

Examining Canadian patient and family financial burden: Provincial variation and decisions to forego cancer care

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Introduction/Background: Studies from Canada and other countries with primarily publicly funded health care systems show that cancer patients commonly experience substantial economic burden or out-of-pocket costs with resulting psychosocial distress. The impacts and consequences may vary for patients living within different geographical jurisdictions because of variation in policies and practices. This study examined Canadian provincial differences in patient spending for cancer care and reductions in household spending, including decisions to forego cancer care.

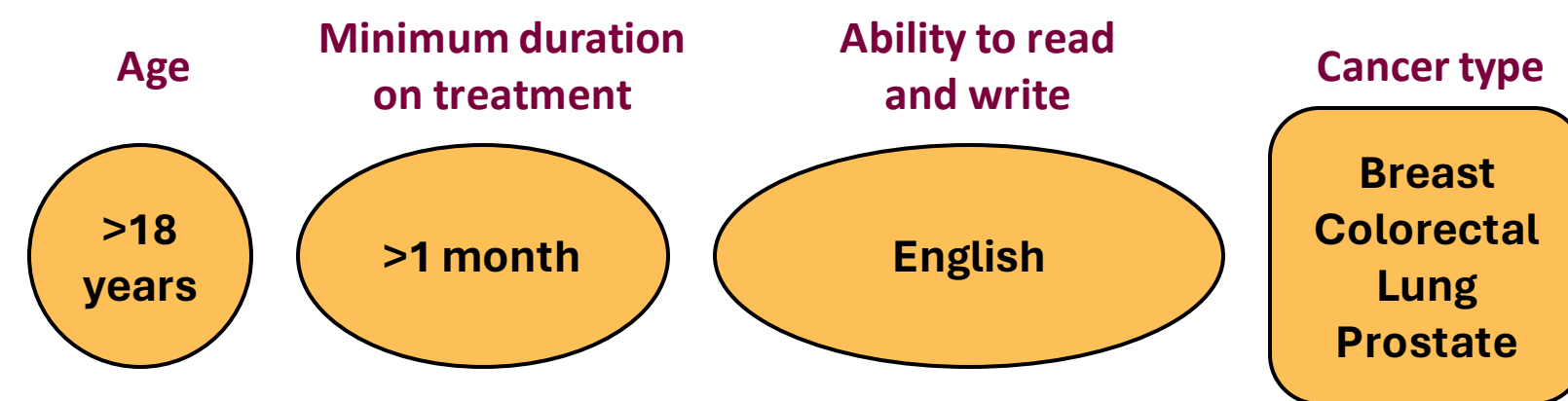
Methods: Patients with cancer, from twenty cancer centres across Canada, completed a self-administered questionnaire (P-SAFE version 7.2.4) on one occasion. Questionnaire items measured direct and indirect costs, and spending changes, including decisions to forego cancer care.

Results: In total, 901 cancer patients (344 breast, 183 colorectal, 158 lung, 216 prostate) provided responses. Provincial variations showed a high mean out-of-pocket cost (OOPC) of \$938 (Alberta) and a low of \$280 (Manitoba). Differences were influenced by age and income. Income loss was highest for Alberta (\$2,399) and lowest for Manitoba (\$1,126). Travel costs were highest for Alberta (\$294) and lowest for BC (\$67). Parking costs were highest for Ontario (\$103) and lowest for Manitoba (\$53). Forty-one percent of patients reduced spending, but this increased to 52% for families earning <\$50,000/year. Highest national rates for making decisions to forego care were for vitamins/supplements, 21.3% of those who indicated spending reductions. Reductions for *Complementary and Alternative Medicine* (CAM) were made by 16.3%, and for drugs by 12.8%. Most cost categories had higher proportions of individuals who decided to forego care when family income was <\$50,000/year and for patients <65 years.

Conclusions/Implications: Financial burden for patients with cancer varied across Canadian provinces. Decisions to forego cancer care were highest for vitamins/supplements, CAM, and drugs. Provincial differences suggest that regional health policies, and demographics may impact patients' overall financial burden.

