

Research for action on social, intersectional and geographical disparities in economic outcomes for families impacted by pediatric cancer

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Background

- While physical and mental health impacts of childhood cancer are well studied, socioeconomic impacts are less known. More evidence is needed to reduce inequities across the cancer journey.
- For example, families in lower income brackets may struggle more to cover health-related and indirect costs of treatment, such as travel, accommodation, and productivity losses due to caregiving responsibilities.

Goal

- Investigate how **social, intersectional and geographic disparities** interact with socioeconomic outcomes (education, income, employment) for families impacted by pediatric cancer.

Objectives

- Examine the intersectionality between multiple family-level social and geographic characteristics and long-term socioeconomic outcomes.
- Identify potential mediating factors (e.g., disability, education) that amplify the impact of disparities on the socioeconomic burden of pediatric cancer.

Study Methods

Pan-Canadian Linked Data  Statistics Canada


- This project will use a comprehensive **custom linkage** of datasets at Statistics Canada comprised of birth records, pediatric-specific cancer registry data (diagnosis and treatment information), income tax, employment insurance, post-secondary education, and hospitalization records.
- In light of linkage delays, our team is conducting **preliminary investigations using existing datasets** at Statistics Canada limited within survivors and mothers.

Preliminary Results

Adult-aged survivors of childhood cancer

- N = 3,635 survivors**
 - 49% = hematologic malignancy
 - 56% = aged 10-14 at diagnosis
- N = 1 million matched controls without cancer**

Median age of 22 years (IQR: 19-25) at end of follow-up

 5% lower income among all survivors, 23% lower among CNS survivors

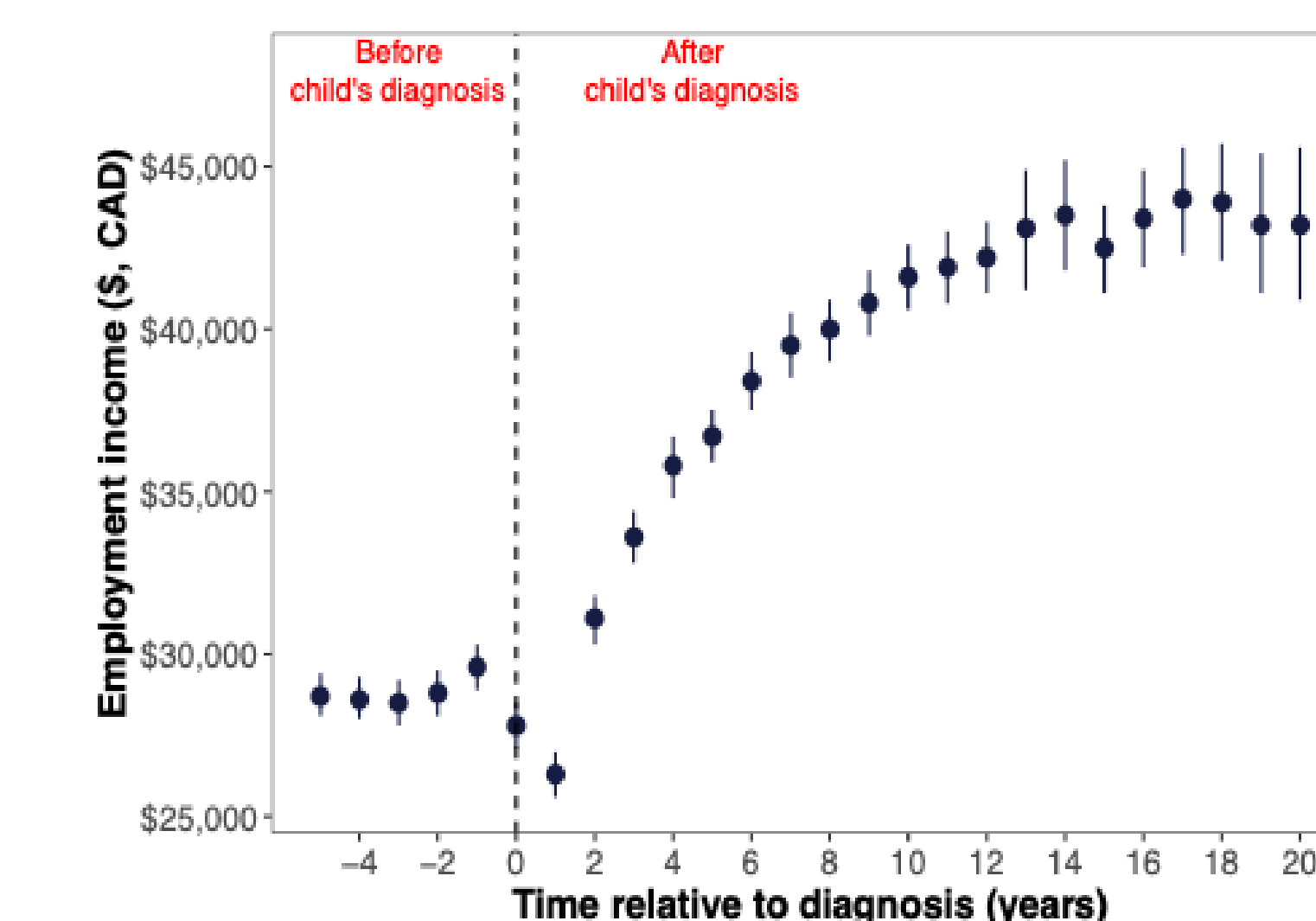
 4% lower employment rate among all survivors, 14% lower among CNS survivors

