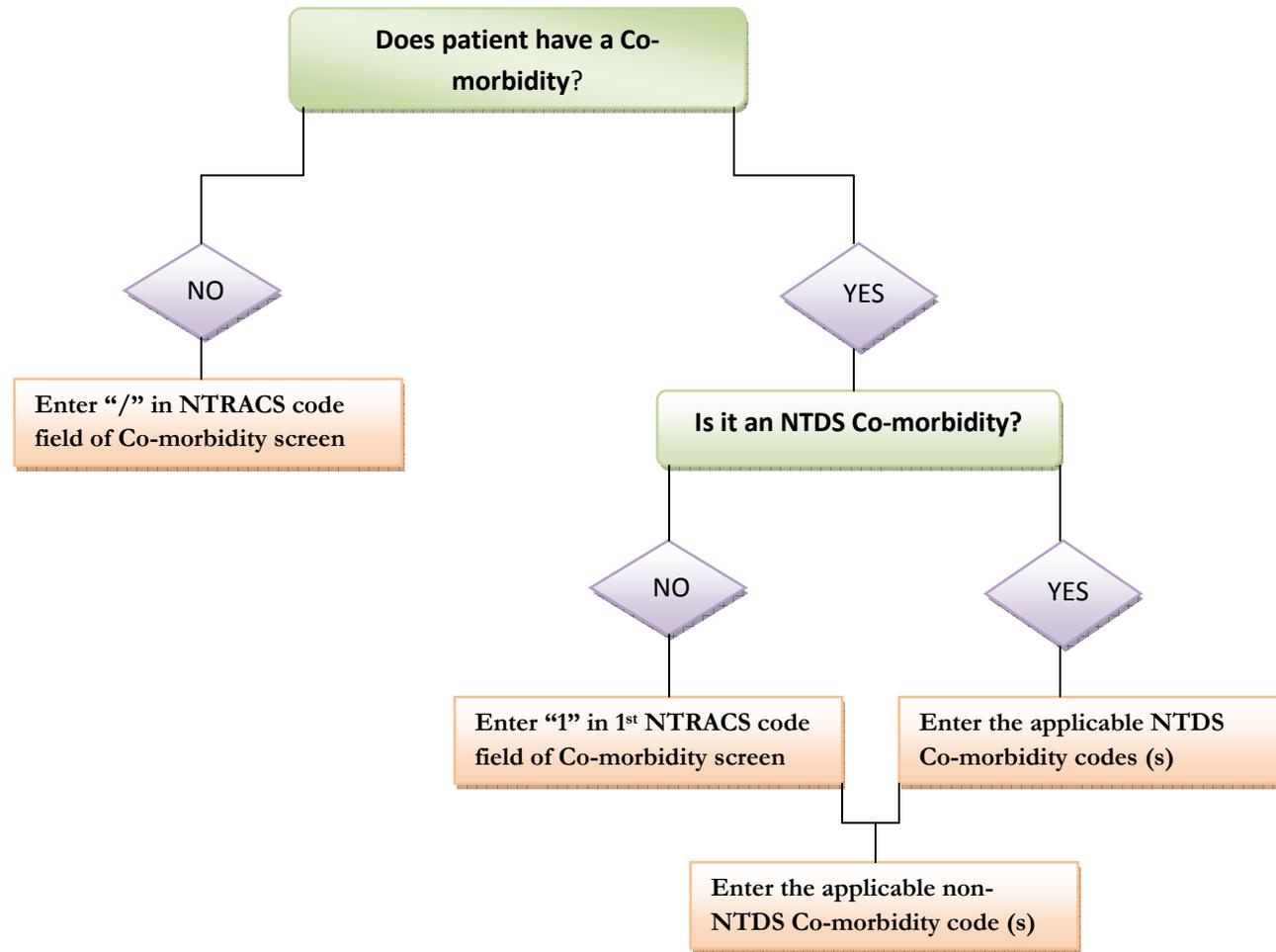


## Trauma Registry Group of NC - Co-morbidity Screen Algorithm



**Note:** If there is a NTDS code and a non-NTDS code for the same Co-morbidity, choose the NTDS code. If your facility submits data to the NTDB, you are required to use NTDS codes. Capturing any or all of the non-NTDS Co-morbidities listed in NTRACS is at the discretion of your facility.

