CASE STUDIES

Recognising patients at risk of deterioration and dying on general medicine wards: a nurse-led point prevalence study

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ABSTRACT

Objective: To trial the Supportive and Palliative Care Indicators Tool (SPICT) as a nurse-led initiative to describe the supportive and palliative care needs of patients in the acute general medical ward. Patient deaths within the subsequent 12 months were identified.

Background: National standards specify recognition of patients at risk of deterioration and dying as essential to ensure high quality and safe end-of-life care. However, the timely recognition of these patients in acute medical wards is often complex and inherently uncertain.

Method: A point prevalence study assessed the supportive and palliative care needs of patients admitted to the general medical wards of a major public tertiary hospital in a single day. A nurse-led team used the SPICT and the Surprise Question to assess patients. Patient deaths were identified one year following assessment.

Results: Most admitted patients (n = 40, 93%) exhibited at least one advanced disease and two indicators of general deterioration on assessment. Of these patients, 40% died within one year. Only one patient was referred to the hospital-based palliative care service at the time of assessment.

Conclusion: The SPICT identified a high prevalence of supportive and palliative care needs among general medicine inpatients. The use of the SPICT as a nurse-led initiative provides an opportunity to identify patients at risk of deteriorating and dying while also recognising areas of unmet need.

Implications for research, policy, and practice: The SPICT can be effectively administered by nursing teams to assist with the identification of patients who may be at risk of deteriorating and dying so that appropriate end-of-life care decisions can be considered. Further work is needed to develop supportive measures to assist home teams in the identification and response to patients at risk of deterioration and dying in acute hospitals.

What is already known about the topic?

- Accreditation standards specify that hospitals are required to promptly recognise patients at high risk of deteriorating or dying within 12 months.
- The timely recognition of these patients is often complex and inherently uncertain in the acute medical setting.
- The Supportive and Palliative Care Indicators Tool (SPICT) can help multidisciplinary teams identify patients who may be at risk of deteriorating and dying in all care settings.

What this paper adds

- This snapshot study revealed >90% of patients admitted to our general medical wards presented with advanced disease and indicators of deterioration. Forty percent of these patients died within 12 months following their admission.
- The SPICT can be effectively administered by nursing teams to assist in the recognition of these vulnerable patients so that appropriate end-of-life care decisions can be considered.

Keywords: Deterioration; dying; general medicine; palliative care; supportive care

OBJECTIVE

This study trialled the SPICT as a nurse-led tool to describe the supportive and palliative care needs of patients admitted to the general medical wards of a major public tertiary hospital. Patient deaths were identified within the subsequent 12 months following admission.

BACKGROUND

The timely recognition of patients who are at risk of dying is often complex and inherently uncertain.[1,2] Compared to cancer, non-malignant conditions often present greater challenges in identifying patients at risk of dying, as the typical illness trajectory comprises a gradual deterioration in health and functional status with only occasional acute exacerbations requiring a visit to hospital.[3]

The burden of suffering at the end of life can be considerable when dying is not expected, affecting not just the patient but also their families. Palliative care is proven to offer individuals and families better quality care by providing effective symptom management and psychosocial support, reducing hospitalisations, and limiting the use of non-beneficial treatments at the end of life.[4–6] However, prompt and accurate identification of the deteriorating patient is essential so that these systems can be put in place to provide the most benefit.

Australian accreditation standards specify that hospitals are required to accurately and promptly recognise when a patient is at high risk of deteriorating or dying within the next 12 months.[7] A recent national audit showed >70% of hospital patients had documentation suggesting dying was recognised by a clinician but this occurred on average only one day before death.[8,9] Furthermore, 66% patients had potentially non-beneficial and invasive medical procedures performed in their final 48 hours of life.[8] These findings are reflected internationally demonstrating wide-spread challenges in the management of dying people in hospital.[10,11]

At present, there is no systematic way to identify deteriorating and dying patients in acute medical wards. This problem is exacerbated by issues surrounding clinician experience working with deteriorating and dying patients,[8] confidence in identifying the deteriorating patient,[12] coordination between clinical teams, and communication with the patient and family.[9]

The Supportive and Palliative Care Indicators Tool (SPICT) was developed to help multidisciplinary teams identify patients at risk of deteriorating and dying in all care settings.[13] As a prognostication tool, the SPICT has been shown to lack the necessary sensitivity and specificity for accurately identifying dying patients.[14] However, in combination with the Surprise Question,[15] it can still be a useful support for clinicians to gauge patients at risk of dying within the next 6-12 months, and who may have supportive care needs and could benefit from palliative care intervention. This SPICT can be readily completed by nursing staff, who often spend the most time caring for the patient. The use of the SPICT in this context has shown to increase nurses' confidence in identifying and responding to patients approaching end of life,[12] and can subsequently support and inform discussions with medical teams when deciding on appropriate care pathways.

