**Supplementary materials 1:** Victims’ clinical pattern, Dynamic Casualty Cards and FAST ABCDE findigs.

**VICTIM 1. HEMOPERITONEUM**

|  |  |  |
| --- | --- | --- |
|  | **Dynamic Casualty Card**  (Intervention and control group) | **FAST-ABCDE**  (Only intervention group) |
| A (airways) | **Airway** patency | Cervical scan findings:   * No E lines; * Regular larynx and trachea; * Bilateral sliding sign. |
| B (breathing) | **Observation** = expands bilaterally, no rib retraction or asymmetry  **Palpation** = no pain to digital pressure, not palpable subcutaneous emphysema  **Auscultation** = Normal breath sounds  **Count (Respiratory Rate)** = 20 breaths per minute  **Saturation (Oximetry)** = SpO2 97% (FiO2 0.21) | Thorax scan findings:   * No E lines; * Regular pleural line; * Bilateral sliding and seashore signs; * A pattern. |
| C (circulation) | **Capillary Refill** = 2 seconds  **Radial Pulse** = Present  **Heart Rate** = 95  **Arterial Pressure** = 100/60  **Jugular Veins** = Normal  **Bleeding** = Not evident  **Monitor** = Sinus rhythm  **Skin** = Normally perfused | Thorax, abdominal ad limbs scan   * Hyperkinetic atria and ventricles with slightly reduced dimension; * Collapsibility index (CI) of inferior vena cava (IVC): 80%; * No pericardial or pleural free fluid; * Presence of free fluid in Morrison's pouch and perisplenic region; * Regular aortic shape; * No evident long bone fractures. |
| D (disability) | **A V P U** \*= Alert  **GCS\*\*** (E M V) = 15  **Pupils size** = isochoric-isocyclic  **Photomotor reflex** = bilaterally present  **Neurological examination** = moves all 4 limbs without loss of strength or sensitivity | * Trans eyed-lid scan: * Normal optic nerve diameter; * No papilledema; * No emphysema. |
| E (exposure) | **HEAD TO TOE** = pain on palpation of the left hip, bruises left hip, small left hematoma at transverse umbilical line  **SAMPLE\*\*\*** = 45 yo, allergic to pollens and grasses |  |

**VICTIM 2. PNEUMOTHORAX**

|  |  |  |
| --- | --- | --- |
|  | **Dynamic Casualty Card**  (Intervention and control group) | **FAST-ABCDE**  (Only intervention group) |
| A (airways) | **Airway** patency | Cervical scan findings:   * Presence of right-lower-latero-cervical E lines; * Regular larynx and trachea; * Bilateral sliding sign. |
| B (breathing) | **Observation** = Expands bilaterally, no rib retraction or asymmetry, right subclavian excoriations  **Palpation** = Clavicular fracture, pain to digital pressure, not palpable subcutaneous emphysema  **Auscultation** = Harsh breath sounds  **Count (Respiratory Rate)** = 22 breaths per minute  **Saturation (Oximetry)** = SpO2 98% Mask Reservoir (95% FiO2 0.21) | Thorax scan findings:   * Presence of E lines; * Thickened pleural line in right upper anterior hemithorax; * No lung sliding sign; * Presence of the stratosphere sign; * A pattern. |
| C (circulation) | **Capillary Refill** = < 2 seconds  **Radial Pulse** = Present  **Heart Rate** = 90  **Arterial Pressure** = 120/80  **Jugular Veins** = Normal  **Bleeding** = Not evident  **Monitor** = Sinus rhythm  **Skin** = Normally perfused | Thorax, abdominal and limb scan:   * Normal atria and ventricles; * CI of IVC: 20%; * No pericardiac or intra abdominal free fluid; * Regular aortic shape; * No evident long bone fractures. |
| D (disability) | **A V P U** = Alert  **GCS** (E M V) = 15  **Pupils size** = isochoric-isocyclic  **Photomotor reflex** = bilaterally present  **Neurological examination** = moves all 4 limbs without loss of strength or sensitivity | Trans eyed-lid scan:   * Normal optic nerve diameter; * No papilledema; * No emphysema. |
| E (exposure) | **HEAD TO TOE** = Clavicular fracture, right subclavian excoriations.  **SAMPLE** = 65 yo, Hypertension in therapy with ACE-I, former smoking, viral influenza in resolution, felt on right shoulder and chest |  |

