Unique Nature of Trauma Injury and Treatment:

Traumatic injury is the leading cause of death under age 44. It is the third most costly medical condition in the US, following behind cardiac conditions and cancer. Traumatic falls are now the leading mechanism of injury at 40% of all injuries. The largest morbidity occurs in people aged 65 years or older, young adults aged 15–29 years and children aged 15 years or younger.

All health events that are both emergent and life-threatening share certain characteristics. They are time sensitive, such that getting the right patient to the right place in the right amount of time can make the difference between life, death or serious disability. There is a differentiated system for movement of such patients to the appropriate medical destination. And, there are substantial fixed costs of ensuring readiness of life-saving care for such patients 24 hours a day, 7 days a week. Proximate and timely access to specialized centers of care can greatly impact patient outcome.

For trauma, there are some additional attributes that are unique and complex:

- **Traumatic injury frequently implicates multiple organs and systems.** Care for complex multisystem injuries requires multidisciplinary readiness and capabilities of numerous surgical specialties and emergency physicians and other specialized trauma team caregivers including nurses and respiratory therapists. In addition, trauma surgeons manage the care of trauma patients, beyond surgery, including in the intensive care unit.

- **Traumatic injury is extremely unpredictable in nature and duration.** There is substantial variability in an episode of acute trauma care and rehabilitation. The outcome of a trauma patient can greatly depend upon an underlying medical condition prior to injury. Planned and unplanned readmissions are a matter of routine for severely injured trauma patients. Further, there is no defined path for rehabilitation due to the unique nature of every injury.

- **Trauma disproportionately affects children, young adults, and the very old.** The majority of traumatic injury affects people under the age of 45 who are children or wage earners. They are more likely to be uninsured or underinsured than patients in age groups affected by other imminently life threatening health events (e.g. cardiac). The frail elderly are increasingly at risk of traumatic falls.

- **Trauma can happen to anyone, anytime, and anywhere.** Prevention of other imminently life threatening diseases reduces global treatment costs as there are fewer patients to treat (e.g. lowering risk of cardiac disease reduces the number of cardiac events). However, for trauma, no matter how much is invested in prevention, there
remain very high fixed costs of readiness for any patients, even if the number of trauma patients is reduced.

**The Current Outdated FFS System Disincentivizes High Quality and Efficient Trauma Care:**

The current fee for service model of payment is not well suited to promoting high quality and value based care for patients at trauma centers.

- The treatment of traumatic injury in trauma centers involves multiple physicians and trauma team members. It is extremely fast paced and involves numerous diagnostic and treatment tools which do not fit neatly into APCs or DRGs. Providing high quality trauma care according to medical standards established by the American College of Surgeons (ACS), which verifies the majority of trauma centers in the U.S., is in conflict with the current reimbursement structure.

  - For hospitals with trauma centers, Medicare partially recognizes payment for trauma team activation through the "trauma response fee". Trauma team activation is rigorously reviewed in accordance with established medical protocols. However, Medicare only pays the "trauma response fee" if the patient is not admitted, if EMS prenotifies (excluding walk-ins), and if the patient receives 30 minutes of "critical care." This is contrary to the trauma team activation medical standard which promotes movement of a trauma patient through diagnostics, surgery or the ICU in a time sensitive manner which is often far less than the 30 minute requisite amount of time required by CMS.

  - To ensure physician availability for trauma treatment, the majority of trauma centers provide "on-call pay" to enable the physicians to be on "trauma call" which otherwise means they cannot be treating patients in their traditional practice. For example, surgeons taking trauma call cannot otherwise be operating on patients. The on-call pay provided by trauma centers to emergency and surgical physicians enables them to be available at any given time to treat trauma patients. Level 1 trauma centers require as many as 16 specialist physicians to be on call at any given time.

- Quality measures have not yet been established for trauma care, due in part to the complexity and unpredictable nature of traumatic injury. Process measures are more difficult to establish as the process (diagnostics, labs, surgical interventions) will always depend upon the specific nature of the injury and cannot be easily standardized. Outcome measures are also challenging to establish due to the many caregivers providing care to trauma patients from the first responders through the acute trauma care episode and through rehabilitation. Many caregivers throughout the continuum of trauma care can positively or negatively impact outcomes, thus making accountability for quality and value a complex proposition.

