EXPLOSIVE-RELATED INJURIES
derived from Centers For Disease Control

System	Injury or Condition
Auditory	TM rupture, ossicular disruption, cochlear damage, foreign body. If TM rupture, consider at risk for pulmonary viscus injury
Eye, Orbit, Face	Perforated globe, foreign body, air embolism, fractures. Up to 10% of all blast survivors have significant eye injuries.
Respiratory	Blast lung, hemothorax, pneumothorax, pulmonary contusion and hemorrhage.
Digestive	Bowel perforation, hemorrhage, ruptured liver or spleen
Circulatory	Cardiac contusion, myocardial infarction from air embolism, shock, vasovagal hypotension, peripheral vascular injury, air embolism-induced injury
CNS Injury	Concussion, closed and open brain injury, stroke, spinal cord injury, air embolism-induced injury
Renal Injury	Renal contusion, laceration, acute renal failure
Extremity Injury	Traumatic amputation, fractures, crush injuries, compartment syndrome, burns, cuts, lacerations, acute arterial occlusion, air embolism-induced injury

http://www.cdc.gov/masstrauma/preparedness/primer.pdf

BLASTS AND EXPLOSIONS
VA/DoD GENERAL GUIDANCE
Pocket Guide

PROTECT YOURSELF

- Do not enter unstable buildings without back-up, skilled teams, and communication equipment.
- Be alert for secondary explosions (timed to go off after a first explosion to injure rescuers).

IMMEDIATE TREATMENT STRATEGIES FOR CARE PROVIDERS

- Listen for breathing, look for chest movement, feel for pulse.
- Establish an Airway:
  - Chin lift, jaw thrust, stabilize head, avoid neck movement
  - Intubation - avoid head tilt if neck injury possible
  - With mass casualties a clamp, pin, or towel may be used as an expedient with unconscious victims to keep the tongue out of the back of the throat and maintain the airway.
- Perform rescue breathing & chest compression, if indicated
- Cover open chest wound, treat tension pneumothorax (i.e., needle decompression in the short term).
- Manage Bleeding
  - Control bleeding with pressure
  - Internal bleeding should be controlled surgically
  - Judicious fluid use to maintain organ perfusion while minimizing bleeding prior to surgical control
    - ✓ Goals: Maintain mentation
    - ✓ Maintain Mean Arterial Pressure 80-85 (Systolic 100, Palpable Radial Pulse of less than 120). Increase infusion rate **only** when goals not met.

Continued on Back

September 2004

VA access to card: http://www.oqp.med.va.gov/cpg/BCR/BCR_Base.htm
VA access to Personal Emergency Preparedness:
http://www.vethealth.cio.med.va.gov/Pubs/PersPrepare.pdf

Produced by the Employee Education System for the Office of
Public Health and Environmental Hazards, Department of Veterans Affairs.

- **Burns**
  - Cover large surfaces with cleanest covers available (preferably sterile)
- **Impaled objects**
  - Do not remove impaled objects
  - If object prevents transport (too large, etc.), shorten (saw, cutters, etc.)
- **Long bone fractures**
  - Splint to prevent instability and worsening trauma during transport
  - Splint to prevent bleeding
- **Primary Blast Injuries**
  - Examine Tympanic membrane (TM): if ruptured, consider at risk for pulmonary and hollow viscus injury.
  - Pulmonary: if ruptured TM, it may signal pulmonary injury: observe for at least 8 hours for worsening symptoms or O2 desaturation. "Blast lung" is the most common fatal primary blast injury among initial survivors. Signs of severe blast lung usually present at the time of initial evaluation, but have been reported as late as 48 hours after the explosion. The clinical triad of apnea, bradycardia, and hypotension characterizes blast lung.
  - Abdominal Injuries: (Gas-containing sections of the GI tract are most vulnerable to primary blast effect.)
    - ✓ Immediate or delayed bowel perforation
    - ✓ Hemorrhage (ranging from small petechiae to large hematomas)
    - ✓ Mesenteric shear injuries
    - ✓ Solid organ lacerations
  - Brain Injury (Primary blast waves cause concussions or vascular brain injury (MTBI) without a direct blow to the head.)

The information in this card is not meant to be complete but to be a quick guide; please consult other references and experts.

EMERGENCY MANAGEMENT OPTIONS: Follow your hospital's and regional disaster system's plan.

TRIAGE
Ranking clinician to evaluate casualties and classify

Categories	Description
Urgent	Require rapid intervention to prevent imminent death due to airway obstruction and tension pneumothorax.
Immediate	High likelihood of survival in these severely injured patients. They need procedures of moderately short duration.
Delayed	Can tolerate delay prior to operative intervention without compromising a successful outcome.
Minimal	Remove from triage area rapidly and assign to other staff.
Expectant	Treatment would cause unjustified depletion of scarce resources; survival unlikely even with adequate resources; complex or time-consuming cases; make comfortable by any reasonable means.

RESOURCES-*Emergency War Surgery Handbook: http://www.vnh.org/EWSurg/EWSTOC.html*