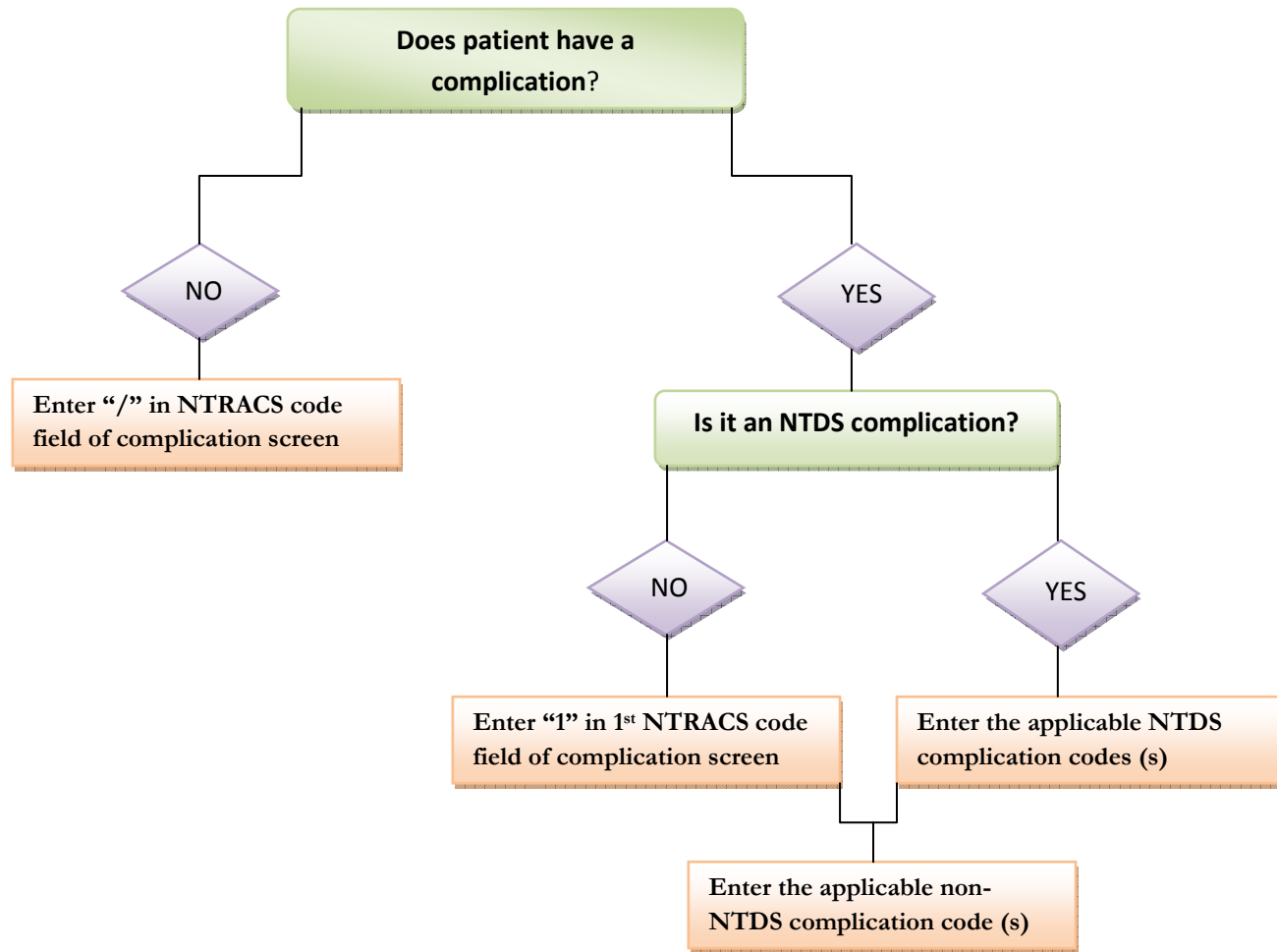


Trauma Registry Group of NC - Complication Screen Algorithm



Note: If there is a NTDS code and a non-NTDS code for the same complication, 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 complications listed in NTRACS is at the discretion of your facility.

Attachment 1) NTDS Complication Definitions (reference NTDS Data Dictionary)

Attachment 2) NTDS/Non-NTDS Complications list (excel spreadsheet). Complications in blue/shaded indicate NTDS codes for the associated complication.

(Reference NTDS Data Dictionary / NTRACS 1999 complication picklist)

Attachment 1:

Hospital Complications

Abdominal compartment syndrome: Defined as the sudden increase in the intra-abdominal pressure resulting in alteration in the respiratory mechanism, hemodynamic parameters, and renal perfusion. Typically patients with this syndrome are critically ill and require ventilator support and/or reoperation.

ICD-9 Code Range: 958.93

Abdominal fascia left open: No primary surgical closure of the fascia or intra-abdominal packs left at conclusion of primary laparotomy (damage control).

Acute renal failure: A patient who did not require dialysis prior to injury, who has worsening renal dysfunction after injury requiring hemodialysis, ultrafiltration, or peritoneal dialysis. If the patient refuses treatment (e.g., dialysis), the condition is still considered present.

