Comprehensive Research Experience for Medical Students
Summer Research Program 2021
Supervisor/Project Information Form

Due February 24, 2021 by email to crems.programs@utoronto.ca

Supervisor Name:
Dr John Snelgrove

Project Title:
Evaluating trends in preterm birth and stillbirth rates during the COVID-19 pandemic

Hospital/Research Institution:
Mount Sinai Hospital, Dept. Obstetrics & Gynaecology

Email: john.snelgrove@sinaihealth.ca

Field of Research (2 keywords): pregnancy, epidemiology

Department: Obstetrics & Gynaecology

School of Graduate Studies Appointment (IMS, LMP, IHPME etc)? Yes/No: Yes
If YES, please name: LMP (SGS cross-appointment, restricted)
Brief Project Description (<300 words):

**Background:** Preterm birth is the global leading cause of perinatal mortality and morbidity(1). Decreased rates of preterm births during the COVID-19 pandemic have been reported in Denmark(2) and the Netherlands(3). Conversely, higher rates were reported in Nepal(4). Conflicting evidence on stillbirth suggests increased rates in some settings(5-7), however several regional/national studies have not replicated these results(8,9).

Our objective is to determine if the rates of stillbirth and preterm birth at Mount Sinai Hospital (MSH) have changed during the COVID-19 pandemic.

**Methodology:** This is a retrospective analysis of all live and stillbirths from 20+0 weeks onward at MSH from March 2018 to March 2021. The primary outcomes are: 1) Stillbirth ≥ 20 weeks GA, and 2) Preterm birth ≥ 23 weeks GA. Secondary outcomes include birthweight, caesarean delivery, and NICU admission. The exposure of interest is the time period after pandemic lockdown measures were imposed in Ontario: the “pre-pandemic period” is the time before March 16, 2020, and the “pandemic period” is from March 16, 2020 onward. Studies to date have used a births-based approach to characterize the risks of stillbirth and preterm birth (2-9). This approach is limited as it does not incorporate pregnancy time-at-risk. To resolve this, the fetus-at-risk approach will be used, modelling risk using survival analysis methods, incorporating fetal time at risk with advancing gestational age(10,11). Ethics approval has been obtained (MSH REB 21-0001-C).

**Impact and project team:** There are no Canadian reports on changes in stillbirth or preterm birth rates during the pandemic. MSH is a major tertiary maternity centre in Ontario and is uniquely poised to study these outcomes in a severely affected region of the province. The CREMS student for this project will participate in data collection, learn about cohort data analysis, and co-author a final manuscript. The anticipated timeline is 12 weeks.

**References**


