SUPPLEMENTAL MATERIAL

Data S1.

Supplemental Analysis

Due to the longitudinal nature of the pregnancy-birth cohort, there were 130,317 women who had more than one pregnancy during the study time period. In addition, there were 8161 pregnancies that resulted in multiple births and 55 women had more than one multiple birth pregnancy in our study.

To account for correlations across pregnancies, we conducted supplementary analyses using generalized estimating equation (GEE) models with binomial distribution and logit function to examine the association between syncope during pregnancy and neonatal and congenital anomaly outcomes in the offspring.

The GEE model accounts for multiple pregnancies from the same mother. However, a pregnancy that resulted in multiple births is counted only once. In the latter case, if any of the neonates born from the multiple pregnancy (i.e. twins, triplets) developed the outcome of interest, that pregnancy was considered to have the outcome.

For each outcome of interest three separate GEE models, including maternal age at delivery as a covariate in the model, were executed: model 1 compared no syncope vs. syncope; model 2 compared no syncope vs. syncope during first, second and third trimester and model 3 compared no syncope vs.1 syncope episode and >1 syncope episode. Results are presented in Figure S2.

Table S1. ICD codes for pre-existing medical conditions and congenital anomalies.
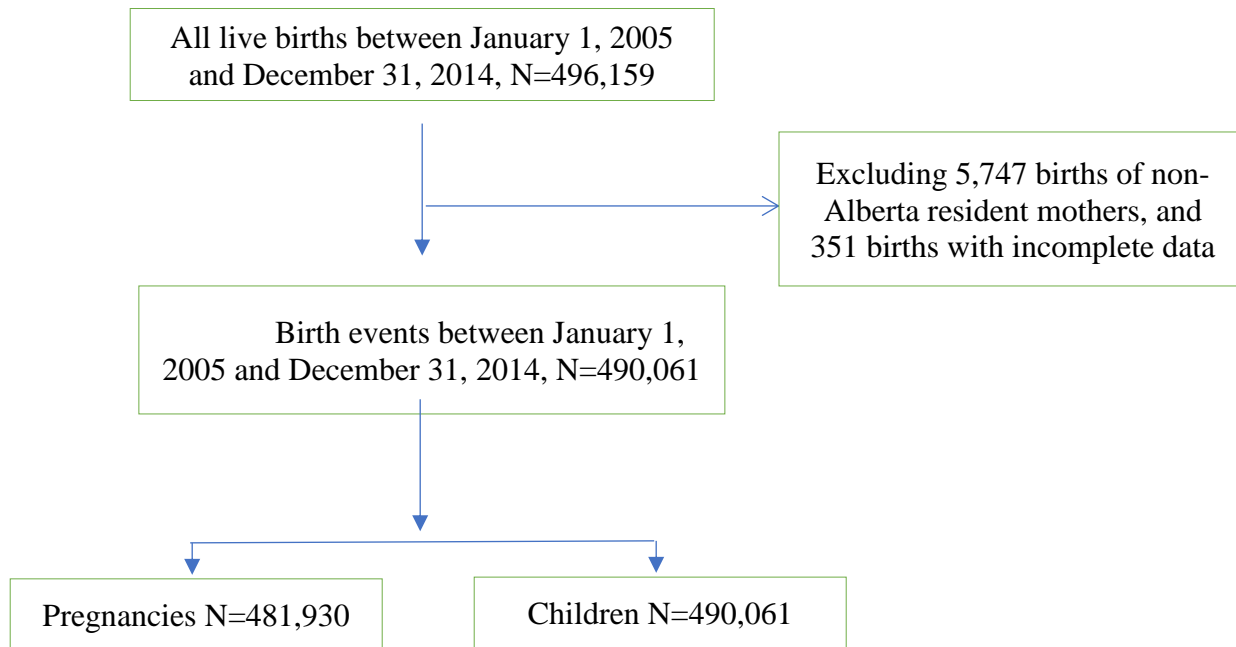
Conditions	ICD codes 9th revision	ICD codes 10th revision
Pre-existing diabetes mellitus	648.0, 250	O240-O243, O245-O247, O249, E10-E14
Gestational diabetes mellitus	648.8	O24.8
Hypertensive disorders of pregnancy (including pre-eclampsia, eclampsia, and pregnancy-induced edema, proteinuria, and hypertension)	642.3-7	O13, O14, O15
Cardiovascular and circulatory conditions		
Congestive heart failure	398.91, 402.01, 402.11, 402.91, 404.01, 404.03, 404.11, 404.13, 404.91, 425.4, 425.5, 425.7-9, 428	I09.9, I11.0, I13.0, I13.2, I25.5, I42.0, I42.5-9, I43, I50
Cardiac arrhythmia	426.0, 426.13, 426.7, 426.9, 426.10, 426.12, 427.0-4, 427.6, 427.8-9, 785.0, 996.01, 996.04,	I44.1-3, 145.6, I45.9, I47, I49, R00.0, R00.1, R00.8, T82.1, Z45.0, Z95.0, V45.0, V53.3
Valvular heart disease	394, -397, 424, 746.3, 746.4, 746.5, 746.6	A52.0, I05-I08, I09.1, I09.8, I34-I39, Q23.0-3, Z95.2-4, O93.2, V42.2, V43.3
Ischemic heart disease	410, 412, 413, 414, 429.2	I20-I25