This study trialled the use of the SPICT as a nurse-led assessment to describe the supportive and palliative care needs in a 'snapshot' of patients admitted to hospital on a given day. Patient deaths were recorded 12 months following assessment.

METHOD

SETTING AND PARTICIPANTS

A point prevalence audit was undertaken in two dedicated general medicine wards at a major 800 bed tertiary hospital in metropolitan Melbourne, Victoria. All adult patients (≥18 years) admitted on 16 May 2017, were included in the study. This date was chosen as hospital activity was less likely to be influenced by extreme seasonal conditions or public holiday periods. This study was approval by the institutional ethics committee (project QA013/17).

DATA COLLECTION

A palliative care nurse practitioner and senior ward nurse extracted information from patient medical records and routinely collected hospital patient administration datasets to inform the SPICT.[16] Information captured included patient age and sex, diagnoses, healthcare utilisation, performance status, and indicators of general deterioration (Table 1). Additionally, treating medical registrars were asked the

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TABLE 1: PATIENT DEMOGRAPHICS

	N = 43
Age (median [IQR])	79 years [74.5 – 85.5]
Sex (male)	28 (65%)
Length of stay (median [IQR])	11 days [6 – 17.5]
Life-limiting conditions	
Cancer	11 (26%)
Dementia/frailty	13 (30%)
Neurological disease	9 (21%)
Heart/vascular disease	38 (88%)
Respiratory disease	14 (32%)
Kidney disease	9 (21%)
Liver disease	7 (16%)
Other non-reversible conditions with poor outcomes	34 (79%)
Indicators of general deterioration	
Deteriorating performance status	16 (37%)
Poor performance status	14 (33%)
Unplanned admissions in last 12 months (median [IQR])	2 visits [1 – 3.5]
Dependent	31 (72%)
Person's carer needs help and support	14 (33%)
Progressive weight loss/underweight	10 (23%)
Persistent symptoms	24 (56%)
Patient/family request palliative care	2 (5%)

IQR = interquartile range

Surprise Question for all patients under their care. This binary question asks whether they "would be surprised if the patient died within 12 months".[15] Patient death status was recoded 12 months following assessment from hospital records and cemetery registry searches.

ANALYSES

Data were entered into a database and checked for inconsistencies. Categorical data were presented as frequencies and percentages. Medians and interquartile ranges were used to describe age, length of stay, and number of previous hospital admissions.

Patients were classified as SPICT-positive (SPICT+) if they had two or more general indicators of deterioration AND one or more advanced diseases outlined in the SPICT.[13,16] This classification has been validated previously in a geriatric population representative of our study cohort.[17]

RESULTS

Forty-three adult patients were admitted under general medicine on the day of assessment (Table 1). These people were generally older (median 79 years) and predominantly male (65%), with a median length of stay of 11 days. Most (98%) had presented to hospital with unplanned admissions in the previous 12 months (median 2 visits).

PREVALENCE OF SUPPORTIVE AND PALLIATIVE CARE NEEDS

Seventy percent of patients presented with either deteriorating or poor performance status (Table 1). The most common life-limiting conditions included heart/vascular disease (88%), respiratory disease (32%), dementia/frailty (30%), and other non-reversible condition with poor outcomes (79%). Most patients (72%) were dependent on other family members on aspects of daily living, half (56%) presented with persistent symptoms, and 33% of all patients' carers reported needing help and support.

Forty patients (93%, CI = 0.81-0.98) were identified as being SPICT+. Ninety percent of SPICT+ patients exhibited ≥3 indicators of deterioration.