Attachment 1) NTDS Co-morbidity Definitions (reference NTDS Data Dictionary)

Attachment 2) NTDS/Non-NTDS Co-morbidities list. Co-morbidities with only numeric field value are NTDS co-morbidity choices.

(Reference NTDS Data Dictionary and NTRACS Picklist)

## **Attachment 1:**

### **Co-Morbid Conditions**

**Alcoholism:** To be determined based upon the brief screening tool used at your institution.

*ICD-9 Code Range: 291.0-291.3, 291.5, 291.81, 291.89, 291.9, 303.00-303.93, 305.00-305.03, V11.3*

**Ascites:** The presence of fluid accumulation (other than blood) in the peritoneal cavity noted on physical examination, abdominal ultrasound, or abdominal CT/MRI.

*ICD-9 Code Range: 789.5 (pre 2008), 789.59*

**Bleeding disorder:** Any condition that places the patient at risk for excessive bleeding due to a deficiency of blood clotting elements (e.g., vitamin K deficiency, hemophilia, thrombocytopenia, chronic anticoagulation therapy with Coumadin, Plavix, or similar medications). Do not include the patient on chronic aspirin therapy.

*ICD-9 Code Range: for example - 269.0, 286.0, 286.1, 286.4, 287.1, 287.3 (pre 2006)-287.5, 287.9*

**Chemotherapy for cancer within 30 days:** A patient who had any chemotherapy treatment for cancer in the 30 days prior to admission. Chemotherapy may include, but is not restricted to, oral and parenteral treatment with chemotherapeutic agents for malignancies such as colon, breast, lung, head and neck, and gastrointestinal solid tumors as well as lymphatic and hematopoietic malignancies such as lymphoma, leukemia, and multiple myeloma.

*ICD-9 Code Range: V58.1(pre 2006), V58.11*

**Congenital Anomalies:** Defined as documentation of a cardiac, pulmonary, body wall, CNS/spinal, GI, renal, orthopedic, or metabolic congenital anomaly.

*ICD-9 Code Range: 740.0 through 759.9, 758.3 (pre 2005), 752.8 (pre 2004)*

**Congestive heart failure:** Defined as the inability of the heart to pump a sufficient quantity of blood to meet the metabolic needs of the body or can do so only at an increased ventricular filling pressure. To be included, this condition must be noted in the medical record as CHF, congestive heart failure, or pulmonary edema with onset or increasing symptoms within 30 days prior to injury. Common manifestations are:

1. Abnormal limitation in exercise tolerance due to dyspnea or fatigue
2. Orthopnea (dyspnea on lying supine)
3. Paroxysmal nocturnal dyspnea (awakening from sleep with dyspnea)
4. Increased jugular venous pressure
5. Pulmonary rales on physical examination
6. Cardiomegaly
7. Pulmonary vascular engorgement

*ICD-9 Code Range: 398.91, 402.01, 402.11, 402.91, 404.11, 404.13, 404.91, 404.93, 425.0-425.9, 428.0*

**Current smoker:** A patient who has smoked cigarettes in the year prior to admission. Do not include patients who smoke cigars or pipes or use chewing tobacco.

**Currently requiring or on dialysis:** Acute or chronic renal failure prior to injury that was requiring periodic peritoneal dialysis, hemodialysis, hemofiltration, or hemodiafiltration.

*ICD-9 Code Range: V45.1*

**CVA/residual neurological deficit:** A history prior to injury of a cerebrovascular accident (embolic, thrombotic, or hemorrhagic) with persistent residual motor, sensory, or cognitive dysfunction. (e.g., hemiplegia, hemiparesis, aphasia, sensory deficit, impaired memory).

*ICD-9 Code Range: 430-438.9, 436*

**Diabetes mellitus:** Diabetes mellitus prior to injury that required exogenous parenteral insulin or an oral hypoglycemic agent.

