative Care Prognostic Tool Characteristics	Average Rank	Standard Deviation
Prognostic tool has been validated	2.7	4.0
Comorbidities	6.5	3.2
Functional status (decreasing activity, physical decline, independence)	7.9	4.3
Patient request for palliative care or refusal of treatment	8.5	6.7
Patients' perspective on wellbeing (social, physical, emotional)	10.1	5.1
Patient demographics (age, gender)	10.2	7.3
Tools designed to be administered by specific health professionals	10.9	9.8
Disease specific (disease stage, disease specific presentation)	11.5	7.4
Frailty	11.6	5.3
Length of time taken to complete the survey	11.7	8.1
Dementia / cognitive impairment	12.3	4.7
Care giver wellbeing perspective / capacity	12.7	6.1
Patients living arrangements (home / aged care)	14.0	6.0
Psychological symptoms	14.3	5.3
Weight loss	14.9	4.6
Poor response / unresponsive to treatment	15.0	7.9

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Length of mortality	15.1	6.3
Hospital admission (length of stay, frequency of hospital admissions, type of hospital admission, ED presentations)	15.6	10.1
Malnutrition	15.8	3.8
Clinical measures (BMI, weight, pulse, blood pressure)	15.9	7.7
Patient eligibility for terminal illness government support / benefits	17.9	6.6
Tool contains the surprise question	18.3	8.2
Sentinel event	18.7	7.1
Laboratory measures (serum albumin, blood pressure, ECG)	19.6	5.6
Medication (dose / frequency)	21.5	6.4
Prognostic tool requires a formula to be calculated	22.5	5.0
Visual field deficit	24.5	4.0
Patients smoking status	25.9	2.8

### 3.3 Participants Use of Palliative Care Prognostic Tools

Table 3 shows that participants have used 18 palliative care prognostic tools within a number of hospital clinical areas. The SPICT palliative care prognostic tool was the most commonly and widely used tool, reported by 5 participants within 5 different hospital clinical areas. The Surprise question palliative care prognostic tool was the second most commonly used tool, with 3 of the survey participants noting its use within all areas, emergency department and palliative care.

**Table 3. Palliative Care Prognostic Tools Used by Participants and Clinical Area in which they were Used**

Tools used by respondents	Respondent's occupation	Used in
<b>AKPS</b>	RN	Medical unit
	RN	Palliative Care Unit
<b>AMBER Care Bundle</b>	Palliative care CNC	Medical and surgical wards, ED
<b>APACHE</b>	RN	ICU
<b>CriSTAL</b>	NP	Training and education
<b>ECOG</b>	Nurse Educator	Palliative Care
<b>EQ-5D-5L Health questionnaire</b>	CNC/RN	Renal Supportive Care
<b>ESAS-r</b>	RN	Medical unit/home-based care setting/aged care
<b>Gold standards framework</b>	NP	Training and education
<b>Integrated Palliative Outcome Scores (IPOS-renal)</b>	CNC/RN	Dialysis/renal supportive care
<b>Karnofsky</b>	Nurse Educator	Palliative Care

<b>Palliative Care Outcomes</b>	Nurse educator	All clinical areas
<b>Collaboration tool</b>	Registered	Medical unit/home based care setting/aged care
<b>Palliative Performance Scale</b>	medicine/surgery Nurse	
	RN	Palliative Care Unit
<b>PCOP</b>	RN	Aged Care Setting
<b>PCPSS</b>	RN	Palliative Care Unit
<b>PIG</b>	NP	Training and education
<b>RUG-ADL</b>	RN	Palliative Care Unit
	Palliative care CNC	Medical wards
	Professor Critical Care	General Medicine
<b>SPICT</b>	Nursing (nurse)	
	NP	Training and education/all areas
	Nurse Educator	Palliative Care
	Palliative Care CNC	Acute ward in Hospital
	Emergency Medicine	ED
<b>Surprise question</b>	Physician	
	NP	All areas
	Nurse Educator	Palliative Care
<b>None</b>	RN	N/A
	Nurse	N/A
<b>No response</b>	RN	N/A
	Doctor	N/A

Abbreviations: RN: registered nurse, CNC: Clinical Nurse Consultant, N/A: Not applicable, NP: Nurse Practitioner, ED: Emergency Department, ICU: Intensive Care Unit

#### *3.4 Palliative Care Prognostic Tools that Participants are Aware of that they have not Used*

Table 4 reveals 8 palliative care prognostic tools that survey participants are aware of but have not used. The SPICT Tool was the most identified with 6 of 15 respondents naming it on their survey.

