



Financial burden of cancer at end of life: A patient and family perspective

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Why should we care?

- Cancer creates a burden for the patient and families (Longo, 2006; Guerriere, 2008)
 - Includes: Healthcare costs, travel costs, lost income
- Particularly burdensome at the end of life (Dumont, 2009; Dumont, 2010)
- For end-of-life these costs are:
 - not well-captured,
 - an important aspect of patient burden,
 - and substantial



What we know

- In measuring the impact for cancer pts.
 - Increased health events (& expenditures)
 - Cancer patients (not all terminal) have monthly costs averaging \$600-\$1000 (Longo, 2006;Longo, 2007)
 - Lost income adds \$1000 to \$2000 per month¹
 - Costs are higher in studies valuing leisure time (Gueirrier, 2008)
- End-of-life care looks different (generally more resources needed)
- Limited published Canadian data that combines includes data on OOPC and lost income picture for end-of-life care.



Guierrier, 2008

- ◆ Ontario – Homecare (multiple co-morbidities including cancers)
 - ◆ \$7671 (4 weeks), 85% privately funded or \$6510 (\$2004)
 - ◆ **Includes valuing leisure time lost by patients & caregivers**
 - ◆ Recruited from community care centres (higher burden cases).

Table 2 Costs by expenditure category (4-week period) per care recipient

Expenditure category	N*	Mean† (for those reporting costs)	Mean‡ (for total sample)	Median	Lower quartile	Upper quartile
Public						
Home-based healthcare professional appointments	514	696.52	696.52	498.40	249.20	996.80
Ambulatory healthcare professional appointments	425	289.05	239.05	85.50	40.40	173.07
Medication, supplies and equipment	351	328.39	224.25	162.81	41.44	470.03
Total public expenditures	514	1159.77	1159.77	874.78	473.00	1551.83
Private						
Time costs	514	6254.68	6254.68	3718.21	1387.98	8970.78
Out-of-pocket	481	186.84	174.84	89.93	31.23	206.00
Third-party insurance	125	334.63	81.38	107.12	30.00	321.60
Total private expenditures	514	6510.90	6510.90	4063.44	1579.20	9520.34
Total overall	514	7670.67	7670.67	5108.31	2434.00	11 072.56

* Number of participants reporting in Expenditure category.

† Mean cost for participants who reported costs within each of the relevant categories.

‡ Mean cost within each cost category calculated using the total sample (514).



Dumont Study 2009*

- Prospective: 248 patients, average FU 11 weeks
 - 5 centres across Canada in 2005-2006
 - Halifax, Montreal, Winnipeg, Edmonton, Victoria
- Share of costs
 - Public Health System cost (71.3%)
 - **Patient cost (26.6%)**
 - NFPO cost (1.6%)
- Patient costs included
 - Caregiving time (66.4%)
 - Out-of-pocket (17%)
 - Medical equipment & aids (6.7%)
 - Homecare (4.4%)



Dumont Study 2009

Table 2. Mean total cost per patient incurred by each part for each resource category*

Resource category	PHCS		Family		NFPO		Others		Total	
	Mean ± SE (95% CI)	%	Mean ± SE (95% CI)	%	Mean ± SE (95% CI)	%	Mean ± SE (95% CI)	%	Mean ± SE (95% CI)	%
Inpatient hospital care	6125 ± 778 (4600–7650)	46.6	0 ± 0 (0–0)	0.0	0 ± 0 (0–0)	0.0	0 ± 0 (0–0)	0.0	6125 ± 778 (4600–7650)	33.2
Ambulatory care	1420 ± 124 (1177–1664)	10.8	42 ± 14 (14–70)	0.9	0 ± 0 (0–1)	0.1	3 ± 2 (0–7)	3.4	1466 ± 127 (1218–1714)	7.9
Home care	3227 ± 698 (1860–4594)	24.5	216 ± 90 (40–393)	4.4	1 ± 1 (0–3)	0.4	12 ± 4 (4–19)	11.7	3456 ± 705 (2075–4838)	18.7
Long-term care	643 ± 191 (268–1017)	4.9	60 ± 25 (11–108)	1.2	0 ± 0 (0–0)	0.0	0 ± 0 (0–0)	0.0	703 ± 201 (310–1096)	3.8
Transportation	194 ± 30 (136–252)	1.5	97 ± 10 (76–117)	2.0	0 ± 0 (0–0)	0.0	0 ± 0 (0–0)	0.0	291 ± 36 (221–361)	1.6
Prescription medication	1129 ± 124 (885–1372)	8.6	68 ± 26 (17–120)	1.4	0 ± 0 (0–0)	0.0	0 ± 0 (0–0)	0.0	1197 ± 125 (953–1442)	6.5
Medical equipment/Aids	404 ± 61 (285–523)	3.1	329 ± 42 (247–411)	6.7	299 ± 57 (187–411)	98.9	82 ± 25 (34–131)	83.2	1115 ± 101 (918–1312)	6.0
Out-of-pocket costs	4 ± 1 (1–6)	0.0	835 ± 118 (604–1065)	17.0	2 ± 1 (0–5)	0.5	2 ± 1 (0–3)	1.7	842 ± 118 (610–1073)	4.6
Caregiving time costs	0 ± 0 (0–0)	0.0	3251 ± 277 (2709–3793)	66.4	0 ± 0 (0–0)	0.0	0 ± 0 (0–0)	0.0	3251 ± 277 (2709–3793)	17.6
Total	13146 ± 1111 (10969–15323)	100	4898 ± 369 (4175–5621)	100	303 ± 58 (190–416)	100	99 ± 26 (49–149)	100	18446 ± 1223 (16048–20844)	100

All costs are expressed in Canadian dollar and have been rounded to the nearest number.



