



Advisory 23-08 CARE BUNDLE UPDATES

To: All EMS Agencies

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At their October meeting, the Regional Medical Emergency Advisory Committee approved updated and new regional care bundles as a resource for providers and agencies as they engage in performance improvement activities to decrease serious missed diagnosis in the prehospital setting. These care bundles included the new Generalized Weakness & Dizziness Care bundle, the Geriatric Fall bundle (to replace the suspected mechanical fall bundle) and updates to the Cerebrovascular Accident Care bundle.

Generalized Dizziness & Weakness Care Bundle

Regional quality improvement activity aimed at improving prehospital stroke care revealed a significant rate of missed prehospital stroke in our region. The most common impression of patients where stroke was missed was generalized weakness and many of these missed strokes affected the posterior circulation of the brain which controls functions such as balance. The generalized weakness & dizziness care bundle aims to improve our assessment of this common chief complaint so that we can detect serious diagnoses, including stroke, that would otherwise be missed.

Geriatric Fall Care Bundle

Geriatric patients who present as falls are a complex patient population. As evidenced by our analysis of regional data, there is commonly a medical etiology for the fall and/or a serious injury. In addition, these calls commonly end in a refusal/non-transport. As such, these patients warrant thorough assessment for medical illness, traumatic injury and safety for refusal which includes ambulation assessment. The "suspected mechanical fall" bundle has thus been updated to reflect this.

Cerebrovascular Care Bundle

This care bundle has been updated to include performance of a stroke severity screen (FAST-ED) in patients for whom a stroke is suspected to be in line with regional initiatives.

The Prehospital Care Bundles have been created to provide a simple framework to help EMS providers identify the most critical elements when caring for a patient. These bundles do not replace protocol, but are designed to assist quality assurance and performance evaluations as we work collectively to optimize the delivery of prehospital medicine. As the science and evidence changes, so will these care bundles and the Program Agency welcomes suggestions for change and requests for future Care Bundles focusing on specific areas of patient care.

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Generalized Weakness & Dizziness Care Bundle

Metric	Goal
Complete set of vitals including temperature	Obtained and documented
Cincinnati Stroke Scale	Obtained during initial assessment and documented
Assess for Posterior Stroke	Perform and document coordination (finger-nose-finger) and gait testing if able
Blood Glucose	Obtained and documented
Assess for Symptoms of ACS (chest pain, dyspnea, abdominal pain)	Obtained and documented; if present, obtain EKG and consider giving ASA if not contraindicated

Theory/Evidence

- Complete set of vitals including temperature:** Weakness and dizziness have a broad differential and can be the presenting chief complaints for time-critical diagnoses, including sepsis, stroke, and acute coronary syndrome, especially in the geriatric population. Abnormal vital signs (including temperature, if available) can give key information regarding differential diagnosis and help the clinician have higher index of suspicion for life-threatening illness.
- Cincinnati Stroke Scale:** The Cincinnati Stroke Scale is expected to be performed and documented when assessing for evidence of a stroke. A positive scale is constituted by one or more positive finding(s): pronator drift, facial droop, or slurred speech.
- Assess for Posterior Stroke:** Approximately 20-25% of all strokes involve the posterior circulation, which can present with vague symptoms such as headache, dizziness, nausea/vomiting, or generalized weakness/fatigue. Testing coordination using the finger-to-nose test and assessing a patient's gait are critical in determining whether posterior stroke may be present. A stroke alert should be strongly considered when patients have experienced a *sudden* onset of symptoms and coordination or gait deficits, even with a normal Cincinnati Stroke Scale.
- Blood Glucose:** Generalized weakness and dizziness can be symptoms of both hyper- and hypoglycemia. Moreover, blood glucose should be performed on all potential stroke patients to exclude symptomatic hypoglycemia as an etiology of the patient's presentation.
- Assess for Symptoms of Acute Coronary Syndrome:** Dizziness or weakness is a common presentation for ACS or arrhythmia, and obtaining an EKG is important for detection of STEMI or arrhythmias.



Geriatric Fall Care Bundle

Metric	Goal
Complete set of vitals including temperature	Obtained and documented
Assessment of Prodromal Symptoms	Symptoms prior to the fall assessed and documented
Assess for Stroke	Perform and document a Cincinnati Stroke Scale and posterior circulation assessment
Anticoagulant and/or Anti-Platelet Medications	Determined and documented
Spinal Motion Restriction (SMR)	Perform and document SMR when indicated
Pain Management	Pain assessment is performed and documented, and treatment initiated prior to patient movement
If transport refusal, assessment of ambulation	Assess and document patient's ability to ambulate at their baseline with pertinent assistive devices