**Table 4. List of Palliative Care Prognostic Tools that Participants are Aware of that they have not Used**

<b>Palliative Care Prognostic Tool Name</b>	<b>No. Respondents (n = 15)</b>
CriSTAL tool	2
Gold standards framework	1
SPICT Tool	6

Palliative Prognostic Index	1
Palliative Prognostic Score	1
Minimum Data Set Mortality Risk Index	1
Advanced dementia Prognostic Tool	1
Surprise question	1
None	1

### *3.5 Participants Comments about the Use of Palliative Care Prognostic Tools within the Acute Care Setting*

Table 5 lists additional comments that survey respondents made about the use of palliative care prognostic tools within the acute care setting. The additional comments have provided further insight into the broader use of palliative care prognostic tools within acute care.

**Table 5. Participants Comments about the Use of Palliative Care Prognostic Tools within the Acute Care Setting**

#### **Additional Comments by Respondents**

They need to be included in undergraduate degree teaching.

So important to mention patient and family perspectives on dying – are they on board?

Commonly use screening tools in acute setting not palliative prognostic tools.

Not used routinely. A greater focus on curative care and preventing death means that proper consideration of death as an outcome is overlooked.

Any tool needs to be easily accessible and straightforward. The SPICT app is useful for phones, but something that could be on workspace desktops would also be helpful. ACI in NSW was trying to get Cristal into that format.

They are encouraged to be done with the patient, substitute decision maker and clinical team when assessing symptoms. An end-of-life pathway when someone is dying is currently not being used in Hobart in the private acute setting and would have benefits.

No

## **4. Discussion**

The identification of acute care patients approaching the end of their lives is an important first step in providing safe and high-quality end-of-life care. While there are currently several prognostic tools in use in the acute care setting within Australia, they are not used routinely. This was noted by one of the survey respondents, who stated, *“An end-of-life pathway when someone is dying is currently not being used in Hobart in the private acute setting and would have benefits [P11]”*. Therefore, understanding what characteristics health professionals find most important when choosing a prognostic tool may aid



in the promotion of individual prognostic tools to health professionals working within acute care.

This research project found that health professionals working within the acute care setting identified prognostic tool validation as the most important characteristic when choosing a palliative care tool. This supports the work undertaken by Gerber et al., 2022, which highlighted that uncertainty about the reliability of prognostic tools has been a barrier to their use. (3) Therefore, creators of prognostic tools need not only to validate their prognostic tool, but also to clearly identify that the tool has been rigorously validated.

One of the survey participants noted that health professionals “*Commonly use screening tools in acute care setting not palliative prognostic tools [P4]*”. This may be why the SPICT tool and the Surprise Question were identified by the survey as the most and second most commonly used tools within the acute care setting, respectively. Both tools were found to have been used in a number of different clinical areas making them very versatile in their applicability. The survey also found that the SPICT tool was the most recognised tool, even by participants who have never used it. One survey respondent suggests a reason for the low uptake of prognostic tools; “*Not routinely used. A greater focus on curative care and preventing death means that proper consideration of death as an outcome is overlooked [P5]*”. This perspective highlights the need for tools that identify patients with palliative care needs, to be incorporated into clinical guidelines so they can become routine practice. The implementation of simple trigger tools and questions may prompt clinicians to use their clinical judgment and make a holistic assessment of whether patients might benefit from end-of-life care. (7). It also highlights the need for health professionals to better understand death and dying and the benefits of identifying patients who need palliative care.

