

Appendix – ICD-9-CM Codes for Study Indices

Severe maternal morbidity (SMM)

Condition/Procedure	ICD-9-CM Codes
Acute myocardial infarction	410.xx
Acute renal failure	584.x, 669.3x
Adult respiratory distress syndrome	581.5, 518.81, 518.82, 518.84, 799.1
Amniotic fluid embolism	673.1x
Aneurysm	441.xx
Cardiac arrest/ventricular fibrillation	427.41, 427.42, 427.5
Disseminated intravascular coagulation	286.6, 286.9, 666.3x
Eclampsia	642.6x
Heart failure during procedure or surgery	669.4x, 997.1
Internal injuries of thorax, abdomen, and pelvis	860.xx—869.xx
Intracranial injuries	800.xx, 801.xx, 803.xx, 804.xx, 851.xx—854.xx
Puerperal cerebrovascular disorders	430, 431, 432.x, 433.xx, 434.xx, 436, 437.x, 671.5x, 674.0x, 997.2, 999.2
Pulmonary edema	428.1, 518.4
Severe anesthesia complications	668.0x, 668.1x, 668.2x
Sepsis	038.xx, 995.91, 995.92
Shock	669.1x, 785.5x, 995.0, 995.4, 998.0
Sickle cell anemia with crisis	282.62, 282.64, 282.69
Thrombotic embolism	415.1x, 673.0x, 673.2x, 673.3x, 673.8x
Blood transfusion*	99.0x
Cardio monitoring	89.6x
Conversion of cardiac rhythm	99.6x

Hysterectomy	68.3x—68.9
Operations of the heart and pericardium	35.xx, 36.xx, 37.xx, 39.xx
Temporary tracheostomy	31.1
Ventilation	93.90, 96.01—96.05, 96.7x

* Excluded from the algorithm in this study

Obstetric comorbidity index (OCI)

Condition/Age	ICD9-CM Codes	Score
Severe preeclampsia/eclampsia ‡	642.5x	5
Chronic congestive heart failure	428.22, 428.23, 428.32, 428.33, 428.42, 428.43	5
Congenital heart disease	745.0x—747.4x, 648.5x	4
Pulmonary hypertension	416.0x, 416.8x, 416.9x	4
Chronic ischemic heart disease	412.x—414.x	3
Sickle cell disease†	282.4x	3
Multiple gestation	V27.2—V27.8, 651.x	2
Cardiac valvular disease	394.x—397.x, 424.x	2
Systemic lupus erythematosus	710.0x	2
HIV	042.x, V08.x	2
Mild or unspecified preeclampsia	642.2x, 642.7x (without severe preeclampsia/eclampsia)	2
Drug abuse	304.x, 305.2x—305.9x, 648.3x	2
Placenta previa	641.0x, 641.1x	2
Chronic renal disease	581.x—583.x, 585.x, 587.x, 588.x, 646.2x	1
Pre-existing hypertension	401.x—405.x, 642.0x—642.2x, 642.7x	1
Previous cesarean delivery	654.2x	1
Gestational hypertension	642.3x (without preeclampsia/eclampsia or pre-existing hypertension)	1

Alcohol abuse	291.xx, 303.xx, 305.0x	1
Asthma	493.x	1
Pre-existing diabetes mellitus	250.x, 648.0x	1
Maternal age (yrs)		
>44	N/A	3
40–44	N/A	2
35–39	N/A	1

‡ 642.6x codes excluded due to overlap with definition of SMM

† 282.6x codes excluded due to overlap with definition of SMM