Sixteen SPICT+ patients (40%) died within 12 months. In response to the Surprise Question, medical registrars indicated that they would not be surprised if 22 of SPICT+ patients (55% of SPICT+ cohort) died within one year. Thirteen of these patients died (81% of all deceased within one year). Of all decedents, only one (6%) was known to the hospital-based palliative care service at the time of assessment.

DISCUSSION

Our findings are consistent with global trends showing that older people are living with more comorbidities.[18] The SPICT identified that the overwhelming majority of patients admitted to our general medical wards had non-malignant life-limiting illnesses, reduced performance status, and multiple signs of general deterioration. Consequently, 40% of patients died within the first 12 months, of which only one was known to the palliative care team at the time of assessment.

The findings from the SPICT assessment suggest that the need for supportive and palliative care intervention is high in this sample. However, clinical effort is often specialised and focused on maintaining delicate balances in medications and other treatments to compensate for patients' myriad of comorbid conditions. With the addition of hospital bed flow pressures, it is not surprising that home teams find identifying patients at risk of deterioration and dying challenging in this context.

Clinicians in our study reported that they would not be surprised if 55% of patients (subsequently identified as SPICT+) died within 12 months. While this suggests some level of recognition of deterioration and dying, it is likely that clinicians are often not confident in their prediction or how to respond. This is supported by previous work showing clinician prognostication of patient death is often unreliable, especially in non-malignant populations[1–3]. Additionally, misconceptions that palliative care is only for terminal care often leads to late referrals.[19] Screening tools like the SPICT in conjunction with the Surprise Question can assist clinicians in identifying people who would benefit from early palliative care intervention[20].

Certain limitations were identified from this work. The relatively small sample size in this point prevalence study affects the generalisability of these findings to the broader population. Further work is needed to investigate the sensitivity and specificity of this screening approach in a larger study. Additionally, any systematic implementation of screening assessment will require a suitable clinical response piece co-designed with the relevant treating teams.

While effective in identifying palliative and supportive care needs, the SPICT, like other screening tools, requires manual assessment of each patient. This is perhaps the biggest barrier to adoption in our already busy hospitals. Mechanisms need to be considered where existing hospital-based electronic patient information can be used to automatically inform items in screening tools, therefore reducing the burden on nursing staff.

CONCLUSION

This point prevalence study trialled the use of the SPICT to describe supportive and palliative care needs among the general medicine inpatient population. The SPICT identified that most patients presented with multiple indicators of deterioration and the need for support. Only one patient was known to palliative care at the time of assessment despite 40% of SPICT+ patients dying within 12 months. The use of the SPICT as a nurse-led initiative provides an opportunity to identify patients at risk of deteriorating and dying while also recognising areas of unmet need. However, further research in this space is warranted to assess feasibility and effectiveness if it were to be incorporated in routine care.

IMPLICATIONS FOR RESEARCH, POLICY, AND PRACTICE

In order for screening and prognostication tools to be effective, they need to have clinical utility.[21] The benefit of using a tool such as the SPICT is that, in addition to identifying patients at risk of deteriorating and dying, areas of unmet need can be identified for clinical teams to proactively respond to. The use of the SPICT in this context has also shown to increase nurses' confidence in identifying and responding to patients approaching end of life.[12] These tools can also promote preliminary dialogue between clinicians, patients, and families regarding the benefits of holistic care, changes in current treatment goals, and palliative care referral, if appropriate.[22]