ICD-9 Code Range: 403.11, 403.91, 404.12, 404.92, 582.0-582.9, 583.0-583.7, 584.5-584.9 585 (pre 2006), 586, 588.0, 958.5

ARDS: Adult (Acute) Respiratory Distress Syndrome: ARDS occurs in conjunction with catastrophic medical conditions, such as pneumonia, shock, sepsis (or severe infection throughout the body, sometimes also referred to as systemic infection, and may include or also be called a blood or blood-borne infection), and trauma. It is a form of sudden and often severe lung failure characterized by $\text{PaO}_2/\text{FiO}_2 \leq 200$, decreased compliance, and diffuse bilateral pulmonary infiltrates without associated clinical evidence of CHF. The process must persist beyond 36 hours and require mechanical ventilation.

ICD-9 Code Range: ICD-9 codes 518.5 and 518.82 cross-referenced with procedural codes for ventilatory support (96.70, 96.71 and 96.72).

Base deficit: Defined as a value greater than 4 at any time during admission. This number is reported as a component of arterial or venous blood gases. The number may be reported by the lab as Base Deficit, or as Base Excess with a negative value.

Bleeding: Any transfusion (including autologous) of five or more units of packed red blood cells or whole blood given from the time the patient is injured up to and including 72 hours later. The blood may be given for any reason.

Cardiac arrest with CPR: The absence of a cardiac rhythm or presence of chaotic cardiac rhythm that results in loss of consciousness requiring the initiation of any component of basic and/or advanced cardiac life support. Excludes patients that arrive at the hospital in full arrest.

ICD-9 Code Range: 427.5

Coagulopathy: Defined as twice the upper limit of the normal range for PT or PTT in a patient without a pre-injury bleeding disorder of this magnitude.

ICD-9 Code Range: 286.6, 287.1, 287.3

Coma: Defined as significantly impaired level of consciousness (exclude transient disorientation or psychosis) for greater than 24 hours. The patient should be unconscious, or postures to painful stimuli, or is unresponsive to all stimuli. Does not include drug-induced coma.

Decubitus ulcer: Defined as a "pressure sore" resulting from pressure exerted on the skin, soft tissue, muscle, or bone by the weight of an individual against a surface beneath. Individuals unable to avoid long periods of uninterrupted pressure over bony prominences are at increased risk for the development of necrosis and ulceration.

ICD-9 Code Range: 707.0 (pre 2005), 707.00 through 707.09

Deep surgical site infection: Defined as an infection that occurs within 30 days after an operation and the infection appears to be related to the operation. The infection should involve deep soft tissues (e.g., fascial and muscle layers) at the site of incision and at least one of the following:

1. Purulent drainage from the deep incision but not from the organ/space component of the surgical site.
2. A deep incision spontaneously dehisces or is deliberately opened by a surgeon when the patient has at least one of the following signs or symptoms: fever (> 38 C), localized pain, or tenderness, unless site is culture-negative.
3. An abscess or other evidence of infection involving the deep incision is found on direct examination, during reoperation, or by histopathologic or radiologic examination.
4. Diagnosis of a deep incision infection by a surgeon or attending physician.

Note:

Report infections that involve both superficial and deep incision sites as deep surgical site infection. If wound spontaneously opens as a result of infection, code for Deep Surgical Site Infection and Wound Disruption.

Drug or alcohol withdrawal syndrome: Defined as a set of symptoms that may occur when a person who has been drinking too much alcohol or habitually using certain drugs suddenly stops. Symptoms may

include: activation syndrome (i.e., tremulousness, agitation, rapid heart beat and high blood pressure), seizures, hallucinations or delirium tremens.

ICD-9 Code Range: 291.0, 291.3, 291.81, 292.0

Deep Vein Thrombosis (DVT)/thrombophlebitis: The formation, development, or existence of a blood clot or thrombus within the vascular system, which may be coupled with inflammation. This diagnosis may be confirmed by a venogram, ultrasound, or CT. The patient must be treated with anticoagulation therapy and/or placement of a vena cava filter or clipping of the vena cava.

ICD-9 Code Range: 451.0, 451.11, 451.19, 451.2, 451.81- 451.84, 451.89, 451.9, 453.40, 459.10-459.19, 997.2, 999.2

Extremity compartment syndrome: Defined as a condition in which there is swelling and an increase in pressure within a limited space (a fascial compartment) that presses on and compromises blood vessels, nerves, and/or tendons that run through that compartment. Compartment syndromes usually involve the leg but can also occur in the forearm, arm, thigh, and shoulder.

Graft/prosthesis/flap failure: Mechanical failure of an extracardiac vascular graft or prosthesis including myocutaneous flaps and skin grafts requiring return to the operating room or a balloon angioplasty.

ICD-9 Code Range: 996.00, 996.1, 996.52, 996.61, 996.62

Intracranial pressure elevation: Defined as intracranial pressure greater than 25 Torr for greater than 30 minutes.

Myocardial infarction: A new acute myocardial infarction occurring during hospitalization (within 30 days of injury).

