## Module 1. Common Data Elements (CDEs) for Preclinical TBI Research

### Animal Characteristics
- Species
- Birthdate
- Age
- Age group
- Sex
- Animal vendor
- Strain/genetic modifications
- Weight measurement

### Injury Model Characteristics
- External cause modeled
- Injury model
- Device manufacturer
- Device manufacturer other text
- Animal stabilization method
- Impact location side
- Impact location cortical region
- Impact location coordinates

### Animal History
- Pre-injury subject housing
- Pre-injury surgical procedures
- Injury group
- Injury date and time
- Anesthetic type
- Post-injury surgical procedures
- Post-injury subject housing
- Treatment group
- Treatment onset

### Assessments and Outcomes
- Outcome timing
- Assessment date and time
- Acute neurological assessment
- Apnea indicator
- Apnea duration
- Righting response time
- Toe pinch response
- Acute physiological assessments
- Brain imaging type
- Chronic physiologic assessments
- Memory/retention tests
- Learning/acquisition tests
- Sensory/motor tests
- Anxiety tests
- Social interaction tests
- Body weight change
- Histopathology

## Module 2. Controlled Cortical Injury (CCI) Relevant Data Elements

### Invasive surgery
- Impactor tip/projectile shape
- Impactor tip rigidity
- Impactor depth setting

### Impactor angle measurement
- Impactor dwell time
- Impactor velocity
- Surface material

## Module 3. Fluid Percussion Injury (FP) Relevant Data Elements

### Craniotomy size
- Connector tube material
- Port distal diameter
- Cement
- Transducer manufacturer

### Connector tube length
- Cap characteristics
- Peak pressure pulse
- Pressure wave duration

## Module 4. Weight Drop Injury (WD) Relevant Data Elements

### Invasive surgery
- Weight drop height
- Weight drop guidance
- Weight drop characteristics

### Impactor/projectile mass
- Impactor velocity
- WD-specific pre-injury surgical procedures

### Impactor/projectile material
- Contact surface type
- WD-specific post-injury surgical procedures

### Impactor tip/projectile shape
- Contact surface area

### Impactor tip rigidity
- Impactor dwell time

## Module 5. Blast-Induced Neurotrauma (BIN) Relevant Data Elements

### Blast-induced delivery device
- Distance between animal and tube
- Animal orientation to blast wave

### Pressure wave type
- Overpressure peak
- Overpressure rise time

### Detonation type
- Overpressure wave duration
- Impulse

### Detonation material quantity
- Reflective wave overpressure
- Tertiary blast effects specifications

### Driver gas
- Reflective wave overpressure
- Tertiary blast effects specifications

### Pressure wave medium
- Overpressure wave duration
- Tertiary blast effects specifications

### Distance from detonation
- Impulse
- Tertiary blast effects specifications

### Blast tube or column area
- Blast wind pressure
- Quaternary blast effects

### Blast tube length
- Pressure sensor orientation
- Systemic injury

### Shock tube driven section length
- Pressure sensor type
- Extracranial injuries

### Membrane thickness
- Pressure sensor sampling frequency
- BIN-specific pre-injury surgical procedures

### Membrane burst method
- Incident pressure time history
- BIN-specific post-injury surgical procedures

### Membrane burst pressure
- Body exposure

### Tube end configuration
- Protective shielding location

### Placement relative to shock tube
- Protective shielding type
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