

fatigue-related errors based on prior sleep-wake data. Key themes identified potential topics for educational interventions as well as targets for organizational improvements with regards to fatigue risk management. This data will be the basis of next steps to implement an FRMP within our organization.

87

**BIG SHOES TO FILL: REALITIES OF RURAL PEDIATRICIANS IN BRITISH COLUMBIA**

Valerie Ward<sup>1</sup>, Jennifer Retallack<sup>2</sup>, Kirsten Miller<sup>3</sup>

<sup>1</sup>UBC Pediatrics, <sup>2</sup>BC Children's Hospital,

<sup>3</sup>University of British Columbia

**BACKGROUND:** Recruitment and retention of paediatricians remains a challenge in rural settings across Canada. In British Columbia, paediatricians are specialty physicians who provide consultation for children and neonates who are acutely unwell or with complex medical conditions. Little is known about the state of rural paediatrics in British Columbia (BC) and the reality of the province's rural paediatricians.

**OBJECTIVES:** Using a survey, this study aimed to understand rural paediatrics in BC, in terms of physician workload and burnout, recruitment, and participation in medical education.

**DESIGN/METHODS:** For the purposes of this survey, those communities with a rural practice subsidiary agreement (RSA) were considered rural. There are 12 RSA communities with paediatricians in BC, served by 32 paediatricians. Surveys were sent to the 28 paediatricians with available contact information and responses were received from 96% (27/28) of those paediatricians.

**RESULTS:** Only one community has more than 5 paediatricians, and 11/12 communities are supported by a single or pair of paediatricians. Sixty-three percent of respondents have been in practice for 10 or more years, and all of the solo paediatricians have been in practice for more than 10 years. This data supports previous studies, which have identified aging of paediatricians, fewer new graduates choosing to practice in rural settings, and difficulty retaining those currently practicing as key factors contributing to the challenges in providing rural paediatric care. Over 75% of respondents reported some degree of burnout, and no respondents were looking to increase their workload. The workload challenges did not seem to be affected by the number of paediatricians in a community. Recruitment was a significant concern for over 80% of respondents, and only 7% felt their community had effective recruitment strategies. When asked what recruitment strategies have previously been effective, mentoring by local paediatricians was a frequent response, indicating that physicians are taking it upon themselves to actively recruit others. Approximately 80% of respondents reported participating in the education of medical students or residents, which has been shown to increase job satisfaction when balanced with workload.

**CONCLUSION:** This survey will contribute to the understanding of the current state of rural paediatrics in BC, a will form the basis for the development of new initiatives, and allow for their evaluation as they are implemented.

88

**ASSOCIATION BETWEEN AREA LEVEL MATERIAL DEPRIVATION AND INCIDENCE OF HOSPITALIZATION AMONG CHILDREN WITH SARS-COV-2 IN MONTREAL**

Assil Abda<sup>1</sup>, Olivier Drouin<sup>2</sup>, Fatima Kakkar<sup>3</sup>, Julie Autmizguine<sup>3</sup>, Francesca del Giorgio<sup>4</sup>, Lise Gauvin<sup>5</sup>

<sup>1</sup>Université de Montréal - CHU Sainte-Justine,

<sup>2</sup>Division of General Pediatrics, Department

of Pediatrics, CHU Sainte-Justine, <sup>3</sup>CHU

Sainte-Justine, <sup>4</sup>CHU Sainte-Justine Research

Centre, <sup>5</sup>School of Public Health, Université

de Montréal

**BACKGROUND:** Although sociodemographic factors have been linked with SARS-CoV-2 infection and hospitalizations in adults, there are little data on the association between sociodemographic characteristics and SARS-CoV-2-related hospitalization in children.

**OBJECTIVES:** The objective of this study was to determine the association between area-level material deprivation and incidence of hospitalization with SARS-CoV-2 among children.

**DESIGN/METHODS:** We conducted a retrospective cohort study of all children (0-17 years of age) with a PCR-confirmed SARS-CoV-2 infection between March 1<sup>st</sup> 2020, and May 31<sup>st</sup> 2021, at a tertiary care pediatric hospital. Data were collected through chart review and included age, sex, and postal code. Postal codes were then assigned a dissemination area-level material deprivation score, measured via the Pampalon Material Deprivation Index (PMDI) quintiles. The Pampalon Material Deprivation Index (PMDI) uses postal codes to describe factors related to material deprivation obtained from the Canadian census, which are proxies for individual data in a geographic area. Specifically, the PMDI integrates data regarding (i) the proportion of persons without a high school diploma; (ii) the employment-to-population ratio; (iii) average personal income which is aggregated at the dissemination area level. We examined the association between PMDI quintiles and hospitalization using Poisson regression.

