PIER: Preventing Injury

Public Information, Education, and Relations for EMS

Injury Prevention Modules
PUBLIC INFORMATION, EDUCATION, AND RELATIONS FOR EMERGENCY MEDICAL SERVICES CURRICULUM

Injury Prevention Modules

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PUBLIC INFORMATION, EDUCATION, AND RELATIONS FOR EMERGENCY MEDICAL SERVICES CURRICULUM

Injury Prevention Modules

Preface

The PIER Injury Prevention Modules are designed to introduce you as an EMS provider to the knowledge and skills that will help you establish and practice Primary Injury Prevention (PIP). They also will provide you with “real-world” tools to help you plan and implement your PIP practice. Our preference is that you progress through each module in the order they are presented. The five modules progress sequentially and address the following:

Module I: Injury Prevention Basics
defines injury, explains how various factors interact to cause injury, and introduces strategies used to plan and implement injury interventions.

Module II: Personal Injury Prevention for Prehospital Professionals
reviews ways EMS can protect yourselves — before, during, and after a call.

Module III: The Mark of a Professional: EMS as Role Model and Teacher
reemphasizes the important role that superior professional practices, interpersonal skills, and thoughtful use of knowledge play in your function as a role model and teacher of safety.

Module IV: Data Collection and Risk Assessment
provides an introduction to what injury data tells us, what information you should collect, and ways you can use this information to plan and implement injury prevention interventions in your service area or community.

Module V: Strategies for Implementing Effective Safety Coalitions
details ways EMS providers can become proactive advocates for safety. Examples range from trying your hand at injury prevention to becoming actively involved in an existing community-wide safety coalition to forming a new safety coalition in your community.

The role of EMS in injury prevention remains in evolution. Members of this project welcome your feedback on the material.

Acknowledgments

The Project Director thanks the National Association of State EMS Directors for facilitating this project, the National Highway Traffic Safety Administration for funding and support, the PIER Injury Prevention Advisory Group for oversight, suggestions and direction, and Denise Hankins for coordination and assistance. Jane Ashford deserves special acknowledgment and appreciation for her expertise and non-stop hard work.
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Injury Prevention Basics

Motor Vehicle Crashes are the leading cause of death for ages 1 through 34.

Injury prevention depends upon our ability to analyze the causes of injury, then think up, test, and execute measures that successfully prevent or counteract the causative factors. Emergency Medical Services (EMS) professionals should be able to recognize these factors and appreciate their significance in order to identify ways to protect people from injury. The EMS role also involves helping people understand why and how preventive measures can help keep them injury free. This module describes basic concepts about factors that cause injuries and influence their severity.

Goal
To familiarize EMS professionals with the factors that cause injuries and influence their severity.

Content Sections
A. What Is an Injury
B. How Energy, People, Agents, and Environments Combine to Cause Injury Events
C. Core Strategies for Injury Prevention Interventions

On completing this module,
EMS professionals will understand the basic principles of injury prevention and be able to
1. List the five leading causes of injury deaths.
2. Describe the extent of the intentional injury problem.
3. Name and describe four basic energy principles that affect the severity of injury.
4. Define surveillance and list four reasons why it is considered the basis for injury prevention interventions.
5. List four strategies used to promote good or discourage risky behaviors.
6. Identify the major steps to implementing injury prevention interventions.
7. Define what a safety coalition is and list three advantages to having one in your community.

Instructor Note:
Much of the statistical information in this module is available on the Web. Information about both national and individual state’s injury problems can be printed from the sources listed. If possible, use information pertinent to your participants’ states.
Outline: Module I

Section A: What is an Injury?
Physical Injury is caused by an external force, energy.
Injury is categorized in three ways.
   External Cause
   Manner/Intent
   Severity
How big is the problem?
   Comparing Causes of Death
   The Costs of Injuries

Section B: How Energy, People, Agents & Environments Combine to Cause Injury Events
Energy is the mechanism of injury events.
   Five Types of Energy
   Six energy principles affect the severity of injury.
Factors Affecting the Safe Use of Energy
   Human, Agent and Environment
   The Demands of Tasks
   Circumstantial Variables

Section C: Core Strategies for Injury Prevention Interventions
Surveillance: Collecting and Analyzing Data
   Surveillance is used to . . .
   EMS professional play a crucial role . . .
A Systematic Approach to Implementing Injury Prevention Solutions
   Formal Injury Prevention Efforts
   Steps to Primary Injury Preventions
   Safety Coalitions
Strategic Approaches to Promoting or Discouraging Behaviors
   Approaches
   The BEST Method?
   A Tool: The Haddon Matrix

Reprint of Using Science to Prevent Injuries:
Dissecting an Event Using the Haddon Matrix
by Dave Short. (Reproduced with permission of JEMS
[24(9):68, 70, 72-74.], copyright September 1999,
Jems Communications, PO Box 2789, Carlsbad, CA 92018)

Conclusion: What are your next steps?
Further Reading
References
SECTION A

What Is an Injury?

Webster’s Dictionary defines injury as, “the act or result of inflicting on a person or thing something that causes loss, pain, distress, or impairment.” The entry goes on to say, “While we first think of injury as damage inflicted to a person’s body by an external force, we need to keep in mind that the term also applies to the impairment or destruction of right, health, freedom, or soundness, or loss of something of value (‘mental or emotional upset is just as truly an injury to the body as a bone fracture, a burn, or a bacterial. Gray b 1886.’)” The main focus of this discussion is physical injury.

Physical injury is caused by an external force, energy. Physical damage to human tissues occurs when
- energy, the external force, is delivered in excess of the receiving person’s ability to withstand it (the threshold), or
- when a normal and necessary transfer of energy is blocked (e.g., a person’s inability to get oxygen in a drowning incident).

Injury is categorized in three ways.

1. External Cause
   The external cause of injury is the type of incident that caused the injury (e.g., fall, drowning, motor vehicle crash). The external cause of injury is recorded in medical records using E codes. Because they identify how the injury occurred (e.g., fall), E codes are especially important to injury prevention and data collection.

2. Manner/Intent
   An injury is either unintentional or intentional. Unintentional injury occurs without intent to harm. Intentional injury is caused by purposeful human action and usually refers to some type of violence, either self-inflicted or inflicted by another. Almost any type of injury can be caused by a willful act, but certain types are usually thought of as fitting into either one category or another.

   A word of caution. It may be difficult to determine intent. While categorizing intent is useful for assembling, sorting, and interpreting data—to pronounce an injury as the result of an intentional act has legal ramifications and infers liability. Therefore, official records of injury events, including narrative accounts, must be careful to record objective facts rather than subjective conclusions.

   “Valid Injury Categories” are provided on the following page.

Unintentional Injuries
- Motor vehicle crashes
- Falls
- Poisonings
- Fires and burns
- Drowning
- Aspiration and choking
- Sports injuries
- Occupational injuries

Intentional Injuries
- Suicide and attempts (self-inflicted violence)
- Homicide (fatal violence inflicted by another)
- Assaults (nonfatal violence inflicted by another)
- Rape and sexual abuse
- Abuse (spousal, child, elder)
### Valid Injury Categories

Valid Mechanism/Cause and Manner/Intent combinations are designated with an ‘X’

(Reproduced from http://webapp.cdc.gov/sasweb/ncipc/validinj.html)

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<th>Mechanism/Cause</th>
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<th>Homicide</th>
<th>Homicide and Legal Intervention</th>
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PIER Injury Prevention Curriculum: Module I: Injury Prevention Basics
3. Severity
Injuries range from minor (inconsequential scrapes and bruises) to the very severe that result in permanent disability or death. One way researchers categorize the severity of injury is by the type of medical attention required for proper treatment: morgue, trauma center, hospital, emergency department, physician’s office, or self-care. Severe injuries, though much less frequent, result in higher costs.

How big is the problem?
In 1998, injury ranked as the fifth leading cause of death in the United States and is the leading cause of death for people between 1 and 34 years of age. But deaths are only the tip of the injury pyramid. National estimates calculate that for every person who dies, 16 people survive their injuries but may require extended hospitalization, and 381 seek outpatient treatment in emergency rooms or urgent care facilities. Even larger number of injuries are treated at home or not at all.

Comparing Causes of Death (mortality)
We hear about deaths from heart disease, cancer, and strokes. Why is it that we hear so little about injury fatalities when injury is the primary cause of premature deaths in the US?

Injury Deaths Compared to Deaths from Other Causes
The relationship of unintentional and intentional injury deaths to other causes of death can be better understood from the table “Ten Leading Causes of Death, United States, 1998,” provided on the following page.

Among elderly people, the rate of hospitalization for injuries is significantly higher than the rate for all other age groups.

See WISQARS for up-to-date data
http://www.cdc.gov/ncipc/wisqars/

WISQARS, the CDCs National Center for Injury Prevention and Control’s interactive system, provides customized injury-related fatal and nonfatal data. Most of the statistical information in this module comes from this source.
## 10 Leading Causes of Death, United States

1998, All Races, Both Sexes

<table>
<thead>
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<th>Rank</th>
<th>Cause</th>
<th>All Ages</th>
<th>65+</th>
<th>55-64</th>
<th>45-54</th>
<th>35-44</th>
<th>25-34</th>
<th>15-24</th>
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<td>Short Gestation</td>
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<td>Pneumonia &amp; Influenza</td>
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### Notes
- Produced by: Office of Statistics and Programming, National Center for Injury Prevention and Control, CDC.
- Data Source: National Center for Health Statistics (NCHS) Vital Statistics System for numbers of deaths.
In 1998, a total of 146,303 people lost their lives due to injuries. Unintentional injuries resulted in 97,835 deaths (66.8%). Intentional injuries were responsible for another 48,468 deaths (33.2%).

Unintentional injuries are the leading cause of death for people between 1 and 34 years of age and the second and third leading cause of death for those between 35-44 and 45-54 respectively. Notice that, though unintentional injury was only the seventh or eighth cause of death for people 65+, these deaths (32,975) accounted for 33.7% of all deaths from unintentional injuries. More than twice as many people 65 and over died than in any other age group.

Unintentional Injury Deaths Compared
Relationships between different causes of unintentional injury deaths can be extracted from the 1998 United States Unintentional Injuries and Adverse Effects bar graph provided on the following page.

This graph demonstrates clearly that motor vehicle crashes (MVC) were the leading cause of death by injury—a total of 42,337 people in 1998. A look at the unintentional and intentional injury bar charts under each age group reveals that MVC was the leading cause of injury death for those between 1 and 74 years of age. MVC was second for those under 1 year and those between 75 and 84 years; third for those 85 years and over. A whopping 73.6% of the 13,349 deaths in the 15-24 age group were the result of MVC. Unintentional suffocation is the leading cause of death for infants under one year. Falls is the leading cause of death for those 75 and over.

For Suicide/ Homicide graphics go to WISQARS “Injury Mortality Reports,” http://www.cdc.gov/ncipc/; choose Fatal Injury Reports, then Mortality Reports.

Suicides

<table>
<thead>
<tr>
<th>1998, United States</th>
<th>Suicide Deaths and Rates per 100,000</th>
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<tbody>
<tr>
<td>All Races, Both Sexes, All Ages</td>
<td>E950–E959</td>
</tr>
<tr>
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<table>
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<tr>
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<th>Suicide Firearm Deaths and Rates per 100,000</th>
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Homicides

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### 1998 United States Unintentional Injuries and Adverse Effects

All Ages, All Races, Both Sexes  
Total Deaths: 97,835

<table>
<thead>
<tr>
<th>Cause of Death</th>
<th>Number of Deaths</th>
<th>Percentage of Deaths</th>
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</thead>
<tbody>
<tr>
<td>MV Traffic</td>
<td>42,191</td>
<td>43.1%</td>
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<tr>
<td>Fall</td>
<td>12,594</td>
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<tr>
<td>Poisoning</td>
<td>10,801</td>
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<tr>
<td>Unspecified</td>
<td>7,118</td>
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<tr>
<td>Suffocation</td>
<td>4,585</td>
<td>4.7%</td>
</tr>
<tr>
<td>Drowning</td>
<td>4,406</td>
<td>4.5%</td>
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<td>Adverse Effects</td>
<td>3,504</td>
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<td>Fire/burn</td>
<td>3,363</td>
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<tr>
<td>Other Transport</td>
<td>1,903</td>
<td>1.9%</td>
</tr>
<tr>
<td>Other Spec., classifiable</td>
<td>1,597</td>
<td>1.6%</td>
</tr>
<tr>
<td>Natural/ Environment</td>
<td>1,522</td>
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</tr>
<tr>
<td>Struck by or Against</td>
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<tr>
<td>Machinery</td>
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<tr>
<td>Firearm</td>
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<tr>
<td>Cut/pierce</td>
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<tr>
<td>Other Spec., NEC(^N)</td>
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<tr>
<td>Overexertion</td>
<td>14</td>
<td>0.0%</td>
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</table>

Total Deaths: **97,835**

\(^N\) Not Elsewhere Classifiable.

**Produced by:** Office of Statistics and Programming, National Center for Injury Prevention and Control, CDC.  
**Data Source:** National Center for Heath Statistics (NCHS) Vital Statistics System for numbers of deaths.
Nonfatal Injuries (morbidity)
The numbers for nonfatal injuries are many times greater than those of injury deaths. Nonetheless, nonfatal injuries result in individual anguish and monetary expense to the injured person, to the family, and to society. Injury also exacts a toll from the community as a whole, especially if the injured person cannot perform normal tasks or jobs while recuperating from the injury.

The Costs of Injuries
The financial, social, and psychological cost of injuries to individuals, to families, and to our communities (both individually and collectively) is staggering. The financial burden includes direct costs (medical care and rehabilitation) and indirect costs (lost wages, productivity losses to the nation).

Some of these costs are more easily measured than others. Direct costs associated with death and estimated costs related to Years of Potential Life Lost (YPLL) due to untimely death can be measured. Measuring the costs associated with nonfatal injury is more difficult.

Who pays?
The financial cost of injury is estimated at more than $244 billion per year, which is an increase of 42% in the last decade.

- Private sources (e.g., insurance) pay about 72% of the cost of injuries.
- Public sources (federal, state, and local) pay about 28% of the cost of injuries.
- The federal government pays about $12.6 billion annually in medical costs and $18.4 billion in disability and death benefits from injuries.

(Quoted from http://www.cdc.gov/ncipc/about/about.htm, March 14, 2000)
Each year, about 1 million Americans with a traumatic brain injury are treated and released from an emergency department. Another 230,000 are hospitalized and survive; 80,000 are disabled; and 50,000 die. (http://www.cdc.gov/ncipc/about/about.htm, March 14, 2001).

Injury treatment depends on understanding the event that caused the injury. EMS curriculums and Hazmat courses teach professionals to anticipate certain kinds of injuries and help them prepare to treat these injuries quickly and appropriately—after the injury has occurred.

Injury prevention also relies upon understanding past injury events, but its main purpose is to devise methods and strategies to avoid these injuries altogether. Injury biomechanics research explores the mechanisms of physical and physiological responses to mechanical forces. Engineers and others use the information gained to design safer environments and products.

Understanding human responses to mechanical forces is equally useful to EMS and other injury prevention professionals because it helps them explain to the public and to policy makers how to use and manage energies correctly in order to prevent injury.

Injuries are not “accidents.” An accident is an “unexpected and undesirable event.” Accidents have been long thought of as unpredictable, uncontrollable events—unexpected and undesirable. Injuries may be unplanned, but we are able to anticipate their occurrence, and we can act to prevent them.

Energy is the mechanism of injury events.
Injury occurs when external force from one or more of an energy type is delivered in a quantity, by a method, or under circumstances that overwhelm the receiving person’s ability to withstand it. Injury also occurs when a normal and necessary transfer of energy is blocked (e.g., a person’s inability to get oxygen in a drowning incident).

Because each type of energy has distinct properties (operative factors), each has its own distinct way of overwhelming a person’s ability to withstand its force.

Five Types of Energy
Five types of energy cause injury: kinetic, thermal, chemical, electrical, and ionizing radiation.

Kinetic
Often called mechanical energy, kinetic energy is actually the energy contained in a moving entity. Kinetic injuries result from collisions—being hit by or thrown up against something. There are three kinds of collisions: vehicle collision, body collision, and organ collision.

Thermal
Thermal energy is caused by heat, or the lack of heat. Injuries result from the ability of heat or cold to arrest tissue processes. Extreme temperatures coagulate tissue proteins.

Chemical
Injuries caused by chemicals, including drugs, vary according to the action of the substance involved. To do harm, they must be ingested, inhaled, or applied to the skin.

**Electrical**

Electrical energy causes injuries in two ways: by burning the body where contact is made or by disrupting the body’s electrical network.

**Ionizing Radiation**

Energy from radioactive materials also attacks body tissues, altering their structures and functions. Certain tissues are more sensitive to radiation than others.

**Six energy principles affect the severity of injury.**

Energy does not cause injury until the agent carrying it comes into contact with something else. Harnessed energy serves many useful purposes, but the safe use of energy requires that the amount of energy delivered be less than the threshold defined for each type of energy.

Mass and velocity are primary contributors in injuries caused by kinetic energy. Weight counts, but speed counts more.

1. **Mass:** The amount of energy measured by its weight. Less is better. The damage inflicted by energy is directly related to the mass (weight in pounds). The more massed energy, the more damage. Reduce the mass and the injury will be less severe. A ping pong ball is the same size as a golf ball, but the golf ball weighs more—has more mass—therefore, has the potential to cause more damage.

2. **Velocity:** The speed at which massed energy is released. Slow is better. The damage inflicted by energy is also directly related to velocity (speed) of the energy. Assuming the mass (weight) remains the same, the more speed, the more damage. For instance, a golf ball tossed to another player is unlikely to cause damage; the same ball propelled by a golf club into a spectator will result in an injury.

   Assuming the specific mass (amount) of the energy stays the same, principles three through six also affect the degree of severity energy can cause.

3. **Dispersion:** The amount of space over which delivered energy is spread. More is better. Droplets of water with a temperature of 212°F delivered via a misted spray with a four-foot radius, will do less harm than the same amount of 212°F water delivered in a one-inch stream.

As Mistovich, et al (2000) explains, the formula for calculating kinetic energy “illustrates that as the mass of a moving object is doubled, its kinetic energy is also doubled... but [velocity is] four times as harmful—because the factor of velocity is squared” (531).

**Kinetic Formula**

\[
\text{Kinetic Energy} = \frac{1}{2} \text{mass} \times \text{velocity}^2
\]
4. **Separation**: A barrier between released energy and the object or person at risk. More is better. Placing a barrier between the energy and the contact point can prevent or reduce injury. How much reduction depends on the quality of the barrier—its ability to dampen the effect of the energy. Distance from a contact point also separates energy, because travel saps the strength from energy.

5. **Duration**: The amount of time a person or object is exposed to the energy. Shorter is better. The less time someone is exposed to extreme heat, chemicals, electricity, or radiation, the better.

6. **Inherent Characteristics of Tissue**: The susceptibility of tissue to the energy. More resistant is better. A ten-year old with supple muscles and strong bones is much less likely to fall and break her hip than an 80-year-old with osteoporosis. The severity of damage inflicted in a motor vehicle crash depends on what part of that person’s body hits something—his thigh, breaking a bone; or his head, snapping his head back and severing his spinal cord. Bones are more resistant than nerve tissues and they grow back together; spinal cords don’t. Certain environments also can make tissue more or less resistant to energy. For instance, dry skin is much more resistant to electrical energy than wet skin.

**Factors Affecting the Safe Use of Energy**

Four “factors” combine to determine whether energy can or will be used safely. The first three are the human (host) operating the energy; the agent (equipment or product) being operated, which delivers the energy; and the environment (physical and social) in which all are operating. The demands of the task being performed is the fourth factor.

**Human, Agent and Environment**

Together, the three are called The Epidemiological Triad. The model at the right (based on the Public Health Model for disease control) was created to demonstrate how these three factors interact to cause health problems. How well these three factors are able to work together to complete the task at hand determines whether the energy will be used safely.

**Human characteristics influence people’s ability to use energy safely.**

Individual characteristics influence a person’s ability to operate different energies and agents in various environments safely.

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**Further Reading**

At the end of this module is a list of texts that cover the properties of energy in detail. Most of this discussion was taken from Waller.

**Vector or vehicle?**

Both terms have been adopted by injury prevention experts from health professionals’ terminology meaning carrier or agent of transmission.
Physical Characteristics impact a person’s ability to perform safely. These include range of motion, strength and stamina, as well as speed, balance, and coordination. Age, sex, and health, among other factors, influence physical ability.