**Need to Change the Current FFS System to a Value Based Episode Payment Model:**
The NQF model of episode by disease has already been established in trauma. The trauma community -- trauma centers, surgeons, physicians, nurses -- have led the development of a model system of care that promotes accountability, quality and cost-efficiencies, despite the financial disincentives of the current FFS system.

- **National Trauma Data Bank® (NTDB).** NTDB is the largest aggregation of trauma registry data ever assembled. The goal of the NTDB is to inform the medical community, the public, and decision makers about a wide variety of issues that characterize the current state of care for injured persons. Participating hospitals not only contribute to the growing knowledge base for trauma research, but they also gain access to a variety of reports that can be used to benefit their patients.

- **Trauma Quality Improvement Program (TQIP).** TQIP provides risk-adjusted benchmarking of designated or verified trauma centers to track outcomes and improve patient care. TQIP utilizes the infrastructure of the NTDB to collect valid and reliable data, provide feedback to participating trauma centers, and identify institutional characteristics that are associated with improved outcomes.

- **Trauma Systems.** Numerous studies document the value and efficiency of trauma care - right patient, right place, right time. Severely injured patients treated by Level I trauma centers have a 25% reduction in mortality. Non-severely injured patients can and should be treated in more cost-efficient settings, such as at Level III centers. Minor injuries can and should be treated by non-trauma hospitals with avoidance of unnecessary transfers to higher and more costly levels of trauma care.

Trauma patients who face imminent and life-threatening conditions are an extremely vulnerable population, deserving of high quality value based care that they can trust. They would be better served by a patient centered episode model of care for which reimbursement is based on quality and outcomes improvement. This would entail harmonizing the outdated FFS payment model with the advanced delivery of trauma care already established by the trauma community, consistent with the NQF model of care.

**Essential Principles to Harmonizing High Quality Trauma Care with Value Based Episode Payment Model:**

- **Value Based Payment Methodology** – Ensuring access for patients to value based patient-centered trauma care. This includes the distribution of trauma patients to the closest most appropriate level of care based upon the severity and complexity of the injury. Outcomes and cost-efficiencies are maximized based on distribution of more severely injured patients to higher levels of trauma care and less severely injured patients to lower levels of trauma care.

- **Around Episodes of Acute Trauma Care** – The payment methodology should encompass the acute trauma care hospital episode of care experience in a manner that promotes the best patient outcome, and not a particular procedure or care setting (inpatient vs
outpatient). The methodology should be designed to potentially enable future expansion to include the full continuum of care, including palliative and end of life care.

- **That Harmonizes Reimbursement with the Advanced Model of Trauma Care** – The reimbursement methodology should be modernized to catch up with the model of trauma care already established in accordance with the NQF model of care for a particular condition.

- **And That Encompasses Quality Measurement Designed to Reflect the Unique Nature of Trauma Care** -- It is essential to finally establish quality measures for trauma care in a manner that creates accountability and reflects the imminent, life threatening, and unpredictable nature of traumatic injury and its corresponding treatment.

**Conceptual Framework of Value Based Patient Centered Trauma Episode Payment Model:**

Under the conceptual framework, reimbursement for trauma services provided by trauma centers would be restructured and aligned in accordance with principles established in this document. The conceptual framework must be evaluated, tested and piloted initially to ascertain its effectiveness in improving outcomes and lowering costs with modifications made as needed based upon the experience of the pilot. Ultimately, the current FFS payment structure would be replaced with an episode based payment model, in which reimbursement to the trauma center would promote the delivery of high quality and value based care to all trauma patients through quality measures specifically designed for the unique and unpredictable nature of trauma care.

