Patterns of Care for Children who are Persistently High Resource Utilizers: Implications for Policy

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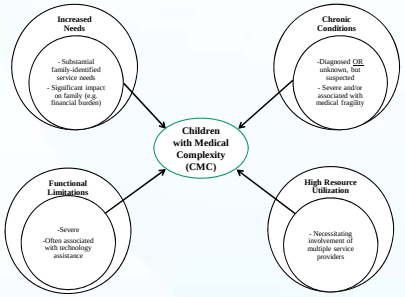
BACKGROUND

- Healthcare spending is highly concentrated in small populations with very high needs
  - More so in children than adults and the elderly
- So-called high cost users have become a target population for healthcare policy and strategies to improve care and outcomes through more coordinated services across primary, secondary and hospital services
  - Locally in Ontario, major policy initiative around integration (HealthLinks)
  - Explicit targeting of the "top 1 and 5%" by healthcare spending
- Little understanding of this population in a paediatric context
- Previous policy paradigm defined "children with medical complexity" for interventions to improve care coordination



OBJECTIVES

- Describe the population of children who have persistently high healthcare resource use (five years) in Ontario (total child population of just under 3 million)
- Characterize the patterns of health care use
- Model the predictors of persistently high health care use

DATA SOURCES & STUDY POPULATION

- Population-based cohort study using linked administrative health data for all Ontarians
- Cohort of top 5% of child (1-18) population by healthcare spending in 2007

MEASURES & ANALYSES

- Defined persistently high healthcare use as being in the top 1% by spending for at least 2/4 follow-up years (2008-2011)
- Characterized population by demographic and clinical characteristics (hierarchical approach to underlying clinical problems as in previous work)
- Logistic regression models to test the association of characteristics with persistence

RESULTS

Figure 1. Average cost for top 10% of children in Ontario by cost in 2007

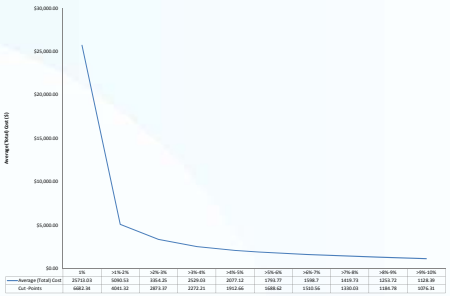


Figure 2. Percentage of children with persistently high health care use (2/4 years in the top 1%) by clinical category (N=7,012)

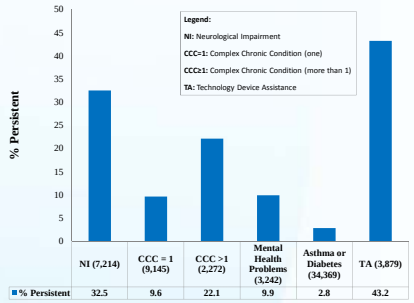


Figure 3. Clinical categories of children with persistently high health care use (N=7,012)

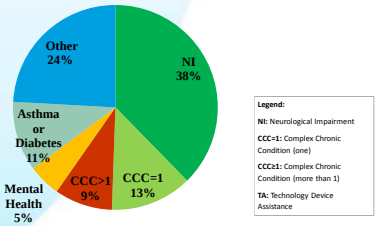


Figure 4. Breakdown of cost of services for children with persistently high health care use (n=7,012, annualized cost = $200,008,605)

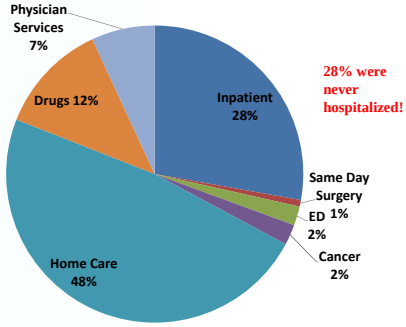
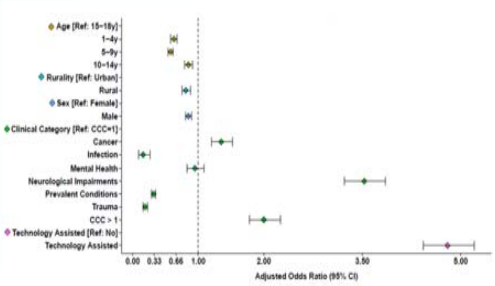


Figure 5. Predictors of persistent healthcare utilization in pediatric population of Ontario



No association with socio-economic status

KEY FINDINGS

- Sharp drop-off in cost after top percentile (Figure 1)
- 143, 211 children in the top 5% in 2007
  - Baseline mean costs: $17,710.57 ± $30, 292.58 (top 1%) and $2,563.24 ± 964.44 (top 2-5%)
- In subsequent years:
  - 625 (4.3%) died
  - **7, 012 (4.9 %) persisted in top 1% for 2/4 of the following years**
  - Annualized mean costs $28,523.7 ± 35,455.1
- Much higher proportion of medically complex will have persistently high HC needs (Figure 2) children with complex chronic conditions, neurological impairment BUT not all will have persistently high HC needs
- Children with less complex problems such as asthma and diabetes make up a proportion of the children with persistently high HC needs (Figure 3)
- Home care is the largest cost for the children with persistently high HC needs
- Only 28% of costs are inpatient and 28% of these children had no admissions in the 4 year follow up period
- Most significant association with persistence was medical complexity (technology assistance, neurological impairment, multiple complex chronic conditions) (Figure 5)
- No association of SES with persistence

IMPLICATIONS

- Using the lens of persistent high healthcare spending yields a somewhat different and smaller population of children than focusing on pre-defined groups with medical complexity
  - Not all medically complex children are chronically high healthcare users
  - Other groups of children may have unmet needs, but these may require a different policy focus than pure healthcare coordination
- Many differences to adult patterns
  - Much lower rates of mortality and institutionalization
  - Home care spending dominates
    - Implications for potential interventions, impact of policies to better coordinate care, ?? cost savings ??
  - Heavy reliance on paediatric tertiary care system
- Focus on cost alone, even with the overlay of persistence across time may not be the most appropriate sole strategy to target populations for health system interventions
  - Some high cost children may be well-served by the care system (CF, cancer)
- Ideally strategies to integrate care for high cost children will be able to support improvements in care for other children with high healthcare needs (e.g. those with mental health problems) but will need to include coordination with community-based services, schools and public health

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