### Appendix 1. Variables to Define Cohort Entry/Exclusion Criteria, Study Exposure, Outcome, Adjustment, and Censoring Variables

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Timing</th>
<th>Disease or procedure</th>
<th>ICD-9 [ICD-10-CA] code(s)</th>
<th>OHIP code(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Inclusion criteria</strong></td>
<td>Index birth hospitalization</td>
<td>Any obstetrical delivery ≥ 20 weeks gestation</td>
<td>In MOMBABY &amp; B_GESTWKS_DEL &gt;= 20</td>
<td>--</td>
</tr>
<tr>
<td><strong>Exclusion criteria</strong></td>
<td>≤ 5 y before the index birth hospitalization, up to the 19th completed gestational week of the index pregnancy</td>
<td>Seizure, seizure disorder, epilepsy</td>
<td>345 [G40, G41]</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>≤ 5 y before the index birth hospitalization</td>
<td>Traumatic brain injury</td>
<td>800, 801, 803, 850, 851, 852, 853, 854, 959 [S01.0-S01.9, S02.0, S02.1, S02.3, S02.7-S02.9, S04.0, S06.0-S06.9, S07.0, S07.1, S07.8, S07.9, S09.7-S09.9, T01.0, T02.0, T04.0, T06.0, T90.1, T90.2, T90.4, T90.5, T90.8, T90.9]</td>
<td>854</td>
</tr>
<tr>
<td></td>
<td>≤ 5 y before the index birth hospitalization</td>
<td>Same Stroke</td>
<td>433, 434, 436, 437.0, 437.1, 437.8, 437.9 [G46, 163.0-166.9, 167.2, 167.8]</td>
<td>432, 436, 437</td>
</tr>
<tr>
<td></td>
<td>Same</td>
<td>Maternal death</td>
<td>Identified by the Registered Persons Database</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>Same</td>
<td>Multiple sclerosis</td>
<td>340 [G35]</td>
<td>340</td>
</tr>
<tr>
<td></td>
<td>During the index birth hospitalization, or ≤ 30 days after the index birth hospitalization discharge date</td>
<td>Maternal death</td>
<td>Identified by the Registered Persons Database</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>≤ 30 days after the index birth hospitalization discharge date</td>
<td>Date of last contact</td>
<td>Identified by the Registered Persons Database</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>≤ 5 y before the index birth hospitalization and up to 19 completed weeks’ gestation of the index pregnancy</td>
<td>Eclampsia</td>
<td>642.6 [O15]</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>≥ 20 completed weeks of gestation or ≤ 30 days after a birth discharge date</td>
<td>Eclampsia</td>
<td>[O15]</td>
<td>--</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>Assessment</th>
<th>Timing</th>
<th>Disease or procedure</th>
<th>ICD-9 [ICD-10-CA] code(s)</th>
<th>OHIP code(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Study outcome</strong></td>
<td>&gt; 30 days after the birth hospitalization discharge date.</td>
<td>Seizure, seizure disorder, epilepsy</td>
<td>[G40, G41]</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>If within a future pregnancy, outcome permitted if arose at &lt; 20 weeks’ gestation or &gt; 30 days after birth discharge date.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Time-varying covariates</strong></td>
<td>At each birth hospitalization</td>
<td>Multiple gestation</td>
<td>[Z372, Z373, Z374, Z375, Z376, Z377, Z3790, 030, O31]</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>Same</td>
<td>Diabetes mellitus</td>
<td>[E10, E11, E13, E14, O244]</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>Same</td>
<td>Chronic hypertension</td>
<td>[I10, I15, O10, O11]</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>Same</td>
<td>Obesity</td>
<td>[E66]</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>Same</td>
<td>Drug dependence or smoking</td>
<td>[F10-F19, F55]</td>
<td>--</td>
</tr>
<tr>
<td><strong>Fixed covariates</strong></td>
<td>&gt; 30 days after the index birth hospitalization discharge date, up to any censoring date</td>
<td>Traumatic brain injury</td>
<td>[S01.0-S01.9, S02.0, S02.1, S02.3, S02.7-S02.9, S04.0, S06.0-S06.9, S07.0, S07.1, S07.8, S07.9, S09.7-S09.9, T01.0, T02.0, T04.0, T06.0, T09.1, T09.2, T09.4, T09.5, T09.8, T09.9]</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>Same</td>
<td>Stroke</td>
<td>[G46, I63.0-I66.9, I67.2, I67.8]</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>Same</td>
<td>Cerebral tumour</td>
<td>[C70, C71, D33]</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>Same</td>
<td>Cerebral aneurysm, or arteriovenous malformation</td>
<td>[I67.1, Q28]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Same</td>
<td>Intracerebral or subarachnoid haemorrhage</td>
<td>[I60, I61, I62]</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>Same</td>
<td>Multiple sclerosis</td>
<td>[G35]</td>
<td>340</td>
</tr>
<tr>
<td><strong>Censoring variables</strong></td>
<td>&gt; 30 days after the index birth hospitalization discharge date, excluding subsequent pregnancy time from ≥ 20 weeks’ gestation up to 30 days after the birth discharge date</td>
<td>Seizure, seizure disorder, epilepsy</td>
<td>[G40, G41]</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>Same</td>
<td>Participant death</td>
<td>Identified by the Registered Persons Database</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>Same</td>
<td>Date of last contact</td>
<td>Identified by the Registered Persons Database</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>March 31, 2015</td>
<td>End of study</td>
<td>--</td>
<td></td>
</tr>
</tbody>
</table>