**RESULTS:** During the study period, 964 children had a positive PCR-confirmed SARS-CoV-2 test and 124 were hospitalized due to SARS-CoV-2 infection. Children from the most deprived PMDI quintile represented 31.6% of positive cases and 40.7% of hospitalizations (Figure 1 and 2). Both in bivariate and multivariable regression analyses, there was evidence of greater proportion of positive test results in the most deprived PMDI quintile (Quintile 5) compared to the least deprived quintile (Quintile 1) (rate ratio 1.77, 95%CI: 1.36; 2.62) (Table 1). The incidence of hospitalization due to SARS-CoV-2 infection was 2.42 times greater in the most deprived quintile compared to the least deprived quintile (95%CI: 1.33; 4.41) (table 1). In a post-hoc analysis, the risk for severe disease appeared higher for children living in Q5 areas relative to other areas but the difference did not reach statistical significance.

**CONCLUSION:** In conclusion, in this study we found evidence that Canadian children living in neighbourhoods with high material deprivation had a higher incidence of infection and hospitalizations related to SARS-Cov-2 compared to children living in neighbourhoods with less material deprivation. Public health authorities should take these disparities into account when devising public health policy and interventions especially at this crucial point in the pandemic. Special efforts should be deployed to protect children from these more disadvantaged areas, especially as vaccination is not yet available to a majority of children.

Figure 1 - Distribution of Pampalon Material Deprivation Index for patients with positive SARS-CoV-2

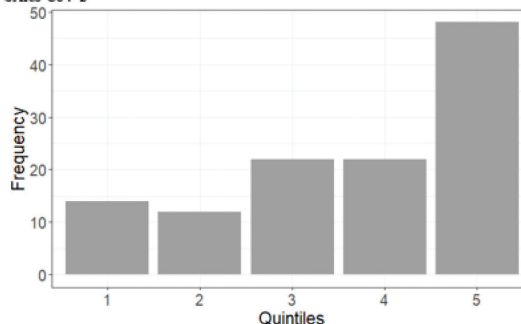
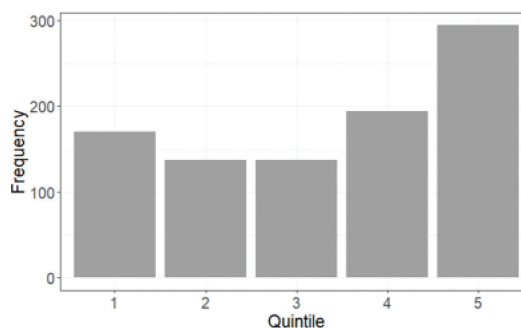


Figure 2 - Distribution of Pampalon Material Deprivation Index for patients hospitalized with positive SARS-CoV-2



**Table 1.** Association between socio-economic characteristics and distribution of positive tests (multivariable negative binomial regression)<sup>1</sup> and hospitalization (multivariable Poisson regression)<sup>2</sup>

Characteristics	Rate Ratio (95% CI)	Rate Ratio (95% CI)
	All positive SARS-CoV-2 tests <sup>1</sup>	Hospitalized with positive SARS-CoV-2 test
<b>Age of child</b>		
Infants (<1 year)	REF	REF
Preschool (1-5 years)	3.53 (2.66; 4.70)	0.93 (0.55; 1.57)
School age (6-12 years)	3.70 (2.79; 4.91)	0.74 (0.42; 1.28)
Adolescents (13-17 years)	1.94 (1.44; 2.62)	1.27 (0.77; 2.07)
<b>Sex of child</b>		
Female	---	REF
Male	---	1.33 (0.91; 1.92)
<b>Pampalon Material Deprivation Index<sup>2</sup></b>		
Q1 (most privileged)	REF	REF
Q2	0.82 (0.61; 1.10)	0.74 (0.34; 1.62)
Q3	0.80 (0.59; 1.07)	1.25 (0.64; 2.45)
Q4	1.14 (0.86; 1.51)	1.11 (0.57; 2.18)
Q5 (most deprived)	1.77 (1.36; 2.62)	2.42 (1.33; 4.41)

89

### CENTRE-BASED CHILD CARE ATTENDANCE IN EARLY CHILDHOOD AND ADIPOSITY IN LATER CHILDHOOD: A PROSPECTIVE COHORT STUDY

Michaela Kucab<sup>1</sup>, Charles Keown-Stoneman<sup>2</sup>, Catherine Birken<sup>3</sup>, Michal Perlman<sup>4</sup>, Jonathon Maguire<sup>5</sup>

<sup>1</sup>University of Toronto; <sup>2</sup>St. Michael's Hospital,

<sup>3</sup>St Michael's Hospital, <sup>4</sup>The Hospital for Sick Children,

<sup>5</sup>St Michael's Hospital

#### Background

One in three children are living with overweight or obesity in North America. The burden of childhood obesity is disproportionately experienced by children from low-income families, who are more likely to have obesity. Centre-based child care attendance may influence important adiposity risk factors such as dietary intake, eating behaviour, and physical activity, but its impact on childhood obesity is unclear.