*ICD-9 Code Range: 250.00-250.33, 250.40- 250.73*

**Disseminated cancer:** Patients who have cancer that:

1. Has spread to one site or more sites in addition to the primary site AND
2. In whom the presence of multiple metastases indicates the cancer is widespread, fulminant, or near terminal. Other terms describing disseminated cancer include “diffuse,” “widely metastatic,” “widespread,” or “carcinomatosis.” Common sites of metastases include major organs (e.g., brain, lung, liver, meninges, abdomen, peritoneum, pleura, bone).

*ICD-9 Code Range: 196.0-199.1*

**Do Not Resuscitate (DNR) status:** The patient had a Do-Not-Resuscitate (DNR) document or similar advance directive recorded prior to injury.

**Esophageal varices:** Esophageal varices are engorged collateral veins in the esophagus which bypass a scarred liver to carry portal blood to the superior vena cava. A sustained increase in portal pressure results in esophageal varices which are most frequently demonstrated by direct visualization at esophagoscopy.

*ICD-9 Code Range: 456.0-456.20*

**Functionally dependent health status:** Pre-injury functional status may be represented by the ability of the patient to complete activities of daily living (ADL) including: bathing, feeding, dressing, toileting, and walking. This item is marked YES if the patient, prior to injury, was partially dependent or completely dependent upon equipment, devices or another person to complete some or all activities of daily living. Formal definitions of dependency are listed below:

1. Partially dependent: The patient requires the use of equipment or devices coupled with assistance from another person for some activities of daily living. Any patient coming from a nursing home setting who is not totally dependent would fall into this category, as would any patient who requires kidney dialysis or home ventilator support that requires chronic oxygen therapy yet maintains some independent functions.
2. Totally dependent: The patient cannot perform any activities of daily living for himself/herself. This would include a patient who is totally dependent upon nursing care, or a dependent nursing home patient. All patients with psychiatric illnesses should be evaluated for their ability to function with or without assistance with ADLs just as the non-psychiatric patient.

**History of angina within past 1 month:** Pain or discomfort between the diaphragm and the mandible resulting from myocardial ischemia. Typically angina is a dull, diffuse (fist sized or larger) substernal chest discomfort precipitated by exertion or emotion and relieved by rest or nitroglycerine. Radiation often occurs to the arms and shoulders and occasionally to the neck, jaw (mandible, not maxilla), or interscapular region. For patients on anti-anginal medications, enter yes only if the patient has had angina within one month prior to admission.

*ICD-9 Code Range: V12.50*

**History of Myocardial Infarction within past 6 months:** The history of a non-Q wave, or a Q wave infarction in the six months prior to injury as diagnosed in the patient's medical record.

*ICD-9 Code Range: 412*

**History of revasc/amp for PVD** (History of revascularization/amputation for peripheral vascular disease): Any type of angioplasty or revascularization procedure for atherosclerotic PVD (e.g., aortafemoral, femoral-femoral, femoral-popliteal) or a patient who has had any type of amputation procedure for PVD (e.g., toe amputations, transmetatarsal amputations, below the knee or above the knee amputations). Patients who have had amputation for trauma or resection of abdominal aortic aneurysms would not be included.

**Hypertension requiring medication:** History of a persistent elevation of systolic blood pressure >140 mm Hg and a diastolic blood pressure >90 mm Hg requiring an antihypertensive treatment (e.g., diuretics, beta blockers, ACE inhibitors, calcium channel blockers).

*ICD-9 Code Range: 401.0-401.9, 402.00, 402.10, 402.90, 403.00, 403.10, 403.90, 404.00, 404.10, 404.90, 405.01-405.99*

**Impaired sensorium:** Patients should be noted to having an impaired sensorium if they had mental status changes, and/or delirium in the context of a current illness prior to injury. Patients with chronic or longstanding mental status changes secondary to chronic mental illness (e.g., schizophrenia) or chronic dementing illnesses (e.g., multi-infarct dementia, senile dementia of the Alzheimer's type) should also be included. Mental retardation would qualify as impaired sensorium. For pediatric populations, patients with documented behavior disturbances, attention disorders, delayed learning or delayed development should be included.

