

Economic and quality-of-end-of-life impact of early palliative care among high resource utilizers in the final 12 months of life



RESEARCH WEEK
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INSPIRED RESEARCHERS
Northern Health

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Background		
Healthcare resource utilization increases in the final 12 months of life, with a small patient cohort of high resource utilizers (HRU) accounting for disproportionate need. Palliative care has proven benefit in improving quality of end-of-life and may reduce resource use, though local data is limited.		
Aim		
To characterise HRU patients at Northern health and determine the impact of early palliative care on quality end-of-life outcomes and hospital resource use.		
Methods		
Retrospective cohort study of 5,425 adult in-hospital decedents at Northern Health, 2018–2023 using linked administrative data: • HRU: top decile for unplanned inpatient admissions OR total inpatient bed days in the final 12 months of life. • Palliative care: palliative care unit (PCU) admission, consult service review or ICD-10 Z51.5 code • Early palliative care: referral ≥90 days before death; late: <90 days; or no palliative care. • Quality indicators in final 30 days: ≥2 admissions, ≥2 ED presentations, any length of stay >14 days, ICU admission, and inpatient chemotherapy in cancer decedents		
Who are the HRU Patients?		
	HRU	Non-HRU
N	1,043	4,382
Age, median (IQR)	79 (71–86)	80 (71–88)
Female	422 (40.5%)	2,055 (47%)
Aboriginal or Torres Strait Islander	12 (1.2%)	34 (0.8%)
English preferred language	581 (55.7%)	2,842 (64.9%)
Illness trajectory		
Cancer	215 (21%)	1,114 (25%)
Dementia	173 (17%)	815 (19%)
Organ failure	575 (55%)	1,612 (37%)
Other	80 (7.7%)	841 (19.2%)

Resource use over 12 months		
	HRU	Non-HRU
Inpatient separations*	7 (5–11)	2 (1–3)
Bed days*	71 (38–107)	16 (6–31)
Inpatient cost*	\$126,649	\$40,610
Inpatient NWAU*	13.95	3.58
	(9.67–21.05)	(1.81–6.79)
*Median, IQR.		
Palliative care is accessed late		
81% of HRU patients accessed palliative care — but only 19% received it ≥90 days before death.		
21% 19% 60% No Palliative care Early Late		
27 days Median referral-to-death 1 in 5 No Palliative Care		
Early Palliative Care and Quality of the final month of life		
ICU admission		
aOR 0.055 • 95% CI 0.012–0.256 • p<0.001		↓ 95% LOWER ADJUSTED ODDS
Inpatient chemotherapy*		
aOR 0.030 • 95% CI 0.002–0.538 • p=0.017		↓ 97% LOWER ADJUSTED ODDS
≥2 inpatient admissions		
aOR 0.584 • 95% CI 0.367–0.928 • p=0.023		↓ 42% LOWER ADJUSTED ODDS
LOS >14 days		
aOR 0.586 • 95% CI 0.310–1.108 • p=0.100		↓ 41% LOWER ADJUSTED ODDS
>2 ED presentations		
aOR 1.21 95% CI 0.712–2.069 • p=0.477		No significant difference
*In cancer patients		

Early Palliative care & Resource Use	
Adjusted results in HRU patients: early vs no palliative care	
↓ 12% Total inpatient cost \$23,621 lower per patient	↓ 13% Total bed days 13.1 fewer days
↓ 27% Terminal admission cost \$7,149 lower per patient	↓ 15% Inpatient NWAU 3.70 NWAU lower
Inpatient cost ratio 0.88 (p=.039), bed-days ratio 0.87 (p=.038), terminal-cost ratio 0.73 (p=.005), and NWAU ratio 0.85 (p=.007).	
What this means for Northern Health	
End-of-life demand is rising: by 2023 annual in-hospital deaths had risen from 847 to 947 and patients in their final 12 months of life accounted for 16% of hospital bed days. HRU patients are a small, identifiable cohort with repeated opportunities for earlier palliative care engagement. Earlier referral may improve end-of-life care while reducing acute hospital demand.	
Limitations	
Single-centre retrospective study using administrative data therefore residual confounding and unmeasured clinical factors are likely. Because out-of-hospital deaths and associated costs were not captured results are likely a significant underestimate of the true cost of end of life. Associations only; should not be interpreted as causal	
Conclusion	
Early palliative care was associated with better end-of-life quality indicators and lower hospital resource use among high resource utilizers.	

TAKE-HOME MESSAGE

For patients who use the most hospital care near the end of life, earlier palliative care may be a high-value intervention that improves quality of end-of-life while reducing resource use and cost.

Next step: refine which HRU patients benefit most, identify the optimal referral window, and test proactive referral pathways.