Psychological Characteristics influence a person’s ability to receive and interpret information correctly, make rapid judgments, or take appropriate action. These include intelligence, experience, education, short- and long-term memory, attitudes, and belief systems.

Agent characteristics influence people’s ability to use energy safely.
Agent routinely refers to an object that delivers the injury-causing energy. The agent may be called a vector or vehicle. It may be referred to as, “the mechanism of injury” or as the “external cause of injury.”

Some examples of vectors are
• automobile, bicycle, motorcycle, or dashing deer
• knife or gun
• medicine, cleaning products, industrial chemical, powder or gas
• falling hammer or falling person
• lightning bolt
• nuclear materials

Product design can help make agents more likely to be used correctly; for example, shower valves that automatically compensate for sudden decreases in the flow of cold or hot water, thus maintaining an even temperature. Design can also make products less likely to be used by persons not competent to operate them; for example, stoves with controls placed out of the reach of small children.

Environmental characteristics influence people’s ability to use energy safely.
Physical environments include the locations (highway, building, factory, playground, home) and conditions that affect surfaces (flat or sloped, wet or dry, slick or rough, loose or secure) or that affect visibility (fog, rain, obstructions) in which the task is performed.

Cultural and social environments influence our beliefs. We demonstrate our beliefs and values though our behaviors. Thus the treatment of women, child discipline, acceptable methods of defending oneself, drinking patterns, driving age policies, concealed weapons laws, and a whole host of other behaviors are influenced by our cultural environment.
The Demands of Tasks
Different tasks demand different levels of functioning from humans, from agents, and from the environments in which they operate. A mismatch between the requirements of the task being performed and any or all of the following can result in injury:

- the abilities of the human performing the task
- the capabilities of the object or product containing the energy
- the characteristics of the environment in which the human and/or the agent are operating

Humans must be capable of performing tasks safely.
To do so they may need:

- extensive learning, judgment, intelligence or all three
- the use of several senses simultaneously
- the ability to pay attention to multiple signals at one time
- quick action, dexterity, strength, balance, or stamina
- experience

We should keep in mind that our abilities do vary. All of us —deprived of sleep, distracted by worries, or sick—have an occasional bad day. The disruption in performance caused by these and other variables may be minor or severe; short-lived or persistent.

Agents also must be capable of performing tasks safely.
We expect agents to function consistently. We feel we have a right to demand that products live up to their promises—advertised or just assumed. But products have limitations, too. First, capabilities vary by manufacturer—the load capacities of tires, for instance. And wear and tear rates vary.

Products also may have flaws: Tires on vehicles or O rings on rockets. Many devices manufactured to make our lives more convenient, comfortable, and even safer can have unexpected and undesirable effects. Products also can be overwhelmed by unsuitable environments. Windshield wipers, for instance, are of little use in a hurricane.

Environmental factors also influence our ability to perform tasks safely.
The weather is often a factor in incidents that cause injuries, though not always. Auto crashes may result from inadequate or missing warnings about roadway or traffic conditions; poorly placed, poorly lit, or confusing directions; even subtle differences in materials used to color signs or build road surfaces.

Cultural factors may play a role as well. Experts have observed that teen drivers misjudge the task or their capabilities when driving with their peers. And legion are the numbers of usually sane adults who believe that aggressive driving is an appropriate method to “teach someone a lesson” or vent frustrations.
Circumstantial Variables

Circumstantial variables are those individual characteristics and behaviors for each factor that affect the safe use of energy—human, agent, environment, and task demands—present before, during and after the moment an injury hazard is encountered. For each factor, the circumstantial variables change—week to week, day to day, moment to moment. The possible combinations are infinite and are different not just between people, but also each time a hazard is encountered.

To illustrate, think of the components in the Epidemiological Triad as constantly turning wheels. Inside each wheel are pie-shaped sections, one for each possible circumstantial variable—good and bad. Each pie-shaped section touches the rim of its wheel. The three wheels turn at different rates, so different characteristics interact (meet) at different times and in different combinations. Some combinations predict that no injury will occur; some predict disaster.

° ° °
SECTION C
Core Strategies for Injury Prevention
Interventions

Prevention strategies concentrate on changing behaviors and task demands. They seek to either promote a circumstantial variable (or a set of variables) known to increase our ability to avoid a specific injury or to discourage variables known to contribute to injury events. Consequently, to implement prevention, we first need to know exactly what circumstantial variables are consistently present in similar injury events. Second, we must create a plan that will guide us in assembling and deploying all the elements that will help effect the change we have determined is necessary. Third, we must employ various methods to change the behaviors of the contributing factors.

Three key strategies help us focus and effectively use resources and energies. One simple tool can help us identify both the contributing variables for each factor and intervention strategies.

Strategies
- Surveillance
- A Plan: The Systematic Approach to Implementing Prevention Solutions
- Strategic Approaches to Promote or Discourage Behaviors or Tool
- The Haddon Matrix

Surveillance: Collecting and Analyzing Data
Injury surveillance systems form the core of evidence-based prevention interventions. Surveillance is the process of gathering and analyzing information (data) about and monitoring the incidence rates, causes, and circumstantial variables of fatal and nonfatal injuries.

Collecting Data is the process of recording the causes of deaths as well as the causes and severity of nonfatal injuries, their associated costs, and their circumstantial variables—those attributes of the humans, agents, environments, and task demands present before, during, and after injury events.

Analyzing Data is the process of sorting, categorizing, counting, and comparing data that further defines injury problems, targets populations at risk, and identifies risk factors associated with specific injury events.

Surveillance is used to
- Define the extent of a problem or problems by counting the number of deaths, the number and severity of nonfatal injuries, and the costs.
- Provide a baseline against which the results of intervention efforts will be measured.
- Identify a new or potential injury problem and the population at risk.
• Learn the risk factors associated with the humans, agents, environments, and task demands involved in injuries.
• Monitor trends: increases, decreases, or the stability of an injury problem over time.
• Prioritize intervention efforts.
• Track (evaluate) the success or failure of intervention efforts, both existing and new, to determine if prevention strategies result in increased use of safety measures and/or a reduction in injuries over time.
• Determine research priorities.

Injury surveillance does have limitations. Causal factors for unintentional injuries are not as well defined as you might think, and even less is known about the causes of intentional injuries. Variations in injury documentation, collection systems, and the coding of data make it difficult to sort and compare data internationally, nationally, or even within a single state. Even so, without the information that surveillance provides, injury prevention efforts would be little more than stabs in the dark.

EMS professionals play a crucial role in gathering information about injuries.
As the first medical personnel on a scene, EMS professionals are eyewitnesses to information that may be unavailable to other medical personnel or to injury prevention statisticians—unless EMS professionals document it. Additionally, EMS professionals who wish to help identify and solve injury problems in their communities can use surveillance to
• Determine the current state of the problem and provide a baseline against which the results of intervention efforts will be measured.
• Identify the population at risk and the contributing factors, or circumstantial variables, that must be changed in order to prevent that injury.
• Track (evaluate) the success or failure of intervention efforts to determine if those measures actually result in increased use of safety measures and/or a reduction in injuries over time.

A Systematic Approach to Implementing Injury Prevention Solutions
We all practice injury prevention—informally. We look at someone teetering on a rickety ladder and reaching way too far out to clean the rain gutters and know a fall is likely. If the someone happens to be a member of our family, we intervene. But if the someone is our neighbor, we may mutter to ourselves, “That’s an accident waiting to happen,” and move on. One advantage to formal injury prevention is that it allows and encourages us to speak to people we don’t know. Another advantage is that it points the way to intervening effectively.
Formal Injury Prevention Efforts
Unlike the hit or miss of informal efforts, formal injury prevention uses a systematic approach based on the Public Health System Model for disease control. Adapted to injury problems, this model identifies the kinds of injuries that are occurring, the people being injured and the strategies most successful at preventing these injuries. This methodical approach also helps identify the underlying circumstances that put the general public or specific populations at risk. The following approach combines elements from four separate schemes, all based on the public health model. (All four are detailed in Appendix B.)

Steps to Primary Injury Prevention Interventions
1. Define the problem: Collect and analyze data.
   - Create a community profile, detailing the ages, racial and economic circumstances of the people living in a community.
2. Intervene: Design effective programs.
   - Plan
   - Implement
   - Evaluate (the results, the process, and the plan)
   - Revise to improve
   - Replicate effective programs
3. Share your results.
   - Inform the media and the community.
   - Share the plan, implementation, evaluation, and revisions with colleagues at professional workshops and conferences.
   - Publish in journals, if possible.

As a part of intervention, current public health methods encourage assessing the readiness of the community to address the problem. If the community is not ready, the initiative—no matter how well planned—will probably fail to be effective.

Each of these steps may involve multiple tasks and actions. EMS agencies may use all or parts of these steps on their own to implement programs or projects within their service area. In many communities, however, EMS injury prevention efforts have been more effective when they are integrated with those of the larger community.

Safety Coalitions
Wherever possible, EMS professionals should join a community safety coalition, such as the National Highway Traffic Safety Administration’s “Safe Communities.” These multidisciplinary community initiatives focus efforts on planning, implementing, and evaluating community-wide injury prevention solutions.
Coalitions recruit partners from a broad base of citizens who have a stake in injury prevention. Their efforts foster coordination and collaboration and better position interested citizens and professionals to effect public policies that help prevent injuries. Because joint efforts reduce redundancy and competition, these groups have the added advantage of being able to leverage resources, such as funding and in-kind donations, paid and volunteer staff, technical support, and training opportunities.

Whether you are part of a well-organized, well-funded EMS network fully involved in a statewide effort, a mega-metropolis safety coalition, or just the Arapahoe EMS Volunteers, the steps to primary injury prevention solutions are the same. The key is to approach the problem systematically, one battle at a time, keeping in mind the needs and readiness of your community, the resources available to you, and the information you will need to plan and implement an effective intervention and to discover if and why it does or doesn’t work.

Strategic Approaches to Promote or Discourage Behaviors
An intervention attempts to change an action, attitude, or behavior of a person at risk, the characteristics of the agent he or she is using, the characteristics of the physical or social environment in which the injury is most likely to occur, and/or the demands of the task. Whatever your injury problem, a planned intervention program will use one or more of the following three approaches.

Approaches
All approaches employ one or more of these general strategies:

- Persuade people at risk of injury to alter their behavior for increased self-protection—for example, to use seat belts or install smoke detectors.
- Require individual behavior change by law or administrative rule—for example, by laws requiring seatbelt use or requiring installation of smoke detectors in all new buildings.
- Provide automatic protection by product and environmental design—for example, integrated child passenger restraints in minivans or built-in sprinkler systems that automatically extinguish fires.

(Injury in America, quoted by Christoffel & Gallagher, 130-131)

Active and Passive Strategies
Active strategies ask people to be willing (and remember) to take some action to protect themselves. Passive strategies provide automatic protection.
The Six Es: Approaches in Action

The original Es are education, engineering, and enforcement. Recent authors have added other Es: environmental modification, enactment, and economics.

**Education:** Attempts to persuade people to change their behavior, encouraging them to act more safely through instruction, demonstrations, safety checklists, ads and stories in the media, and other techniques intended to alter personal behavior as well as public opinion about what is safe behavior and what is not.

**Engineering:** Provides automatic protection through the design of products, such as the switch to “softer” material for car interiors, the installation of air bags, or adding guardrails to roadways.

**Environmental Modification:** Provides automatic protection by changing the environment, such as raising a stop sign higher and removing tree limbs that make the sign hard to see.

**Enactment:** Encourages changes in an individual’s behavior through legislation—by passing laws and regulations requiring seatbelt and child passenger restraint use or the installation of smoke detectors.

**Enforcement:** Promotes changes in an individual’s behavior by insisting that people obey the enacted laws; examples include surveillance checkpoints and the issuing of tickets for non-compliance.

**Economics:** Provides financial incentives and disincentives to reinforce safe behavior, such as discounted or free bicycle helmets or price breaks from insurance companies for not smoking and for safe driving records.

The BEST Method?

**Automatic Protection.**

A great many people act only when they must. Witness the number of people who miss the fact that their car’s inspection sticker has expired or forget to change the batteries in their smoke alarms. Automatic or passive measures require no motivation, no remembering, no overt action by the consumer.

Other strategies should not be ignored, however. Economics become a crucial factor when recommended measures require money to implement them: no amount of persuasion will allow parents who do not have the money for food to purchase a child restraint device. Economics also offer the opportunities to provide incentives or dis incentives to act to prevent injury: fines, points on your license, or reductions in insurance rates for drivers completing a safe driving course, for instance.
In other cases, high-risk situations may not lend themselves to automatic measures. How, for instance, can we automatically place helmets on children’s heads before they go biking or skating? Enacting, then enforcing laws that require children to wear helmets is the next best choice. But putting those helmets on correctly requires educating both children and their parents. And education remains the most effective approach to preventing babies from suffocating in their beds.

Consequently, the best intervention programs are usually a combination of all six Es: education, engineering, environmental modification, enactment, enforcement, and economics.

**A Tool: The Haddon Matrix**
The Haddon Matrix is a simple tool that helps identify both the factors that contribute to an injury event and possible strategies which might prevent similar injuries in the future.

### How the Haddon Matrix Works
Dr. Haddon divided injury events into two categories: phases and contributing factors. Phases are pre-event, event, and post-event. Contributing variables—or factors—are human (host), agent or vector/vehicle, physical environment, social environment (cultural, political, and/or economic). Contributing variables are listed in the box that corresponds with the proper phase.

The structure of the matrix allows us to identify more clearly a variety of circumstantial variables associated with a given injury and show how these variables occur over time. The matrix makes it easier to discern the points at which we can intervene. And, the grid is also used as a tool for identifying possible intervention countermeasures and strategies that may prevent similar injuries from occurring in the future. The following article, Using Science to Prevent Injuries: Dissecting an Event Using the Haddon Matrix, illustrates its usefulness.
Using Science to Prevent Injuries:  
Dissecting an Event Using the Haddon  
Matrix

by Dave Short

Editor’s Note: New opportunities are emerging for EMS providers to be involved in preventing injuries beyond the traditional educational role. However, to be most effective EMTs and paramedics need to have a basic understanding of the science and strategic analysis involved with injury prevention. The following case study takes the reader through such a process and introduces them to the Haddon Matrix, a valuable tool for understanding the causes of “accidents.”

The call: “Just another drunk driver”

It’s 0330, and your paramedic unit has just returned from another fatal crash on the three-mile section of highway known as “The Body Count.” It was a typical single vehicle/single occupant, drunk driver and rollover crash. You’ve seen plenty of them—highway speeds too fast for road conditions, narrow and poorly maintained shoulders, sparse signage, poor visibility, sloping embankments, curves and downhill grades all make this section of road a horror to drive. You often remind your own family to drive cautiously there.

The crash occurred when a young man in a red Suzuki Samurai slid off the roadway on a curve. The vehicle rolled multiple times, and the driver was ejected. He was found immediately by an eyewitness, who delivered first aid. EMS and rescue crews arrived quickly and worked efficiently to package him and bring him up to the road. His heart was still beating when your unit arrived on scene, but he had sustained obvious cervical spinal damage, was unresponsive and not breathing. Rescue and medical care were excellent, but the man died en route to the hospital of spinal shock and complications.

You figure that another drunk driver is dead. Obviously, drinking and driving doesn’t make sense, but you wonder if he deserved to die for his stupidity. Conflicting emotions and thoughts arise. You feel angry about another senseless death in your ambulance, but you also feel relief that he didn’t take out someone else’s family when he crashed. Frustrated, you chalk up another one to The Body Count.

Cluster sites

The Body Count is a name for a fatal injury “cluster site.” Similar injury incidents have happened along this stretch of road, in similar ways, to others among the local population. When you identify a cluster site, you can be sure that something causes people to die there—and it’s not just drunk driving. These deaths are usually preventable.

Within this common scenario are many variables that can lead to effective strategies to prevent similar crashes (injury prevention) or to reduce the severity and amount of injuries (injury control). When we look at this crash only in terms of placing blame, we may never see other obvious factors that contribute to the event or its severity. And if we think that our only option is upgrading EMS, we’ll miss other opportunities while we wait for luck to deliver a survivable crash. If, however, we suspend judgment and take the larger view, we may find strategies that can reduce the damage or altogether prevent crashes like this one.
The rest of the story
The driver, Paul, was a 28-year-old, loving father of two young children. He was coming home after a stressful Friday night swing shift. He stopped at his favorite bar, had a few beers and stayed until closing, relaxing with his friends. Police officials calculated that at 0130 his alcohol level was .07. When he heard, “Last call for alcohol, everybody order up!” he ordered a last beer along with others in the bar and tossed it down too quickly as the bartender shouted, “Drink up; it’s time to go!” Fifteen minutes later, when the bartender herded everyone into the parking lot and locked the doors, Paul’s blood alcohol level was .09. Paul sensed he shouldn’t be driving, but he had to get home and there was no other ride available. He wasn’t in the habit of using seatbelts and didn’t start that night.

He was driving the speed limit (55 mph) along the dark highway when a curve seemed to appear without warning. His reflexes were impaired, and he took too long to brake. When he did, the vehicle skidded to the outside. Once the tires hit the grassy shoulder, the vehicle went sideways and Paul’s unrestrained body was thrown across the seat, away from the steering wheel. This caused him to lose all control. The tires dug in and the SUV’s high center of gravity caused it to tip and roll violently down the mild slope. The vehicle turned a complete revolution in the air, impacting on the passenger side. Paul was hurled into the passenger door panel, and his head smashed the glass. As the vehicle continued to roll, centrifugal force pinned Paul against the door. The unlocked door sprung open, and he was launched over the top of the vehicle with such force that one of his shoes flew off.

He landed on his head and neck against a tree 50 feet away, crushing his cervical spine. The eyewitness who arrived moments later found him unconscious, with no respiration. She gently manipulated Paul’s neck into an airway position, later saying it had felt like a bag of poorly mashed potatoes.

Crash factors
By looking at all the variables before, during and after the crash, we often find alternative methods of reducing mortality and morbidity. Deciding on the best strategy is then a matter of choosing the one that targets a specific hazard, is effective for the entire population and automatically provides protection, requiring no action from the population to be protected.

Based on this information, how many different factors contributed to the crash and the driver’s death? What strategies would protect all users of this section of the highway? When does the strategy take effect: before, during or after the crash? Would driver education or behavior modification [have] been effective? Would tougher drunk driving laws have helped? Would adding more paramedic units to reduce response time or giving community CPR classes help in the next event of this type?

The Haddon Matrix
In the 1920s motor vehicle crashes became the leading cause of injury deaths in the United States and have remained so ever since. Prior to 1966, American auto manufacturers maintained that people were the sole cause of “accidents” and by inference that all efforts to reduce fatalities from motor vehicle crashes should focus strictly on the drivers. They conveniently overlooked fatalities caused by unrestrained drivers and passengers who were frequently impaled on steering columns, decapitated by unsafe windshields and whose bodies were crushed and pierced by hard interior surfaces.

In 1966 Congress enacted the Motor Vehicle Safety Act, creating the federal bureau that became the National Highway Transportation Safety Administration (NHTSA). William Haddon Jr., MD, was appointed its first chief, with the mandate to develop automotive safety standards. Haddon and his colleagues were the first to successfully apply the scientific methods of injury epidemiology to the problem of motor vehicle crash fatalities. Epidemiology is the branch of medicine that deals with the study of the causes, distribution and control of disease in a population. Injury epidemiology treats clusters of injuries as epidemics. Traumatic injuries are caused by the release of energy into human tissue in amounts or at rates it can’t withstand.
Like epidemics, injuries can occur repeatedly under similar circumstances, within specific populations, in identifiable locations, with predictable results. Like illness, there is a common vector or vehicle of transmission in similar injury events. (For example, mosquitoes/malaria, automobiles/motor vehicle crashes, handguns/homicides, prescription medications/overdoses or poisoning.)

The birth of Haddon’s Matrix
Haddon described 10 distinct strategies for the prevention of all types of injuries (See insert.). In order to identify the strategies that might work for each specific event, Haddon developed a tool—now known as Haddon’s Matrix—to systematically and logically look at nine separate components of every injury incident. Haddon’s Matrix can be used to investigate any injury event or clusters of similar events.

Injuries tend to have multiple causative factors and, therefore, multiple strategies for control. Within each of nine separate boxes formed by the matrix are multiple possible strategies to prevent the injury event, control the energy release of the event or reduce the severity of the injuries that result. Haddon argued successfully that factors other than driver error were responsible for the high motor vehicle crash fatality rate. He identified hard, unforgiving motor vehicle interiors as the cause of many crash fatalities. Haddon and his team then championed notable changes in new car construction. These modifications have led to a significant reduction in fatality and injury severity in all vehicles manufactured since that time. Padded interiors, collapsible steering wheels and safety glass are all examples of Haddon’s environmental modifications, which are automatic and control the transfer of energy during a crash event.