*ICD-9 Code Range: 290-290.9, 299.00, 312.9, 314.00, 315.2, 315.31, 315.39, 315.5, 315.8, 315.9, 317, 318.0, 318.1, 319, 331.1 (pre 2004), 331.11-331.2, V11.0, V11.1, V11.2, V11.8*

**Prematurity:** Defined as documentation of premature birth, a history of bronchopulmonary dysplasia, ventilator support for greater than 7 days after birth, or the diagnosis of cerebral palsy. Premature birth is defined as infants delivered before 37 weeks from the first day of the last menstrual period.

*ICD-9 Code Range: 343.0 through 343.9, 765.00 through 765.19, 770.7*

**Obesity:** Defined as a Body Mass Index of 40 or greater.

*ICD-9 Code Range: 278.00-278.01*

**Respiratory Disease:** Defined as severe chronic lung disease, chronic asthma; cystic fibrosis; or COPD (such as emphysema and /or chronic bronchitis) resulting in any one or more of the following:

1. Functional disability from COPD (e.g., dyspnea, inability to perform ADLs)
2. Hospitalization in the past for treatment of COPD
3. Requires chronic bronchodilator therapy with oral or inhaled agents
4. An FEV1 of <75% of predicted on pulmonary function testing

Do not include patients whose only pulmonary disease is *acute* asthma. Do not include patients with diffuse interstitial fibrosis or sarcoidosis.

*ICD-9 Code Range: 277.00, 490 through 493.92*

**Steroid use:** Patients that required the regular administration of oral or parenteral corticosteroid medications (e.g., Prednisone, Decadron) in the 30 days prior to injury for a chronic medical condition (e.g., COPD, asthma, rheumatologic disease, rheumatoid arthritis, inflammatory bowel disease). Do not include topical corticosteroids applied to the skin or corticosteroids administered by inhalation or rectally.

**Attachment 2:**

**Co-morbid Conditions**

<b>Field Value</b>	<b>Definition</b>	<b>Field Value</b>	<b>Definition</b>
1	No NTDS co-morbidities present	G. 01	Bilirubin >2mg% (on admission)
2	Alcoholism	J.05	Chronic demyelinating disease
3	Ascites within 30 days	N. 01	Chronic drug abuse
4	Bleeding disorder	A.04	Cor pulmonale
5	Chemotherapy for cancer within 30 days	A.02	Coronary artery disease
6	Congenital Anomalies	D.02	Coumadin therapy
7	Congestive heart failure	G.02	Documented history of cirrhosis
8	Current smoker	D.03	Hemophilia
9	Currently requiring or on dialysis	A.01	History of cardiac surgery
10	CVA residual neurological deficit	F.01	HIV/AIDS
11	Diabetes mellitus	C.04	Inflammatory bowel disease
12	Disseminated cancer	J.02	Multiple Sclerosis
13	Do Not Resuscitate (DNR) status	J.07	Organic brain syndrome
14	Esophageal varices	C.03	Pancreatitis
15*	Functionally dependent health status	J.08	Parkinson's Disease
16	History of angina within past 1 month	C.01	Peptic ulcer disease
17	History of MI within past 6 months	D.04	Pre-existing Anemia
18	History of revascularization/amputation for PVD	P.00	Pregnancy
19	Hypertension requiring medication	I.01	Rheumatoid arthritis
20**	Impaired sensorium	J.04	Seizures
21	Prematurity	M.01	Serum Creatinine >2mg% (on admission)
22	Obesity	I.02	Systemic lupus erythematosus
23***	Respiratory disease	F.03	Transplants
24	Steroid use	H.01	Undergoing current therapy
D.01	Acquired coagulopathy		

\* I've included the NTRACS codes for MS, Parkinson's, Lupus, and RA. Diagnosis of these diseases does not necessarily indicate that the patient is functionally dependant. I have excluded spinal cord injury.

\*\* I've excluded the NTRACS codes for Alzheimer's disease and Dementia as they fall under the impaired sensorium definition.

\*\*\* I've exclude the NTRACS codes for COPD and asthma as they fall under the respiratory disease definition.