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ICD-9 = International Classification of Diseases, 9th Revision; ICD-10-CA = International Classification of Diseases, 10thRevision, Canada; OHIP = Ontario Health Insurance Plan
Appendix 2. Number of Deliveries at Risk at the Start of Each 2 Year Interval of Follow-up and the Number of New Events That Occurred by the End of Each 2-Year Interval of Follow-up

<table>
<thead>
<tr>
<th>Delivery exposure status</th>
<th>0</th>
<th>2</th>
<th>4</th>
<th>6</th>
<th>8</th>
<th>10+</th>
<th>Total events by end of study</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No. at risk</td>
<td>No. events</td>
<td>No. at risk</td>
<td>No. events</td>
<td>No. at risk</td>
<td>No. events</td>
<td>No. at risk</td>
</tr>
<tr>
<td>Eclampsia</td>
<td>1615 ≤ 5</td>
<td>1254 ≤ 5</td>
<td>766 ≤ 5</td>
<td>542 ≤ 5</td>
<td>402 ≤ 5</td>
<td>252 ≤ 5</td>
<td>6</td>
</tr>
<tr>
<td>Preeclampsia</td>
<td>17264 ≤ 5</td>
<td>12292 6</td>
<td>6887 ≤ 5</td>
<td>4501 ≤ 5</td>
<td>2958 ≤ 5</td>
<td>1644 ≤ 5</td>
<td>17</td>
</tr>
<tr>
<td>Gestational Hypertension</td>
<td>60863 11</td>
<td>46074 10</td>
<td>25854 10</td>
<td>16469 ≤ 5</td>
<td>10256 ≤ 5</td>
<td>5523 ≤ 5</td>
<td>34</td>
</tr>
<tr>
<td>Unexposed</td>
<td>148599 1</td>
<td>1104058 155</td>
<td>642393 170</td>
<td>423291 142</td>
<td>272709 119</td>
<td>151370 80</td>
<td>825</td>
</tr>
</tbody>
</table>
### Appendix 3. Characteristics of Women at Their First Birth in the Study Period, According to Exposure to Eclampsia, Preeclampsia, or Gestational Hypertension at the Time of the First Birth