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REFERENCES

1. Ellershaw J, Ward C. Care of the dying patient: the last hours or days of life. *BMJ*. 2003;326(7379):30–4.
2. Kennedy C, Brooks-Young P, Gray CB, Larkin P, Connolly M, Wilde-Larsson B, et al. Diagnosing dying: an integrative literature review. *BMJ Support Palliat Care*. 2014;4(3):263–70.
3. Murray SA, Kendall M, Boyd K, Sheikh A. Illness trajectories and palliative care. *BMJ*. 2005;330(7498):1007–11.
4. Kelley AS, Morrison RS. Palliative Care for the Seriously Ill. Campion EW, editor. *N Engl J Med*. 2015;373(8):747–55.
5. Brian Cassel J, Kerr KM, McClish DK, Skoro N, Johnson S, Wanke C, et al. Effect of a home-based palliative care program on healthcare use and costs. *J Am Geriatr Soc*. 2016;64(11):2288–95.
6. Kavalieratos D, Corbelli J, Zhang D, Dionne-Odom JN, Ernecoff NC, Hanmer J, et al. Association between palliative care and patient and caregiver outcomes: a systematic review and meta-analysis. *JAMA*. 2016 Nov 22;316(20):2104–14.
7. Australian Commission on Safety and Quality in Health Care. Consensus statement: essential elements for safe and high-quality end-of-life care [Internet]. Sydney: Australian Government; 2015. [cited 2022 SEP 05] Available from: https://www.safetyandquality.gov.au/sites/default/files/migrated/National-Consensus-Statement-Essential-Elements-forsafe-high-quality-end-of-life-care.pdf
8. Gunasekaran B, Scott C, Ducharlet K, Marco D, Mitchell I, Weil J. Recognising and managing dying patients in the acute hospital setting: can we do better? *J Intern Med*. 2019;49(1):119–22.
9. Mitchell I, Lacey J, Anstey M, Corbett C, Douglas C, Drummond C, et al. Understanding end-of-life care in Australian hospitals. *Aust Health Rev*. 2021;45(5):540.

10. Binda F, Clari M, Nicolò G, Gambazza S, Sappa B, Bosco P, et al. Quality of dying in hospital general wards: a cross-sectional study about the end-of-life care. *BMC Palliat Care*. 2021;20(1):153.
11. Verhofstede R, Smets T, Cohen J, Eecloo K, Costantini M, Van Den Noortgate N, et al. End-of-life care and quality of dying in 23 acute geriatric hospital wards in Flanders, Belgium. *J Pain Symptom Manage*. 2017 Apr;53(4):693–702.
12. Lunardi L, Hill K, Crail S, Esterman A, Leu RL, Drummond C. 'Supportive and Palliative Care Indicators Tool (SPICT) improves renal nurses' confidence in recognising patients approaching end of life'.*BMJ Support Palliat Care*. 2020;1–6.
13. Highet G, Crawford D, Murray SA, Boyd K. Development and evaluation of the Supportive and Palliative Care Indicators Tool (SPICT): a mixed-methods study. *BMJ Support Palliat Care*. 2014;4(3):285–90.
14. Mudge AM, Douglas C, Sansome X, Tresillian M, Murray S, Finnigan S, et al. Risk of 12-month mortality among hospital inpatients using the surprise question and SPICT criteria: a prospective study.*BMJ Support Palliat Care*. 2018;8(2):213–20.
15. Aaronson EL, George N, Ouchi K, Zheng H, Bowman J, Monette D, et al. The surprise question can be used to identify heart failure patients in the emergency department who would benefit from palliative care.*J Pain Symptom Manage*. 2019 May;57(5):944–51.
16. Primary Palliative Care Research Group. SPICT: Supportive and Palliative Care Indicators Tool [Internet]. SPICT. 2019. [cited 2021 Nov 5]. Available from: https://www.spict.org.uk/
17. De Bock R, Van Den Noortgate N, Piers R. Validation of the Supportive and Palliative Care Indicators Tool in a geriatric population.*Palliat Med*. 2018;21(2):220–4.
18. Barnett K, Mercer SW, Norbury M, Watt G, Wyke S, Guthrie B. Epidemiology of multimorbidity and implications for health care, research, and medical education: a cross-sectional study. *Lancet*. 2012;380(9836):37–43.
19. Flieger SP, Chui K, Koch-Weser S. Lack of awareness and common misconceptions about palliative care among adults: insights from a national survey. *J Gen Intern Med*. 2020;35(7):2059–64.
20. White N, Kupeli N, Vickerstaff V, Stone P. How accurate is the 'Surprise Question' at identifying patients at the end of life? a systematic review and meta-analysis. *BMC Med*. 2017 Dec;15(1):139.
21. Taseen R, Ethier JF. Expected clinical utility of automatable prediction models for improving palliative and end-of-life care outcomes: toward routine decision analysis before implementation.*JAMIA*. 2021;28(11):2366–78.
22. Bange EM, Courtright KR, Parikh RB. Implementing automated prognostic models to inform palliative care: more than just the algorithm. *BMJ Qual Saf*. 2021;30(10):775–8.