WHO SHOULD READ THIS PROCEDURE:
WakeMed General Surgery Raleigh and Cary

POLICY STATEMENT:

The secondary survey includes the complete physical examination with adjuncts to identify specific injuries and guides treatment. The secondary survey must be conducted in a systematic head to toe fashion only after the primary survey is complete, resuscitation is started, and improved vital function is demonstrated.

PROCEDURES:

I. Physical Examination:
   a. A complete physical examination following the order of head, maxillofacial, cervical spine and neck, chest, abdomen and pelvis, perineum/rectal/vaginal, musculoskeletal, and neurological systems.
      i. Neurologic evaluation should be carried out in appropriate detail.
      ii. Body structures should be evaluated for deformities or crepitus.
      iii. Any bleeding localized and immediately managed.
   b. This includes the external surfaces of the body as well as accessible internal surfaces such as the auditory canals, oropharynx, rectum, and vagina if indicated.
      i. Sensitive exams may be deferred for pediatric patients and patients with low suspicion for spinal cord involvement or perineal injury. In some circumstances sensitive exams may require privacy, same sex examiners and anxiolysis, sedation or anesthesia.
   c. The patient should be carefully turned, with concern for potential spine injuries, and the posterior aspect of the patient should be evaluated for both soft tissue and bony abnormalities. The long spine board should be removed as soon as possible, if applicable.
   d. A Focused Abdominal Stenography for Trauma (FAST) is considered part of the physical examination and should be performed routinely if abdominal injuries are suspected or possible, especially for hemodynamically unstable patients.

II. Laboratory Evaluation:
   a. The evaluating practitioner should do their best to minimize the extent of testing while still attempting to obtain all necessary and pertinent data.
   b. Routine laboratory tests may include but not limited to: CBC, BMP, Urinalysis, arterial blood gas, lactate, and pregnancy test for females of childbearing age prior to CT scans.
   c. An alcohol screen should be performed on all trauma/injury patients 12 and older.

III. Radiographic Evaluation:
   a. Considerations for radiographic evaluations differ based on mechanism of injury.
      i. Penetrating trauma
         1. Frequently undergo more anatomically directed surveys with the studies being directed by the weapon used and the region of the body that has been injured. Refer to penetrating abdominal, back, and flank injury & penetrating thoracic injury policies.
      ii. Blunt trauma
         1. May harbor multiple scattered injuries due to high energy transfer that occurred at the time of impact.
         2. Radiographic studies are used to evaluate "hidden" compartments for occult injuries, including chest, abdominal cavity, and cranium.

3. A chest x-ray should be routinely performed to evaluate for bony, vascular, pulmonary, and diaphragmatic injuries as well as proper placement of any tubes or lines. If does not definitively demonstrate injury but increases suspicion of chest injury, further evaluation is needed.
4. A plain AP film of the pelvis has historically been routinely obtained as it may reveal bony injuries that carry a potential for significant unseen blood loss. Physical exam and mechanism of injury may, at times, preclude this need.

iii. Computed tomography (CT) scans
1. A non-contrast-enhanced study of the brain is always performed before any contrast enhanced abdominal/pelvic studies.
2. The thoracic, lumbar, and sacral (TLS) spines should be radiographically studied in any patient with back pain, bony tenderness, palpable bony spine abnormalities, correlative neurologic findings, or a MOI associated with high incidence of spine injury.
   a. Patients who are unable to participate in evaluation must be screened for TLS injuries with CT or plain films.
   b. Patients with a GCS of 14 or 15 who do not have a clear distracting injury, the absence of positive physical findings, and low risk MOI for lower spinal column injury may have spinal precautions removed without radiologic evaluation.

IV. Monitoring and Procedures:
a. Trauma patients require reevaluation constantly to ensure no new findings are overlooked and to recognize any deterioration from previous findings.
b. Continuous monitoring of vital signs, oxygen saturation, neurologic assessment, end-tidal CO_2 and urinary output is essential.
   i. Vital signs should be monitored and documented every 5 minutes until stable (more frequently if dictated by other policies such as those for observation during angiography).
   ii. GCS should be monitored and documented every hour if less than 12.
c. Periodic laboratory analyses may be needed to appropriately trend resuscitative measures including repeat hemoglobin, ABGs, and lactate.
d. Pain management is an important part of monitoring and assessment for all trauma patients.
e. An EKG for patients with blunt trauma over age 50 or with hemodynamic compromise attributed to cardiac contusion or arrythmias

I. ASSOCIATED DOCUMENTS
a. Primary Survey
b. Penetrating abdominal, back, and flank injury
c. Penetrating thoracic injury policies.

II. ADDITIONAL RESOURCES
a. ATLS, advanced trauma life support. (2018). 10th ed. Chicago, IL: American College of Surgeons.