Theory/Evidence

- Complete set of vitals including temperature:** Geriatric falls have a broad differential and can be the presenting chief complaints for serious medical illness, including sepsis and cardiac issues. Abnormal vital signs (including temperature, if available) can give key information regarding differential diagnosis and help the clinician have higher index of suspicion for life-threatening illness. Vital sign abnormalities such as tachycardia and hypotension (defined as $SBP \leq 110$ in the geriatric population) should prompt consideration of serious medical illness.
- Assessment of Prodromal Symptoms:** Symptoms prior to falling can indicate a medical etiology of a suspected mechanical fall. Palpitations, dizziness, light-headedness, chest pain, and dyspnea are all examples of prodromal symptoms which may necessitate workup or treatments (e.g. blood glucose, EKG, vascular access, etc). A description of the fall should also be included in prehospital documentation.
- Assess for Stroke:** Falls are often the result of weakness or loss of balance due to stroke. Screening for, and documenting a Cincinnati Stroke Scale, coordination using the finger-to-nose test, and assessing a patient's gait are critical in identifying stroke and identify those patients for time-critical interventions.
- Anticoagulant and/or Anti-platelet Medications:** The use of anticoagulants and/or anti-platelet medications increases the risk of internal and intracranial bleeding as a result of a fall. Patients taking these medications who experience a mechanical fall should be transported to the emergency department for more complete evaluation. Anticoagulants include Coumadin (Warfarin); Apixaban (Eliquis), Dabigatran (Pradaxa) and Rivaroxaban (Xarelto). Anti-platelet medications include Aspirin, Clopidogrel (Plavix), Edoxaban (Savaysa) and Ticagrelor (Brilinta).
- Spinal Motion Restriction (SMR):** Spinal motion restriction should be performed when indicated - and documented when not - based on the history, mechanism of injury, and physical exam. Patients age ≥ 65 are at higher risk for significant spinal trauma with ground level falls and cervical spine "clearance" protocols are less sensitive in excluding injury in this age group and should be used with caution.
- Pain Management:** Pain is often undertreated in the geriatric population. Patients with significant traumatic injuries (e.g. hip and humerus fractures) warrant non-pharmacologic and pharmacologic pain management interventions to minimize discomfort during movement, transport and subsequent Emergency Department evaluation.
- Assessment of Ambulation:** Only half of geriatric fall patients are transported to the hospital. Screening for whether the patient is at their baseline ambulation status, including the use of any assistive devices used by the patient prior to the fall (e.g. walker, cane, etc) and whether the patient can get from sitting to standing independently, is critical in identifying any unappreciated or minimized injuries, ascertain potential traumatic injury or precipitating medical illness, and evaluate the patient's ability to remain at home safely.



Cerebrovascular Accident Care Bundle

Metric	Goal
Early Identification	Within 5 minutes of patient contact <i>All patients dispatched as a stroke should be screened.</i>
Cincinnati Stroke Scale	Obtained during initial assessment and documented
Perform stroke severity screen for LVO	Perform and document FAST-ED screen Strongly consider transport to thrombectomy-capable center if ≥ 4
Time Last Known Well	Obtained and documented
On Scene Time	10 minutes or less
Prehospital Notification	Within 5 minutes of identification
Blood Glucose	Obtained and documented
Anticoagulant Use	Determined and documented
Surrogate Contact Information	Obtained and relayed to ED staff

Theory/Evidence

- **Early Identification:** Early identification of patients with suspected stroke is critical to facilitate focused evaluation and minimizing on scene time. A dispatch of stroke is highly predictive of the patient having a stroke and these patients must be thoroughly assessed for potential stroke.
- **Cincinnati Stroke Scale:** The Cincinnati Stroke Scale is expected to be performed and documented when assessing for evidence of a stroke. A positive scale is constituted by one or more positive finding(s): pronator drift, facial droop, or slurred speech.
- **Screen for LVO:** The FAST-ED stroke-severity tool should be performed for identification of large vessel occlusion (LVO) if the patient appears to be having a stroke. A FAST-ED score of ≥ 4 should be transported to a thrombectomy-capable center unless doing so will significantly delay time to a closer primary stroke center.
- **Time Last Known Well:** The most critical piece of information that determines a stroke patient's eligibility for treatment is the time last known well, a.k.a. the time when the patient was last noted to be at their neurologic baseline. This time must be clearly communicated upon transfer of care and documented in the medical record.
- **On Scene Time:** Patients with a stroke should be expediently moved to a stroke center with a goal on scene time of less than 10 minutes.
- **Prehospital Notification:** Prehospital notification is expected on all patients with a last known well time of < 24 hours and mobilizes essential hospital resources prior to the arrival of the patient.
- **Blood Glucose:** A blood glucose is expected on all potential stroke patients to exclude symptomatic hypoglycemia as an etiology of the patient's presentation. Determination of blood glucose should not significantly delay scene time.
- **Anticoagulant Use:** A patient on anticoagulants (Coumadin [Warfarin]; Apixaban [Eliquis], Dabigatran [Pradaxa] and Rivaroxaban [Xarelto]) can change Emergency Department treatment options and determining this in advance can help guide care.
- **Surrogate Contact Information:** A piece of critical information for the treatment team is having reliable contact information for a surrogate (witness) to help make treatment determinations.