

Hospital for Sick Children

“There’s a significant environmental component to diabetes control in children. Diabetes control can come down to factors like your neighbourhood, food security, your socio-economic strata and parental employment.”

Dr. Farid Mahmud, the Hospital for Sick Children

Research snapshot

In 2010 - 2011, researchers from the [Hospital for Sick Children](#) set out to examine associations between diabetes control in 845 Toronto-area children and factors like family income and ethnic concentration.* Researchers began with the results of A1C tests, which read blood sugar levels and indicate the degree to which diabetes is being controlled in individual patients. They then looked at the relationship between a child’s neighbourhood and their level of diabetes control.

The study, ‘[Social Determinants of Health on Glycemic Control in Pediatric Type 1 Diabetes](#),’ used the Ontario-Marginalization Index (ON-Marg) to look at area levels of ethnic concentration, and the Quebec-based deprivation index, the [INSPQ](#), to look at area levels of social and material deprivation. Researchers found that children living in areas with higher rates of material deprivation, social deprivation and ethnic concentration were more likely to have higher A1C levels, which indicate sub-optimal diabetes control. Ethnic concentration, however, factored less heavily than material and social deprivation in determining higher A1C levels.

Research impacts

“Our next step is to better understand the populations we’re dealing with,” says Dr. Farid Mahmud from the Hospital for Sick Children. “This gave us a snapshot of what was going on in our clinic, now we can explore this topic with more detail.” Using this information, the multi-disciplinary team of health providers at the Hospital for Sick Children will have the ability to design interventions in their clinic for at risk populations.

Why ON-Marg?

“ON-Marg has been well-studied, and their methodology is sound,” says Dr. Mahmud. He also points to the fact that it’s useful to have access to Ontario-specific data. In addition, ON-Marg is well-supported by knowledge transfer resources including a website and access to research scientists from the Centre for Research on Inner City Health.

Future work with ON-Marg

This study has inspired other areas of the Hospital for Sick Children to use ON-Marg to examine the relationship between health outcomes and area-level indicators.

* ON-Marg defines ‘ethnic concentration’ as proportion of the population who are recent immigrants and the proportion of the population who self-identify as visible minority.

Interview conducted with [Dr. Farid Mahmud](#), staff physician in the division of endocrinology, department of paediatrics, Hospital for Sick Children. Dr. Mahmud is also an assistant professor at the University of Toronto and project investigator at the [Hospital for Sick Children Research Institute](#).