**OBJECTIVES:** The primary objective was to evaluate the relationship between the intensity of centre-based child care attendance between 1 and 4 years of age and Body Mass Index z-score (zBMI) from 4 to 10 years of age relative to non-centre-based child care (i.e., home-based, grandparents, relatives, and nanny's). The secondary objective was to explore if family income modified the relationship.

**DESIGN/METHODS:** A prospective cohort study of children 1 to 10 years of age was conducted through the TARGet Kids! primary care research network. The primary exposure was intensity of centre-based child care attendance (hours/week). The primary outcome was zBMI, an age and sex adjusted measure of child adiposity. Interaction terms for child age and family income were explored. A linear mixed effects model and logistic generalized estimating equations were used to determine the association between centre-based child care attendance and child zBMI.

**RESULTS:** 3,503 children were included (mean age: 2.7 years). Children who attended centre-based child care full time (40 hours/week) had a 0.11 lower zBMI at 4 years (95% CI -0.19, -0.03; p=0.005) and lower odds of obesity (zBMI > 2) at 4 (OR 0.58; 95% CI 0.34, 0.99; p=0.04) and 10 years of age (OR 0.52; 95% CI 0.29, 0.90; p=0.02) relative to children who attended non-centre-based child care. The relationship was modified by family income such that, children from families with an income of <\$50,000CDN who attended centre-based child care full time had a 0.35 (95% CI -0.56, -0.15; p=0.001), 0.34 (95% CI -0.54, -0.13, p=0.001) and

0.29 (95% CI -0.50, -0.07, p=0.009) lower zBMI at 4, 7 and 10 years of age, respectively, relative to children who attended non-centre-based child care. **CONCLUSION:** Centre-based child care attendance in early childhood was associated with lower adiposity and odds of obesity in later childhood. This relationship was stronger for children who were from lower income families. Centre-based child care may be an effective early intervention to prevent childhood obesity.

90

### AN ANALYSIS OF COVID-19 PUBLIC HEALTH MEASURE ADHERENCE AMONG PARENTS AND CHILDREN AND THE CORRESPONDING EFFECTS OF LOCKDOWNS AND SCHOOL CLOSURES

Mary Aglipay<sup>1</sup>, Justin Semalago<sup>1</sup>, Charles Keown-Stoneman<sup>2</sup>, Ashleigh Tuite<sup>1</sup>, Catherine Birken<sup>3</sup>, Jonathon Maguire<sup>4</sup>

<sup>1</sup>University of Toronto, <sup>2</sup>St Michael's Hospital,

<sup>3</sup>The Hospital for Sick Children, <sup>4</sup>St Michael's

#### Hospital

**BACKGROUND:** Public health preventive measures have been a necessary intervention in preventing COVID-19 transmission.

**OBJECTIVES:** The objectives of this study were 1) To investigate how the adherence to COVID-19 public health measures among parents and children in Ontario changed over time; 2) To determine if provincial lockdowns were associated with higher adherence to public health measures among parents; 3) To determine if school closures were associated with higher adherence to public health measures among children.

**DESIGN/METHODS:** A longitudinal study was conducted in children aged 0-10 years and their parents through the TARGet Kids! COVID-19 Study of Children and Families in the Greater Toronto Area, Canada (April 2020 -May 2021). Parents completed weekly questionnaires on sociodemographics and public health practices. The primary exposure was calendar date. Secondary exposures were provincial lockdowns and school closures. The primary outcome was adherence to public health preventive measures (staying home, limiting visitors in the home, avoiding contact with others, socially distancing, and handwashing, measured as number of days practicing per week) measured separately for parents and children. Linear mixed effects regression and piecewise linear splines mixed effects models were conducted. **RESULTS:** 819 children and their parents contributed 13,220 observations to the study over 13 months. Mean age was 5.6 years (SD=2.7) and 373 were female (45.5%). 273 children (35.1%) had a parent who worked as an essential worker and 254 (35.4%) of families lived in a COVID-19 'hotspot'. The number of days per week that parents adhered to all 5 public health measures decreased by 0.029 days (p<0.001), and by 0.146 days for children (p<0.001) over the study duration. For parents, adherence to the five public health measures decreased over time during the first lockdown ( $\beta=-0.06$ , p<0.001) and first reopening ( $\beta=0.01$ , p<0.001), but increased again during the second lockdown ( $\beta=0.01$ , p<0.001). For children, adherence to the five public health measures decreased over time during the first school closure, increased during the second closure, and decreased during second reopening ( $\beta=-0.04$ , p<0.01). See Figure 1.

**CONCLUSION:** Parents and children both decreased in their adherence to social distancing, staying at home, and avoiding contact with others over time. Lockdown after a period of reopening increased parent adherence to public health measures and school closures increased adherence in children. Supports may be necessary to help children and parents maintain adherence to public measures over prolonged periods of lockdown and school closure.