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Hypertension	401-405	I10-I13, I15
Pulmonary circulation disorder	415.415.1, 416, 417.0, 417.8, 417.9	I26, I27, I28.0, I28.8, I28.9
Peripheral vascular disease	440, 441, 443.1, 443.2, 443.8, 443.9, 447.1, 557.1, 557.9	I70, I71, I73.1, I73.8, I77.1, I79.0, I79.2, K55.1, K55.8, K55.9, O93.0,V43.4, Z95.8, Z95.9,
Congenital anomalies		
Anencephaly/acrania	740	Q00.0
Transposition of great vessels	745.1X	Q20.1, Q20.3, Q20.5, Q20.8
Hypoplastic left heart syndrome	746.7	Q23.04
Renal agenesis and dysgenesis	753	Q60.2, Q60.5
Anomalies of diaphragm	756.6	
Patau syndrome	758.1	Q91.7
Edward syndrome	758.2	Q91.3
Tetralogy of Fallot	745.2	Q21.3
Common ventricle	745.3	Q20.4
Endocardial cushion defects	745.6X	Q21.2
Congenital anomalies of pulmonary valve	746.0X	Q22.0-Q22.3
Other specified congenital anomalies of heart	746.8X	Q24.0-Q24.8
Patent ductus arteriosus	747	Q25.0

Coarctation of aorta	747.1	Q25.1
Anomalies of pulmonary artery	747.3	Q25.5, Q25.6, Q25.71, Q25.72, Q25.79
Agenesis, hypoplasia, and dysplasia of lung	748.5	Q33.2 Q33.3, Q33.6
Tracheoesopahgeal fistula, esophageal fistula and stenosis	750.3	Q39.0-Q39.4
Atresia and stenosis of small intestine	751.1	Q41.9
Atresia and stenosis of large intestine, rectum, and anal canal	751.2	Q42.9
Congenital single renal cyst	753.11	Q61.01
Polycystic kidney	753.12-753.14	Q61.2, Q61.3, Q61.19
Renal dysplasia	753.15	Q61.4
Other specified cystic kidney disease	753.19	Q61.8
Anomalies of abdominal wall	756.7	Q79.2-Q79.4, Q79.51, Q79.59
Other conditions of autosomal anomalies	758.5	Q92.7

ICD, International Classification Disease

Figure S1. Flow diagram for study cohort selection.