**VICTIM 3. HEMOTHORAX**

|  |  |  |
| --- | --- | --- |
|  | **Dynamic Casualty Card**  (Intervention and control group) | **FAST-ABCDE**  (Only intervention group)  Cervical scan findings: |
| A (airways) | **Airway** patency | * No E lines; * Regular larynx and trachea; * Bilateral sliding sign. |
| B (breathing) | **Observation** = Expands bilaterally, no rib retraction or asymmetry  **Palpation** = Right scapula excoriation, pain to digital pressure, not palpable subcutaneous emphysema  **Auscultation** = Normal breath sounds  **Count (Respiratory Rate)** = 19 breaths per minute  **Saturation (Oximetry)** = SpO2 96% (FiO2 0.21) | Thorax scan findings:   * No E lines; * Intrapleural hypoechoic areas with regular, floating margins, at the base of the right hemithorax. * B1 pattern on the right lung base |
| C (circulation) | **Capillary Refill** = 2 seconds  **Radial Pulse** = Present  **Heart Rate** = 100  **Arterial Pressure** = 105/70  **Jugular Veins** = Normal  **Bleeding** = Not evident  **Monitor** = Sinus rhythm  **Skin** = Normally perfused | Thorax, abdominal ad limb scan   * Hyperkinetic atria and ventricles with slightly reduced dimension; * CI of IVC: 70%. * No pericardiac or intra abdominal free fluid; * Regular aortic shape; * No evident long bone fractures. |
| D (disability) | **A V P U** = Alert  **GCS** (E M V) = 15  **Pupils size** = Isochoric-isocyclic  **Photomotor reflex** = Bilaterally present  **Neurological examination** = Moves all 4 limbs without loss of strength or sensitivity | * Trans eyed-lid scan: * Normal optic nerve diameter; * No papilledema; * No emphysema. |
| E (exposure) | **HEAD TO TOE** = Right scapula excoriation with pain to digital pressure (felt on his back, no neurological deficit)  **SAMPLE** = 25 yo, irritable bowel syndrome |  |

**VICTIM 4. OPEN FRACTURE**

|  |  |  |
| --- | --- | --- |
|  | **Dynamic Casualty Card**  (Intervention and control group) | **FAST-ABCDE**  (Only intervention group) |
| A (airways) | **Airway** patency | Cervical scan findings:   * No E lines; * Regular larynx and trachea; * Bilateral sliding sign. |
| B (breathing) | **Observation** = Expands bilaterally, no rib retraction or asymmetry  **Palpation** = No pain to digital pressure, not palpable subcutaneous emphysema  **Auscultation** = Normal breath sounds  **Count (Respiratory Rate)** = 24 breaths per minute  **Saturation (Oximetry)** = SpO2 99% (FiO2 0.21) | Thorax scan findings:   * No E lines; * Regular pleural line; * Bilateral lung sliding and seashore signs; * A pattern. |
| C (circulation) | **Capillary Refill** = 2 seconds  **Radial Pulse** = Present  **Heart Rate** = 110  **Arterial Pressure** = 140/80  **Jugular Veins** = Normal  **Bleeding** = Mild from open fracture  **Monitor** = Sinus rhythm  **Skin** = Normally perfused | Thorax, abdominal ad limb scan   * Normal atria and ventricles; * CI of IVC: normal; * No pericardiac or intra abdominal free fluid; * Regular aortic shape; * Multiple site left tibial-fibular fracture without major hematoma. |
| D (disability) | **A V P U** = Alert  **GCS** (E M V) = 15  **Pupils size** = Isochoric-isocyclic  **Photomotor reflex** = Bilaterally present  **Neurological examination** = Moves 3 limbs without loss of strength or sensitivity, no movement left lower limb (pulsatility, motility, sensitiveness present distally) | Trans eyed-lid scan:   * Normal optic nerve diameter; * No papilledema; * No emphysema. |
| E (exposure) | **HEAD TO TOE** = Open fracture left tibia and fibula, pulsatility, motility, sensitiveness present distally, little bleeding at the fracture site due to damaged skin.  **SAMPLE** = 18 yo, foot trapped and then twisted 180 degree. |  |