Patient Selection

Study inclusion eligibility



901 patients ; 20 cancer centers across Canada; Between May 1, 2016 and May 31, 2019

Patient Survey

Patient Self-Administered Financial Effects (P-SAFE) Questionnaire (v 7.2.4)

| | |
|-----------------------|---|
| Direct costs | Questions about insurance plans that help pay for health services as well as additional costs of care |
| Indirect costs | Time away from work for self and caregivers |
| Demographic | Age, sex, education, job, income, caregiver status |
| Comments | Other comments related to out-of-pocket costs |

Results

Study population: demographic characteristics by study sample and tumor type

| | | Total (n=901) | Breast (n=344) | Colorec. (n=183) | Lung (n=158) | Prostate (n=216) |
|------------------|-------------|------------------|-------------------|---------------------|-----------------|---------------------|
| Age | Age | 61.3 | 55.5 | 59.0 | 65.3 | 67.6 |
| Education | Elementary | 19(2.1) | 2(0.6) | 3(1.6) | 8(5.1) | 6(2.8) |
| | Some HS | 55(6.1) | 10(2.9) | 15(8.2) | 16(10.1) | 14(6.5) |
| | Com. HS | 169(18.8) | 68(19.8) | 39(21.3) | 32(20.2) | 30(13.9) |
| | Some Univ | 170(18.9) | 58(16.9) | 30(16.4) | 38(24.1) | 44(20.4) |
| | Com. Univ | 367(40.8) | 161(46.9) | 75(40.1) | 52(32.9) | 79(36.6) |
| | Post Grad | 120(13.3) | 44(12.8) | 21(11.5) | 12(7.6) | 43(19.9) |
| Income | \$0-19.9K | 65(7.2) | 19(5.5) | 17(9.3) | 21(13.3) | 8(3.7) |
| | \$20-39.9K | 137(15.2) | 50(14.6) | 33(18.0) | 29(18.4) | 25(11.6) |
| | \$40-59.9K | 142(15.8) | 54(15.7) | 27(14.8) | 28(17.7) | 33(15.3) |
| | \$60-79.9K | 134(14.9) | 52(15.2) | 28(15.3) | 24(13.0) | 30(13.9) |
| | \$80-99.9K | 131(14.6) | 52(15.2) | 22(12.0) | 13(8.2) | 44(20.4) |
| | \$100K plus | 218(24.2) | 90(26.2) | 42(23.0) | 25(15.8) | 61(28.2) |
| | Missing/DK | 73(8.1) | 26(7.6) | 14(7.7) | 18(11.4) | 15(6.9) |

28-day expenditures for OOPC, parking, travel, and lost income vs. mean monthly family income

| | National | BC | Alberta | Manitoba | Ontario |
|-------------------------------|---------------|---------------|---------------|---------------|---------------|
| OOPC | \$518 | \$528 | \$938 | \$280 | \$461 |
| Parking | \$84 | \$62 | \$71 | \$53 | \$103 |
| Travel | \$179 | \$67 | \$294 | \$146 | \$194 |
| Lost income (days) | \$1733 (8.3) | \$1668 (8.0) | \$2399 (11.5) | \$1126 (5.4) | \$2010 (9.6) |
| Total financial effect | \$2514 | \$2325 | \$3702 | \$1605 | \$2768 |
| Family income (%) | \$5304 (47.4) | \$5211 (44.6) | \$5539 (66.8) | \$4562 (35.2) | \$5522 (50.1) |

