

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

<b>Assessment</b>	<b>Timing</b>	<b>Disease or procedure</b>	<b>ICD-9 [ICD-10-CA] code(s)</b>	<b>OHIP code(s)</b>
<i>Inclusion criteria</i>	Index birth hospitalization	Any obstetrical delivery $\geq$ 20 weeks gestation	In MOMBABY & B_GESTWKS_DEL $\geq$ 20	--
<i>Exclusion criteria</i>	$\leq$ 5 y before the index birth hospitalization, up to the 19 <sup>th</sup> completed gestational week of the index pregnancy	Seizure, seizure disorder, epilepsy	345 [G40, G41]	345
	$\leq$ 5 y before the index birth hospitalization	Traumatic brain injury	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]	854
	Same	Stroke	433, 434, 436, 437.0, 437.1, 437.8, 437.9 [G46, I63.0-I66.9, I67.2, I67.8]	432, 436, 437
	Same	<ul style="list-style-type: none"> <li>• Cerebral tumour</li> <li>• Cerebral aneurysm, or arteriovenous malformation</li> <li>• Intracerebral or subarachnoid haemorrhage</li> </ul>	<ul style="list-style-type: none"> <li>• 191, 225 [C70, C71, D33]</li> <li>• 747.8 [I67.1, Q28]</li> <li>• 430-432 [I60, I61, I62]</li> </ul>	<ul style="list-style-type: none"> <li>• 191, 225</li> <li>• 432</li> </ul>
	Same	Multiple sclerosis	340 [G35]	340
	During the index birth hospitalization, or $\leq$ 30 days after the index birth hospitalization discharge date	Maternal death	Identified by the Registered Persons Database	--
	$\leq$ 30 days after the index birth hospitalization discharge date	Date of last contact	Identified by the Registered Persons Database	--
	$\leq$ 5 y before the index birth hospitalization and up to 19 completed weeks' gestation of the index pregnancy	Eclampsia	642.6 [O15]	--
<i>Main (time-varying) study exposures</i>	$\geq$ 20 completed weeks of gestation or $\leq$ 30 days after a birth discharge date	Eclampsia	[O15]	--
	Same	Preeclampsia	[O14]	--

Nerenberg KA, Park AL, Vigod SN, Saposnik G, Berger H, et al. Long-term risk of a seizure disorder after eclampsia. *Obstet Gynecol* 2017; 130.

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Assessment	Timing	Disease or procedure	ICD-9 [ICD-10-CA] code(s)	OHIP code(s)
	Same	Gestational hypertension	[O13]	--
<i>Study outcome</i>	> 30 days after the birth hospitalization discharge date. If within a future pregnancy, outcome permitted if arose at < 20 weeks' gestation or > 30 days after birth discharge date.	Seizure, seizure disorder, epilepsy	[G40, G41]	--
<i>Time-varying covariates</i>	At each birth hospitalization	Multiple gestation	[Z372, Z373, Z374, Z375, Z376, Z377, Z3790, 030, O31]	--
	Same	Diabetes mellitus	[E10, E11, E13, E14, O244]	--
	Same	Chronic hypertension	[I10, I15, O10, O11]	--
	Same	Obesity	[E66]	--
	Same	Drug dependence or smoking	[F10-F19, F55]	--
<i>Fixed covariates</i>	> 30 days after the index birth hospitalization discharge date, up to any censoring date	Traumatic brain injury	[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]	--
	Same	Stroke	[G46, I63.0-I66.9, I67.2, I67.8]	--
	Same	<ul style="list-style-type: none"> <li>• Cerebral tumour</li> <li>• Cerebral aneurysm, or arteriovenous malformation</li> <li>• Intracerebral or subarachnoid haemorrhage</li> </ul>	<ul style="list-style-type: none"> <li>• [C70, C71, D33]</li> <li>• [I67.1, Q28]</li> <li>• [I60, I61, I62]</li> </ul>	--
	Same	Multiple sclerosis	[G35]	340
<i>Censoring variables</i>	> 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	Seizure, seizure disorder, epilepsy	[G40, G41]	--
	Same	Participant death	Identified by the Registered Persons Database	--
	Same	Date of last contact	Identified by the Registered Persons Database	--
	March 31, 2015	End of study	--	