ICD-9 Code Range: 410.00, 410.02, 410.10, 410.12, 410.20, 410.22, 410.30, 410.32, 410.40, 410.42, 410.50, 410.52, 410.60, 410.62, 410.70, 410.72, 410.80, 410.82, 410.90, 410.92

Organ/space surgical site infection: Defined as an infection that occurs within 30 days after an operation and infection involves any part of the anatomy (eg, organs or spaces) other than the incision, which was opened or manipulated during a procedure; and at least one of the following, including:

1. Purulent drainage from a drain that is placed through a stab wound or puncture into the organ/space;
2. Organisms isolated from an aseptically obtained culture of fluid or tissue in the organ/space;
3. An abscess or other evidence of infection involving the organ/space that is found on direct examination, during reoperation, or by histopathologic or radiologic examination; or
4. Diagnosis of an organ/space SSI by a surgeon or attending physician.

Pneumonia: Patients with evidence of pneumonia that develops during the hospitalization. Patients with pneumonia must meet at least one of the following two criteria:

Criterion 1. Rales or dullness to percussion on physical examination of chest AND any of the following:

- a. New onset of purulent sputum or change in character of sputum
- b. Organism isolated from blood culture
- c. Isolation of pathogen from specimen obtained by transtracheal aspirate, bronchial brushing, or biopsy

Criterion 2. Chest radiographic examination shows new or progressive infiltrate, consolidation, cavitation, or pleural effusion AND any of the following:

- a. New onset of purulent sputum or change in character of sputum
- b. Organism isolated from the blood
- c. Isolation of pathogen from specimen obtained by transtracheal aspirate, bronchial brushing, or biopsy
- d. Isolation of virus or detection of viral antigen in respiratory secretions
- e. Diagnostic single antibody titer (IgM) or fourfold increase in paired serum samples (IgG) for pathogen
- f. Histopathologic evidence of pneumonia

ICD-9 Code Range: 480.0-480.3, 481, 482.0, 482.1, 482.2, 482.30, 482.31, 482.32, 482.39, 482.40, 482.41, 482.49, 482.81-482.89, 482.9, 483.0, 483.1, 483.8, 484.1, 484.8, 485, 486

Pulmonary embolism: Defined as a lodging of a blood clot in a pulmonary artery with subsequent obstruction of blood supply to the lung parenchyma. The blood clots usually originate from the deep leg veins or the pelvic venous system. Consider the condition present if the patient has a V-Q scan interpreted as high probability of pulmonary embolism or a positive pulmonary arteriogram or positive CT angiogram.

ICD-9 Code Range: 415.11, 415.19

Stroke/CVA: Following injury, patient develops an embolic, thrombotic, or hemorrhagic vascular accident or stroke with motor, sensory, or cognitive dysfunction (e.g., hemiplegia, hemiparesis, aphasia, sensory deficit, impaired memory) that persists for 24 or more hours.

ICD-9 Code Range: 997.02

Superficial surgical site infection: Defined as an infection that occurs within 30 days after an operation and infection involves only skin or subcutaneous tissue of the incision and at least one of the following:

1. Purulent drainage, with or without laboratory confirmation, from the superficial incision.
2. Organisms isolated from an aseptically obtained culture of fluid or tissue from the superficial incision.
3. At least one of the following signs or symptoms of infection: pain or tenderness, localized swelling, redness, or heat and superficial incision is deliberately opened by the surgeon, unless incision is culture-negative.
4. Diagnosis of superficial incisional surgical site infection by the surgeon or attending physician.

Do not report the following conditions as superficial surgical site infection:

1. Stitch abscess (minimal inflammation and discharge confined to the points of suture penetration).
2. Infected burn wound.
3. Incisional SSI that extends into the fascial and muscle layers (see deep surgical site infection).

Systemic sepsis: Defined as definitive evidence of infection, plus evidence of a systemic response to infection. This systemic response is manifested by the presence of infection and TWO or more of the following conditions:

1. Temp >38 degrees C or <36 degrees C
2. Sepsis with hypotension despite adequate fluid resuscitation combined with perfusion abnormalities that may include, but are not limited to, lactic acidosis, oliguria, or an acute alteration in mental status. Patients who are on inotropic or vasopressor agents may not be hypotensive at the time that perfusion abnormalities are measured.
3. HR >90 bpm
4. RR >20 breaths/min or PaCO₂ <32 mmHg(<4.3 kPa)
5. WBC >12,000 cell/mm³, <4000 cells/mm³, or >10% immature (band) forms

ICD-9 Code Range: 038.0, 038.10, 038.11, 038.19, 038.3, 038.4-038.9, 790.7

Unplanned intubation: Patient requires placement of an endotracheal tube and mechanical or assisted ventilation because of the onset of respiratory or cardiac failure manifested by severe respiratory distress, hypoxia, hypercarbia, or respiratory acidosis. In patients who were intubated in the field or Emergency Department, or those intubated for surgery, unplanned intubation occurs if they require reintubation after being extubated.

Wound disruption: Separation of the layers of a surgical wound, which may be partial or complete, with disruption of the fascia.

ICD-9 Code Range: 998.3 (pre 2004), 998.31, 998.32