Association of Socioeconomic Status with Virtual Specialized Palliative Care in Patients who Died with Cancer Before and During the COVID-19 Pandemic

Javaid Iqbal,[1] Rahim Moineddin,[1] Robert Fowler,[2] Monika Krzyzanowska,[3] Christopher Booth,[4] James Downar,[5] Jenny Lau,[3] Lisa Le,[3] Gary Rodin,[3] Hsien Seow,[6] Peter Tanuseputro,[7] Craig Earle,[2] Kieran Quinn,[8] Breffni Hannon,[3] Camilla Zimmermann[3]

Affiliations: [1] University of Toronto, [2] Sunnybrook Health Sciences Centre, [3] Princess Margaret Cancer Centre, [4] Queen's University, [5] University of Ottawa, [6] McMaster University, [7] Ottawa Hospital Research Institute, [8] Mount Sinai Hospital

Introduction

- During the COVID-19 pandemic, healthcare systems expanded virtual care services to provide continued access to medical care despite social distancing mandates.
- We assessed whether there was a differential effect of the pandemic on virtual specialized palliative care (PC) delivery at the end of life according to socioeconomic status (SES).

Methods

- Population-based cohort of 173,915 adults who died with cancer from 16/3/2015 to 15/3/2020 (pre-COVID-19 period), and from 16/3/2020 to 15/3/2021 (COVID-19 period), in Ontario, Canada.
- March 16, 2020 coincided with pandemic-related hospital entrance screening and visitor restrictions in hospitals across Ontario.
- Virtual specialized PC defined using the Ontario Health Insurance Plan (OHIP) physician billing codes; measured as % of patients with ≥1 virtual specialized PC visit via telephone or videoconference, in the last 30 days of life.
- Segmented negative binomial regression performed accounting for serial correlation.
- Analyses stratified area-level material deprivation quintiles (Q1, least deprived, to Q5, most deprived) from the Ontario Marginalization Index, which represent SES.

Results

- 100,462 patients received specialized PC in last 30 days of life; 7,296 (7.3%) received PC virtually.
- From a baseline of 0.001%, the rate of virtual specialized PC increased by a factor of 1.02% per month in the pre-COVID-19 period. At the start of the pandemic, the rate increased by 118-fold (*P*<.0001) (Figure 1).
- The rates of virtual specialized PC were similar for Q1, Q3 and Q5 before the pandemic, but at pandemic onset the increase in virtual specialized PC was highest for patients in Q1 and lowest for patients in Q5; this difference continued during the pandemic (Table 1; Figure 2).

Figure 1. Observed and Expected Trends Over Time in Receipt of Virtual Specialized Palliative Care in the Last 30 Days of Life.