The data and information requirements of the individual prognostic tools can include: objective measures (e.g. laboratory tests and clinical measures), subjective measures (e.g. clinical experience and a patient wishes), patient demographic information, screening clinical history and hospital administrative data. Some prognostic tools can be administered on paper, such as the SPICT tool, and others require the calculation of an algorithm such as the Multidimensional Prognostic Index (MPI). It has been noted that tools that require fewer documentation and that can be completed quickly are more likely to be adopted by health professionals. (10) This finding has also been reported in the results of this survey with one respondent stating, “*Any tool needs to be easily accessible and straightforward. The SPICT app is useful for phones, but something that could be on workspace desktops would also be useful. ACI in NSW was trying to get CRISTAL into that format [P6]*”. Therefore, the promotion of prognostic tools which are easier to use by health professionals may increase the use of these tools in the future.

How the prognostic tool is administered within the acute care setting was important to survey respondents. One respondent mentioned that they should be administered with a team like approach: “*They are encouraged to be done with the patient, substitute decision maker and clinical team when assessing symptoms [P11]*”. While another survey respondent mentioned the broader aspects of

end-of-life beyond clinical measures: “*So important to mention patient and family perspectives on dying – are they on board? [P3]*”. Both responses reflect the nature of palliative care which is supporting quality of life by attending to the needs of the person and their family in line with individual preferences and goals of care.

Prognostic tools used within the acute care setting, range from those that can be applied by non-medical staff, to those that require medical training to apply, and those that may require a person with a specialist background to apply. (10) So it is unsurprising that a survey respondent wrote: “*They need to be included in undergraduate degree teaching [P1]*”. The inclusion of palliative care prognostic tools within undergraduate teaching programs has the potential to greatly increase their adoption within the acute care setting.

This survey investigating the characteristics important to acute care health professionals in Australia when choosing a palliative care prognostic tool has identified not only key characteristics which may increase prognostic tool usage but several other aspects to their use within the acute care setting.

## 5. Conclusions

While public awareness and understanding of palliative care and end-of-life care has been widely identified as an important factor in the management of a life-limiting illness, (11) the use of the term “palliative care” and talking about palliative care to patients frequently generates anxiety for non-palliative care clinicians. However, considering the likelihood of a patient dying offers opportunities to identify their needs and consider how best to align care with the individual’s expressed values, goals and wishes. Routine use of prognostic tools can prompt clinicians to use their clinical judgement to make a holistic assessment of whether a patient might benefit from end-of-life care.

Resources should be developed which highlight the tools with the important characteristics highlighted in this study, to direct health professionals to the most relevant tools. Thus, promoting utilisation of prognostic tools. Further, we identified that 30% of participants care about the time taken to complete the tools. There is little published evidence to inform health professionals in this area, proving a valuable avenue for further research.

This survey has identified that validated prognostic tools which are easy to use, are preferred by health professionals working within the acute care setting within Australia, and should be used with the patient, substitute decision maker and the clinical team. The SPICT and Surprise Question are currently used in a number of different clinical areas within the acute care setting and their promotion could increase their use amongst a wide range of health professionals. The inclusion of palliative care prognostic tools within undergraduate teaching programs has the potential to increase awareness and utilization of prognostic tools by health professionals working within the acute care setting within Australia.

## 6. Limitations

This research is based on the opinions of 15 health professionals who work within the acute care setting within Australia. Therefore, the sample size is not large enough to generalize the results, and as such may not reflect the opinions of all health professionals working within acute care in Australia.

## Author contribution

DvG conceived the article topic. DvG and LA contributed to the research, analysis, writing and referencing of the manuscript. Both authors agreed to the final content.

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### Appendix 1 Prognostic Tool Characteristics / Predictors

T o o l N o m ( e a r )	A	Predictors Included in Tools from Sax Institute Report														Predictors Included in Tools from Analysis																					
		Validated tool	Surprise question	Other clinical subjective judgement	Age	Functional status	Weight loss	Frailty	Clinical measures	ED Presentations	Hospital admissions	Specific diseases present	Dementia / cognitive impairment	Deterioration	Patient choice	Prognostic tool requires a formula to be calculated	Care giver wellbeing perspective / capacity	Psychological symptoms	Malnutrition	Clinical measures (BMI, weight, pulse, blood pressure)	Sentinel event	Laboratory measures (serum albumin, blood pressure, ECG)	Comorbidities	Poor response/unresponsive to treatment	Living arrangements (home / aged care)	Patient eligibility for terminal illness government support / benefits	Patient gender	Visual field deficit	Patients smoking status	Medication (dose / frequency)	Patients' perspective on wellbeing (social, Physical and emotional)	Tools designed to be administered by specific health professionals	Length of mortality	Length of stay	Type of hospital admission		
		CURB65/CRB65	Lim et al. (2003)	x			x				x										x		x										x	x			
		SPICT	Highet et. al (2014)	x	x					x	x				x	x									x	x	x							x	x		x
		GSF-PIG	O'Callaghan et. al (2014)	x	x		x			x		x		x	x		x	x				x	x	x	x		x							x	x		x
		Bioelectrical impedance analysis (BIA)	Barbosa-Silva et. al. (2005)				x											x																			
		Nutritional Risk screen	Tangvik et. al.	x		x				x		x		x				x			x	x												x	x		