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Exposure status at the first birth</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Eclampsia (n = 1,324)</td>
</tr>
<tr>
<td>Mean (SD) age, years</td>
<td>28.8 (6.4)</td>
</tr>
<tr>
<td>Income quintile (Q)</td>
<td></td>
</tr>
<tr>
<td>Q1 (lowest)</td>
<td>338 (25.5)</td>
</tr>
<tr>
<td>Q2</td>
<td>304 (23.0)</td>
</tr>
<tr>
<td>Q3</td>
<td>255 (19.3)</td>
</tr>
<tr>
<td>Q4</td>
<td>238 (18.0)</td>
</tr>
<tr>
<td>Q5 (highest)</td>
<td>177 (13.4)</td>
</tr>
<tr>
<td>Unknown</td>
<td>12 (0.9)</td>
</tr>
<tr>
<td>Rural residence</td>
<td>188 (14.2)</td>
</tr>
<tr>
<td>Previous deliveries</td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>1,000 (75.5)</td>
</tr>
<tr>
<td>1</td>
<td>215 (16.2)</td>
</tr>
<tr>
<td>2</td>
<td>73 (5.5)</td>
</tr>
<tr>
<td>3</td>
<td>22 (1.7)</td>
</tr>
<tr>
<td>4 or more</td>
<td>12 (0.9)</td>
</tr>
<tr>
<td>Unknown</td>
<td>≤ 5 (0.2)</td>
</tr>
<tr>
<td>Mean (SD) hospital length of stay, days</td>
<td>5.0 (3.6)</td>
</tr>
<tr>
<td>Multiple gestation</td>
<td>76 (5.7)</td>
</tr>
<tr>
<td>Mean (SD) gestational age at birth, weeks</td>
<td>36.7 (3.4)</td>
</tr>
<tr>
<td>Preterm birth &lt; 37 weeks’ gestation</td>
<td>457 (34.5)</td>
</tr>
<tr>
<td>Poor fetal growth</td>
<td>95 (7.2)</td>
</tr>
<tr>
<td>Stillbirth</td>
<td>28 (2.1)</td>
</tr>
<tr>
<td>Diabetes mellitus</td>
<td>36 (2.7)</td>
</tr>
<tr>
<td>Chronic hypertension</td>
<td>25 (1.9)</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Eclampsia (n = 1,324)</th>
<th>Preeclampsia (n = 13,617)</th>
<th>Gestational hypertension (n = 45,072)</th>
<th>Unexposed (n = 918,619)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diagnosed obesity</td>
<td>25 (1.9)</td>
<td>306 (2.2)</td>
<td>1,041 (2.3)</td>
<td>4,313 (0.5)</td>
</tr>
<tr>
<td>Alcohol use disorder</td>
<td>0 (0.0)</td>
<td>≤ 5 (0.0)</td>
<td>10 (0.0)</td>
<td>222 (0.0)</td>
</tr>
<tr>
<td>Drug use</td>
<td>6 (0.5)</td>
<td>31 (0.2)</td>
<td>81 (0.2)</td>
<td>2,145 (0.2)</td>
</tr>
<tr>
<td>Tobacco use</td>
<td>≤ 5 (0.1)</td>
<td>9 (0.1)</td>
<td>17 (0.0)</td>
<td>325 (0.0)</td>
</tr>
<tr>
<td>Conditions arising &gt; 30 days after the initial birth discharge date</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Traumatic brain injury</td>
<td>58 (4.4)</td>
<td>392 (2.9)</td>
<td>1,228 (2.7)</td>
<td>28,366 (3.1)</td>
</tr>
<tr>
<td>Stroke</td>
<td>≤ 5 (0.3)</td>
<td>19 (0.1)</td>
<td>54 (0.1)</td>
<td>514 (0.1)</td>
</tr>
<tr>
<td>Cerebral tumour, aneurysm, haemorrhage</td>
<td>≤ 5 (0.3)</td>
<td>≤ 5 (0.0)</td>
<td>17 (0.0)</td>
<td>223 (0.0)</td>
</tr>
<tr>
<td>Multiple sclerosis</td>
<td>≤ 5 (0.4)</td>
<td>69 (0.5)</td>
<td>252 (0.6)</td>
<td>4,686 (0.5)</td>
</tr>
<tr>
<td>Death</td>
<td>8 (0.6)</td>
<td>47 (0.3)</td>
<td>135 (0.3)</td>
<td>2,450 (0.3)</td>
</tr>
</tbody>
</table>

Values represent n (%), unless otherwise indicated. If a woman was diagnosed with more than one condition at the time of the first birth, then a diagnosis of eclampsia superseded preeclampsia, which superseded gestational hypertension.