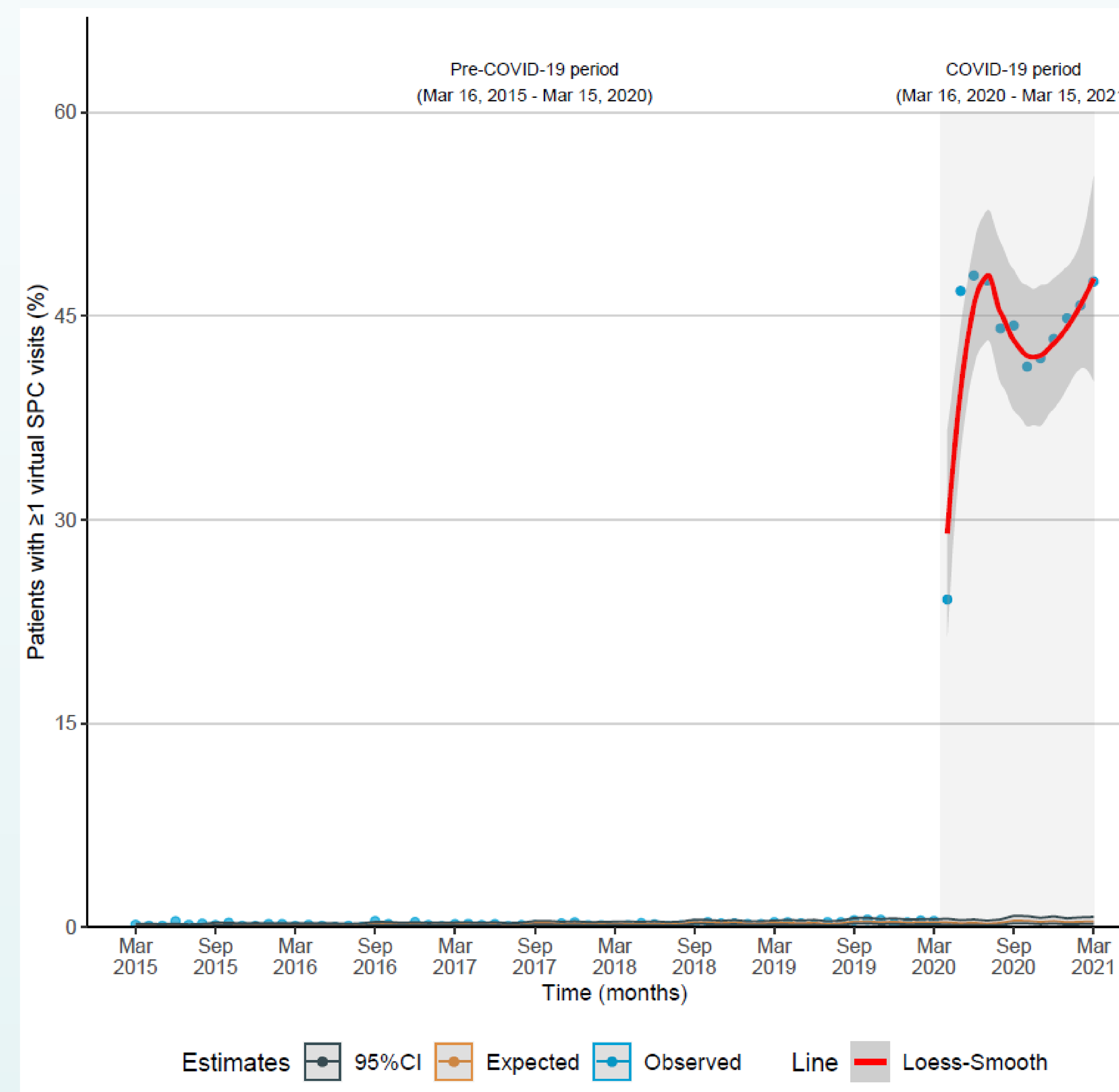

Figure 2. Observed Trend Over Time in Receipt of Virtual Specialized Palliative Care in the Last 30 Days of Life, Stratified by Material Deprivation Quintile.