| | National | BC | Alberta | Manitoba | Ontario |
|---------------------------|------------|------------|------------|------------|------------|
| Adjust Spend (ALL) | 40.7 | 39.7 | 36.3 | 35.1 | 42.8 |
| Income < \$50K | 52.2 | 42.6 | 46.2 | 52.7 | 57.9 |
| Age < 65 | 54.3 | 55.9 | 47.1 | 58.3 | 55.1 |
| Drugs (ALL) | 12.8(5.2) | 13.5(5.3) | 12.2(4.4) | 14.9(5.2) | 10.9(4.7) |
| Income < \$50K | 20.7(10.8) | 25(10.6) | 0 (0) | 20.7(10.9) | 19.5(11.3) |
| Age < 65 | 13.4(7.3) | 15.8(8.8) | 12.1(5.7) | 21.4(12.5) | 10.7(5.9) |
| Devices (ALL) | 9.0(3.7) | 7.7(3.1) | 17.1(6.2) | 8.5(3) | 6.9(3) |
| Income < \$50K | 8.3(4.3) | 5.0(2.1) | 8.3(3.8) | 10.3(5.5) | 7.8(4.5) |
| Age < 65 | 9.3(5.1) | 10.5(5.9) | 21.2(10) | 10.7(6.3) | 5.3(2.9) |
| Homecare (ALL) | 8.7(3.6) | 9.6(3.8) | 14.6(5.3) | 8.5(3) | 7.4(3.2) |
| Income < \$50K | 10.3(5.3) | 15(6.4) | 0(0) | 13.8(7.3) | 9.1(5.3) |
| Age < 65 | 8.6(4.6) | 13.2(7.4) | 15.2(7.1) | 7.1(4.2) | 6.7(3.7) |
| CAM (ALL) | 16.3(6.7) | 17.3(6.9) | 24.4(8.8) | 14.9(5.2) | 14.9(6.4) |
| Income < \$50K | 14.5(7.6) | 10(4.3) | 8.3(3.8) | 17.2(9.1) | 15.6(9.0) |
| Age < 65 | 19.3(10.5) | 21.1(11.8) | 27.3(12.9) | 21.4(12.5) | 16.8(9.2) |
| Vitamins (ALL) | 21.3(8.7) | 21.2(8.4) | 24.4(8.8) | 23.4(8.2) | 20.3(8.7) |
| Income < \$50K | 29(15.1) | 25(10.6) | 8.3(3.8) | 31(16.4) | 29.9(17.3) |
| Age < 65 | 21.9(11.9) | 23.7(13.2) | 27.3(12.9) | 28.6(16.7) | 29.9(11.1) |

Multivariable linear regression of OOPCs

| Category | Variable | Coefficient (SE) | Beta* | 95% Confidence Interval | P value |
|-------------------|-------------|----------------------|-------|-------------------------|---------|
| Province** | BC | -\$399.75 (\$195.02) | 2.05 | -\$782.18, -\$17.32 | p<0.05 |
| | Manitoba | -\$507.20 (\$200.33) | 2.53 | -\$900.05, -\$114.35 | p<0.05 |
| | Ontario | -\$532.52 (\$160.29) | 3.32 | -\$846.85, -\$218.19 | p<0.01 |
| Income | Below \$50K | -\$326.51 (\$113.41) | 2.88 | -\$548.91, -\$104.11 | p<0.01 |
| | Continuous | -\$9.08 (\$3.85) | 2.35 | -\$16.63, -\$1.53 | p<0.05 |
| Burden*** | Burden High | \$671.10 (\$115.85) | 5.79 | \$443.92, \$898.28 | p<0.01 |
| | Constant | \$1329.34 (\$270.79) | 4.91 | \$798.32, \$1860.36 | p<0.01 |

HS – High School; DK – Don't know; OOPC – Out-of-pocket cost; \$ in Canadian dollar; CAM – complementary and alternative medicine

* Standardized beta = Absolute value of coefficient/SE * Alberta is reference province; ** 'small burden' is burden reference

Conclusion

- Provincial differences in patient and family burdens related to cancer treatment and decision to forego care exist and are statistically significant in some cases regarding out-of-pocket costs
- Expenditure as a percentage of income is greatest for those with low incomes
- Decisions to forego care, particularly for those with family incomes below CAD 50,000 per year and those under 65 years of age