ICD-9 = International Classification of Diseases, 9th Revision; ICD-10-CA = International Classification of Diseases, 10th Revision, 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**

	Years since delivery												Total events by end of study
	0		2		4		6		8		10+		
Delivery exposure status	No. at risk	No. events	No. at risk	No. events	No. at risk	No. events	No. at risk	No. events	No. at risk	No. events	No. at risk	No. events	
Eclampsia	1615	≤ 5	1254	≤ 5	766	≤ 5	542	≤ 5	402	≤ 5	252	≤ 5	<b>6</b>
Preeclampsia	17264	≤ 5	12292	6	6887	≤ 5	4501	≤ 5	2958	≤ 5	1644	≤ 5	<b>17</b>
Gestational Hypertension	60863	11	46074	10	25854	10	16469	≤ 5	10256	≤ 5	5523	≤ 5	<b>34</b>
Unexposed	148599 1	159	1104058	155	642393	170	423291	142	272709	119	151370	80	<b>825</b>

**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**

Characteristic	Exposure status at the first birth			
	Eclampsia (n = 1,324)	Preeclampsia (n = 13,617)	Gestational hypertension (n = 45,072)	Unexposed (n = 918,619)
Mean (SD) age, years	28.8 (6.4)	29.9 (6.0)	30.0 (5.8)	29.5 (5.6)
Income quintile (Q)				
<i>Q1 (lowest)</i>	338 (25.5)	3,002 (22.0)	9,686 (21.5)	211,014 (23.0)
<i>Q2</i>	304 (23.0)	2,780 (20.4)	9,551 (21.2)	188,402 (20.5)
<i>Q3</i>	255 (19.3)	2,842 (20.9)	9,326 (20.7)	185,223 (20.2)
<i>Q4</i>	238 (18.0)	2,769 (20.3)	9,143 (20.3)	184,771 (20.1)
<i>Q5 (highest)</i>	177 (13.4)	2,109 (15.5)	7,141 (15.8)	145,428 (15.8)
<i>Unknown</i>	12 (0.9)	115 (0.8)	225 (0.5)	3,781 (0.4)
Rural residence	188 (14.2)	1,687 (12.4)	5,083 (11.3)	85,529 (9.3)
Previous deliveries				
0	1,000 (75.5)	11,302 (83.0)	35,680 (79.2)	621,967 (67.7)
1	215 (16.2)	1,482 (10.9)	5,912 (13.1)	193,306 (21.0)
2	73 (5.5)	556 (4.1)	2,369 (5.3)	72,298 (7.9)
3	22 (1.7)	187 (1.4)	734 (1.6)	20,561 (2.2)
4 or more	12 (0.9)	87 (0.6)	365 (0.8)	10,154 (1.1)
Unknown	≤ 5 (0.2)	≤ 5 (0.0)	12 (0.0)	333 (0.0)
Mean (SD) hospital length of stay, days	5.0 (3.6)	5.3 (4.3)	3.5 (2.7)	2.5 (2.2)
Multiple gestation	76 (5.7)	1,090 (8.0)	1,745 (3.9)	16,281 (1.8)
Mean (SD) gestational age at birth, weeks	36.7 (3.4)	36.2 (3.4)	38.3 (2.0)	38.9 (2.1)
Preterm birth < 37 weeks' gestation	457 (34.5)	6,027 (44.3)	5,590 (12.4)	65,979 (7.2)
Poor fetal growth	95 (7.2)	1,489 (10.9)	2,384 (5.3)	19,237 (2.1)
Stillbirth	28 (2.1)	209 (1.5)	278 (0.6)	5,743 (0.6)
Diabetes mellitus	36 (2.7)	397 (2.9)	1,391 (3.1)	14,377 (1.6)
Chronic hypertension	25 (1.9)	32 (1.0)	313 (0.7)	4,869 (0.5)

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

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**

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

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