Using Haddon’s principles
Haddon believed it important to think of injuries as occurring in a time sequence. Occurrences prior to an injury were the pre-event phase, the precise time of the injury—the event phase and occurrences following the injury were considered the post-event phase.

This sequence forms one axis of the matrix, and the second is composed of the factors involved in the injury. The factors are the host or human factors (the person

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**Haddon’s 10 Strategies for Preventing Injuries**

1. Prevent the creation of the hazard in the first place. (For example, stop the manufacture of “cop killer” bullets, high-powered ammunition that is Teflon-coated to pierce body armor.)

2. Reduce the amount of the hazard brought into being. (Require vehicles—especially SUVs—to be more stable during evasive maneuvers.)

3. Prevent the release of the hazard that already exists. (Require cigarettes to stop burning when set down; require fabrics and furniture stuffing to resist ignition at higher temperatures.)

4. Modify the rate of spatial distribution of release of the hazard from its source. (Slow down the release of energy to within tolerable limits by using shoulder harness seatbelts and child-seat restraints.)

5. Separate, in time or space, the hazard and that which is to be protected. (Remove hazardous fixed objects from road sides; separate bicycle and pedestrian pathways from traffic.)

6. Separate the hazard and that which is to be protected by interposition of a material barrier. (Place shock absorbing crash barriers at gore points; install guardrails and air bags; require bicycle helmets.)

7. Modify basic relevant qualities of the hazard. (Modify the interiors of vehicles to replace sharp edges and hard surfaces with more forgiving materials; create softer baseballs and/or less powerful bats; create break-away baseball bases to prevent sliding injuries.)

8. Make what is to be protected more resistant to damage from the hazard. (Require physical conditioning of athletes prior to participation in sports, especially contact sports.)

9. Begin to counter the damage already done by the environmental hazard. (Make improvements to first response and EMS system.)

10. Stabilize, repair and rehabilitate the object of the damage. (Provide medical services and develop trauma centers, rehabilitative services and career/life counseling.)
who’s injured), the equipment involved (in this case a vehicle), and physical and social factors that play a role in the injury.

To use Haddon’s Matrix, you simply form a grid of nine boxes, which break down crash factors and investigate strategies for reducing fatal rollovers on The Body Count (see Figures 1 and 2, p.[26]). Be very free in your initial brainstorming of strategies, even including unlikely or ridiculous options. Being completely open to ideas often stimulates other, more beneficial ideas.

Next, using the matrix as a guideline, review Haddon’s 10 strategies and look for the most appropriate solutions to the problem within each of the listed strategies. (Not all will apply.) As Haddon wrote, “In choosing among potentially useful preventive measures, priority should be given to the ones most likely to effectively reduce injuries. In general, these will be measures that provide built-in automatic protection, minimizing the amount and frequency of effort required of the individuals involved.”

Summary
Are you still convinced that this was simply a case of drunk driving? Did you come up with any strategies not listed in the supplied matrix? Which strategy would you choose to prevent future fatalities at the cluster site? Did this exercise make you think of an injury pattern or cluster site in your own community?

By looking at all injuries as preventable events and by using your personal expertise and experience in your community, you can make significant permanent changes in mortality and morbidity from trauma among your service population.

Using Haddon’s Matrix allows your service to look at the unique injury patterns in the pre-event, event and post-event phases, adding another valuable dimension to your service. To be most effective, remember to think in terms of simple, long-term, automatic solutions that are specific to the injury pattern.

The beauty of injury prevention and control is that once you have made appropriate modifications to the injury environment, it’s likely that this part of your critical trauma problem will disappear.

References

Dave Short is a private consultant to the Indian Health Service on EMS and injury prevention issues. He has 20 years experience as a field provider and served 15 years as EMS coordinator for the Hoopa Health Association in northern California reservation. He serves as a volunteer assistant chief and training officer for the Willow Creek Volunteer Fire Department in northern California and is the author of Quick Guide to Effective Injury Prevention. Contact Short at dshort@firedept.net.

•••
<table>
<thead>
<tr>
<th>Phases</th>
<th>Human</th>
<th>Vehicle</th>
<th>Physical and Social Environment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-Crash</td>
<td>Fatigue</td>
<td>Advertised as fast and stable off the road</td>
<td>Drinking and driving laws and legal limits</td>
</tr>
<tr>
<td></td>
<td>Stress</td>
<td>High center of gravity</td>
<td>Last call for alcohol usage/unsafe drinking behavior</td>
</tr>
<tr>
<td></td>
<td>Rapid alcohol consumption at bar break</td>
<td>Tendency to roll over in evasive maneuvers</td>
<td>Unavailability of alternative transportation</td>
</tr>
<tr>
<td></td>
<td>Visibility reduced at night</td>
<td></td>
<td>Rural two-lane highway</td>
</tr>
<tr>
<td></td>
<td>Judgment faulty</td>
<td></td>
<td>55 miles per hour speed limit</td>
</tr>
<tr>
<td></td>
<td>Highway speed too fast for conditions</td>
<td></td>
<td>Poor visibility of road surface and side lines</td>
</tr>
<tr>
<td></td>
<td>Inattention to road</td>
<td></td>
<td>Downhill curves</td>
</tr>
<tr>
<td>Crash</td>
<td>Reflexes slowed</td>
<td>Automatic restraints not available</td>
<td>Inadequate warning signage</td>
</tr>
<tr>
<td></td>
<td>Seatbelt not used</td>
<td>Automatic door locks not available</td>
<td>Narrow, poorly maintained, soft shoulders</td>
</tr>
<tr>
<td></td>
<td>Thrown from behind steering controls</td>
<td>Cargo loading, weight shifting</td>
<td>Lack of barriers to prevent run-off road crashes</td>
</tr>
<tr>
<td></td>
<td>Ejection landing on head and neck</td>
<td></td>
<td>Sloping embankment</td>
</tr>
<tr>
<td></td>
<td>Age</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post-Crash</td>
<td>Physical condition of victim</td>
<td>Crush protection</td>
<td>Rapid First Aid administered</td>
</tr>
<tr>
<td></td>
<td>Age</td>
<td>Padded interiors</td>
<td>Rapid notification of emergency services</td>
</tr>
<tr>
<td></td>
<td>Protective clothing</td>
<td>Door sprung open</td>
<td>Quick response and treatment by crews</td>
</tr>
<tr>
<td></td>
<td>Damage to spinal cord</td>
<td></td>
<td>Quality of emergency care</td>
</tr>
<tr>
<td></td>
<td>Multiple system trauma</td>
<td></td>
<td>Rapid transport</td>
</tr>
<tr>
<td></td>
<td>Apneas/Airway compromise</td>
<td></td>
<td>Emergency surgery available quickly</td>
</tr>
<tr>
<td></td>
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</tbody>
</table>

**Figure 1: Haddon Matrix/Crash Factors on The Body Count**

**Figure 2: Strategies to Prevent Future Injuries on The Body Count**
Blank 1: Haddon Matrix/Injury Factors

<table>
<thead>
<tr>
<th>Phases</th>
<th>Human</th>
<th>Vehicle</th>
<th>Physical and Social Environment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-Crash</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crash</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post-Crash</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Blank 2: Strategies to Prevent Future Injuries

<table>
<thead>
<tr>
<th>Phases</th>
<th>Human</th>
<th>Vehicle</th>
<th>Physical and Social Environment</th>
</tr>
</thead>
<tbody>
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<td>Pre-Crash</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Crash</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post-Crash</td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>
What Are Your Next Steps?

Now that you know some of the basic concepts behind injury prevention strategies, the next step is to put your understanding to work. Module II: Personal Injury Prevention for Prehospital Professionals asks you to learn and apply injury prevention strategies to yourself—both on and off the job. Modules III through V ask you to move beyond yourself and put your knowledge to work for others. This will allow you to

- become a role model and one-on-one teacher of safety
- become an active observer and recorder of “accidents waiting to happen” as you go about your daily job, then to
- broaden your knowledge of existing injury prevention programs and use that knowledge more effectively by participating in—or forming—a safety coalition.

Further Reading


For a more complete discussion of The Three Es, see Chapters 7 through 9: Educational Strategies, Environmental Modification, and The Role of Law.


Excellent discussions on energies and the types of injuries they cause in Chapter Three: How Injury Events Occur. Part II: Specific Types of Injury Events details the factors involved in different types of injury events.

Activity

Chart an Injury Event

After reading the article, chart a different injury event using a scenario from your experience. Use the first blank Haddon Matrix to record the circumstantial variables; note the points at which intervention could take place. Use the second blank to list possible strategies and intervention measures that could prevent the injury in the future.
References


Supplementary Materials
Module I

Activity
Chart an Injury Event

Appendices
A: Other Resources

B: Four Systematic Approaches to Implementing Injury Prevention
**Activity**

**Chart an Injury Event**

After reading the “Using Science to Prevent Injuries” article, chart a different injury using either a scenario from your experience or one provided by your instructor. (Instructor Note: Provide an injury scenario in writing or on video.)

**Chart the Factors that Caused the Injury Event (circumstantial variables)**

Use this blank Haddon Matrix to record the circumstantial variables; then, note the points at which intervention could take place.

<table>
<thead>
<tr>
<th>PHASES</th>
<th>FACTORS</th>
<th>Pre-event</th>
<th>Event</th>
<th>Post-event</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Human/Host</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Agent/Vector</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Physical Environment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Socio-economic Environment</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

PIER Injury Prevention Curriculum: Module I: Injury Prevention Basics
Chart Strategies to Prevent future Injuries
Use this blank Haddon Matrix to list possible strategies and intervention measures that could prevent that injury in the future.

<table>
<thead>
<tr>
<th>PHASES</th>
<th>Activity</th>
<th>Pre-event</th>
<th>Event</th>
<th>Post-event</th>
</tr>
</thead>
<tbody>
<tr>
<td>FACTORS</td>
<td></td>
<td>Human/Host</td>
<td>Agent/Vector</td>
<td>Physical Environment</td>
</tr>
</tbody>
</table>

Chart an Injury Event
Appendix A

Other Resources

WISQARS™
The Centers for Disease Control, National Center for Injury Prevention and Control’s “Web-based Injury Statistics Query And Reporting System” is an interactive system providing customized injury-related data useful for research and for making informed public health decisions. Data is produced by the National Center for Health Statistics (NCHS) Vital Statistics System for numbers of deaths, Bureau of Census for population estimates. Statistics compiled by the Office of Statistics and Programming.

Injury Mortality Reports [Suicide/Homicide]

Leading Causes of Death Reports

Unintentional Injuries and Adverse Effects
First, select a Leading Causes of Death Report. Then, under the age group of interest, click on the colored square for unintentional injuries (homicide, or suicide also available)

Nonfatal Injury Reports

Leading Causes of Nonfatal Injury Reports

State Injury Profiles
Injury profiles and comparative statistics

State Traffic Facts
Motor vehicle related injury deaths

Children’s Safety Network
http://www.injurypreventionweb.org/info/data.htm
Charts and tables of injury data by region and state
Other Resources

Selected Online Course Materials on Injury Prevention


• • •
Appendix B

Four Systematic Approaches to Implementing Injury Prevention

(based on the Public Health Model for Disease Control)

1. Songer T. Ten basic principles of injury epidemiology [slide 7].
   - Define the Problem: identify morbidity; (nonfatal); mortality (death); costs
   - Identify the Risk Factors: social; genetic; environmental; health care
   - Intervene
   - Evaluate

2. VINCENTweb, University of North Carolina-Chapel Hill, School of Public Health, page 21.
   - Gather and analyze information (data collection) to identify a potential injury problem and target population
     [And identify risk factors.]
   - Identify potential strategies for interventions (methods to prevent the injury problem)
   - Choose strategies
   - Develop an implementation plan
   - Implement the plan
   - Evaluate the plan and revise
3. Christoffel T, Gallagher SS.  
- Assessing the specific injury problem via data collection and risk factor identification  
- Facilitating the formation of multidisciplinary groups in the community to coalesce around the problem [Safety Coalitions]  
- Developing injury prevention interventions  
- Evaluating these early injury prevention programs  
- Replication of proven programs

4. STIPDA  
- Data Collection & Analysis  
- Program Design, Implementation and Evaluation  
- Coordination and Collaboration  
- Technical Support and Training  
- Public Policy
MODULE II
Personal Injury Prevention
for Prehospital Professionals

Don't just talk the talk, walk the walk.

Staying injury free is an essential part of your job.
In addition, to be an effective teacher of injury prevention—to be an effective role model of safety—you must first put your injury prevention knowledge to work for yourself. This module describes the factors that put EMS professionals at risk. It also explains prevention strategies that will help prepare you to perform at optimal levels and avoid injury despite the physical, mental, and emotional stresses of your job. And it reviews scene safety procedures.

Goal
To review factors that put EMS professionals at risk and the prevention interventions that can help them avoid injuries.

Content Sections
A. Risk Factors for Prehospital Professionals
B. Pre-Event Injury Prevention
C. Event Injury Prevention
D. Post-Event Injury Prevention

On completing this module, EMS professionals should be able to
1. Name 3 behaviors that put EMS professionals at risk of injury and give 2 examples of each.
2. List the 2 major categories into which injury prevention measures for the pre-event phase fall and give 3 examples of each.
3. List 4 injury prevention measures to practice during the event phase and give examples of each.
4. State how post-event injury prevention measures are similar to or different from pre-event measures.
Outline: Module II

Section A: Risk Factors for Prehospital Professionals
- Risk Factors at Work
  - Physical and Personal Attributes
  - EMS Occupational Injury Statistics
- General Risk Factors
  - Determinants of Health
  - Assessing Health Risks
  - Assessing Injury Risks

Section B: Pre-Event Injury Prevention
- Stay fit and injury-free off the job.
  - See your doctor.
  - Avoid tobacco.
  - Eat healthy.
  - Exercise regularly.
  - Avoid strains and sprains.
  - Limit alcohol.
  - Protect yourself (and others) from infection.
  - Store firearms safely.
  - Operate motor vehicles safely.
  - Never use drugs improperly.
  - Get adequate rest and relaxation.
  - Manage distress to avoid stress.
- Prepare for the unique demands of your job.
  - Build your medical knowledge.
  - Learn and practice the care and use of rescue equipment.
  - Make certain all equipment is clean and functioning.
  - Learn and practice personal protection measures.

Section C: Event Injury Prevention
- Dress for conditions.
- Stay safe on the move.
  - Acquire and train reliable drivers.
  - Use all available protective measures while on the move.
  - Learn navigation do’s and don’ts.
  - Secure all persons and equipment.
  - Driver courtesy also helps protect coworkers and passengers.
- Injury Prevention at the Scene
  - Begin preparing en route.
  - Manage your approach.
  - No matter where you are, maintain an escape route!
- Injury Prevention in Special Situations

Section D: Post-Event Injury Prevention
- Finishing Up
  - Prevent mental and emotional fallout.
  - Critical Incident Stress Management

Further Reading
References

Supplementary Materials
Appendices
  A: Other Resources
  B: Instructor Resources
Prehospital emergency work occurs under potentially dangerous conditions and in physically, mentally, and emotionally taxing situations. To safely navigate the minefield of injury risks encountered at work, you should have—or develop—and apply special attributes and knowledge. The risks you incur do not begin or end at work, however. As a member of the human race, you also are at risk for all the general health and injury risks that plague the rest of us.

Relating the demands of your life, both on and off the job, to your physical and emotional strengths and weaknesses is key to staying injury free.

Risk Factors at Work

The four components affecting the safe use of energy (discussed in Module I, Section B) remain the same for EMS at work as they do for the rest of the population. In order to meet the demands of the tasks required of them and avoid injury, the “factors”—EMS humans, agents, and environments (physical and social)—must interact appropriately.

Physical and personal attributes are needed to meet the demands of EMS work.


Desired attributes

- Emotional stability
- Quick levelheaded reactions to life-threatening situations
- Good dexterity: skill in the use of the hands or body; mental skill or adroitness.
  - Adroitness = skillful and adept under pressing conditions; cleverness; acumen
  - Acumen = quickness and accurateness of judgement; keenness of insight
  - Insight = the capacity to discern the true nature of a situation
- Agility: the ability to move in a quick and easy way, be nimble; and stay mentally alert
- Physical coordination: range of motion, speed, balance, strength, and stamina
- Able to lift and carry heavy loads
- Good eyesight (corrective lenses may be used), especially accurate color and night vision
EMS Occupational Injury Statistics

Despite the high injury and health risks to which EMS professionals are exposed, surprisingly few studies have collected or analyzed data on job-related injuries and exposures. Those studies that can be found only examine small groups. Nevertheless, the results suggest that EMS professionals experience a high rate of injury. Trade publications directed to EMS professionals are peppered with articles reviewing the risks and suggesting “interventions” in attempts to warn, educate, or cajole EMS professionals into taking steps to protect themselves from

- Stress
- Strains & Sprains
- Back Injuries
- Assaults
- Ambulance Collisions
- Hearing Loss
- Eye Injury
- Cuts & Abrasions

“Occupational injuries of EMS personnel are at a serious level.”
(Tortella & Lavery 1994)

“Our findings suggest a high incidence of occupational injury in EMS personnel with EMTs and persons under 30 years of age at higher risk.”
(Hogya & Ellis 1990)

“The prevalence of back injuries, assault, stress, and extremity injuries seems to be too high.”
(Schwartz, Benson & Jacobs 1993)

“Most [strains and sprains] were caused by stretcher mishaps, especially during transport of heavy patients. Walkway impediments (e.g., icy steps, wet leaves, broken and uneven pathways) also played an important role in creating slipping and tripping hazards.”
(Gershon et al 1995)
General Risk Factors
The fact that you are also a member of the general public is one of the things that makes your work in EMS such a valuable resource to your community. It also means that you are at risk from the same health problems and factors that forecast injuries which afflict the population as a whole. What puts you at risk?

Determinants of Health
Healthy People 2010 groups the influences “that are responsible for about 70 percent of all premature deaths in the United States” into four categories, calling them the “determinants of health”:

- **Biology**— genetic makeup and family history as well as the physical and mental health problems acquired during life
- **Behavior**— individual responses or reactions to internal stimuli and external conditions
- **Social environment**— interactions with family, friends, coworkers, others in the community; the conditions as well as social institutions, including the presence or absence of violence in the places people live, work, exercise, and play
- **Physical environment**— the air, water and soil through which exposure to toxins or infectious or toxic agents may occur as well as the physical conditions in which people live, work, exercise, and play

“Individual biology and behaviors influence health through their interaction with each other and with the individual’s social and physical environments. . . . Personal choices and the social and physical environments surrounding individuals can shape behaviors. The social and physical environments include all the factors that affect the life of individuals, positively or negatively, many of which may not be under their immediate or direct control” (Healthy People 2010, A Systematic Approach, 11-12).

Assessing Health Risks
Take another look at the Ten Leading Causes of Death listed on the next page. Then take a look at your lifestyle, family history, and general fitness and health. With this information, you and your doctor can assess your risks and develop a plan to tackle potential problems:

- Age
- Family history
- High blood pressure
- High cholesterol
- Alcohol & medications
- Smoking
- Inactivity and poor diet
- Excess weight
- Diabetes
- Other health problems
Assessing Injury Risks

Now take a look at the leading causes of fatal and nonfatal injuries. Biology, behavior, and the social and physical environments surrounding individuals also define risk factors for injury. Can you name one biological, behavioral, social, and physical environmental risk factor for each of the mechanisms of injury listed below?

<table>
<thead>
<tr>
<th>Leading Causes of Death</th>
<th>Leading Causes of Fatal Injury</th>
<th>Leading Causes of Nonfatal Injury</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Heart Disease</td>
<td>- Motor vehicle crash</td>
<td>- Falls</td>
</tr>
<tr>
<td>- Cancer</td>
<td>- Falls</td>
<td>- Struck By/Against</td>
</tr>
<tr>
<td>- Strokes</td>
<td>- Poisoning</td>
<td>- Cut/ Pierce</td>
</tr>
<tr>
<td>- Bronchitis, Emphysema, Asthma</td>
<td>- Unspecified</td>
<td>- Motor Vehicle Traffic</td>
</tr>
<tr>
<td>- Unintentional Injury &amp;</td>
<td>- Suffocation</td>
<td>- Overexertion</td>
</tr>
<tr>
<td>Adverse Effects</td>
<td>- Drowning/Submersion</td>
<td>- Assaults</td>
</tr>
<tr>
<td>- Pneumonia &amp;</td>
<td>- Fire/Burn</td>
<td>- Natural/Environmental</td>
</tr>
<tr>
<td>Influenza</td>
<td>- Medical Care, Adverse Effects</td>
<td>- Transportation, other</td>
</tr>
<tr>
<td>- Diabetes</td>
<td>- Transport, other</td>
<td>- Foreign Body</td>
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<td>- Suicide</td>
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<td></td>
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<tr>
<td>- Kidney Disease</td>
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<td></td>
</tr>
<tr>
<td>- Liver Disease</td>
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With these risks in mind, EMS professionals should review their preparations to maintain healthy and injury-free lifestyles.
Because injury and disease are less likely to happen to those who maintain excellent physical health, mental acuity, and emotional balance, and have knowledge of themselves in relation to their environments, EMS professionals—subjected to so many health and injury risks at work—should maintain healthy lifestyles.