The model to be evaluated, tested and piloted would establish a hospital based Clinical Affinity Service (CAS) for inpatient and outpatient hospital services related to trauma. This concept is modeled after the Clinical Affinity Group (CAG) idea proposed by the American College of Surgeons. The CAS would encompass the cost to hospital trauma centers for "trauma call" but would not encompass physician payment under Medicare Part B which would continue to be separately compensated. Such a CAS could theoretically be established for other imminent and life-threatening health events that would encompass the unique attributes of those medical conditions and corresponding treatments. The model to be tested for a CAS in trauma would encompass:

1) incentivizing the movement of the right patient to right level of trauma care;

2) quality metrics that drive quality and value, but take into consideration the unpredictable and inconsistent nature of trauma care; and

3) payment that recognizes readiness at varying levels of care as well as the particular acuity and severity of injury of the trauma patient.

Under the model, hospital payments for trauma care, both outpatient and inpatient, would be restructured as follows:
The DRG/APC would be replaced with a base payment regardless of setting that would incorporate both a readiness component and a patient acuity component that would be combined to produce a base payment rate (from which any other payments to which the hospital would be entitled would be added on, such as GME or DSH) that would vary and be calculated as follows:

- **Readiness Component**: Some percent of the base rate would be designated as the readiness component based upon the level of the trauma center -- the higher the level, the higher the readiness component based on a study that would be commissioned to identify the actual readiness costs, particularly the high fixed costs of Level I and II trauma centers. The trauma activation fee would be incorporated into the readiness component and not be separately compensated.

- **Patient Severity Component**: Some percent of the base rate would be designated as the patient severity component based on a scoring mechanism that accurately depicts the level of acuity and intensity of services required for the patient. One option would be to use the injury severity score (ISS) or some modification thereto as the base mechanism from which other adjustments could be made. For example, if ISS is utilized, patients would be segregated into payment categories based on their ISS score (e.g. between 1-5 ISS, between 5-9 ISS, between 9-15 ISS, between 15-20 ISS and over 20 ISS or some differentiation that is clinically appropriate). There would also be adjusters in this methodology that recognize comorbidities and appropriate geographic differences.

- **Value Based Payment Adjustment**: The VBPA would be specifically designed for trauma care. Should the value based payment model for physicians proposed by ACS be adopted, the VBPA for hospital trauma centers could be aligned with a VBU compliance for physicians. Regardless, for hospital trauma centers, the VBPA would incorporate the key concepts and components of VBP, HACs and preventable readmissions into the value based adjustment, just in a way that more accurately depicts the unique nature of trauma care.

**Quality Measures**: Quality measures (including HCAHPS) would be designed to address the challenges and unique nature of trauma care. These quality measures would take into account the work being done by ACS TQIP, the National Trauma Data Bank, and the ACS trauma center verification process. Hospitals with trauma centers would still be subject to VBP, Readmissions and HACs for all other patients; trauma patients would be excluded from these payment methodologies and the value proposition would be separately addressed through the value based adjustment in the CAS, which would separately address value, readmissions and HACs in a manner more clinically appropriate for trauma care.

**ACOs**: Hospitals and physicians choosing to participate in ACOs could opt to carve out trauma services from their Medicare shared savings arrangement and follow the trauma clinical affinity model for that subset of patients.
**Episode of Care**: The trauma clinical affinity model of payment would initially cover the episode as defined by outpatient or inpatient hospital services. Eventually, it is designed to potentially expand toward covering a broader spectrum of the episode, potentially including pre-hospital, rehabilitation and palliative care to the extent that the broader system moves toward global payment for such services.

**Incentivizing Right Patient, Right Trauma Center, Right Time**: Cost efficiencies and improved outcomes are expected to result from ensuring trauma patients receive the right level of trauma care. The goal of the evaluation and pilot is to ascertain this proposition which we believe can be facilitated by the following:

- For EMS agencies: Provide a bonus payment to EMS agencies for compliance with CDC trauma triage guidelines.
- For non-trauma hospitals:
  - Provide a new hospital payment for stabilization and transfer on a capitated basis, but only if they have an established plan for the appropriate treatment and disposition of trauma patients and transfer agreements.
  - Add a measure to the VBP payment for non-trauma hospitals that promotes the appropriate treatment disposition of patients in accordance with best practices, whether to retain and treat the patient or to expeditiously stabilize and transfer to a higher level of trauma care.