DISASTER FIRST AID

Techniques for the Golden Hour
Fatal and hospitalized injuries resulting from the 1994 Northridge earthquake
Corinne Peek-Asa, Jess F Kraus, Linda B Bourque, Dushyanthi Vimalachandra, Jenny Yu and Jackie Abrams

- **Background**
  The Northridge earthquake struck Los Angeles on 17 January 1994, originating from a previously unknown thrust fault. The earthquake measured 6.7 on the Richter scale and caused extensive damage to buildings, utilities and roadways. This report describes injuries occurring in the Northridge earthquake which resulted in death or hospital admission.

- **Methods**
  Earthquake-related deaths were identified by the Los Angeles Department of the Coroner. All 78 hospitals in Los Angeles County were screened for earthquake related admissions and were found in 16 of them. Coroner's records and medical records from the 16 hospitals were individually reviewed to identify earthquake related injuries and to obtain information about the injury.
Results

A total of 171 earthquake-related injuries was identified in Los Angeles County, 33 were fatal and 138 required hospital admission. Injury rates were approximately equal by gender and increased significantly with increasing age. Most of the fatalities were due to building collapse, and most of the hospital-admitted injuries were caused by falls or being hit by objects. Motor vehicle injuries and burns were also common causes of injury. Head and chest injuries were common among fatalities, and extremity injuries were the most common among those admitted to a hospital.

Conclusion

Earthquakes cause injuries through many mechanisms, and a clearer understanding of these pathways can help focus prevention strategies. Research combining comprehensive surveillance with risk factor assessment can help identify behaviors and circumstances increasing the risk of injury in an earthquake.
Appendix B: Disaster Supplies Checklists (PDF 41KB)

The following list is to help you determine what to include in your disaster supplies kit that will meet your family’s needs.

**First Aid Supplies**

<table>
<thead>
<tr>
<th>Supplies</th>
<th>Home</th>
<th>Vehicle</th>
<th>Work</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adhesive bandages, various sizes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 &quot; x 9 &quot; sterile dressing</td>
<td></td>
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<tr>
<td>Conforming roller gauze bandage</td>
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<tr>
<td>Triangular bandages</td>
<td></td>
<td></td>
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<tr>
<td>3 &quot; x 3 &quot; sterile gauze pads</td>
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</tr>
<tr>
<td>4 &quot; x 4 &quot; sterile gauze pads</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Roll 3 &quot; cohesive bandage</td>
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</tbody>
</table>
### First Aid Supplies [cont.]

<table>
<thead>
<tr>
<th>Supplies</th>
<th>Home</th>
<th>Vehicle</th>
<th>Work</th>
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</thead>
<tbody>
<tr>
<td>Germicidal hand wipes or waterless, alcohol-based hand sanitizer</td>
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<tr>
<td>Antiseptic wipes</td>
<td></td>
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<tr>
<td>Pairs large, medical grade, non-latex gloves</td>
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<tr>
<td>Tongue depressor blades</td>
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<tr>
<td>Adhesive tape, 2 &quot; width</td>
<td></td>
<td></td>
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<tr>
<td>Antibacterial ointment</td>
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<tr>
<td>Cold pack</td>
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<tr>
<td>Scissors (small, personal)</td>
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<td></td>
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<tr>
<td>Tweezers</td>
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<tr>
<td>Supplies</td>
<td>Home</td>
<td>Vehicle</td>
<td>Work</td>
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<tr>
<td>--------------------------------------</td>
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<tr>
<td>Assorted sizes of safety pins</td>
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<tr>
<td>Cotton balls</td>
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<td></td>
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<tr>
<td>Feminine hygiene pads for bleeding</td>
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<td></td>
<td></td>
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<tr>
<td>1” and 3” Tape for splinting and bandaging</td>
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<tr>
<td>Thermometer</td>
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<td></td>
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<tr>
<td>Tube of petroleum jelly or other lubricant</td>
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<td></td>
<td></td>
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<tr>
<td>Sunscreen</td>
<td></td>
<td></td>
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<tr>
<td>CPR breathing barrier, such as a face shield</td>
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<tr>
<td>First aid manual</td>
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</tbody>
</table>
Initial Steps for First Aid