Pre-event injury prevention for prehospital professionals can be divided into two broad categories. The first is the quality of your general health and fitness. The second is the quality of your preparations for the special demands of the job.

**Stay fit and injury-free off the job.**

There is no substitute for a fit, healthy body and mind. Expecting to do a physically and emotionally draining job without one is like expecting a 1950 Chevy that's been up on blocks in your yard for five years to win a NASCAR race.

Poor general physical health and fitness and personal habits and attitudes put you at risk for injury. What you put in your body, how much physical activity you engage in, and how well you handle stress do count. Periodically, take a moment or two to review your health and injury risks. Keep the behaviors that increase your resistance to injury. Change those that don’t.

**Actual Causes of Death, United States**

- **Tobacco**
- **Poor diet/lack of exercise**
- **Alcohol**
- **Infectious agents**
- **Pollutants/toxics**
- **Firearms**
- **Sexual behavior**
- **Motor vehicles**
- **Illicit drug use**

Percentage of all deaths


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**See your doctor regularly.**

Your personal physician is your gateway to health risk assessment, screening services, and preventive measures that will help keep you out of the morgue. Yearly physicals are the standard. Eye examinations are recommended every two years or so until age 65, then yearly.
Avoid Tobacco.
Do not use tobacco in any form. Period. There is no safe form of tobacco: not cigars, not pipes, not cigarettes, not snuff or chewing tobacco.

Eat healthy.
“Overweight and physical inactivity account for more than 300,000 premature deaths each year in the US, second only to tobacco-related deaths.”

Follow recommended guidelines to choose foods and cooking styles.

Seven dietary guidelines
Developed by the US Department of Health and Human Services and the US Department of Agriculture, these seven guidelines “reflect the recommendations of health and nutrition experts, who agree that enough is known about the effect of diet on health to encourage certain eating practices.”

1. Eat a variety of foods to get the energy (calories), protein, vitamins, minerals, and fiber you need for good health.
2. Maintain a healthy weight to reduce your chances of having high blood pressure, heart disease, a stroke, certain cancers, and the most common kind of diabetes.
3. Choose a diet low in fat, saturated fat, and cholesterol to reduce your risk of heart disease and certain types of cancer. Because fat contains more than twice the calories of an equal amount of carbohydrates or protein, a diet low in fat can help you maintain a healthy weight.
4. Choose a diet with plenty of vegetables, fruits, and grain products that provide needed vitamins, minerals, fiber, and complex carbohydrates. They are generally lower in fat.
5. Use sugars only in moderation. A diet with lots of sugars has too many calories and too few nutrients for most people and can contribute to tooth decay.
6. Use salt and other forms of sodium only in moderation to help reduce your risk of high blood pressure.
7. If you drink alcoholic beverages, do so in moderation. Alcoholic beverages supply calories, but little or no nutrients. Drinking alcohol is also the cause of many health problems and accidents and can lead to addiction.

Make a food plan.
Develop a food plan appropriate for your age, height, activity level and one that takes into account whether you need to lose, gain, or just maintain your current weight. You need to know how many calories you should be consuming to reach or maintain your optimum weight.
1. **Count servings to control calories.** Figure out how many servings of each food group you should eat each day to consume the number of calories you need to stay at a healthy weight.

2. **Start by eating more fruits and vegetables.** The recommended number of daily servings for fruits is 2 to 4 servings; for vegetables, 3 to 5 servings.

3. **Limit Meat.** Note that no matter how many calories you need to maintain a healthy weight, experts recommend no more than 2 to 3 servings of lean meat, poultry, fish, beans or other alternative sources of protein a day. One serving of meat (2-3 ounces) is about the size of a deck of cards.

### Exercise regularly.

Do not assume that, because you have a physically demanding job, you get enough exercise at work. Thirty minutes of moderate physical activity 3-4 days per week is recommended. Almost any type of sustained activity that will increase your heart rate will do the trick.

Before beginning any exercise program, discuss the program with your doctor and follow the doctor’s advice. Gradually work up to exercising at least three or four times a week for 30-60 minutes. Plan to warm up and cool down with slow, rhythmic exercises.

1. **Get off your duff.**
   Look for ways to keep moving and stretching as you go about your day.

2. **Develop a regular exercise routine.**
   • Walk
   • Jog
   • Bicycle
   • Swim
   • Dance
   • Jump Rope

### Avoid strains and sprains—especially to your back.

Acute low back problems are the most frequent cause of disability for people under age 45.

1. **Practice good posture.**—at all times.
   Standing, walking, sitting, squatting, lying down, exercising, working, lifting, pushing, pulling, and reaching. Good posture helps develop both proper carriage as well as stronger muscles that protect your back.

2. **Exercise to minimize back problems.**
   American Academy of Orthopaedic Surgeons recommends performing specific exercises to help strengthen and stretch your back, stomach, hip, and thigh muscles.

3. **Practice Safe Lifting.**—off the job as well as at work.
   • Keep your back aligned while you lift.
   • Maintain your center of balance.
   • Lift with the muscles in your legs.

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**Daily Calorie Needs**

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<tbody>
<tr>
<td>1,300 calories for toddlers</td>
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<tr>
<td>1,600 calories for many sedentary women and some older adults</td>
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<tr>
<td>2,200 calories for most children, teenage girls, active women and many sedentary men</td>
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<tr>
<td>2,800 calories for teenage boys, many active men and some very active women</td>
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Check It Out Online

“Be Smart for Your Heart.” American Heart Association Web site: http://www.americanheart.org/ Choose: Managing Your Lifestyle, then Managing Your Weight.

Exercise: How to Get Started

Limit alcohol.
If you must drink alcoholic beverages, do so in moderation and sensibly. Moderation means one drink per day for women or two per day for men. Drinking alcohol with meals slows absorption. Never drink before or during driving, or whenever a lack of quick, levelheaded thinking and optimum physical coordination will put you or others at risk.

One alcoholic drink is ONE of the following:
- 12 ounces of regular beer
- 5 ounces of wine
- 1.5 ounces of 80-proof distilled spirits

Protect yourself (and others) from infection.
Thoroughly wash everything all the time. Throw out anything you put on or in yourself that even threatens to smell bad, puff up, or ooze goo. Use precautions when you or others have caught or are around others with a contagious disease. — Always wash your hands.

Keep your immunizations up-to-date.
The need to be vaccinated against infectious diseases does not end with childhood. All members of the general public need “boosters” periodically. Some vaccines need to be administered to cover special circumstances.

Store firearms safely.
Keep firearms unloaded and store them and bullets in separate locked cabinets or a safe when not in use. Make sure the keys are not available to children or any others not authorized to use the guns. If you hunt, take a safety course.

Operate motor vehicles safely.
Maintain your vehicles in optimum working order; have them inspected regularly by a qualified mechanic. Always wear your seatbelt and see that your passengers wear theirs. Obey all laws—especially the speed limit. DO NOT drive when fatigued, when under the influence of alcohol, or when taking medications that alter your perceptions, coordination or reaction times. To the best of your ability, eliminate distractions. Concentrate on driving and drive defensively.

Never use drugs improperly.
NEVER use illegal drugs, such as Ecstasy, marijuana, cocaine, PCP, or heroin. Never use legal drugs acquired illegally for illicit purposes or take medicine prescribed for someone else. Carefully follow all instructions for the proper use and dosages of prescription and over-the-counter medicines—especially instructions about potential adverse reactions with alcohol and prescribed medications.
“Drowsy driving causes more than 100,000 crashes a year, resulting in 40,000 injuries and 1,550 deaths.”
(Wake Up and Get Some Sleep.)

Also See
Top 10 Tips for Shift Workers

Get adequate rest and relaxation.
Rest and relaxation are critical to maintaining excellent physical health, mental acuity, and emotional balance and are crucial to reducing the risk of being injured.

1. Lack of sleep is expensive.
“The National Commission on Sleep Disorders estimates that sleep deprivation costs $150 billion a year in higher stress and reduced workplace productivity. It may also lead to personal and public tragedy. There are indications that the Challenger disaster, the Chernobyl nuclear reactor meltdown, and the Exxon Valdez oil spill can all be partly linked to people suffering from a severe lack of sleep” (CNN.com NewsNet, Lack of sleep).

2. Lack of sleep is a killer.
“Getting less than 6 hours a night can affect coordination, reaction time and judgment.” Researchers believe that between 16 and 60 percent of highway crashes involve sleep deprivation (CNN.com NewsNet, Sleep deprivation). Being in a constant state of high alert produces fatigue. Fatigue can damage body systems and decrease the ability of the body to repair itself. Sleep deprivation is also associated with higher levels of stress, anxiety, depression and unnecessary risk taking.

3. Stress is a killer.
Prolonged stress increases the risk of injury and disease (Stress at Work). The dissatisfactions and frustrations that cause stress are not confined to EMS work situations. Diffusing emotional tensions off the job is also an important step to preventing injuries. Balancing your family duties, social and civic responsibilities, and getting in some “me time” and some playtime is one of the big challenges of life.

Manage distress to avoid stress.
Change can lead to both distress and stress, either in an individual or in a group. Any unwelcome change in your body or general health, in the way you think, in the way you feel, or in the way you act may signal distress. The degree and/or persistence of the unwelcome change defines the difference between distress and all out stress (Mitchell & Bray 1990, 40).

Signs and symptoms of distress include
• persistent fatigue,
• negativity,
• cynicism, and
• diminished job motivation (EMS Safety, 136).
Diffuse emotional pressure points.
Dealing with stress requires a change in one or more of the following:

- the environment/stressful trigger
- the response to the stressful event
- the interpretation of the event (Christie 1997)

Practice ten simple strategies to reduce stress.
Christie (1997) recommends the "Ten Simple Strategies to Reduce Stress," excerpted here:

1. Take care of your physical health by getting enough sleep, eating a balanced diet, and exercising regularly.
2. Learn more positive self-statements; focus on what can be learned from a situation rather than what was done wrong.
3. Establish clear boundaries between work and home, and set firm limits on the amount of overtime you will put in.
4. Lessen the amount of emotional overflow from job to home by scheduling 15 or so minutes to review events and related feelings.
5. Take regular vacations.
6. Participate in activities [and with people] unrelated to EMT work.
7. Keep a sense of humor.
8. Evaluate the positives and negatives of remaining in your current job.
9. Learn meditation and other relaxing techniques.
10. Increase the amount of fun you have in your life. (55)

Even if you've babied your "Chevy," it's going to need some special outfitting to become a winner at EMS work. Some extra preparation for the unique demands of your job that require you to go from 0 to 120 mph in a minute or so are in order.

Prepare for the unique demands of your job.
Nothing prevents occupational-related physical injuries and stress as well as being outfitted for the demands of the job—being well suited to, well qualified for, and proficient at all the skills and tasks you will be asked to perform. That means continuously increasing your knowledge base and training to maintain the physical strengths and stamina and the intellectual and emotional skills that you need to stay alert, agile, and injury-free throughout many different kinds of calls. And it means achieving some "peace of mind" by mastering personal protection measures and standard protocols and making them a habit—before you need them.
Continue to build your medical and procedural knowledge.
Approach required continuing education and training as if it was a payment on your personal safety insurance policy. Medical knowledge and technical proficiency add immeasurably to safety—yours and your patients. Competence and self-confidence come from knowing what you are supposed to do and practicing how to do it until you no longer have to think about the correct way to perform efficiently and safely.

1. Take refresher and continuing education courses.
Ongoing classroom instruction and field-based practice, then, are essential for EMS professionals who are intent on staying injury-free. Welcome advances in technology. Learn to use new safety equipment, such as safer needle devices, that technology has produced. Training should include any possible special situations—violence, crime, rescue or hazardous materials situations—likely to be encountered in your areas of operation.

2. Read, read, read.
Many useful things can be accomplished while waiting for calls; one of these should be self-directed continuing education. Every unit should have a source of current educational materials. Units, or agencies, should subscribe to professional and trade-specific magazines and journals. These resources should include the latest versions of EMS textbooks as well as regulatory statutes, and technique and safety manuals.

3. Get connected to the Internet.
If at all possible, your unit should acquire a computer and access to the Internet, especially as CD-ROM training programs, online courses, and downloadable free injury prevention materials become more prevalent. (Your community college or public library are alternatives, if less handy, sources for computer and Internet access.)

Learn and practice the proper care and efficient use of rescue equipment (heavy or otherwise).
Keeping all rescue equipment clean, repaired, oiled, fueled, and appropriately restocked so you are assured that all will function at optimum levels is as basic to your safety as it is to the safe care and disposition of your patients.

4. Build your health and physical fitness to meet the demands of your job.
Your own body is the most important piece of rescue equipment on any scene. The physical demands on EMS professionals require that they refuel and rest regularly, develop a lean, mean muscle machine, and learn how to use it when moving patients and equipment.
Train like an athlete.

Are you fit to reach, bend, twist, wriggle, grip, pry, pull, lever, heave, lift, and haul 300 pounds or so—over long periods of time, again and again? Walking 30 minutes a day is not enough to build the cardiovascular fitness, muscle strength and tone, stamina, and range of motion demanded of EMS professionals. EMS professionals need to think and workout like athletes preparing for competition.

If your agency does not have a health and fitness program, a good example of one is provided by NFPA 1583 Standard on Health-Related Fitness Programs for Fire Fighters (considered a companion to NFPA 1582 Standard on Medical Requirements for Fire Fighters and Information for Fire Department Physicians).

Learn and practice recommended techniques for lifting and moving patients and heavy equipment.

Most new texts and curriculums include expanded instructions for lifting and carrying patients proven to help reduce the risk of injury to the rescuers. Mistovich et al (2000) Prehospital Emergency Care, is excerpted here:

Always use proper body mechanics.

- Use teamwork, equipment, and imagination to make sure you are always in the position of applying proper body mechanics [including those recommended for reaching or pulling].
- Use the power-lift and power-grip techniques as a best defense against injury.
- Reduce the height or distance through which an object must be moved. Lift in stages, if necessary.
- Lift an object as close to your body as possible to avoid back injury.
- Avoid using back muscles to lift.
- Use legs, hips, and buttocks (gluteal) muscles plus abdominal muscles for safe, powerful lifts.
- While you are carrying an object, keep shoulders, hips and feet in alignment. [stack all atop of your feet]
- Use the proper posture—ears, shoulders, and hips in vertical alignment—when standing and sitting.
- Improve personal physical fitness to build strength and manage stress (793).
Master the proper execution and use of techniques and carrying devices.

**Lifts**
- Power lift
- Power grip
- Squat lift
- Log roll (2, 3, and 4 person)
- Reaching
- Pushing/pulling

**Carrying Devices**
- Wheeled stretcher
- Portable stretcher
- Stair-chair
- Backboard
- Scoop stretcher
- Basket stretcher
- Flexible stretcher

**Non-urgent Moves**
- Direct ground lift
- Extremity lift
- Direct carry method
- One-handed carrying
- Draw sheet method

**Emergency Moves**
- Rapid extraction
- Armpit-forearm drag
- Shirt drag
- Blanket drag

(84-91; 672-76; 793-806)

**Eat, drink wholesome fluids, and sleep at regular intervals.**
Attention to your basic physical needs is not indulgence; it is preventive maintenance. Empty, worn out equipment is not reliable. Place a priority on refueling your body and resting your mind between calls whenever possible, even if you work 24- or 48-hour call schedules. Fruit with flavored yogurt or cottage cheese, a peanut butter and banana sandwich, a vegetable salad or soup, a glass of low-fat milk or orange juice are some examples of quick and healthful pick-me-ups.

**Make certain all other equipment is clean and functioning properly prior to use.**
Clear protocols and up-to-date checklists are essential to exemplary routine preparation and evaluation of your vehicles and other equipment as well as to restocking supplies. You will not be able to run to the convenience store to replace nonworking or missing items while on a call. Daily and pre- and post-run preparation is a must.

Your agency may have special people assigned to maintain vehicles and equipment, but your need to be confident that all is in working order places this chore in the “pack your own parachute category”— in other words, you should recheck all the equipment that you will use yourself.
Vehicle maintenance and inspection
Ambulances come with vehicle maintenance checklists. Most states’ rules and regulations spell out the minimum requirements. Use these sources to review and evaluate all
• fuel, electrical, mechanical and other operating and power systems;
• communication systems: radios, binoculars, flashlights, Emergency Response Guidebook, route plans, street maps, etc.; and
• personal restraint and safety devices: seatbelts, harnesses, grab bars, scene warning devices, etc.

Supplies and equipment
Restock disposable supplies and equipment and evaluate all reusable equipment for cleanliness. Inventory and evaluate all
• basic patient care equipment and supplies
• personal protective apparel and equipment (weather and terrain appropriate, marked with reflective tape); and
• special situation gear for violent, rescue, and/or hazardous materials situations.

Learn and practice personal protection measures and follow standard protocols.
As an EMS worker, you will be exposed to infectious (contagious or communicable) diseases, not all of which are bloodborne. Assume that you won’t know what you’ve been exposed to until after you’ve treated the patient and signed off. Take recommended precautions. All of them, all the time!

The CDC, OSHA, and the National Fire Protection Association (NFPA) publish a number of standards and regulations recommending or mandating specific precautions for health care workers exposed to air- and bloodborne communicable diseases. Your state also may have regulations. Your agency undoubtedly has an infection control program. You should know what these regulations are, what they say, and whether or not you are consistently in compliance with them.

Get the immunizations recommended for health care workers!
The CDC’s Immunization of Health Care Workers: Recommendations of the Advisory Committee on Immunization Practices (ACIP) and the Hospital Infection Control Practices Advisory Committee (HICPAC), 1997 recommends the following:
• All adults should be immunized against tetanus, diphtheria, and pneumococcal disease.
• Active immunization is strongly recommended because of special risks for Hepatitis B, influenza, measles, mumps, rubella, and varicella (chicken pox).
• Active and/or passive immunization may be indicated in certain circumstances for tuberculosis, Hepatitis A, meningococcal disease, typhoid fever, and vaccinia (smallpox) and in the future for pertussis (whooping cough).
• There is no vaccine for Hepatitis C.

Your agency may keep immunization records, but you should verify that you remain immunized (appropriately for your personal susceptibility) against diseases known to be circulating in your area. Check with your agency’s infection control physician. Compliance is everyone’s responsibility!

Understand infectious diseases.

Your best protection against those diseases for which immunization is not available is to know how they are transmitted, their symptoms, their consequences, and then practice recommended precautions—Body Substance Isolation (BSI) among them. As health care professionals, you should know these facts as well as you know the names, ages, foibles, and the best methods of disciplining your children! (Maybe better?) Your health, the health of your coworkers, the health of your patients—even the health of your family—depends on your doing so.

Infectious Disease Transmission Methods

Bloodborne diseases are of great concern to health care professionals, but they are not the only source of contagious diseases. Needlesticks, for instance, are not a transmission route for Tuberculosis or meningitis.

Disease can be transmitted by one or more of these methods:

1. Contact
   a. Direct contact—body surface-to-body-surface contact such as occurs when a person performs patient care activities that require direct personal contact
   b. Indirect contact—contaminated instruments, needles, or dressings, or contaminated hands that are not washed and gloves that are not changed between patients

2. Droplet—coughing, sneezing, and talking, or through the performance of certain procedures such as suctioning and bronchoscopy (Droplets are propelled a short distance and do not remain suspended in the air, so special air handling and ventilation are not required to prevent droplet transmission.)

3. Airborne—droplets that remain suspended in the air for long periods of time or settle in dust particles. Special air handling and respiratory protection are required.
4. Common vehicle—contaminated items, such as food, water, medications, devices, and equipment

5. Vectorborne—mosquitoes, flies, ticks, lice, rats, and other vermin transmit microorganisms.

Excerpted from Guidelines for isolation precautions in hospitals, Part II: Recommendations for isolation precautions in hospitals <http://www.cdc.gov/ncidod/hip/ISOLAT/isopart2.htm>

Get a thorough grasp of Body Substance Isolation (BSI) and Universal Precautions procedures and use them—consistently.
Body substance isolation (BSI) and universal precautions for infectious diseases remain the best way to prevent infection by communicable diseases.