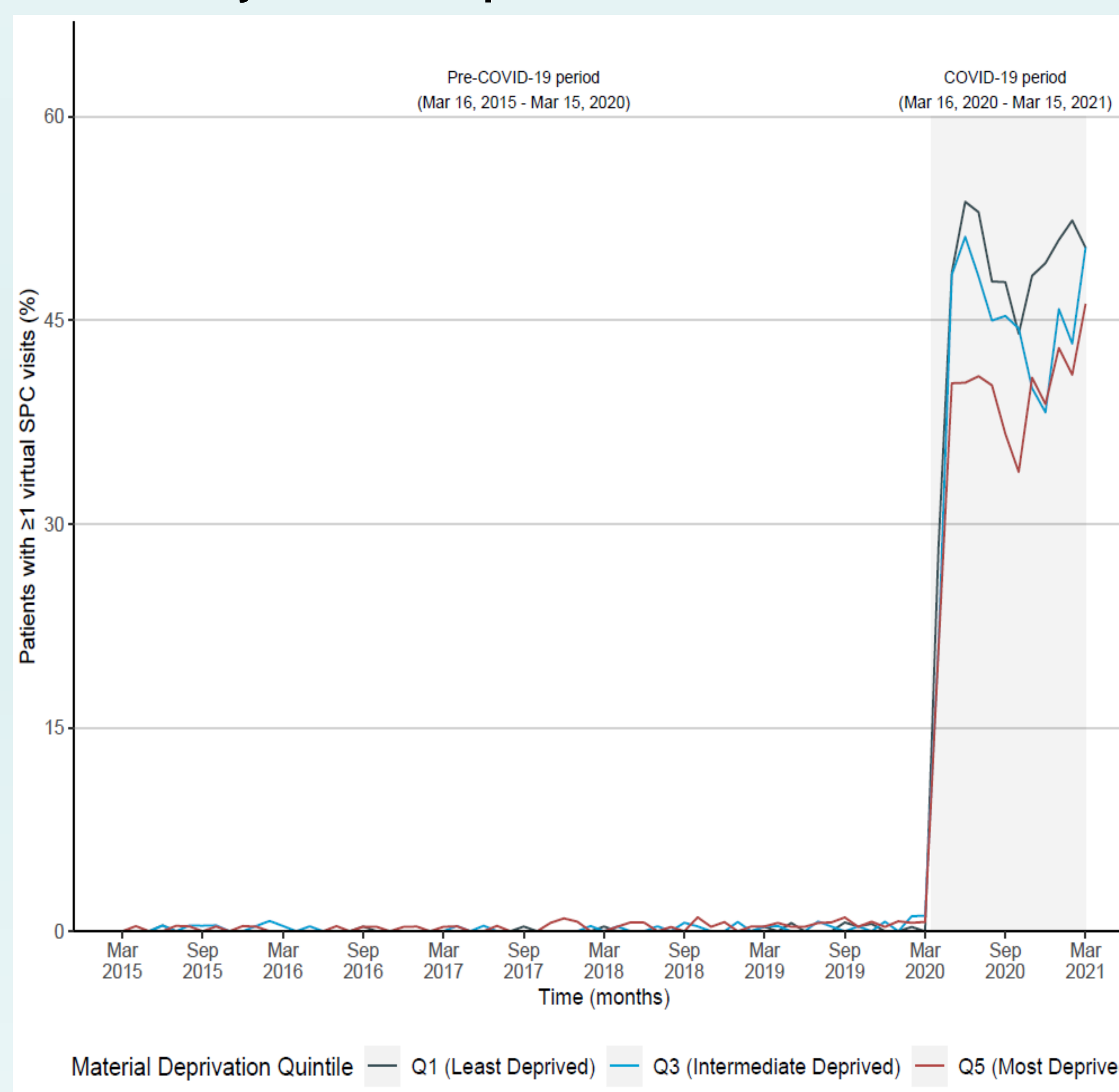

Table 1. Rate of Virtual Specialized Palliative Care, Stratified by Material Deprivation Quintile[1, 2]

Material Deprivation Quintile	Baseline Rate at the Start of Study Period	Pre-COVID-19 Period Trend (per month)	Immediate Level Change at the Start of the COVID-19 Pandemic	Slope Change During the COVID-19 Pandemic
Q1 (Least Deprived)	**0.0001**	**1.05**	**185.0**	0.97
Q2	**0.002**	1.01	**164.0**	1.01
Q3 (Intermediate Deprived)	**0.0009**	1.02	**107.3**	0.99
Q4	**0.002**	1.01	**102.0**	1.00
Q5 (Most Deprived)	**0.001**	**1.03**	**50.0**	1.00

[1] Regression estimates in **bold** are statistically significant (*P*≤0.05).
[2] Rates represent exponential values calculated from log estimates. The rate per 100 patients can be calculated using the formula: (estimate – 1) * 100.

Conclusions

Although the COVID-19 pandemic was associated with an immediate increase in virtual specialized palliative care at the end of life among patients with cancer, there was a disparity in this increase according to socioeconomic status.

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Correspondence:

javaid.Iqbal@utoronto.ca or camilla.zimmermann@uhn.ca

CIHR IRSC Canadian Institutes of Health Research Instituts de recherche en santé du Canada

UHN Toronto General Toronto Western Princess Margaret Toronto Rehab Michener Institute