- Identify basic first aid equipment
- Understand the three phases of trauma death
- Understand the techniques for:
  - Opening the airway
  - Controlling bleeding
  - Treating shock
Three Phases of Trauma Death

- Phase 1: Death in minutes
- Phase 2: Death in several hours
- Phase 3: Death in several days or weeks

These phases underlie why disaster medical operations are conducted as they are (by identifying those with the most serious injuries as soon as possible and treating those with life-threatening injuries first)
Dressings, bandages and band-aids
Medical and Duct tape
Blankets, sheets and pillows
Soap and water
Splinting materials
Stretchers and backboards
Saline solution and medical ointment
Latex gloves
Triage tape
Scene Size-Up and Safety

- Rescuer safety
- Team safety
- Bystander safety
- Patient care
Performing the ABC’s

The “Killers”:

- Airway obstruction
- Excessive bleeding
- Shock
Performing the ABC’s

- Nasal Air Passage
- Pharynx
- Larynx
- Trachea
- Lungs
- Bronchus
Performing the ABC’s

Head-Tilt/Chin-Lift Method for Opening an Airway

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>At an arm’s distance, shake the patient by touching the shoulder and shout, “Can you hear me?”</td>
</tr>
<tr>
<td>2</td>
<td>If the patient does not or cannot respond, place the palm of one hand on the forehead.</td>
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<tr>
<td>3</td>
<td>Place two fingers of the other hand under the chin and tilt the jaw upward while tilting the head back slightly.</td>
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<tr>
<td>4</td>
<td>Place your ear over the patient’s mouth, looking toward the patient’s feet, and place a hand on the patient’s abdomen.</td>
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<tr>
<td>5</td>
<td>Look for chest rise.</td>
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<tr>
<td>6</td>
<td>Listen for air exchange.</td>
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<tr>
<td>7</td>
<td>Feel for abdominal movement</td>
</tr>
</tbody>
</table>
Performing the ABC’s

Controlling Bleeding

- Arterial is bright red and spurting
- Venous is dark red and flowing
- Capillary is red and oozing
Performing the ABC’s

Controlling Bleeding

- Direct Pressure
  - Step 1: Place direct pressure over the wound by putting a clean dressing over the wound and pressing firmly.
  - Step 2: Maintain pressure on the dressing over the wound by wrapping firmly with a pressure bandage.
- Elevation
- Pressure Points
  - The pressure points most often used are the:
    - Brachial point in the arm.
    - Femoral point in the leg.
RECOGNIZING AND TREATING SHOCK

Shock is a disorder resulting from ineffective circulation of blood. Remaining in shock will lead to the death of:

- Cells
- Tissues
- Entire organs
Performing the ABC’s

Signs of Shock

- Rapid and shallow breathing
- Capillary refill greater than 2 seconds
- Failure to follow simple commands, such as “Squeeze my hand.”
Performing the ABC’s

Treatment of Shock

- Position patient on back
- Maintain airway *
- Control bleeding
- Maintain normal body temperature
- Avoid rough or excessive handling

* although patients who are suffering from shock may be thirsty, they should not eat or drink anything initially because they may also be nauseated
CHAPTER 1
DISASTER FIRST AID INTRODUCTION

This chapter will cover the following topics:
- Introduction: The basic concepts of providing disaster first aid and the equipment required to safely respond to medical emergencies during disaster conditions.
- Burn Injuries: How to evaluate and treat burns.
- Airway, Breathing, and Circulation (ABC): How to maintain ABC in a casualty.
- Wound Occlusion: How to control bleeding from wounds.
- Traumatic Shock: How to recognize and treat traumatic shock.

CHAPTER 2
DISASTER TRAJECT Operations

This chapter will include the following:
- Triage: The process of triage and how to safely triage disaster victims.
- Disaster Medical Treatment Area: How to establish the area, triage functions, and the proper way to treat patients in the area.

CHAPTER 3
PATIENT EXAM AND INJURY TREATMENT

This chapter will include the following:
- Patient Evaluation: How to perform a head-to-toe patient evaluation to identify and treat injuries.
- Basic Injury Treatment—How To:
  - Treat and cleanse wounds.
  - Treat and bandage specific injuries.
  - Treat fractures, dislocations, sprains, and strains.
  - Apply splints to suspected musculoskeletal injuries.