**Standard Precautions for EMS Professionals**

Standard Precautions are designed to reduce, not eliminate, the risk of transmission of microorganisms from both recognized and unrecognized sources of infection in health care settings and are applied to all patients, regardless of their diagnosis or presumed infection status. Universal Precautions are designed to reduce, not eliminate, the risk of transmission of bloodborne pathogens (e.g., Body Substance Isolation (BSI) to reduce the risk of transmission of pathogens from moist body substances).

**Standard Precautions apply to**

- blood;
- all body fluids, secretions, and excretions except sweat, regardless of whether or not they contain visible blood;
- nonintact skin; and
- mucous membranes.

**Standard Precautions require consistent use of handwashing.**
Always wash your hands before and after gloving and between patients: a 15-second (one, one thousand, two, one thousand . . . ) or more, thorough scrub of your hands—between the fingers, under and around your fingernails, and up your forearms.

**Personal protective equipment (PPE), or barrier protection,** reduces the risk that infectious materials will contact your skin or mucous membranes and help prevent injuries from needles, scalps, and other sharp instruments or devices that can puncture your skin. Recommended barriers during patient care include:

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*Check it Out Online*
http://www.cdc.gov/ncidod/hip/ISOLAT/isopart2.htm
Use PPE Consistently!
During a 1995 study observing 297 ambulance runs over a 3-month period, observers recorded the handling of sharps and the use of personal protective equipment in four situations: IV line placement, endotracheal intubation, large-wound management, and body fluid hazard. Emergency medical workers properly handled sharps in 24 of 65 situations (37%). They were usually compliant with glove use during the observed procedures. However, compliance with the use of other personal protective equipment was poor. (Eustis 1995).

Protective apparel (head to toe)
- Eyes, Nose, and Mouth: glasses with side shields or goggles, surgical or HEPA masks, or whole-face shields.
- Hands: Always use vinyl, latex, or other synthetic gloves; if torn or punctured, remove ASAP and wash hands before replacing with new ones. Bandage any open wounds on your hands (or any place else that could possibly come in contact with blood or other body fluids during patient care). Use utility gloves when cleaning contaminated materials and equipment.
- Body: Wear gowns and aprons—water-resistant and disposable (if possible)—in any situation likely to put you in contact with blood or body fluids.
- Feet: Wear sturdy, steel-toed boots, preferably waterproof ones, that offer the traction you may need.

Protective equipment, as necessary
- Respiratory devices: N95 respirator or HEPA (mask)
- Resuscitation equipment: alternatives to mouth-to-mouth resuscitation (pocket masks, bag-valve-masks, or other ventilation devices)
- Sharps containers and safety devices: do not recap needles or repackage other sharps; after use, place them immediately in a puncture proof container. Investigate and purchase new sharps safety devices.

Document and report exposures.
Documenting and reporting any exposure to an infectious disease are key to maintaining your health! Both are mandated by CDC, OSHA, and NFPA (National Fire Protection Association) standards and guidelines. In 1998, the CDC published guidelines for managing HIV exposures. If exposed, EMS professionals should be treated by an agency-approved physician (not their own doctors) trained in post-exposure situations and familiar with these guidelines (West 1999).

Practice Exemplary Hygiene
Learn all special disposal and/or cleaning techniques for all patient care equipment.
- Use as many disposable patient care and personal protective items as possible. Use them only once and dispose of them properly. If you suspect the patient may have a communicable disease, bag and seal equipment following biohazardous or infectious waste procedures. Double bag items if HIV is suspected.
- Nondisposable items must be cleaned, disinfected and/or sterilized. The type of contact these items had with the patient and whether a contagious disease is suspected, as well as local guidelines and
protocols dictate procedures. Wear vinyl or other synthetic gloves and face protection when disposing of or cleaning patient care equipment and contaminated surfaces (e.g., the ambulance). And wash your hands and face when you finish.

- Wash all patient linens according to local guidelines.
- Wash your uniform, if soiled, in hot soapy water with bleach for about 25 minutes. And take a long, hot shower yourself. (It’s a good idea to have an extra uniform on hand; even more so if you are working a 24-hour shift.) If you take your uniform home to wash, it is a good idea to wash it separately from other clothes.

When the call comes, you are rested, fit, and in optimum health. Your unit and all its equipment are primed and ready. You are in uniform and all the personal protective apparel and equipment you might need is stowed where you can easily get it before you need the protection it will provide. Now all you have to do is protect yourself from being injured in your vehicle en route and at the scene—whatever that scene may be. It is important to constantly remind yourself of the measures you can take to protect yourself during any injury event.

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“Document in your logbook or on your flow sheet any contact with blood or other body fluids and any cleaning you have done as a result.”
(Mistovich, 22)

Tools to Use

EPI Net Exposure Prevention Information Network

The International Health Care Worker Safety Center at the University of Virginia Health System <http://www.med.Virginia.EDU/medcntr/centers/epinet>

includes a surveillance system developed by Dr. Janine Jagger to provide health care facilities with a standardized system for tracking occupational blood exposures. The System can help in complying with the federal Needlestick Safety and Prevention Act (11/00) and OSHA’s revised Bloodborne Pathogens Standard (1/01).
Dress for conditions.
Always wear your uniform.
- Flame resistant; tear resistant; breathable; and washable in hot water with bleach
- Boots: sturdy, washable, all terrain with good treads and steel toes
- Coats, hats, and gloves suitable for current weather conditions

Always use personal protective gear.
- BSI gloves, work gloves, and eye protection
- Respiratory devices, as necessary
- Portable radio
- Coveralls—preferably, the water resistant and disposable type
- Helmets for any situation in which head injury is a possibility
- Turnout gear and/or protective body armor as necessary

Use identification and reflective vests judiciously.
If you are working in an exposed location at a crash or rescue site, you will need the added protection and visibility that reflective vests and tape provide. However, if a situation calls for "stealth or anonymity," visibility may put you in danger. EMS Safety recommends a reversible jacket; one side with reflective tape and one side without. Badges may also present problems in that EMS may be mistaken for law enforcement.

Stay safe on the move.
EMS professionals spend more time than most people on the road, most of it under pressure. Emotionally charged situations are a given. Distractions are a given. Stress is a given. All foster human error. Add the fact that EMS professionals often must treat patients in the back of a moving vehicle and you have real danger.

Acquire and train reliable drivers.
Ambulance crashes not only take lives they cost money—money to replace expensive equipment and money to pay medical and legal bills. This is certainly much more money than you will spend properly selecting, training, and maintaining your driver pool.

Select drivers with good driving records.
Screen your drivers to reduce risk. Periodically review both their personal motor vehicle records and their driving behavior on the job. Poor driving habits are not a good sign. Aggressive, impatient, and distractible behavior when driving an ambulance is unacceptable. Acquiring or developing a good screening and review evaluation tool should be high on your management priority list.

“I never thought of injury prevention as safety; at a scene we have ‘Safety Officers’, not ‘Injury Prevention Officers.’”
—Bruce Walz
Train drivers—and partners—well.
Training helps drivers understand legal liabilities as well as national and state laws governing navigation do’s and don’ts. Training allows drivers to test and judge the capabilities of their often overloaded and top heavy vehicles under different road and weather conditions. It also can help drivers learn to control the adrenaline response that leads to aggressive driving, overcome tunnel vision by using peripheral vision to scan side-to-side, and anticipate the mistakes pedestrians and other drivers may make. The standard course, developed by NHTSA, is EVOC (Emergency Vehicle Operators Course). Another, CEVO (Coaching the Emergency Vehicle Operator) is offered by the National Safety Council. A third option may be offered by your agency’s insurance company: VFIS Insurance, a private insurer of many emergency services, offers such a course.

On-going training and refresher courses should be required.
However, “Right now, we are unaware of any state that requires refresher training.” Such courses update emergency vehicle driving skills and help jolt drivers out of any “false sense of security” or bad habits they may have developed. They also provide an opportunity to review innovative new safety features and practices that promise to help keep emergency personnel, as well as their passengers, safer in the patient compartment, such as those being uncovered by Johns Hopkins’ Dr. Nadine Levick (Erich 2000).

Use all available protective measures while on the move.

- Always wear lap and shoulder belts to improve survival and help keep the driver in a position to maintain control of the vehicle.
- Do not leave loose items on the dash; they are projectiles in waiting.
- Avoid sleepiness: fresh air, deep breathing. Professionals on medications that produce drowsiness, such as antihistamines, should let others drive.
- Both occupants of the cab should always watch the road. If you’re moving pay attention! Partners can help confirm clear paths at intersections, when backing up, and can help identify hazardous road situations such as pot holes, ice patches, etc. (Calm voice levels only; no shrieking allowed.) Partners also can read maps, watch for street signs and house numbers, and start sizing up the scene.

Learn navigation do’s and don’ts.
1. Obey the traffic laws.
State laws regulate the operation of emergency vehicles. Make sure you know what those laws are. While most states allow emergency vehicles certain privileges, emergency vehicles must share the road and drive with the safety of all other people in mind, motorists and pedestrians included. “Most state laws ... imply that if the emergency vehicle operator hits something or causes an
Lights and Sirens?
Recent studies find that the time saved by running with lights and sirens “is likely to be clinically relevant in only a very few cases” (Brown et al. 2000).

Lay drivers also need education.
Most of the people killed and injured in emergency vehicle crashes are those driving other vehicles. Distracted themselves, they may not see or hear you approaching. Failure to yield to emergency vehicles is one of the major causes of ambulance collisions (Saunders & Heye 1994).

Ongoing public information campaigns telling and showing people how to react to approaching emergency vehicles can reduce these problems.

Check it Out Online

accident, injury or property damage, they have failed to use due regard.” Translated that means you will be held liable financially, and quite possibly, criminally (Burns 1999).

2. Know where you are going and the safest way to get there quickly.
Verify call locations with dispatch. Study the maps for your area of service. Plan alternate routes for all occasions. Familiarize yourself with rush-hour traffic patterns. Know where vehicle crashes jam up traffic. Pay attention to sporting, social, and civic events that dump more traffic onto roadways.

3. Use sirens, emergency lights, and speed infrequently.
If you are running “hot,” you must use warning devices to alert other motorists to your presence and give them a chance to yield. If you value your life and theirs, do not scare the wits out of other motorists by blowing up on their bumper “out of the blue” and only then impatiently blasting the horn, sirens, or flashing your red lights.

4. Pass other motorists cautiously.
Even when warning devices are going full blast, do not assume other people on the road see or hear you approaching. Give them time to respond.

5. Use the utmost caution at all intersections, especially when moving against a red traffic light.
With the light, slow down! Against the light, stop! Look in all directions—twice. Other vehicles may block your view. Consider all motor traffic; anticipate pedestrians in crosswalks. Make sure it is safe bef Doubly true if you are the second of two emergency vehicles passing through. Avoid using an escort. Hazards associated with ambulance driving are doubled when an escort is involved because you are the second vehicle through an intersection and motorists may expect only one.

Secure all persons and equipment in the patient compartment. Secure patients according to protocol.
First for their safety and second, for yours. All unrestrained persons are unsafe in moving vehicles. Secure patients to their stretchers (or other carrying devices) and stretchers to the bar. Restrain violent patients that clearly pose a threat to you, but only as a last resort, after making every effort to talk them into a more cooperative mode. Document the conditions surrounding the decision to restrain any belligerent or violent patient; a legal challenge may require you to justify your actions (Demcoeur 1990, 187-194).
EMS professionals must secure themselves— one way or another.

- **Sit down!** According to research quoted in EMS Safety, more than half the time patient care is possible while the professional is belted.
- **Hang on!** Install and use ceiling rails and grab bars— do not grab anything that isn't bolted to the compartment.
- **Learn the boaters rough water stance.** Hanging on works well in combination with the boaters rough water stance: Get a wide base with your feet. Keep your knees loose, your fanny low, your weight distributed between, and a hand wrapped around something bolted down. As the vehicle bucks and pitches, use your knees and weight in counterbalance to the motion.
- **Brace.** Use your legs, torso, fanny, or back (not your head) to wedge yourself into a position against a secure structure. Bracing works best if you get a wide base, keep your weight low, and align yourself with the direction of travel (Dernoceur 1990, 183-184).

**Secure all equipment.**

Professionals who do not want to be bashed or skewered during a rough ride should lock up or tie down everything that can move in the patient compartment. Cabinet and hatch latches should be quick release ones and strong enough to hold under severe circumstances. Built-in holders in cabinets or secured to bulkheads are best. Nonskid shelving liner works wonders, both on the shelf and as a protective casing for breakables. Tie downs with quick release mechanisms and appropriately placed hook-ons should secure larger items, such as EKG monitors and O₂ tanks. Take a look around your patient compartment; find appropriate methods of strapping down everything that will not stay put in “rough water.”

**Driver “courtesy” also helps protect coworkers and passengers.**

Smooth out the ride as much as possible. Slow down, both the speed and the stop’s and go’s. Brake cautiously. Warn your passengers before unusual hazards or moves: A simple “Yo, cornering left.” or “Railroad track!” may allow riders to anticipate the need to hang on or brace. Also remember that even though the patient is secured to the cot and the cot is secured to the compartment, rapid acceleration, hard brakes or turns can cause the body mass to shift and may aggravate traumatic injuries despite proper immobilization.

It’s not only the patient who’s at risk during transport! What’s happening to your co-worker in the back of the vehicle? The patient compartment is not a safe environment—especially if only the patient is secured. Loose equipment is a projectile waiting to happen.

Secure everything—animate and inanimate!
Injury Prevention at the Scene

Injury prevention at the scene of a crisis is an on-going dynamic process. Take nothing for granted. **Assume nothing!**

Begin preparing en route.

There usually is time to run through a checklist on your way to the call. The items on that checklist should reflect the usual and unusual situations your unit can anticipate.

1. **Prepare for obvious risks.**
   Dispatch information can help you begin visualizing personal protective measures you'll need to take. Confirm dispatch information: the location; nature; the number, location and severity of patients; other law enforcement or emergency units en route; and special circumstances, such as animals.

2. **Prepare for not so obvious risks.**
   What you can't see or don't know can hurt you. Dispatch may not have all the information or may have been misinformed, inadvertently or purposefully. (They certainly won't know about the raccoon in the trash can.) Pay special attention to any hint that things may not be as they seem at first glance, especially for signs of violence or hazardous materials.

Manage your approach.

Binoculars are for more than spotting a 10 on the beach... as flashlights are for more than finding the house number.

1. **Approach every call scene discreetly and with caution.**
   Never just pull up to the call address and hop out. Be suspicious. If violence is known or even suspected, turn off your lights and siren “2-3 blocks before reaching the address during the day, and 4-5 blocks from the address at night” (Meade 1998). Even if violence isn't suspected, drive by the address, turn around, and come back before parking, all the while taking a conscientious look around.

2. **Always use binoculars to scope out the area before parking and again before getting out of your vehicle.**
   Binoculars are essential for identifying potentially life-threatening situations, those known to involve rescue, hazardous materials, and/or violence, for instance. Don’t stop there! Get in the habit of using those binoculars and flashlights to scope out all scenes even if no special threatening circumstance has been identified. Even an overturned garbage can is a hazard if you don’t see it, fall over it, and terrify a scavenging raccoon. (And stay away from loose parrots!) If there is any reason to believe that violence or crime is involved, call — and, if at all possible, wait— for law enforcement back up.

A Word About Hearing Loss

Sirens, traffic, heavy machinery, and the shouting and shrieking at emergency scenes add up to loud incessant noise. Constant exposure to loud noise results in a loss of hearing. Many ambulances have sirens on the roof. A better location is in the front grille. When sirens are sounding, keep the windows closed, and protect your ears with earmuffs or with ear plugs whenever possible. (Dernocoeur 1990, 194-195)
3. **Park safely.**
Saunders & Heye (1994) cite unsafe parking as another major cause of ambulance collisions.

**Choose your spot carefully.**
First, never get blocked in; park for a rapid departure. Second, choose a spot that will protect rescue workers from obvious hazards and potentially dangerous situations: moving traffic, fires, downed power lines, hazardous materials, and/or violence. Third, park to do all of the above and facilitate patient care: not too close, not too far.

In violent or potentially violent situations, park where your vehicle can go mostly unnoticed until the scene is secured: down the block or around the corner. If fire, explosion or airborne toxins are a threat, park uphill, upwind, and far enough away from the “hot zone” to assure your safety.

**Secure your vehicle.**
Set the brake. If you must leave the vehicle unattended, shut off the engine and take the keys. People do steal emergency vehicles.

**Use public warning and traffic management devices.**
Leave the flashers going, but turn off your headlights unless they’re needed to light the scene. At a crash site, make sure all crash and rescue personnel are visible. Always wear reflective tape; carry flashlights at night. Make sure motorists are warned far enough ahead of crash sights so they have a chance to react properly. Use cones by day and flares at night, as necessary. Responding DOT agencies may have portable lighted signs.

**Never leave your vehicle until you have assessed the situation and notified dispatch.**
At the very least make sure that you won’t be hit by another vehicle or blindsided by an enraged or hysterical human or animal.

4. **Approach every scene with caution.**
We’d all like to believe that our help is wanted and appreciated. Unfortunately EMS professionals are increasingly subjected to assault in the course of their duties: riotous crowds, drugged or drunk patients; enraged or hysterical family members or bystanders, even road rage.

**Consider the characteristics of each individual scene— outdoors or in.**
Controlling the scene starts with understanding what is going on— all of it! While it is useful to understand sets of precautions for similar situations, do not fall into the trap of stereotyping scenes. Assess the
attributes and atmosphere of each as if it were unique. Continuously review
the safety precautions for frequently encountered situations:

- Crash scenes
- Crime scenes
- Barroom scenes
- Crowd scenes
- Special situation scenes involving rescue operations, violence, or
  hazardous materials incidents

**Approach every building with care.**

Mistovich et al (2000, 134-135) recommends the following:

- Walk on the grass, not the sidewalk, for a quieter, less
  obvious approach.
- If you are using a flashlight, hold it beside, not in front of your
  body— so that you don’t make your body a possible target.
- If you are walking with a partner, walk single-file. The last person in
  line should carry the jump kit. This will leave the person or persons
  at the front of the line unencumbered and better able to react to any
  problems that may be encountered.
- Only the first person in line should carry a flashlight, because
  anyone with a flashlight behind the first person will backlight
  those in front.
- As you approach the scene, make a mental map of possible places
  of concealment (objects such as shrubbery, that will hide you) and
  cover (objects such as trees, that will both hide you and stop
  bullets). Keep illuminating or scanning dark or shadowed areas for
  movement as you approach a house.
- Take a moment to look at windows and corners. If you need to
  take a longer look, change positions to make it harder for a
  hostile person to get a fix on you.
- Stand to the side of a door when you knock on it; never in front
  of it— to avoid being a target for someone shooting, springing
  out, or reaching to grab you through the door. Standing to the
  knob side prevents a door that opens outward from blocking you.
  If the door opens inward, the person opening it will most
  likely be looking toward the hinge side, letting you see him
  before he sees you.
- As soon as the door is open, assess the situation before you
  decide whether to retreat and call for reinforcement or to have
  your partner move the ambulance up to the front of the
  building. As you enter, leave doors open behind you to ensure
  an escape route. Likewise, never appear to block the patient’s
  route of escape.
Approach every stopped car with care.