**VICTIM 5. PREGNANCY**

|  |  |  |
| --- | --- | --- |
|  | **Dynamic Casualty Card**  (Intervention and control group) | **FAST-ABCDE**  (Only intervention group) |
| A (airways) | **Airway** patency | Cervical scan findings:   * No E lines; * Regular larynx and trachea; * Bilateral sliding sign. |
| B (breathing) | **Observation** = Expands bilaterally, no rib retraction or asymmetry  **Palpation** = No pain to digital pressure, not palpable subcutaneous emphysema  **Auscultation** = Normal breath sounds  **Count (Respiratory Rate)** = 24 breaths per minute  **Saturation (Oximetry)** = SpO2 98% (FiO2 0.21) | Thorax scan findings:   * No E lines; * Regular pleural line; * Bilateral lung sliding and seashore signs; * A pattern |
| C (circulation) | **Capillary Refill** = 2 seconds  **Radial Pulse** = Present  **Heart Rate** = 105  **Arterial Pressure** = 100/60  **Jugular Veins** = Normal  **Bleeding** = Not evident  **Monitor** = Sinus rhythm  **Skin** = Normally perfused | Thorax, abdominal ad limb scan   * Normal atria and ventricles; * CI of IVC: normal; * No pericardiac or intra abdominal free fluid; * Regular aortic shape; * Single fetus podalic pregnancy with normal heart beat. Posterior placenta with no signs of abruptio. * No evident long bone fractures |
| D (disability) | **A V P U** = Alert  **GCS** (E M V) = 15  **Pupils size** = Isochoric-isocyclic  **Photomotor reflex** = Bilaterally present  **Neurological examination** = Moves all 4 limbs without loss of strength or sensitivity | Trans eyed-lid scan:   * Normal optic nerve diameter; * No papilledema; * No emphysema. |
| E (exposure) | **HEAD TO TOE** = Normal  **SAMPLE** = 24 yo, second pregnancy, 37 gestational weeks, gestational proteinuria, presence of active fetal movements, no contractions, very scared, requires to go to hospital for fetal monitoring. No fall. |  |

**VICTIM 6. SCREAMING/SHOUTING**

|  |  |  |
| --- | --- | --- |
|  | **Dynamic Casualty Card**  (Intervention and control group) | **FAST-ABCDE**  (Only intervention group) |
| A (airways) | **Airway** patency | Cervical scan findings:   * No E lines; * Regular larynx and trachea; * Bilateral sliding sign |
| B (breathing) | **Observation** = Expands bilaterally, no rib retraction or asymmetry  **Palpation** = No pain to digital pressure, not palpable subcutaneous emphysema  **Auscultation** = Normal breath sounds  **Count (Respiratory Rate)** = 26 breaths per minute  **Saturation (Oximetry)** = SpO2 100% (FiO2 0.21) | Thorax scan findings:   * No E lines; * Regular pleural line; * Bilateral lung sliding and seashore signs; * A pattern |
| C (circulation) | **Capillary Refill** = 2 seconds  **Radial Pulse** = Present  **Heart Rate** = 120  **Arterial Pressure** = 115/55  **Jugular Veins** = Normal  **Bleeding** = Not evident  **Monitor** = Sinus rhythm  **Skin** = Normally perfused | Thorax, abdominal ad limb scan   * Normal atria and ventricles; * CI of IVC: normal; * No pericardiac or intra abdominal free fluid; * Regular aortic shape; * No evident long bone fractures |
| D (disability) | **A V P U** = Alert  **GCS** (E M V) = 15  **Pupils size** = Isochoric-isocyclic  **Photomotor reflex** = Bilaterally present  **Neurological examination** = Moves all 4 limbs without loss of strength or sensitivity | Trans eyed-lid scan:   * Normal optic nerve diameter; * No papilledema; * No emphysema. |
| E (exposure) | **HEAD TO TOE** = Arms with bruises from falling.  **SAMPLE** = 30 yo, anxiety and panic attacks, now scared, hyperventilation with crying, he wants to go home and not to hospital. |  |

