**Guidance when Applying the Canadian Triage and Acuity Scale (CTAS) to the Geriatric Patient: Executive Summary**

**BACKGROUND**

Currently 12% of the current Canadian population is over the age of 65, and this number is expected to rise to 20% by 2030, when the last of the baby boomers reaches 65. Emergency Department (ED) visits by older patients reportedly make up 12 – 21% of all ED visits. Those over the age of 75 have an even higher number of visits relative to their proportion of the population. System overcrowding remains a national problem. Current fiscal constraints mean that capacity will be unlikely to catch up with demand. To better work within these realities it is essential that older patients be safely triaged and assigned an appropriate CTAS score.

**METHODS**

The Canadian Triage and Acuity Scale National Working Group (CTAS NWG) discussed the need for an improved approach to the triage of the elderly for a number of years. In addition, CTAS Instructors and Providers were asking for further direction in how to assess and prioritize this group of patients.

In collaboration with the Canadian Association of Emergency Physicians (CAEP) Geriatric Emergency Medicine Practice Committee key challenges to accurately and safely triaging older patients were outlined and supporting literature identified.

 ***Interpretation of vital signs (1st order modifiers)***

As people age the respiratory, cardiovascular and neuro-regulatory systems respond differently to homeostatic challenges.

1. **Respiratory**: Aging lungs are less responsive to hypoxia and hypercapnia. Decreasing elastic recoil and dilatation of the airspaces lead to increased dead space so that increased ventilation comes through higher rates of respiration rather than through greater volumes per respiration. Respiratory rates of greater than 27 breaths per minute are therefore more sensitive than pulse and blood pressure in identifying critically ill patients.
2. **Cardiovascular**: Myocardial thickening, arterial wall stiffness and hypertension all lead to increased workload on the heart. Pulse pressures widen and there is a decreased response to circulating catecholamines. Orthostatic hypotension is extremely common. With age, resting heart rate gradually increases, whereas maximal heart rate decreases. These changes may mask significant underlying disease and worsen prognosis in severe illness.
3. **Temperature:** A decreased metabolic rate and alterations to the hypothalamus often result in lower core body temperatures and altered thermoregulatory responses in the elderly. The inability to mount a fever response makes older people more vulnerable when infected, with subtle temperature changes, including hypothermia, often signifying a serious infection.

***Interpretation of pain (1st order modifiers)***

Pain assessment is complicated by a number of factors. Pain perception appears to decrease with age, neurogenic inflammation is less pronounced with age leading to lower pain signals initially, and cognitive impairment and communication issues make it more difficult to quantify pain severity and determine the level of distress. A number of different pain assessment tools, numeric, visual perception, and others have been developed and validated for use in an elderly population.

***Domains of care requiring special consideration***

1. **Atypical presentations of common diseases:** Frequently older patients present with non-specific symptoms or general weakness and later prove to have a serious condition. Acute coronary syndromes are more likely to present without chest pain in the older patient, especially if they have diabetes. Patients over age 75 with community acquired pneumonia are less likely to complain of respiratory symptoms or chills and sweats. While the *presence* of abdominal pain in older patients is more often associated with serious pathology, the *severity* of the pain may only be mild in many patients with a surgical abdomen.
2. **Cognitive impairment**: Delirium and dementia are reportedly present in 25% or more of elderly ED patients, even though both have been shown to be under diagnosed and often undocumented. While complete delirium and mental status assessments cannot be a routine part of ED triage, a history of recent cognitive change or evidence of fluctuating mental status and inattention should be identified as an acute alteration in level of consciousness making the patient a CTAS level 2.
3. **Falls and trauma**: Injury is a leading cause of morbidity and mortality among the aging population despite less forceful trauma mechanisms. Falls are the most common causes of injury. One in three patients over age 65 and one in two over age 85 suffer falls each year; one in 5 falls results in serious injury. Hip fractures and head trauma are the most common serious injuries. Minor head trauma in older patients with atrophy of the brain and on oral anticoagulants, places them at high risk for intracranial bleeding. It is also important to recognize that an acute medical problem such as a cardiovascular or neurovascular event may have precipitated the fall. Due to cardiovascular changes previously noted, a systolic blood pressure (SBP) of less than 110 mmHg confers the same mortality risk as an SBP of less then 90 in younger healthy adults.
4. **Polypharmacy**: Nearly 50% of patients over the age of 65 in the US are taking 5 or more medications, making this population susceptible to adverse drug events (ADEs). ADEs reportedly account for 10% of ED visits and 10-17% of hospital admissions for this age group. Drugs with vasodilatory effects make patients prone to orthostatic falls or syncope. Anticholinergic medications inhibiting sweating increase the risk for heat stroke. Opioid analgesics and sedating agents increase the risk of cognitive impairment and falls. Many patients take an oral anticoagulant due to atrial fibrillation, leaving them susceptible to bleeding. This is especially true if they have been started on a new drug that potentiates warfarin and prolongs the INR.

**CONCLUSION**

The proportion of ED visits by older patients will continue to grow for the foreseeable future. In older patients with vague complaints, tachypnea is a sensitive sign of critical illness. Hypertension and an increased resting heart rate are part of the aging process. Elderly patients with a ‘normal’ pulse rate and blood pressure should not dissuade the triage nurse from the possibility of serious disease if the clinical situation suggests it. The blunted febrile response requires vigilance to identify the septic patient, given early treatment is directly related to better outcomes.

The combination of decreased pain response and cognitive impairment can make accurate assessment of distress difficult. Getting help from family and caregivers, believing what you are being told and making use of elder friendly pain scales are all important tools to support accurate triage. Fluctuating mental status, inattention and new onset are suggestive of delirium and need to be addressed sooner than later. Trauma from seemingly minor falls can lead to significant injuries. Polypharmacy is a major problem for aging patients age due to the combination of physiologic changes and altered drug metabolism, with adverse drug events a common reason for presentation to the ED. Patient and family expectations including goals of care are very important to identify. Medical directives limiting care should have no impact on triage acuity.