EMS Safety (79-82) has the following tips for approaching vehicles when “someone is slumped behind the wheel” and law enforcement is not on the scene:

- Drive up behind the vehicle.
- Park no closer than 15 feet away, and park at an angle that will facilitate rapid departure. If the person investigating the parked car will be exposed to moving traffic, the EMS unit can be slightly offset to provide a channel of relative protection.
- The driver should stay behind the wheel to allow for a quick getaway if needed.
- Before approaching, try using the PA system to elicit a response from the patient.
- Walk behind the EMS unit (rather than between the vehicles) to avoid being silhouetted by the headlights at night and to avoid being crushed between the stopped vehicle and the EMS unit should either vehicle move suddenly.
- Upon reaching the EMS vehicle driver door, check with the driver whether anything about the scene changed while walking behind the vehicle. Leave the jump kit next to the EMS unit until after assessing the situation.
- Throughout the approach, watch the inside of the vehicle for signs of trouble. For example, if the side mirror is moving, or the occupant seems to be shifting suspiciously (like reaching under the seat for something), abort the approach, return to the rescue unit and call for immediate law enforcement backup.
- Move quietly and quickly to the rear of the stopped vehicle.
- Check to make sure the trunk is closed; if it is unlatched, slam it shut without opening it.
- Use the protection of the vehicle itself. Most cars have “A,” “B” and “C” columns:
  - Pause briefly at column C to check whether there is any thing of concern in the back seat.
  - Then move to column B to observe what is happening in the front seat. Try to see occupants’ hands, and avoid reaching into the vehicle, where it is easy to be grabbed and held.
  - Never pass column B; doing so positions the EMS profes sional where it would be easy to be shot or knocked off balance if the door was opened quickly. One EMS profes sional should remain by column B to watch the patient—who may yet wake up and respond violently to the commotion.
• Loudly identify yourself as emergency medical services.
• Keep something soft (such as a pad of paper) in the left hand; this can be used as a distraction by throwing it into the assailant’s face, perhaps buying time for a safe retreat to the EMS unit.

Be alert for unstable vehicles, surfaces, and slopes.
If you think a heavy object is hanging by a thread, it probably is. If a surface or slope looks like it might give way under your weight, it probably will. Stabilize overturned vehicles, agricultural or industrial equipment, and construction materials only if you can do so without risk to yourself and others. Otherwise call for help. The same is true of attempting to navigate steep earthen or rock strewn grades, skewed or gouged out piles of grain, sand, asphalt, etc. and for trying to shore up collapsed structures, or those threatening to collapse.

Take stock of the mood of all others at the scene.
Scan the crowd for human responses that might put you at risk of attack. Note the emotional mood of crowds and smaller groups of bystanders, of uninjured participants in the crisis or the injury event (family, friends, or adversaries), and of the patient(s). Also note the mood and emotions of other emergency or rescue personnel on the scene that may provide clues to the general atmosphere. In the face of hostility or hysteria, remain calm but extremely vigilant. Judge whether or not your attention and communication skills will be enough to diffuse the situation. If not, retreat and call for help.

No matter where you are, maintain an escape route.
Also remember to note areas or structures that could provide protection. Never allow a crowd to come between you and your ambulance or a dangerous person or patient to come between you and your way out.

Injury Prevention in Special Situations
EMS duties place you in an incredible number of diverse situations. Some of these situations may require specialized training beyond the scope of what is learned in EMT Basic, Intermediate, or Paramedic courses. Most call for specialized personal protective and rescue equipment as well as specific techniques and protocols to reduce the hazards posed. The basic rule in such situations is to stay out of the hot zone unless you have received the training and practiced the skills a particular situation demands.

Know your area, your skills, and your capabilities. What is an unlikely situation in some regions may be much more likely in others. Train accordingly.
Identifying Special Situations
EMS professionals should at least be able to identify and describe the details of scenes that pose unusual hazards. For a number of reasons, you just might find yourself the first responder to the scene. In these cases, you will be responsible for calling for assistance. A detailed description of the conditions will help other agencies and equipment to respond appropriately and allow public safety measures to begin.

Rescue Operations
- Electricity
- Fire
- Explosion
- Heights
- Structural collapses or cave-ins
- Confined spaces that forecast low O₂ levels or may harbor noxious gases.
- Open or swift water
- Hazardous materials

Violence
Violence is not confined to crime scenes. Suicides, road rage, workplace and domestic violence—even civil disturbances—are much too common to be ignored. In the ideal world a scene involving crime or violence would always be secured by law enforcement before EMS professionals attempt to furnish patient care. Again, a variety of circumstances may put you first on the scene. Harm may come from the perpetrator, family, or bystanders.

In any situation involving unknown or suspicious circumstances, caution, stealth, and anonymity are your first line of defense. Risk management should be a part of training for violent situations—such as techniques for
- seeking cover and concealment,
- conflict communication,
- weapons searches, and
- restraint of belligerent or violent patients or bystanders.

A Word About Civil Violence
Unfortunately, peaceful protests or celebrations can evolve into random street violence or erupt into major, widespread violence. In such cases, the risks for injury or death becomes reality for everyone in the area. Every community should have a civil disturbance plan. EMS professionals should review plans for tactical deployment and safer operations in hostile environments.

A totally COOL Web site
http://www.scorecard.org/
Environmental Defense Fund’s Web site tracks pollutants and toxins.
Hazardous Materials
Specialized Hazmat teams control hazardous materials scenes. Unless you are specifically trained for the situation at hand, EMS professionals furnish emergency care only after the scene is safe and patient contamination limited. Familiarize yourself with all the information in the Emergency Response Guidebook, published by the US Department of Transportation. (One should be in your vehicle at all times.) The manual is updated every three years.

Training is required by law: OSHA 29 CFR 1910.120: Hazardous Waste Operations and Emergency Response Standards (1989). The regulations are designed with responders’ safety in mind, EMS included. Ideally, EMS professionals should be aware of those hazardous materials either located in or regularly transported through their communities, their usual containers, and the placards and other labels that mark hazardous materials. In any event, responders should know the basic rules:

General Rules
• Stay out of the hot zone, unless specially trained.
• Know who to notify, what information to give them, and how to cordon off the area if they find themselves on a hazardous materials scene without warning.
• Approach and stay uphill, upwind, and at a sufficient distance to avoid contamination.
• Park facing in a direction that allows rapid departure—that is, facing in a direction that allows for immediate forward movement (EMS Safety, 101).

In addition, EMS professionals should be able to
• Correctly identify the characteristics of hazardous materials using the two most widely used labeling systems.
• Name the four levels of training and define the responsibilities of each.
• Diagram and annotate the safety “zones” established at hazardous materials (and rescue) scenes.
• List the items under each of the four levels of Personal Protective Equipment worn at hazardous materials scenes. [See EMS Safety, Figure 9-2, page 104: Four levels of Personal Protective Equipment (PPE)]
• Describe clean side and contaminated side activities in the nine-step decontamination procedure. [See EMS Safety, Figure 9-3, 106; and Mistovich, Figure 42-7, 858]
Natural Disasters

Natural disasters include everything from floods and snow storms to earthquakes, hurricanes, and tornados. Each presents unique hazards for EMS professionals and their prospective patients.


Terrorism

The terrorist attack on the World Trade Center and subsequent anthrax incidents have made preparation for this particular form of chaos priority number one. In the coming years, much of the thinking on preparedness will be reviewed and revised. Helpful introductory materials can be found on the following Websites by using their search boxes:

- **National Fire Academy**
  [http://www.usfa.fema.gov](http://www.usfa.fema.gov)
- **Centers for Disease Control and Prevention**
  [http://www.bt.cdc.gov](http://www.bt.cdc.gov)
- **Federal Emergency Management Agency**
  [http://www.fema.gov](http://www.fema.gov)

A Very Good Idea

This is but a quick recap of scene safety techniques you should already be familiar with. Do not stop here. Access the resources listed here or follow up on appropriate sources given you by your partners in EMS, fire, and other rescue services. Build a library of safety information and resources—make it available to all emergency personnel in your area/region. Requirements and availability of specialized training will vary by community, state and region. Advocate and apply for continuing education and training for special situations prevalent in your area. Use new EMS textbooks and Internet resources to refresh your knowledge and skills.

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**Check it Out Online**

**Natural Hazards Center**
at the University of Colorado, Boulder
Web site [http://www.colorado.edu/hazards](http://www.colorado.edu/hazards)

**Check It Out Online**


**To access the Hazmat Guide for First Responders:**
enter “Hazardous Materials Guide” in the search box at the top of the page.

- Regulatory Considerations
- Background
- Training-specific Responses
- Special Situations (Hazmat incidents involving highway transport, rail transport, marine transport, fixed facilities, pipelines, radioactive materials, cryogenic tanks, chemical and biological terrorism and illegal or clandestine drug laboratories.)
- Search for specific information about Chemicals.
When the call came, you were in optimum health, clean, fueled, and rested. Now, back at the station, having faced death and destruction and survived without injury, you are wrung out, not exactly smelling like a rose, and hungry. The uniform and the personal protective apparel and equipment that you might need again soon is (to put it kindly) “used.” Your rescue unit is also a bit of a mess; it needs cleaning and restocking to be ready for your next performance.

**Finishing Up (and beginning again at the top)**

**Report any and all exposures.**

All exposures to infectious diseases must be reported according to your agency’s protocol. This protocol is guided by both federal and state regulations. Know what it is. Follow it as necessary.

**Clean and restock your ambulance and all equipment.**

1. Wash, disinfect, and sterilize, as necessary, using clean, hot water and soap, disinfectants or antibacterial agents per protocol. Wear utility gloves and coveralls to avoid contact with infectious substances that may still cling to surfaces and patient care equipment.
2. Repair or retire damaged equipment.
3. Restock disposable supplies.
4. Refuel.

**Clean and restock yourself.**

1. Put some food and fluids in your personal engine.
2. Wash yourself. Wash your hands, fingernails, and forearms. If at all possible, take a hot soapy shower and shampoo your hair. Change into a clean uniform; wash, dry, and hang up the used one so it will be wearable after the next call.
3. While you’re at it do a tick inspection— the every little nook and cranny inspection method perfected by mothers looking for ticks which works well to scope out new nicks and bruises that may need attention.
4. Take a power nap.

**Cool off and wind down— physically and emotionally— before the next call and before you go home.**

- Talk it out with coworkers or other appropriate professionals.
- Stretch the kinks out. Yoga works well.
- Practice relaxation techniques: breathing, meditation, and visual imagery.
Prevent mental and emotional fallout.
Stress in emergency medical service workers is all too prevalent and affects both professionals and their families and friends. Getting ahead of the game by getting enough rest and relaxation, managing routine distress, and paying attention to the responses of your families and friends off the job (as discussed in Section B) is your first line of defense against stress on the job.

Unfortunately, there will be occasions when that is not enough—occasions when the degree and persistence of the changes you note in yourself or your coworkers are intense.

Do not wait to confront stress overload.
Horrific casualty scenes are not the only cause of stress overload for EMS professionals. The cumulative effect of general conditions—such as the long hours on call, the “hurry up and wait” nature of duty time mixed with inadequate public support, administrative issues, deficient budgets, inexperienced leadership or coworkers, sexual, racial, or personality conflicts, lack of badly needed training and career-building opportunities—result in stress.

Recognize the signs and symptoms of stress overload.
- Irritability to coworkers, family, friends
- Inability to concentrate
- Difficulty sleeping/nightmares
- Anxiety
- Indecisiveness
- Guilt
- Loss of appetite
- Loss of interest in sexual activities
- Isolation
- Loss of interest in work

Find out more about dealing with stress.
Sources of good background information and group or self-study materials are listed in the Further Resources section at the end of this module.

Request changes in your work environment.
Sometimes just a slight change can relieve some of the pressures. Work shifts allowing all personnel more regular sleeping and time to relax with family and friends may be a solution. Arranging for a rotation to a duty assignment in a less busy area—while not always possible—may be another way to get the respite you need.

Seek professional help for yourself or for a stressed coworker.
If properly applied stress management methods do not relieve your stress, seek professional assistance.

Pay attention to your family and friends’ responses
- Lack of understanding
- Fear of separation and being ignored
- On-call situations cause stress
- Can’t plan activities
- Frustration caused by wanting to share

Get out and about and relax
- With family
- With friends unrelated to EMS
- In your community (volunteer)
Critical Incident Stress Management:
A brief reminder

Comprehensive Critical Incident Stress Management includes
- Pre-incident stress education
- On-scene peer support
- One-on-one support
- Disaster support services
- Diffusing
- Critical incident stress debriefing (CISD)
- Follow up services
- Spouse/family support
- Community outreach programs
- Other health and welfare programs such as wellness programs

Critical incident stress debriefing (CISD).
CISD meetings are held within 24 to 72 hours of a major incident. Attendance is voluntary. Debriefing is a process designed to allow EMS professionals and others to express and explore their feelings quickly in a nonthreatening environment. The intent is to accelerate the normal recovery process. It is not an investigation or interrogation. It is an open discussion of feelings, fears, and reactions guided by a team of peer counselors and mental health professionals. The team helps those involved review the incident and offer suggestions for overcoming the stress. All information is confidential.

Further Reading
Federal Emergency Management Agency (FEMA), United States Fire Administration. EMS Safety: Techniques and Applications. International Association of Fire Fighters (IAFF); Nd.
FEMA contract EMW-91-C-3592.

All injury prevention initiatives involve ongoing processes of surveillance to define and help anticipate injury risks and their solutions. Once the risks and solutions are identified and tested, we must practice those prevention strategies (measures) which promise to reduce injury. This is no less true for EMS professionals than it is for the populations they serve. Staying safe yourself is a fundamental element of your job.

Practicing personal injury prevention is also indispensable to your role as a model and teacher of safety which is discussed in Module III: The Mark of a Professional: EMS Professional as Role Model & Teacher.


• • •
Possible Handout
Stress at Work
National Institute for Occupational Safety and Health (NIOSH)

Print copies [DHHS (NIOSH) Publication No. 99-101] are available from:
Publications Dissemination, EID
National Institute for Occupational Safety and Health
4676 Columbia Parkway, Cincinnati, OH 45226-1998
1-800-356-4674; email pubstaff@cdc.gov

Activity
A Fitness Assessment is recommended.
OR use one of your choosing.

Appendices
Appendix A: Other Resources
Appendix B: Instructor Resources
Appendix A

HEALTH ASSESSMENT & TRACKING TOOLS
Web MD Health, Health-E-Tools
http://my.webmd.com/health-e-tools
Don’t forget to check out their “Fast Food Choices” under Tools for Improving Your Health.

Mayo Clinic
http://www.mayohealth.org/home
MayoClinic.com provides health and wellness information and interactive health tools. Choose: Programs & Tools.

Healthfinder
http://www.healthfinder.gov
Office of Disease Prevention and Health Promotion, U.S. Department of Health and Human Services

American Academy of Family Physicians
http://www.familydoctor.org
Choose: Healthy Living

American Heart Association
http://www.americanheart.org
Choose: Health Tools

Healthfinder
Choose: Online Checkups
Office of Disease Prevention and Health Promotion, U.S. Department of Health and Human Services

TOBACCO
Clearing the Air: How to Quit Smoking ... and Quit for Keeps
http://dccps.nci.nih.gov/TCRB/Clearing_the_Air/clearing.html
National Institutes of Health, National Cancer Institute

Why Do You Smoke?
Questions and tips to help you quit from the National Institutes of Health, National Cancer Institute

EATING & EXERCISE
Managing Your Weight
http://www.americanheart.org
Choose: Healthy Lifestyles
American Heart Association Contains nutritionally complete diets for three caloric intake levels, a simple way to calculate your optimum caloric intake by counting servings instead of calories, and lists serving sizes for most foods.

5 A Day for Better Health
http://www.5aday.gov
National Cancer Institute; US Health and Human Services; Produce for Better Health Foundation.
Fruit and Vegetable advice

Guides for Ethnic Eating
http://www.nal.usda.gov/ fnic/etext/000023.html#xtocid2381818
Food and Nutrition Information Center. US Department of Agriculture (USDA) Web site has multiple variations on the Food Guide Pyramid grouped for “Ethnic” and “Special” audiences.

The New American Plate
http://www.aicr.org
American Institute for Cancer Research
A plan for healthier eating

Delicious Decisions
http://www.deliciousdecisions.org/
American Heart Association Online
An online food choices for good nutrition information booklet.

Vegetables/ Fruits & Fat
Dietary Screeners
http://www.nutritionquest.com/freescreen.html
Berkeley Nutrition Services

Fast Food Facts
http://www.olen.com/food
Look up the nutrition facts for a food from one of 19 fast food restaurants. Based on the book Fast Food Facts by the Minnesota Attorney General’s Office,

Cyberdiet
http://www.cyberdiet.com
Cyberdiet features a vast array of nutritional information, interactive tools, discussion groups and more.

Just Move
http://www.justmove.org
American Heart Association
Tips, news, and an online diary.

Sports Music
http://www.sportsmusic.com
Music for Exercise and Fitness
Videos, music for exercise and stress relief as well as fitness tips. (Call 1-800-878-4764.)
Other Resources

CDC, National Immunization Program
http://www.cdc.gov/nip/

Summary of Adolescent/Adult Immunization Recommendations
http://www.cdc.gov/nip/recs/adult-schedule.pdf
CDC, National Immunization Program

POLLUTANTS AND TOXINS
Environmental Defense Fund
http://www.scorecard.org/
A totally COOL Web site with interactive maps that track pollutants and toxins across the US.
Fallout from WTC disaster to be tracked in central database.

STRESS MANAGEMENT
Stress Management: Model Program for Maintaining Firefighter Well Being
International Association of Fire Chiefs Foundation course manual.
Contract EMW-85-C-2047.
A program for maintaining fire and EMS emergency responder well-being, applying sound stress management principles to minimize the consequences of stress. Designed for either classroom or self-study (pdf)—181 pages

Stress at Work:
National Institute for Occupational Safety and Health (NIOSH). Web site.

SAFETY ADVICE
Traffic Safety and Occupant Protection
http://www.nhtsa.dot.gov/people/
National Highway Traffic Safety Administration (NHTSA)

Drowsy Driving
http://www.nhtsa.dot.gov/people/perform/human/
National Highway Traffic Safety Administration (NHTSA)

Prevent Injuries America
http://orthoinfo.aaos.org
American Academy of Orthopaedic Surgeon

FACT SHEETS
American College of Emergency Physicians
http://www.acep.org/1,12,0.html.

CDC Prevention Guidelines
Database. CDC, CDC Wonder
A comprehensive compendium of all of the official guidelines and recommendations published by the US Centers for Disease Control and Prevention (CDC) developed to allow public health practitioners and others to quickly access the full set of CDC’s guidelines from a single point.

SPECIAL SITUATIONS
USFA Hazardous Materials Guide for First Responders:
US Fire Administration, Federal Emergency Management Agency
Appendix B

Other Resources

Domestic Preparedness: A Compendium of Weapons of Mass Destruction Courses
US Fire Administration
http://www.USFA.FEMA.gov/ NFA/ tr_ertss.htm (pdf format)

Natural Hazards Center
A national and international clearinghouse for information on natural hazards and human adjustments to hazards and disasters.

The Federal Emergency Management Agency (FEMA):
http://www.fema.gov
Thousands of pages of hazards/disaster information and disaster preparedness, response, recovery, and mitigation.

Emergency Response to Terrorism: Self-Study (ERT:SS) (Q534)
National Fire Academy
http://www.USFA.FEMA.gov/ NFAtr_ertss1.htm
A self-paced, paper-based document and is designed to provide the basic awareness training to prepare first responders to respond to incidents of terrorism safely and effectively. Students who successfully complete the exam will be eligible for a FEMA/BJA certificate of training. Also available through the USFA Publications Center at (800) 238-3358, ext. 1189.

Biological and Chemical Terrorism: Strategic Plan for Preparedness Response.
Centers for Disease Control and Prevention.
http://www.bt.cdc.gov

Federal Response Plan, 1999
http://www.fema.gov/ r-n-r/ frp.
Federal Emergency Management Agency.
Also available from Washington, DC: General Printing Office.
Instructor Resources

Slide: Inner Workings of Fitness

Discovery Channel video on ambulance crashes: Arrive Alive.
Based on research by Nadine Lovick of Johns Hopkins.

Stress at Work
National Institute for Occupational Safety and Health (NIOSH)
http://www.cdc.gov/niosh/pdfs/stress.pdf [32 page booklet]

Stress Management: Model Program for Maintaining Firefighter Well Being
http://www.usfa.fema.gov/usfapubs/online.htm (pdf 181 pages)

Wake Up and Get Some Sleep: Preventing Drowsy Driving Among Shift Workers Program.
A comprehensive program specifically designed for businesses and organizations that employ workers beyond the typical 9 to 5 workday. Program materials include a Better Sleep Video, Workplace Posters, Shift Worker Brochure, Employer Administrator's Guide with PowerPoint Training Sessions, and a Brochure for Shift Work Families.

Specialized Exercise EMS Posters
VFIS program; if insured through VFIS, please call (800) 233-1957. This Emergency Medical Service poster illustrates common tasks for EMS personnel. Accompanying the tasks are specific exercises to help strengthen the muscles used in these tasks.

Back Reaction Kit
VFIS program; if insured through VFIS, please call (800) 233-1957. This program teaches situational lifts and specialized exercises to eliminate possible back injuries while participating in emergency service duties.
Appendix B

Instructor Resources

Infection Control Resources for EMS Professionals

**VFIS Programs**
(If insured through VFIS, please call (800) 233-1957)

- **Interactive Infectious Disease CD-Rom Program**
- **Bloodborne Pathogens for the Emergency Responder.**
  
  3-6 hours interactive educational program designed to instruct fire and emergency medical personnel in handling biohazardous pathogens and assist in complying with established standards under OSHA 29 CFR 1910.1030.