CAN-Marg dimension	Examples of included factors	Interpretation of quintile values (Q1-Q5)	Quintile	Income effect: survivors vs controls	Employment effect: survivors vs controls
Households and dwellings	Proportion of dwellings that are not owned; average household size	Higher quintile = <u>less</u> housing security	Q1 Q2 Q3 Q4 Q5	-7% -4% -8% -9% -15%	-4% -3% -3% -6% -7%
Material resources	Proportion of total income from government transfer payments for population aged 15+	Higher quintile = <u>less</u> material resources	Q1 Q2 Q3 Q4 Q5	-5% -10% -8% 0% -12%	-4% -3% -4% -5% -8%
Age and labour force	Proportion of the population aged 15+ not participating in the labour force	Higher quintile = <u>higher</u> proportions of seniors, children, and those not in the labour force	Q1 Q2 Q3 Q4 Q5	-7% -12% -2% -11% -4%	-4% -6% -5% -3% -4%
Immigration and visible minority groups	Proportion of the population who self-identify as a visible minority	Higher quintile = <u>higher</u> proportions of recent immigrants and visible minorities	Q1 Q2 Q3 Q4 Q5	-1% -9% -11% -8% -7%	-3% -5% -6% -7% -7%

Mothers of children diagnosed with cancer

- N = 13,400 mothers of children with cancer**
- N = ~4 million mothers of children without cancer**

Characteristics of mothers of children with cancer	
Mother's age at child's cancer diagnosis (mean, SD)	35 years (7)
Child's age at cancer diagnosis (%)	0-2 yrs: 3,700 (28%) 3-4 yrs: 3,000 (23%) 5-9 yrs: 3,800 (28%) 10-14 yrs: 2,900 (23%)
Married/common-law (%)	11,200 (84%)
Employment income - year before diagnosis (mean, SD)	\$29,600 (\$40,300)
Total income - year before diagnosis (mean, SD)	\$40,800 (\$41,000)



Anticipated Impact

Evidence of disparities in socioeconomic burden of disease may be used to advocate for new interventions, policies, and resources - and to whom they should be targeted.