Dumont Study 2009

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All costs are expressed in Canadian dollar and have been rounded to the nearest number.



Dumont, 2010*

- Prospective: 160 patients, average FU 5 months
 - Subset of the original 248 patients in 2009 study
 - 5 centres across Canada in 2005-2006
- Cost categories: inpatient care, outpatient care, & informal care
 - Inpatient: hospital & long-term care
 - Outpatient: ambulatory care, home care, transportation, medications, equipment, OOPC
 - Informal care: caregiving provided by family and friends
- Costs increase each month towards the end-of-life



Dumont 2010

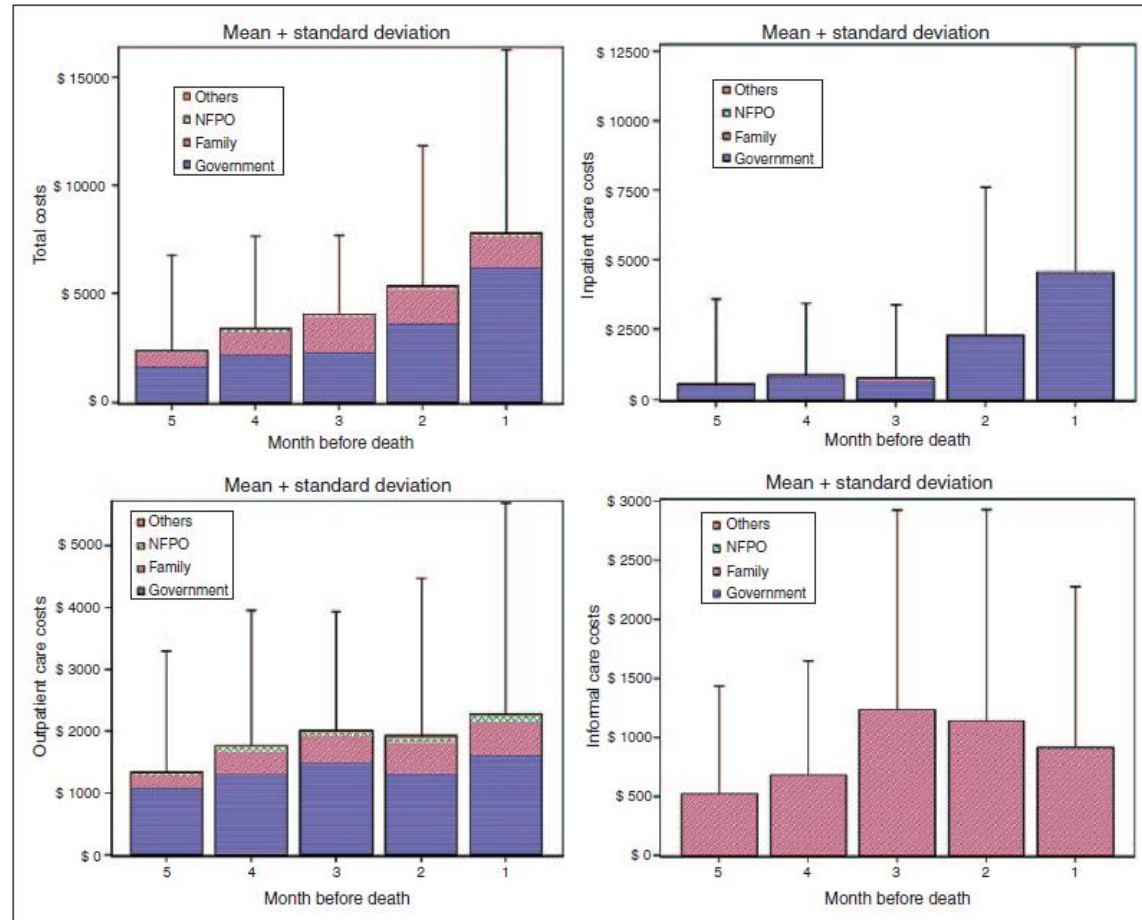


Figure 1. Variations in the mean total costs per patient over the last 5 months of life, by care category.



Dumont, 2010

- Majority of patients observed in this study were cancer patients (~85%, personal communication, Fassbender, 2013)
- OOPC similar to those seen in other studies (Longo, 2006)
 - Dumont (\$156 to \$347); Longo (\$213 to \$472)
- Caregiving monthly lost income at end-of-life increases substantially (\$521-\$1237) over costs seen in other studies (e.g. Longo, 2006: mean: \$230¹)



Conclusions & Future work

- Palliative care patient & family financial burden is significant, and notably higher the closer one gets to end of life.
- Support strategies for patients and families at the end-of-life should make appropriate adjustments associated with this increased financial burden.
- Although some data is available, more research is needed, especially to understand the cause and effects of a shift from home to hospital.



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