

Supplementary Appendices

Supplementary Appendix 1: Variables used for validation

Maternal baseline variables	Neonatal baseline variables	Neonatal outcome variables	Procedures
-Maternal age -Gravida -Parity -Maternal smoking during pregnancy -Maternal substance use during pregnancy -Pre-gestational hypertension -Gestational hypertension -Pre-gestational diabetes -Gestational diabetes -Placenta previa -Placental abruption -Preterm premature rupture of membranes -Cervical insufficiency -Chorioamnionitis -Multiples -Number of abortions	-Gestational age -Birth weight -Birth Date -Sex -APGAR score at 1 min -APGAR score at 5 min -Small for gestational age	-Necrotizing enterocolitis -Gastrointestinal perforation -Mild intraventricular haemorrhage -Severe intraventricular haemorrhage -Any intraventricular haemorrhage -Periventricular leukomalacia -Sepsis -Meningitis -Patent ductus arteriosus (PDA) -Retinopathy of prematurity -Bronchopulmonary dysplasia -Seizures -Death -Pneumothorax -Neonatal respiratory distress syndrome -Neonatal thrombosis -Spontaneous intestinal perforation -Delayed cord clamping -Chest compression -Any congenital anomaly* -Urinary tract infection -Medications during resuscitation -NICU length of stay (in days)	-Caesarean section -Blood transfusion -Mechanical ventilation duration -Ventriculoperitoneal shunt insertion -Tracheostomy -Gastrostomy -Laparotomy -Patent ductus arteriosus ligation -Peritoneal Drainage

NICU-neonatal intensive care unit, #-during pregnancy.



Supplementary Appendix 2: DAD variable definitions

ICD-10-CA or CCI Codes	
Maternal baseline variables	
Maternal age at delivery	as recorded on hospital record, Abstract Fields: Age number, Age upon discharge
Gravida	as recorded on hospital record - gravida variable
Parity	as recorded on hospital record - para variable
Maternal smoking	F17, Z71.6, Z72.0 Abstract Field - Smoking in pregnancy Available options: 9 - Not documented/N-Patient did not smoke/Q-Recently quit /U-Unknown/Y-Patient continues to smoke
Maternal substance use	Collected using code O99.3^^ (Mental disorders and diseases of the nervous system complicating pregnancy, childbirth and the puerperium) with F11-F19 as an additional code to specify the drug used.
Pre-gestational hypertension	O10-Pre-existing hypertension, O11-Pre-eclampsia (Pre-existing HTN), O16-Unspecified maternal hypertension
Gestational hypertension/preeclampsia/eclampsia	O13 - Gestational Hypertension, O14 - Pre-eclampsia, O15 -Eclampsia (pregnancy induced or pre-existing HTN)
Pre-gestational diabetes	O24.5^^ - O24.7^^
Gestational diabetes	O24.8^^
Caesarean section	5MD60, repeat Caesarean section O34.201
Placenta previa	Maternal Abstract: O44.^^^ Neonatal abstract: P02.0
Placental abruption	Maternal Abstract: O45.^^^ Neonatal abstract: P02.1
Preterm premature rupture of membranes	Maternal Abstract: O42.^^^ Neonatal abstract: P01.1
Cervical insufficiency/short cervix	Maternal abstract: O34.3^^ Neonatal abstract: P01.0
Maternal chorioamnionitis	Maternal Abstract: O41.1^^ Newborn Abstract: P02.7
Singleton or multiple pregnancy	Single (livebirth): Z37.0^^ Twin (livebirths) : Z37.2^^ Other Multiple (livebirths): Z37.50^^ Multiple Gestations (additional codes to specify Twin, Triplets, etc.): O30.0^^ - O30.9^^
Number of abortions	as recorded on hospital record - sum of spontabort, therabort
Neonatal baseline variables	
Gestational age	as recorded on hospital record, Additional mandatory codes when applicable: P07.2 - Extreme Prematurity (< 28 completed weeks) P07.3 - Other preterm infants (28 completed weeks or more, but < than 37 weeks)
Birth weight	as recorded on hospital record, Additional mandatory codes when applicable: P07.0 - Birth weight 999g or less, P07.1 - Birth weight 1000-2499g
Date of birth	as recorded on hospital record
Sex	as recorded on hospital record
1 min Apgar score	as recorded on hospital record
5 min Apgar score	as recorded on hospital record
Small for gestational age (SGA)	calculated from birth weight, sex, and gestational age
Neonatal outcome variables	
Necrotizing enterocolitis	P77
Gastrointestinal perforation	P78.0
Mild intraventricular haemorrhage	P52.0, P52.1 (and not severe IVH - P52.2)
Severe intraventricular haemorrhage	P52.2
Periventricular leukomalacia	P91.2
Sepsis	P36
Meningitis	G00
Patent ductus arteriosus (PDA)	Q25.0
Retinopathy of prematurity (ROP)	H35.1
Bronchopulmonary dysplasia (BPD)	P27.1
Seizures	P90
Discharge or death	Abstract Field: Discharge disposition options: 05 - Discharged Home, 09: Stillbirth, 72: Died in Facility (various other options that can be selected)
Pneumothorax	P25.1