[illegible]



[illegible]

[illegible]

## Appendix 2. What is Important to Acute Care Health Clinicians When Choosing a Palliative Care Prognostic Tool Survey

## What is Important to Acute Care Health Clinicians When Choosing a Palliative Care Prognostic Tool Survey.

A fundamental first step in providing safe and high-quality end-of-life care is to recognise those patients who would be likely to benefit from such care. Considering the likelihood of a patient dying offers opportunities to identify their needs, review the goals and plan of care, and consider how best to align care with the individual's expressed values, goals and wishes. Routine use of prognostic tools can prompt clinicians to use their clinical judgment to make a holistic assessment of whether a patient might benefit from end-of-life care.

1. What is your occupation? Eg. Nurse
2. How long have you been working in acute care?

Years	Months
1	1
1	2
1	3
1	4
1	5
1	6
1	7
1	8
1	9
1	10
1	11
1	12
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3	10
3	11
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11	11
11	12
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12	4
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12	10
12	11
12	12

3. What department or ward within the acute hospital setting do you work?

4. There are a number of palliative care prognostic tools currently being used within the acute care setting within Australia. The Supportive and Palliative Care Indicators Tool (SPICT) is one example of a prognostic tool that can help health professionals to identify if patients have palliative care needs. This tool includes a range of data requirements which capture a patients declining health and disease specific indicators of advancing illness.

Each tool has its own characteristics and data requirements. We are interested in capturing which of these characteristics or data requirements are most important to you when choosing a prognostic tool.

Please rank each of the characteristics that you feel are most important to you when choosing a palliative care prognostic tool (Drag and drop the characteristics with number 1 being the most important).

Rank	Palliative Care Prognostic Tool Characteristic
	Prognostic tool has been validated
	Tools designed to be administered by specific health professionals
	Length of time taken to complete the survey
	Patient demographics (age, gender)
	Care giver wellbeing perspective / capacity
	Patient request for palliative care or refusal of treatment
	Patients' perspective on wellbeing (social, physical, emotional)
	Patients' living arrangements (home / aged care)
	Patient eligibility for terminal illness government support / benefits
	Disease specific (disease stage, disease specific presentation)
	Comorbidities
	Dementia / cognitive impairment
	Clinical measures (BMI, weight, pulse, blood pressure)
	Functional status (decreasing activity, physical decline, independence)
	Length of mortality
	Weight loss
	Malnutrition
	Frailty
	Sentinel event
	Psychological symptoms
	Laboratory measures (serum albumin, blood pressure, ECG)
	Poor response / unresponsive to treatment
	Prognostic tool requires a formula to be calculated

	Tool contains the surprise question
	Visual field deficit
	Patients smoking status
	Medication (dose / frequency)
	Hospital admission (length of stay, frequency of hospital admissions, type of hospital admission, ED presentations)

5. Please list the palliative care prognostic tools you have used and in what hospital clinical area: (if none, please write none in the box below).

Tool Name	Hospital Clinical Area

6. Are there any other existing palliative care prognostic tools that you are aware of that you have not used? (please list them)

7. Do you have any other comments you would like to make about the use of palliative care prognostic tools within the acute care setting?

Thank you for taking the time to complete this survey.

We will be in contact soon with the next shorter palliative care prognostication tool survey, which will summarise the responses from this current survey and allow you to reevaluate your preferred ranking of palliative care prognostic tool characteristics and data requirements, against all survey respondents combined results.