SD = standard deviation
Appendix 4. Risk of a Seizure Disorder Following Exposure to Eclampsia, Preeclampsia, or Gestational Hypertension at Their First Birth Hospitalization, or ≤ 30 Days After the First Birth Discharge Date

<table>
<thead>
<tr>
<th>Outcome of a seizure disorder</th>
<th>Eclampsia (n = 1,324)</th>
<th>Preeclampsia (n = 13,617)</th>
<th>Gestational hypertension (n = 45,072)</th>
<th>Unexposed (n = 918,619)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total person-years of follow-up</td>
<td>10,631</td>
<td>91,800</td>
<td>314,008</td>
<td>6,689,601</td>
</tr>
<tr>
<td>No. of events (%)</td>
<td>≤ 5 (≤ 0.38)</td>
<td>19 (0.14)</td>
<td>35 (0.08)</td>
<td>824 (0.09)</td>
</tr>
<tr>
<td>Incidence rate per 10,000 person-years (95% CI)</td>
<td>3.76 (1.20 to 9.08)</td>
<td>2.07 (1.28 to 3.17)</td>
<td>1.11 (0.79 to 1.53)</td>
<td>1.23 (1.15 to 1.32)</td>
</tr>
<tr>
<td>Unadjusted hazard ratio (95% CI)</td>
<td>2.99 (1.12 to 7.99)</td>
<td>1.70 (1.08 to 2.68)</td>
<td>0.92 (0.66 to 1.29)</td>
<td>1.00 (referent)</td>
</tr>
<tr>
<td>Age-adjusted hazard ratio (95% CI)</td>
<td>2.76 (1.03 to 7.37)</td>
<td>1.72 (1.09 to 2.71)</td>
<td>0.95 (0.68 to 1.33)</td>
<td>1.00 (referent)</td>
</tr>
<tr>
<td>Multivariable adjusted hazard ratio (95% CI)*</td>
<td>2.86 (1.07 to 7.63)</td>
<td>1.82 (1.15 to 2.87)</td>
<td>1.00 (0.71 to 1.41)</td>
<td>1.00 (referent)</td>
</tr>
<tr>
<td>Multivariable adjusted hazard ratio (95% CI)**</td>
<td>2.76 (1.03 to 7.37)</td>
<td>1.79 (1.13 to 2.82)</td>
<td>1.00 (0.71 to 1.40)</td>
<td>1.00 (referent)</td>
</tr>
<tr>
<td>Multivariable adjusted hazard ratio (95% CI)**</td>
<td>2.77 (1.04 to 7.40)</td>
<td>1.73 (1.09 to 2.73)</td>
<td>0.94 (0.67 to 1.33)</td>
<td>1.00 (referent)</td>
</tr>
</tbody>
</table>

If a woman was diagnosed with more than one condition at the time of birth, then a diagnosis of eclampsia superseded preeclampsia, which superseded gestational hypertension.

*Adjusted for age, parity, income quintile, and multi-gestation birth at the time of birth.
**Adjusted for age, parity, income quintile, multi-gestation birth, diagnosed diabetes, chronic hypertension, obesity, alcohol, drug, and tobacco use at the time of birth.
***Adjusted for age, parity, income quintile, multi-gestation birth, diagnosed diabetes, chronic hypertension, obesity, alcohol, drug, and tobacco use at the time of birth, as well as new onset of traumatic brain injury, stroke, cerebral tumor, aneurysm or hemorrhage, and multiple sclerosis.

CI = confidence interval

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