Continued

Supplementary Appendix 2: Continued

ICD-10-CA or CCI Codes	
RDS	P22.0
Neonatal thrombosis	I74/I82, P61.6, P61.8
Spontaneous intestinal perforation	P78.0
Deferred cord clamping	P96.82
Chest compression	Abstract Field: Chest compressions (Y/N)
Any congenital anomaly	Q00-Q99
UTI	P39.3
Medications during resuscitation	Abstract Fields: Medications Administered For Resuscitation (Y/N), Narcan/Naloxone Administration (Y/N)
NICU Length of Stay (in days)	Abstract Fields: SCU Admission Date, SCU Discharge Date, S.C.U LOS
Maternal and neonatal procedures	
Blood transfusion	Transfusion recd = 1 or transfusion = Y (for 2009/10)
Duration of mechanical ventilation	1GZ31CAND,1GZ31CRND,1GZ38JANE,1GZ31CBND, To calculate the number of hours (duration) of continuous invasive ventilation during a hospitalization, begin the count from the time of the tracheal access (e.g., endotracheal intubation or transtracheal jet). The duration ends with extubation or when the ventilator is turned off. Disregard intermittent attempts at weaning from ventilation support; include these periods in the total hours.
Ventriculoperitoneal (VP) shunt insertion	Z98.2 (optional), 1.AC.52.^^
Tracheostomy	Z93.0 (optional), 1.GJ.77.^^
Gastrostomy or G-tube insertion	1.NF.53.^^
Laparotomy	2.OT.70.LA
PDA Ligation	1.IM.51.LA
Peritoneal Drainage	1.OT.52.HA, 1.OT.52.HA-TS, 1.OT.52.LA-TS

ICD-10-CA-International Statistical Classification of Diseases and Related Health Problems, 10th Revision, Canada (ICD-10-CA), CCI-Canadian Classification of Interventions, UTI-urinary tract infection, RDS-Respiratory distress syndrome, HTN-hypertension, SCU-special care unit.



Supplementary Appendix 3: Stratified analysis comparing pre-2019 and later sub-cohorts

	<i>Sensitivity</i>			<i>Specificity</i>		
	≤2018	>2018	P-value	≤2018	>2018	P-value
N	1604	480		1604	480	
Gestational diabetes	0.10	0.05	<0.001	1.0	0.94	<0.001
Pre-gestational diabetes	0.09	0.05	<0.001	1.0	1.0	<0.001
Placenta previa	0.26	0.01	1.00	1.0	1.0	0.90
Placenta abruption	0.24	0.01	1.00	0.99	1.0	0.71
PPROM	0.40	0.09	0.48	0.97	0.99	<0.001
Severe intraventricular haemorrhage	0.15	0.35	0.76	0.99	0.97	0.52
Bronchopulmonary dysplasia	0.43	0.16	0.15	0.94	0.99	0.07
Necrotizing enterocolitis	0.70	0.69	0.11	1.0	0.99	0.84
Retinopathy of prematurity	0.67	0.82	0.42	0.93	0.91	0.17
Sepsis	0.04	0.52	0.02	0.97	0.91	0.18

PPROM, Preterm premature rupture of membranes.

Supplementary Appendix 4: Bland Altman plots for gestational age (Panel A), birth weight (B), date of birth (C), and Apgar scores at 1 min (D) and 5 minutes (E)