All live births between January 1, 2005 and December 31, 2014, N=496,159

Excluding 5,747 births of non-Alberta resident mothers, and 351 births with incomplete data

Birth events between January 1, 2005 and December 31, 2014, N=490,061

Pregnancies N=481,930

Children N=490,061

Figure S2. Maternal age adjusted odds ratios and 95% confidence intervals for the association of syncope and neonatal/congenital anomaly outcomes based on generalized estimating equation models accounting for correlation between pregnancies/births of the same mother.
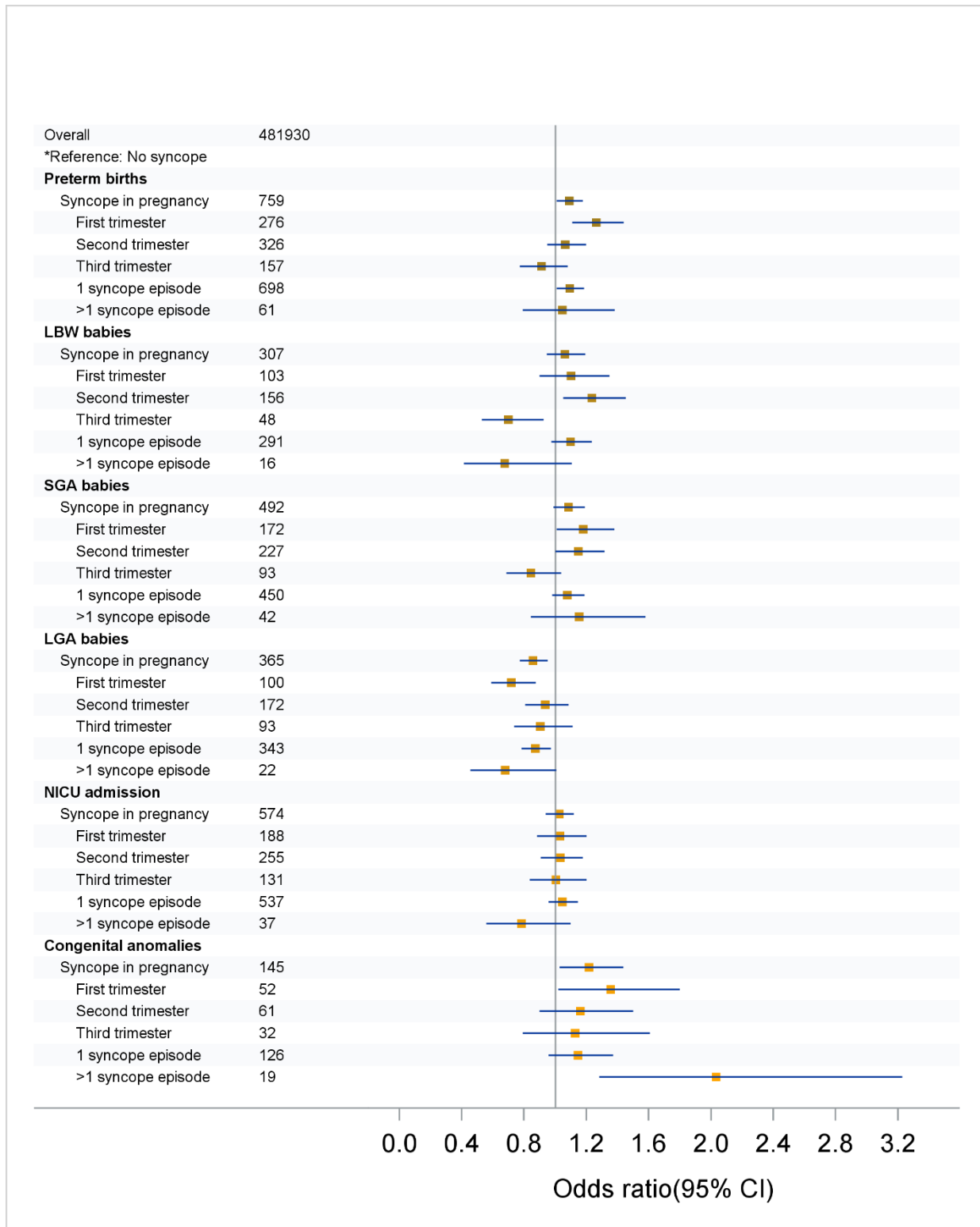
LBW: low birth weight; SGA: small for gestational age; LGA: large for gestational age; NICU: neonatal intensive care unit; CI: confidence interval.