**Web Sources**

CDC, National Center for Infectious Diseases, Division of Healthcare Quality Promotion. (DHQP); — formerly the Hospitals Infection Program (HIP): http://www.cdc.gov/ncidod/hip/default.htm


**CDC, National Immunization Programs:** http://www.cdc.gov/nip/


**EPI Net** (Exposure Prevention Information Network)

The International Health Care Worker Safety Center at the University of Virginia Health System: http://hsc.virginia.edu/medcncr/centers/epinet/home.html

The EPI Net surveillance system was developed by Dr. Janine Jagger, the Center’s director, in 1991 to provide health care facilities with a standardized system for tracking occupational blood exposures; it is now used by over 1500 hospitals in the US. The Center collects data from approximately 70 hospitals using EPI Net (referred to as the “EPI Net network”). You can print out a variety of EPI Net data reports by clicking on About EPI Net, The Center’s bimonthly publication, ADVANCES IN EXPOSURE PREVENTION (AEP), provides exclusive research reports from the EPI Net database, and also tracks legislation, policy, and new products related to exposure prevention and needle safety.
Instructor Resources


- Occupational Exposure to Bloodborne Pathogens; Needlestick and Other Sharps Injuries; Final Rule. 2001. - 66:5317-5325
- Enforcement procedures for the occupational exposure to bloodborne pathogens, CPL 2-2.44D: Revisions to OSHA's bloodborne pathogens standard, mandated by the Needlestick Safety and Prevention Act clarify the need for employers to select safer needle devices as they become available and to involve employees in identifying and choosing the devices. The update also requires employers to maintain a log of injuries from contaminated sharps, which includes provisions designed to maintain the privacy of employees who have experienced needlesticks. Section XIII contains clarifications to OSHA 29 CFR 1910.1030. The document also contains a number of very useful appendices, including a model exposure control plan.
“[EMS] performance is observed and evaluated by more people in worse situations than that of any other group of medical practitioners. How EMS providers communicate their interest in the call or commitment to the current task (even if it is not one that they really enjoy) forms the basis for the impression that the public receives of EMS.”

(Kendrick & Ozimek 1992, 51)

Goal
To inform EMS professionals about the principles that mark them as medical professionals, explain how to serve as injury prevention role models, and conduct one-on-one safety education.

Content Sections
A. The Prehospital Provider: A Medical Professional
B. Communication Skills: The Mark of a Professional
C. The EMS Professional as Role Model
D. The EMS Professional as One-On-One Teacher

On completion of this module,
EMS professionals should be able to
1. Explain the qualities expected of medical professionals.
2. List 4 behaviors that leaders and followers have in common.
3. Describe the factor that most influences the public’s perception that emergency medical care has been “good.”
4. Define belief, value, assumption, and prejudice.
5. List 5 ways to demonstrate a willingness to listen.
6. Define trust and explain how it is earned.
7. Describe two situations in which an elevator speech might be useful.
Outline: Module III

Section A: The Prehospital Provider: A Medical Professional
What is Professionalism?
  Why stress professionalism?
  Professional Criteria
  The Medical Covenant
Ethics and Standards
  EMS Ethical Responsibilities
  EMS Professional Criteria
Three Expected Qualities of Medical Professionals
  Clinical expertise . . .
  Values and behaviors . .
  Excellent personal and interpersonal skills . .

Section B: Communication Skills: The Mark of a Professional
Some notable points about communication
Understand your viewpoints.
  Develop a positive self-regard.
  Develop self-awareness.
Understand others' viewpoints.
  Develop interpersonal competence.
  Gain the confidence of the injured, family, and bystanders.
  Reduce environmental discomforts.
  Learn more about the values, beliefs, and behaviors of people.
Develop listening skills.
  Some notable points about listening
  Some rules for listening
Enhance verbal communication.
Enhance nonverbal communication.
Gain the confidence of coworkers.
  Understand the legitimate goals, responsibilities, and concerns of your coworkers.
  Understand the codependent nature of leaders and followers.
  Understand the meaning of a harmonious working relationship.

Section C: EMS Professional as Role Model
Maintain a professional composure.
  Exhibit professionalism in your appearance.
  Exhibit professionalism in your deportment and demeanor.
  Make use of good manners and common courtesy.
  Mind your talk.
Role model safety on the job.
Role model safety as a (almost) private citizen.

Section D: EMS Professional as One-On-One Teacher
The Teachable Moment
  What is a Teachable Moment/What is NOT a Teachable Moment
  Identifying the Potential for a Teachable Moment
  Teaching the Teachable Moment
Educational Methods to Keep in Mind
  Teaching Modalities
  Manner of Presentation
Delivery Modes
  Planning an Elevator Speech
  Other Ways to Use 30-second Messages

Supplementary Materials
Activities
  1. Leaders & Followers
  2. Compose an Elevator Speech
Appendices
  A: Other Resources
  B: Instructor Resources
SECTION A
The Prehospital Provider:
A Medical Professional

As an EMT, your effectiveness as a role model is judged by the degree of professionalism you display in your work and in your role as a teacher. Because role modeling and teaching are dependent on displaying professionalism, it is worth understanding the principles that underlie the concept.

What is professionalism?
Professionalism is defined as “the conduct, aims, or qualities that characterize or mark a profession” (Webster’s, 1. a).

Why stress professionalism?
Professionalism is important because it creates a sense of trust and promotes effective communication, which allows you to do your job more effectively. Trust fosters two positive outcomes: “First, trust helps individuals to experience a sense of security and connectedness, to feel that they are not alone and that others care about them. Second, trust creates a supportive climate in relationships which reduces defensive communication” (Northouse & Northouse 1998, 43-44).

Why stress professionalism?—

“Credibility immediately comes to mind—credibility with our patients and the other professionals with whom we interact.” (Hunt 1991, 45)

“Trust is defined as an individual’s expectation that he or she can rely on the communication behaviors of others. Trust creates the belief that events are predictable and that people are basically sincere, competent, and accepting . . . that [patients or others] can depend on professionals to behave in predictable ways and that they can rely on professionals’ knowledge and integrity.” (Northouse & Northouse 1998, 41-42)

Trust, then, is the quality that allows people to accept your lead, and both role modeling and teaching are types of leading. When the people with whom you interact trust you and your abilities, both safety and opportunities to teach safety increase.

What are professional criteria?
As a person providing a public service, your professionalism will be judged by the following criteria:

- specialized knowledge, including the underlying principles of the field;
- high standards of achievement;
- high standards of conduct;
- commitment to continued study; and
- altruistic motives (Webster’s, 4. a.).
The Medical Covenant

It is especially important to understand that a covenant of trust characterizes the relationship between medicine and those it serves. This covenant promises to “create and nurture a healing dyadic relationship between [medical professionals] and a patient” (Swick 2000, 613; 616). To implement both the intent and the spirit of this covenant, you need to examine the underlying qualities and actions the ethics and standards for EMS professionals imply.

EMS Ethics and Standards

Together, ethics and standards govern human conduct. Ethics are moral principles, codes of right and wrong, that influence our achievements and conduct. Standards are the norms against which we can measure our achievements and conduct.

The ethics and standards for EMS professionals are described in The Oath of Geneva, The EMT Oath, and The EMT Code of Ethics. Mistovich (2000, 32) summarizes the responsibilities they set forth this way:

EMS Ethical Responsibilities

- Serve the needs of the patient with respect for human dignity, without regard to nationality, race, gender, creed, or status.
- Maintain skill mastery. Demonstrate respect for the competence of other medical professionals.
- Keep abreast of changes in EMS that affect patient care. Assume responsibility in defining and upholding professional standards.
- Review performances, seeking ways to improve response time, patient outcome, and communication. Assume responsibility for individual professional actions and judgment.
- Report with honesty. Hold in confidence all information obtained in the course of professional work unless required by law to divulge such information.
- Work harmoniously with other EMTs, nurses, physicians, and other members of the health care team.

EMS Professional Criteria

The EMS Agenda for the Future broadens the responsibilities listed above, identifying the following four attributes as desirable:

- Professional identity
- Ethical standards
- Scholarly concern for improvement
- Motivation for continued learning

How do these ethics and standards translate into the qualities and actions expected of an EMS professional?
Three Expected Qualities of Medical Professionals

The qualities and actions expected of EMS professionals fall into three categories:

- clinical expertise;
- values and behaviors consistent with best practices for public service involving human interaction; and
- personal and interpersonal skills that allow you to communicate your expertise, norms, and ethics through your professional behavior.

Clinical expertise is a given ingredient of professionalism.

Patient assessment and treatment skills are what EMS training has traditionally taught. Without these skills, EMS would not exist. Much of your confidence, as well as the confidence your coworkers and other professionals place in you, comes to you because you demonstrate technical competence.

But beware. Professionalism is not limited to technical expertise. Indeed, recent studies on narrowly focused and task-oriented curricula have concluded that “narrow emphasis on vocational skills is insufficient to achieve workforce success, and that vocational programs should emphasize the development of academic skills...” (Benz, 1997; quoted in EMS Agenda for the Future). The love of learning is inherent to professional competence.

Demonstrate a commitment to learning by
- having enthusiasm for inquiry and discovery,
- showing in-depth knowledge of the subject, and
- contributing beyond requirements (Fidler 1996, 586).

As important as they are, academic learning and technical expertise—by themselves—are not what marks a professional. Your beliefs and values influence the way you perform clinical tasks.

Values and behaviors consistent with best practices involving human interaction are a crucial ingredient of professionalism.

Nothing increases—or decreases—credibility and trust faster or more enduringly than the attitudes and behaviors you exhibit as you interact with others.

Behaviors and attitudes are dependent on your beliefs, values, and virtues.

Swick emphasizes that: “Medical professionalism is exemplified through what physicians actually do—how they meet their responsibilities to individual patients and to communities.” He goes on to say, “The values and behaviors that individual physicians demonstrate in their daily interactions with patients and their families, and with physicians and other professional colleagues... are what confirm] that we are worthy of the trust bestowed upon us by our patients and the public...” (613; 616).
**Professional values** are the ethics and standards—the behaviors, attitudes, concepts, and qualities—accepted by the collective members of a professional group. As a member of that group, each person is expected to internalize and demonstrate these values, or virtues, in his or her behavior and action. Core virtues, or humanistic values, listed as appropriate for medical professionals by The Society for Academic Emergency Medicine (SAEM) Ethics Curriculum Objectives are “prudence, courage, temperance, justice, trustworthiness, compassion, charity, agility, vigilance, and unconditional positive regard” (quoted in Larkin 1999, Table I, 304).

**Personal beliefs and values** are born of personal experience and participation in one’s culture; they are unique to the individual. Your effectiveness as a medical professional, as a role model and as a teacher, may be compromised if you attempt to impose subjective (e.g., cultural, religious, political) values on others.

People automatically refute, modify, discard, or refuse to consider beliefs and values they do not hold themselves (Stewart 1993, 82). Instinctively, people often disregard the messenger along with the message. Additionally, if your personal belief or value system is not in agreement with your professional one, you are going to have to work harder at consistently demonstrating professional behaviors in your daily interactions.

Behaviors born of unshared beliefs, assumptions, and prejudices—both yours and others’—WILL take a chunk out of your credibility and destroy trust when you least expect it. Even behaviors born of values, those beliefs that are consciously chosen, require reflection.

**Conflicts, Contexts, and Behavior**

As Ginsburg (2000, S6) points out, “professional behaviors are known to be highly context-dependent.” Even consciously choosing behaviors to demonstrate can be difficult because choosing

- often involves resolving a conflict between two (or more) equally worthy values, and
- the value you choose depends on the specific context created by the people and the situation.

Honesty and confidentiality are used as a simple example: “...while it is sometimes appropriate to lie to protect patient confidentiality, there are circumstances in which it would be considered more appropriate to break confidentiality rather than tell a lie” (S6).
To consistently demonstrate your professional values through your behaviors across the varied situations you encounter, you need to be able to negotiate between conflicting worthy values (not to mention between the lesser of two evils). To do so, you need to understand and be able to explain why you think one value is right and another is wrong in the given situation.

**Excellent personal and interpersonal skills are essential to professional competence.**

Demonstrating personal and professional ethics through your behavior, however, requires more than just examining your values and beliefs. It requires good communication skills—personal and interpersonal skills, verbal and nonverbal skills.

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**A belief** is something you are convinced is true.

**An assumption** is something you are less sure is true, but will defend anyway.

**A prejudice**, usually thought of as an unreasonable objection or irrational hostility towards an individual, group, race, or their supposed characteristics, is actually an opinion [belief] or leaning adverse to anything (you name it) without just grounds or before sufficient knowledge is attained.

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**Instructor Note**

**Possible Presentations**

Video clips from “All in the Family,” “South Park,” or “Fireside”
Communication Skills: The Mark of a Professional

“Good communication skills are obviously a hallmark of the quality of an effective leader.”
(Dernocouer 1990, 310)

Assisting people requires people skills. People skills require both personal and interpersonal competence, or the ability “to listen to yourself and others in order to translate beliefs and values into behavior” (Fidler 1996, 583). Additionally, persuading people to follow your lead requires more than being able to talk in a reassuring and calm voice.

The goal is to “create and nurture a healing relationship between you and the people with whom you interact” (Swick 2000). Meeting this goal requires that you understand both your own and others’ viewpoints and that you develop communication techniques that foster trust.

Some notable points about communication

You already know many of the assumptions about the meanings and parts of communication, such as, that it is a transaction between two or more people. The following, excerpted from Northouse and Northouse’s Health Communication: Strategies for Health Professionals (1998) are concepts that bear repeating:

Human communication “has two intertwined parts: content and relationship.” Content is the message: the information given or requested. Relationship, as used here, refers to the beliefs and attitudes or feelings of people that “influence how the content will be interpreted.”

As you interact with others, you are always observing, negotiating, and adjusting beliefs, values, prejudices and the feelings they elicit and the behaviors that demonstrate them—based on perceptions (true or false). Thus, whether the information you impart is believed or discarded is influenced by what others believe are your motives and values.

Understand your viewpoints.

Demonstrating the oft-mentioned attitudes and behaviors expected of EMS professionalism—caring, interested, committed, and respectful—is completely dependent on the positive regard that results from your insight into your beliefs and values. People who are comfortable with themselves feel less threatened and find it much easier to be comfortable with others. Good personal communication skills allow you to clarify and negotiate between your personal and your professional beliefs and values. Good personal skills allow you to become comfortable with these values and with the behaviors and relationships they predict before you have to defend or choose one over another.
Develop a positive self-regard.

Positive self-regard is not an uncritical, irritating satisfaction and pleasure with one’s own personality, accomplishments, or situation. The following is extracted from Fidler (1996).

Demonstrate positive self-regard by

- Communicating verbally and nonverbally in a direct and forthright manner
- Speaking out to identify one’s position
- Responding constructively to criticism
- Tolerating error
- Exhibiting self-starting, self-reliant behavior
- Advocating for self
- Being dependable and reliable
- Acknowledging one’s contribution

Develop self-awareness.

“Self-awareness is a continuous, ongoing process which involves looking for ways to increase self-esteem and confidence while accepting yourself and others as they are” (Pratt 1995, 20). It involves clarifying your values, beliefs and relationships, keeping those that help you maintain a positive self-regard and discarding those that don’t.

Demonstrate increasing self-awareness by

- Seeking and obtaining feedback
- Reflecting, both prospectively and retrospectively
- Noting what is going on around you
- Appraising self realistically
- Clarifying values continually
- Expanding the boundaries of one’s behavioral repertoire
- Clarifying relationships with others (Fidler 1996)

Understand others’ viewpoints.

To understand the viewpoints of others, you must, for the moment, suspend your perceptions of things and look carefully at other peoples perceptions. Along with self-regard and self-awareness, this requires interpersonal competence.

Develop interpersonal competence.

Valued interpersonal skills include “empathetic regard for others” and a “growing ability to productively engage with others” (Fidler 1996, 585).

Positive Self-regard vs.

Self-confidence

Self-confidence has a more aggressive connotation than positive self-regard. Webster’s explains it as “arrogant or excessive reliance on oneself” and associates it with cockiness and overconfidence. Self-confident is defined as “arrogantly overconfident” and is associated with people who are “unruly, impatient of discipline, and too aggressively self-confident.”

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Positive self-regard has a more positive connotation than self-confidence. Positive self-regard is a positive, healthy acceptance of one’s personality, accomplishments, and situation. It involves having confidence in one’s own abilities and capabilities and feeling good about one’s own worth.

Self-confidence, on the other hand, is often associated with arrogance and overconfidence. People who are self-confident may come across as pushy and arrogant. They may be too sure of themselves and not be open to other people’s perspectives. Positive self-regard, on the other hand, is characterized by a healthy sense of self-worth and self-acceptance. People who have positive self-regard are comfortable with who they are and are open to feedback and criticism. They are also more likely to be able to tolerate mistakes and failures, and to respond constructively to criticism.

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Develop interpersonal competence.

Valued interpersonal skills include “empathetic regard for others” and a “growing ability to productively engage with others” (Fidler 1996, 585).
Demonstrate interpersonal competence by
• Being sensitive to the feelings, values, and agendas of others
• Listening to and hearing others
• Developing dialogue skills
• Developing collaboration skills
• Empowering others
• Contributing to the learning of others

These skills are essential to gaining the confidence of ALL the people with whom you interact: the injured, family, and bystanders as well as coworkers and other professionals.

Gain the confidence of the injured, family, and bystanders.

“What the public recognizes as ‘good care’ has more to do with the level of emotional support and compassion displayed by EMS personnel than the quality of technical medical care” (EMS Safety, 37).

“Patients and bystanders probably will not remember what the EMTs or paramedics did medically, but they will remember the feelings they had in observing and relating with them” (Kendrick & Ozimek 1992, 51).

EMS professionals must establish a rapport with patients, families, and bystanders quickly (not to mention other rescue and health professionals). The way to do this is to project that sense of emotional support—compassion, interest, commitment, and respect for others expected of you during working hours.

Reduce environmental discomforts.

EMS professionals do not have much control over physical and environmental factors at a scene. Nevertheless, a simple way to lend emotional support and show compassion is to reduce the impact of scene activities. Being aware of, explaining and acknowledging, and—whenever possible—looking for ways to alleviate unpleasant circumstances are your best bets. Look for ways to reduce the volume and pitch of noise, increase privacy and shield unpleasant sights, provide warmth, attend to smells, and adjust lighting. (Richmond and McCroskey, 2000)

Learn more about the values, beliefs, and behaviors of people.

Caring requires being sensitive to other people’s feelings, values, and agendas. Knowledge helps order our expectation of others’ actions and reactions.

Knowing something about the general characteristics shared by specific age or sociocultural groups can help health care professionals put the beliefs, values, and emotional reactions of others in context and act appropriately. For example, concerned with the high crash rates of teens, NHTSA...
sponsored a review of the intellectual maturity and reasoning skills of youths between 10 and 24 (Eby & Molnar, 1998). The study reveals common values and attitudes that provide insight into the usual beliefs and behaviors of this age group.

Likewise, learning about the beliefs, values, and customs of unfamiliar cultures—especially as they relate to health care—can help EMS professionals understand what behaviors to expect in a health crisis. The information should also help EMS professionals learn what behaviors they should use to avoid misunderstandings and elicit cooperation in an emergency situation. If possible, invite members of immigrant communities to explain the customs and conventions of their culture to your team. Or go to them and show them what to expect when EMS responds to a medical or injury event.

**Develop listening skills.**

While understanding the usual characteristics of specific populations is helpful, making assumptions about what individual people are thinking, feeling, and why is almost always a dreadful mistake. Health care professionals need to listen to the individuals they treat, to the special populations at risk, and to the health and injury concerns of society as a whole. To know what people are really thinking, you have to listen. Listen to their words, listen to their beliefs and values, listen to their behavior, listen to their feelings.

**Some notable points about listening**

Unless otherwise noted, this discussion is excerpted from Nichols The Lost Art of Listening (1995).

“Listening has not one but two purposes: taking in information and bearing witness to another’s expression” (15).

Not to listen makes people feel awkward—makes people feel cut off, unappreciated, betrayed, wounded and bitter. “Failure to respond makes people feel awkward, uneasy, and confused” (10-11).