**VICTIM 7. VAGAL RESPONSE**

|  |  |  |
| --- | --- | --- |
|  | **Dynamic Casualty Card**  (Intervention and control group) | **FAST-ABCDE**  (nly intervention group) |
| A (airways) | **Airway** patency | Cervical scan findings:   * No E lines; * Regular larynx and trachea; * Bilateral sliding sign |
| B(breathing) | **Observation** = Expands bilaterally, no rib retraction or asymmetry  **Palpation** = No pain to digital pressure, not palpable subcutaneous emphysema  **Auscultation** = Normal breath sounds  **Count (Respiratory Rate)** = 14 breaths per minute  **Saturation (Oximetry)** = SpO2 95% (FiO2 0.21) | Thorax scan findings:   * No E lines; * Regular pleural line; * Bilateral lung sliding and seashore signs; * A pattern |
| C(circulation) | **Capillary Refill** = 2 seconds  **Radial Pulse** = Present  **Heart Rate** = 65  **Arterial Pressure** = 90/60  **Jugular Veins** = Normal  **Bleeding** = Not evident  **Monitor** = Sinus rhythm  **Skin** = Pale, Cold, Sweat | Thorax, abdominal ad limb scan   * Normal atria and ventricles; * CI of IVC: normal; * No pericardiac or intra abdominal free fluid; * Regular aortic shape; * No evident long bone fractures. |
| D (disability) | **A V P U** = Alert  **GCS** (E M V) = 15  **Pupils size** = Isochoric-isocyclic  **Photomotor reflex** = Bilaterally present  **Neurological examination** = Moves all 4 limbs without loss of strength or sensitivity | Trans eyed-lid scan:   * Normal optic nerve diameter; * No papilledema; * No emphysema. |
| E (exposure) | **HEAD TO TOE** = Normal.  **SAMPLE** = 28 yo, pelvic pain, day 1 of the menstrual cycle (discomfort at the sight of the blood of others), ankle sprain. |  |

**VICTIM 8. SYMPATHETIC RESPONSE**

|  |  |  |
| --- | --- | --- |
|  | **Dynamic Casualty Card**  (Intervention and control group) | **FAST-ABCDE**  (Only intervention group) |
| A (airways) | **Airway** patency | Cervical scan findings:   * No E lines; * Regular larynx and trachea; * Bilateral sliding sign |
| B (breathing) | **Observation** = Expands bilaterally, no rib retraction or asymmetry  **Palpation** = No pain to digital pressure, not palpable subcutaneous emphysema  **Auscultation** = Normal breath sounds  **Count (Respiratory Rate)** = 20 breaths per minute  **Saturation (Oximetry)** = SpO2 99% (FiO2 0.21) | Thorax scan findings:   * No E lines; * Regular pleural line; * Bilateral lung sliding and seashore signs; * A pattern |
| C (circulation) | **Capillary Refill** = 2 seconds  **Radial Pulse** = Present  **Heart Rate** = 108  **Arterial Pressure** = 160/100  **Jugular Veins** = Normal  **Bleeding** = Not evident  **Monitor** = Sinus rhythm  **Skin** = Normal perfused | Thorax, abdominal ad limb scan   * Normal atria and ventricles; * CI of IVC: normal; * No pericardiac or intra abdominal free fluid; * Regular aortic shape; * No evident long bone fractures. |
| D (disability) | **A V P U** = Alert  **GCS** (E M V) = 15  **Pupils size** = Isochoric-isocyclic, bilateral mydriasis  **Photomotor reflex** = Bilaterally present  **Neurological examination** = Moves 3 limbs without loss of strength or sensitivity. Presence of a plaster for a previous (10 days before) right forearm fracture | Trans eyed-lid scan:   * Normal optic nerve diameter; * No papilledema; * No emphysema. |
| E (exposure) | **HEAD TO TOE** = Headache for 3 hours, already present before the event but rising after event. No signs of head trauma. Fallen on his knees (bruises), but no deficits.  **SAMPLE** = 36 yo, allergic to eggs and nuts. Chronic headache. |  |