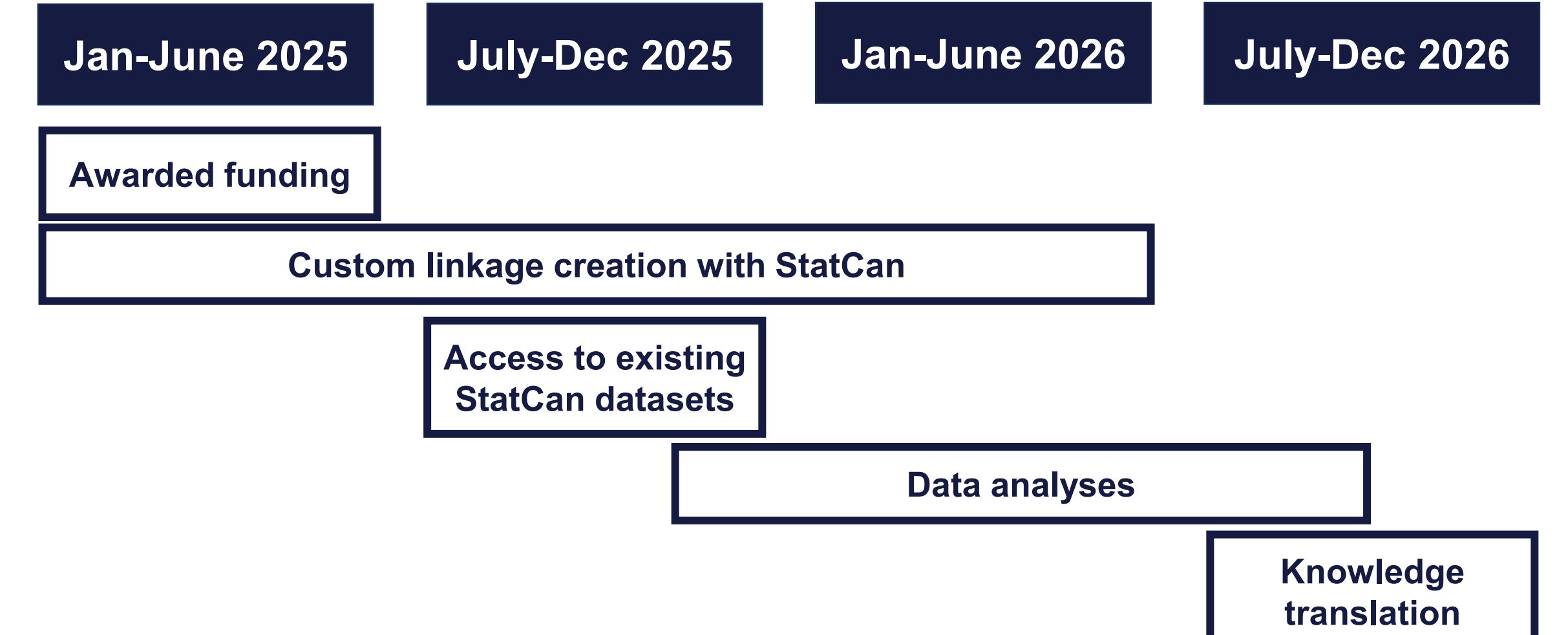
This may include:

- Fiscal policies and survivorship care models that enhance equity
- Financial navigators / financial planning that begins at diagnosis
- Government aid (e.g., expansion of caregiver benefits)
- Expansion of vocational programs for survivors

Next Steps

- Our team will continue to analyze the existing datasets:
 - Maternal cohort: create matched control group, conduct an expanded descriptive/comparative analysis including geographical components (rurality/urbanicity, dimensions of area-level marginalization)
 - Survivor cohort: stratified analysis by rurality/urbanicity
- The main analysis using the custom linkage (expected Summer 2026) will include:
 - Access to more years of cancer registry data (1992-2024) with longer follow-up time
 - Ability to identify family units (identification of siblings and fathers)
 - Information on additional equity-related factors (immigration status, ethnicity)
 - Access to data sources on cancer treatment, post-secondary education, disability, employment insurance claims, etc.

Project Timeline



This work is part of ACCESS Theme 4: Regulation, Policy & Economics