**VICTIM 9. CARDIOPATHY WITH BETA BLOCKERS**

|  |  |  |
| --- | --- | --- |
|  | **Dynamic Casualty Card**  (Intervention and control group) | **FAST-ABCDE**  (Only intervention group) |
| A (airways) | **Airway** patency | Cervical scan findings:   * No E lines; * Regular larynx and trachea; * Bilateral sliding sign |
| B (breathing) | **Observation** = Expands bilaterally, no rib retraction or asymmetry  **Palpation** = No pain to digital pressure, not palpable subcutaneous emphysema  **Auscultation** = Normal breath sounds  **Count (Respiratory Rate)** = 20 breaths per minute  **Saturation (Oximetry)** = SpO2 97% (FiO2 0.21) | Thorax scan findings:   * No E lines; * Regular pleural line; * Bilateral lung sliding and seashore signs; * A pattern |
| C (circulation) | **Capillary Refill** = 3 seconds  **Radial Pulse** = Present  **Heart Rate** = 60  **Arterial Pressure** = 95/60  **Jugular Veins** = Normal  **Bleeding** = Not evident  **Monitor** = Atrial Fibrillation (medium heart rate)  **Skin** = Pale | Thorax, abdominal ad limb scan   * Left atrial enlargement with slightly dilated left ventricle. * CI of IVC: normal; * No pericardiac or intra abdominal free fluid; * Regular aortic shape; * No evident long bone fractures. |
| D (disability) | **A V P U** = Alert  **GCS** (E M V) = 15  **Pupils size** = Isochoric-isocyclic  **Photomotor reflex** = Bilaterally present  **Neurological examination** = Moves all 4 limbs without loss of strength or sensitivity | Trans eyed-lid scan:   * Normal optic nerve diameter; * No papilledema; * No emphysema. |
| E (exposure) | **HEAD TO TOE** = Thoracic pain.  **SAMPLE** = 72 yo, atrial fibrillation in therapy with beta blockers, previous electrical cardioversion, he feels fatigue after the event. |  |

**VICTIM 10. PERIORBITAL HEMATOMA**

|  |  |  |
| --- | --- | --- |
|  | **Dynamic Casualty Card**  (Intervention and control group) | **FAST-ABCDE**  (Only intervention group) |
| A (airways) | **Airway** patency | Cervical scan findings:   * No E lines; * Regular larynx and trachea; * Bilateral sliding sign |
| B (breathing) | **Observation** = Expands bilaterally, no rib retraction or asymmetry  **Palpation** = No pain to digital pressure, not palpable subcutaneous emphysema  **Auscultation** = Normal breath sounds with wheezing.  **Count (Respiratory Rate)** = 18 breaths per minute  **Saturation (Oximetry)** = SpO2 94% (FiO2 0.21) | Thorax scan findings:   * No E lines; * Regular pleural line; * Bilateral lung sliding and seashore signs; * A pattern |
| C(circulation) | **Capillary Refill** = 2 seconds  **Radial Pulse** = Present  **Heart Rate** = 90  **Arterial Pressure** = 130/70  **Jugular Veins** = Normal  **Bleeding** = Not evident  **Monitor** = Sinus rhythm  **Skin** = Normally perfused | Thorax, abdominal ad limb scan   * Biatrial and biventricular enlargement. * CI of IVC: normal; * No pericardiac or intra abdominal free fluid; * Regular aortic shape; * No evident long bone fractures. |
| D (disability) | **A V P U** = Alert  **GCS** (E M V) = 15  **Pupils size** = Right mydriasis, left pupil unassessable.  **Photomotor reflex** = Bilaterally present  **Neurological examination** = Moves all 4 limbs without loss of strength or sensitivity | Trans eyed-lid scan:   * Normal optic nerve diameter; * No papilledema; * No emphysema. |
| E (exposure) | **HEAD TO TOE** = Left periorbital hematoma from a nudge from crowd in panic, nasal pyramid fractured, epistaxis. No fall.  **SAMPLE** = 80 yo, COPD in therapy with beta agonists. |  |

**\***Alert, Verbal, Pain, Unresponsive scale

\*\* Glasgow Coma Score

\*\*\*Symptoms, Allergies, Medication, past medical history, Last oral intake, Events leading to the illness or injury.