**Some rules for listening**

1. Do not filter other people’s messages:

   - Suspend your agenda: Put on hold your own needs—your need to teach a lesson, set someone straight, or top their story.
   - Suspend your preconceived notions and expectations: Attitudes bias what we hear. Second guessing can get in the way of truth.
   - Control your emotional reactions to messages that trigger hurt, fear, anger, or disgust. Reactions can crowd out your understanding of and concern for others. Put your expectations of the other person on hold—don’t judge them by what you’ve “become accustomed to in previous relationships” (44).
2. Pay attention to “what is going on in your conversational partner’s private world of experience” (110). Listen for the speaker’s agenda, preconceived notions and expectations, and emotions.

3. Appreciate the other person’s point of view
You do not have to agree with another’s point of view—or approve of their feelings—to be aware of and acknowledge them (116).

4. “Demonstrate a willingness to listen with a minimum of defensiveness, criticism, or impatience . . .” (112).
   - Listen without giving an opinion.
   - Listen without offering advice.
   - Listen without immediately agreeing or disagreeing.
   - Notice how the other person appears to be feeling and then ask for confirmation.
   - Listen to feelings but do not push too hard. (134)

5. Ask questions and make comments, in jargon-free language, that draw out thoughts and feelings.

6. Restate your understanding of others’ communications in your own words.
Repeat, in your own words, what the other person said or expressed to you and invite that person to
   - correct or agree with your understanding and/or
   - elaborate (114).

   Sensitive listening is a way of validating and empowering others.
Sensitive dialogue is another. Usually thought of as conversation, dialogue actually means to exchange ideas and takes place in both verbal and nonverbal communication.

Enhance verbal communication.
Effective verbal communication creates “messages that show openness, friendship, or empathy with the other person . . . [messages that] encourage the other person to communicate” (Richmond & McCroskey 2000, 212). Using your verbal skills to acknowledge others’ information, thoughts, and feelings as valid will increase the perception of physical and psychological closeness and produce trust.

Verbal messages primarily relay information.
   - Give information
   - Confirm information received
Create a supportive climate with your words.

- Describe; don’t judge: keep your message free of moral or value judgments.
- Describe the problem, not the person.
- Communicate in uncomplicated ways, marked by openness, honesty, and directness.
- Attempt to place yourself in the listener’s personal world.
- Be willing to share control: recognize the value of others’ experience, perspectives and suggestions, and involve the listener in defining the problem and finding the solution.

(Gibbs 1961. Adapted in Northouse & Northouse 1998, 46-49)

Use the techniques of confirmation to validate others.

Confirmation techniques “are [verbal] responses that enable someone else to value himself or herself more fully as a human being” (Northouse & Northouse 1998, 60). They involve showing empathy, sharing control, exhibiting trust, and disclosing positive personal thoughts and feelings to others when appropriate.

- Respond directly to what the other person is communicating.
- Reinforce or support what the other person is talking about.
- Express understanding, reassurance, or try to make the other person feel better.
- Ask for further explanation or encourage the other person to express a thought or feeling in greater detail.
- Respond with positive feelings and statements.


Enhance nonverbal communication.

Openness, friendship, or empathy are also increased or decreased by nonverbal behaviors. Nonverbal messages primarily relay emotions—our moods, our attitudes, and our relationships with others, and help establish empathetic rapport. Nonverbal communication is continuous; it never stops. It contains no words, but it does have vocal elements.

Purposes of Nonverbal Communication

Expression of feelings and emotions

Joy, anger, despair, and fear are all communicated with nonverbal actions—smiling eyes, jerky tense movements, wringing one’s hands, and cowering—all help communicate emotions.

Regulation of interaction

Nonverbal clues, such as a tilted head, intense eye contact, raised eyebrows, a lowered voice, a shift in body posture or a movement toward or away from someone, all regulate the flow of messages,
indicating to others whether individuals want to talk, when they want
to talk, whether they want to listen, how long they want to listen, and
when a conversation is over.

**Validation of verbal messages**
Verbal messages are confirmed as being really true when the
information and words, including the manner in which they are said,
match the feelings and emotions conveyed by the nonverbal
expression of the speaker.

**Maintenance of self-image**
The idea that dressing the part, walking the walk, and talking the talk
helps an individual communicate to others (and often to themselves)
how they want to be seen and understood.

**Maintenance of relationships**
Nonverbal communication is also a means of transmitting “relational
messages to others about such things as inclusion, status, control, or
affection.” (Northouse & Northouse 1998, 130-132)

**Components of Nonverbal Communication**
The components of nonverbal communication can be used to either
encourage or discourage physical and psychological closeness. Unless
otherwise stated, the following is adapted from Richmond and

**Physical Appearance**
Attractiveness, body shape and size, scent, hair, dress and artifacts
(jewelry, glasses, makeup, briefcase or stethoscope)

**Gesture and Body Movements**
- Emblems are gestures understood by most people in a culture,
such as the OK sign in America.
- Illustrators help illustrate spoken language: gestures that further
explain pleasure, anger, boredom
- Regulators help control the flow: nodding the head to indicate
that someone should continue
- Affect reflects intensity, the amount of tension or relaxation we
feel, clenched fists or relaxed hands
- Adaptors generally indicate negative feelings: wringing one’s
hands, chewing on your lip
- Posture erect—not rigid, with a forward lean, open arms and
a direct body orientation

“When you are in the
presence of another
human being, you can-
not not communicate.”
(Richmond & McCroskey, 4)
Facial Expression and Eye Behavior
Openness and empathy are communicated by a pleasant expression and good eye contact.

Vocal Behavior
The volume, tone, pitch, speed, pauses, and inflections of a voice.

Spatial Behavior
How a person defines comfortable distances and how a person chooses to arrange his or her environment to promote or discourage conversation (territoriality). You may already know that decreasing distance between people implies increasing familiarity and emotional closeness, and that people can become quite upset if you invade their personal spaces—good reason or not. In America, degrees of familiarity are thought to be:

- 12 feet and over = public
- 12-4 feet = social
- 4 feet -18 inches = personal
- 18 inches or under = intimate (Dernocouer 1990, 64)

Tactile (touch) Behavior
Because it indicates intimacy, touching is touchy. Generally you can touch people on their hand, forearm, shoulder, and middle to upper back without repercussions (225). But beware . . . “touch will not always be perceived in the same way by each person. Some patients will regard it as positive and helpful, while others will view it as negative and not helpful” (Northouse & Northouse 2000, 149). To determine the difference, keep your eyes on people.

Environmental and Physical Factors
Settings also promote or discourage communication—the size, shape, and placement of furnishings; colors; lighting; hot or cold; moist or dry air, blowing or still air—all affect physical and emotional comfort.

Scent and Smell
People can have emotional and physical reactions to smells. Pleasant odors are more likely to increase conversation.

Temporal (Time) Factors
The way you use time determines whether you will be viewed positively or negatively. Late people are seen as uncaring, slow, lazy, and uninteresting. Punctual people are seen as caring, bright, energetic, and interesting. This is true in conversation as well. Responding to questions almost immediately is seen as caring. Spending more, unhurried time with a person is also taken as a sign that you care.
**Gain the confidence of coworkers.**

Develop collaboration skills. The objective of collaborative relationships is to work as a team to serve the needs of the injured. Never lose this focus. You are there to do a specific job—safely and with a minimum of fuss and delay—not to impress other people. The respect you wish to earn will come from performing well and empowering others to do the same.

To do so, you should employ the same sensitivity to the feelings, values, and agendas of coworkers and other professionals. The better able you are to use listening skills and verbal and nonverbal communication techniques to create a positive, nonthreatening atmosphere, the more success you can expect as a member of a collaborative team.

**Understand the legitimate goals, responsibilities, and concerns of your coworkers.**

Understanding the complementary roles of leaders and followers is the first step towards teamwork. The second is to understand the legitimate goals, responsibilities, and concerns of your coworkers and the other rescue and health professionals with whom you must work harmoniously. Learning how to anticipate and accommodate the variables of both their and your personal and professional requirements is a part of that understanding.

**Understand the codependent nature of leaders and followers.**

No one disputes the fact that having a leader brings order and security to an injury scene. Or that leadership by committee is no leadership at all. Good leaders should be models of competence—a good leader should not expect subordinates to achieve what he or she cannot.

Never forget, however, that leaders, like role models and teachers, are “measured by the accomplishments of their followers” (Beers, 2). Leaders and followers, then, can be thought of as sides of the same coin. Because they are tied together in this manner, no matter which side is “up,” the other side is underneath, supporting.

**Understand the meaning of a harmonious working relationship.**

Understand that while creating a harmonious working relationship requires mutual trust in each other’s professional skills, it does not mean that you must be bosom buddies. “Real teams do not have to get along. They have to get things accomplished” (Harvard, 38).

Additionally, teamwork implies shared responsibilities—a working environment that encourages team members to “decide each issue differently based on who is in the best position to ensure performance. Sometimes the leader decides, sometimes another person, and sometimes more than one” (Harvard, 39).

**EMS Responsibilities**

- Demonstrate respect for the competence of other medical professionals
- Work harmoniously with other EMTs, nurses, physicians, and other members of the health care team (Mistovich).
Getting things accomplished takes
- a common commitment to a purpose and a working approach
- a definition of exactly what needs to be accomplished
- clear rules of the road (Harvard, 37-38)

Do not present yourself in any way that will compromise your professional ideals and values. Focus on the common goal at injury and rescue scenes: people safety and patient care.

Follow the principles of professionalism, internalize the beliefs and values professionalism embraces, and strive to develop the high ethics and standards of your calling. Demonstrate them in your behaviors—your attitudes, reactions, and actions—and you will be a role model almost by default.

Activity 1
Leaders and Followers
On the worksheet, Leaders and Followers, identify the characteristics or behaviors leaders of emergency situations should demonstrate. Then identify which ones followers should demonstrate.
Your role as a model of safety comes in two parts: as a professional and as a private citizen. To illustrate: say role model in the same breath with EMS, police, or firemen and people automatically think of a uniformed and impressively equipped professional talking in front of an audience of boys and girls about safety. Use the term to refer to a private citizen and people think of, say, a Big Brothers, Big Sisters volunteer—modeling friendship and maturity.

Most of the things a role model teaches are osmosed through observation. It is the “do what I do, not what I say” form of teaching, though explanations of why you are doing so also help.

The question is: What ARE you doing to increase your credibility as a role model and what are you doing to model safety practices both on duty and off duty?

Maintain a professional composure.
People form an impression of you from your appearance and demeanor before you even open your mouth or set to work.

Exhibit professionalism in your appearance.
Professional appearance includes both the way you dress and the way you are groomed. Uniforms should be whole—no rips or tears, no buttons missing, nothing left off. They should be clean, without obvious stains, and fit reasonably well. They should be buttoned, zipped, or tucked appropriately. “Message” T-shirts are not in good taste in a professional setting. Shoes should be polished. Jewelry and other “artifacts” should be minimal and inconspicuous (Richmond & McCroskey 2000, 219).

Professional grooming means being clean and tidy about your person—clean body, teeth, and nails. Unpleasant body odor and halitosis make close contact decidedly unpleasant; also avoid heavy perfumes or colognes. Fingernails should be clipped short, unpolished, and clean. Likewise, your hair should be clean and an acceptable length, color, and style. Unrestrained long hair is a safety hazard: it can get in the way of your vision, flap in the patient’s face as you bend over them, and get caught in almost anything.

Exhibit professionalism in your deportment and demeanor.
Professional deportment is the way you “carry” yourself—walking, standing, sitting, slouching. Demeanor refers to your expressions, verbal and nonverbal. What you are aiming for here is presence, or a “poise and effectiveness and ease of performance that enables a performer to achieve a close and sympathetic relationship with his audience” (Webster’s).
Make use of good manners and common courtesy.

In a study analyzing the impact of six treatment areas on patient satisfaction, “the factor with the greatest negative impact came from a perceived lack of crew courtesy and politeness” (Doering 1998, 69).

No matter the urgency, you are entering the homes and personal spaces of strangers; do so with consideration and the least amount of intrusive behavior possible. Whenever possible request permission to enter personal spaces. Rude, inconsiderate, judgmental or openly disrespectful behaviors do not give birth to healing relationships. Rather than encourage communication and cooperation, they invite people to defend themselves either aggressively or by retreating. So, use your best “guest in someone else’s home” behavior. Manners dictate that you introduce yourself.

Patients who tolerate coarse, impolite, or churlish intrusions with poise and patience are defending their welfare and showing a great deal more professionalism than you. They are also “observing and relating” you to other uncivilized, uncharitable, and insensitive oafs who have made their lives miserable in the past.

Mind your talk.

Presence of mind denotes the ability to choose appropriate words and phrases and to pay attention to the tone of their delivery. The choices you make will convey how you feel about the people present as well as how you feel about the injury and/or the variables that contributed to that injury.

The words you use and the way you put them together will either help or hinder understanding, either elicit cooperation or discourage it. Thus, words meant to soothe should not be said in a brusque manner, eyes ablaze with anger.

Whenever possible, “talk with patients, not to or about them” (Smith 1999). It doesn’t take that long to make eye contact and say a kind “Hey there. I’m _______, a paramedic here to help. What’s your name? ” before you say, “How did you do this?” Reason and compassion should lead you to soften hard truths without neglecting honesty.

A note about the power of words

EMS professionals need to ask questions and tell people what is being done and why. Try to use words and terms that you are relatively sure will be understood by the person you are speaking to (jargon-free, for the most part), but that convey the meaning you intend. That means you should know the meaning(s) and pronunciation of the words you use and be able to clarify their meanings at the first sign of confusion. All of us are victims of occasional “peach inspediments,” but using a similar sounding word with very different meaning than you intend or turning the syntax around can instantly cut your credibility.
Your appearance and composure are the first “attitude or value made visible” people notice about you. They speak to the predictability of your communication behaviors so important to gaining the trust that allows colleagues and patients to accept your lead as a role model and teacher.

Role model safety on the job.
PEOPLE ARE WATCHING you. How can they help it? You’re in a universally recognizable vehicle, in uniform, on your way to, from, or in the middle of some medical emergency. If people look in your window what will they see? When people watch you work, what will they observe or hear? Will they see you as a part of the solution rather than a part of the problem?

Do they see you wearing your seat belt in the ambulance, thereby increasing the chance that you will not be ejected from your vehicle in case of a crash? Do they see you cautiously negotiating traffic?

Do they see you wearing a mask to protect yourself from infection or the damage fine dust and debris can cause to your lungs? Do they see you parking upwind of chemical incident scenes, out of the way of Hazmat professionals but poised to lend the expertise you’re trained to deliver? Do they see you scrambling over unstable rubble, heedless of safety concerns and injuring an arm, a leg, or eyes?

Role model safety as a (almost) private citizen.
EMS personnel in uniform at the station, in ambulances, or on the street, are recognized as health professionals. In smaller communities, however, people may know you no matter where you are or what you’re wearing.

PEOPLE ARE WATCHING YOU go about your daily chores and activities because they think that, with your special knowledge, you will be the perfect representative of healthy and injury free living.

PEOPLE ARE LISTENING to the attitudes about safety measures you express. They should be able to count on your communication behaviors to role model healthy lifestyles and injury-free living both in your professional role and in your private life.

WHAT SHOULD THEY SEE?

They should see a person who is physically fit—one who doesn’t smoke, who exercises regularly, who eats lots of grains, fruits, and vegetables, and who gets adequate sleep. They should see a person who may enjoy a beer, but is never falling down drunk and one who never uses illegal substances—especially drugs prescribed for someone else. They should see a person who stores house and garden chemicals, firearms, and other dangerous items out of the reach of children and never uses these items inappropriately.

They should NEVER see you in your personal car weaving in and out of traffic or cruising down the right shoulder blowing your horn and making rude gestures.
They should see you always

- wearing a seatbelt and insisting that passengers wear theirs,
- insisting all children ride in the back seats and be correctly restrained for their age and weight,
- using a cell phone only when stopped at the side of the road,
- obeying the speed limit, and never tailgating.

They should NEVER see you driving when drowsy, drunk, or woozy from prescription medicine.

They also should know you always

- have working batteries installed in properly placed smoke detectors in your own house and in your elderly parents’ home;
- search out and eliminate hazards that predict falls, burns, and cuts;
- wear safety glasses or face shields when operating equipment that throws debris around;
- supervise children in a bathtub or near a swimming pool and have observed you empty everything in the yard and garage that holds water; and
- insist your children wear helmets when riding their bikes, scooters, or skateboards.

Get the idea? EMS professionals should be observed practicing any and all injury prevention actions recommended for the general public—on and off duty. If you don’t know what those things are, FIND OUT.

Pick up any brochures or pamphlets on safety you see, from your pediatrician, from your family doctor, or from your insurance agent. Read product “how to” materials.

Get on the Web and visit the sites that have safety information and checklists. Print them.

Set priorities for what you will do first, second, third, then get busy preventing injuries in your own world.

PEOPLE ARE WATCHING YOU and will follow your lead.

Role modeling is guidance gleaned from observing; you may never know exactly what people observed or what they decided to do themselves. One-on-one teaching is more direct; you will know what you said to do or not do.

° ° °
**SECTION D**

**EMS Professional as One-On-One Teacher**

“Teaching is not so much a process of telling, as it is a process of appealing to another’s common sense, good judgment, instinct, intuition, hunches, and insight.”

*(Stewart, 6)*

**Teaching is a way of**
- Empowering others
- Contributing to the learning of others

One-on-one teaching is the most frequently used method of communicating health information. It is effective because, like caring for a patient, one-on-one teaching centers around the patient’s needs. To do it well, you have to be able to set aside your agenda and preconceived notions—your judgments and prejudices—and you must control your defensive emotional reactions, both verbal and nonverbal.

You also should have a firm grasp of the subjects you intend to teach. If passion for your subject matter is the acorn of effective teaching, preparation is the full-blown oak tree. And practice makes perfect; trial and error are essential to practice.

One-on-one teaching can take place almost anywhere. Finding ways to teach prevention at a scene is an important aspect of the new role of EMS as teachers of injury prevention. What is a teachable moment and how to use one effectively, then, is the subject of this section.

**The Teachable Moment**

Most texts that talk about seizing the teachable moment are talking about relaying health information in a stable and controlled environment, a hospital or clinic for instance, long after the crisis has passed and emotions have calmed. Nevertheless, under certain circumstances, teaching at a scene is not only possible, it may be the best—even the only chance—to plant the seed of understanding that may keep those people from being injured again.

**What is a Teachable Moment / What is NOT a Teachable Moment**

When a situation is critical, no teachable moment exists. The focus is, as it rightfully should be, on patient care. Even if the situation is not critical, your first focus should be patient care—fears and other emotions, if not physical wounds, must be attended to. Only after the situation is under control or resolved does the question of whether a teachable moment might occur arise.

**Identifying a Potential Teachable Moment**

A positive state of mind? At an injury scene? Depends on how you define positive state of mind. Teachable moments at injury scenes are simple, natural moments when emotions have stabilized, when concerns and insecurities (legitimate or not) have subsided. When curiosity, reason, and the need to know or explain cause begin to surface.
Questions or statements that reflect on why something happened often announce teachable moments. Deciding the proper moment to teach is a matter of listening to the mood and for the question or statement that may indicate reflection, interest or curiosity.

**Signs that a person IS ready to learn**

**Feeling Signs**
- Interest, curiosity
- Patience, composure
- Self-confidence
- Respect, positive regard
- Affection, generosity
- Pleasure, satisfaction
- Good humor, cheerfulness
- Security, safety

**Behavioral Signs**
- Alert, attentive
- Poise, self-control
- Willing to try
- Teamwork, cooperation
- Friendliness, sharing
- Clear thinking, focused
- Smiling, laughter
- Participation

**Signs that a person is NOT ready to learn**

**Feeling Signs**
- Anger, resentment
- Frustration, impatience
- Agitation
- Boredom, indifference
- Insecurity, stress
- Depression

**Behavioral Signs**
- Complaining, arguing
- Lashing out, crying
- Tuned-out, talking back
- Half-listening, daydreaming
- Unclear thinking, confusion
- Giving up, non-participation

(Stewart 1993, 158-159)

**Teaching During the Teachable Moment**

**Who to Teach**

The person you teach may be a patient—if they are alert, and you can see from their eyes or manner that they are calm enough to be receptive to what you will say. Or it may be someone else. The real person to teach may be the mother, husband, daughter, friend, or caregiver who has the authority and will to change a situation. This person may be hovering in the background.

Speak to the person who asks the question or makes a statement first. But keep your eyes on the others present. If you find that someone else is being especially attentive, include him or her in the conversation without excluding the patient. Try to tailor your discussion so that everyone who is listening is encouraged to ask questions or make statements of his or her own. Don’t write off bystanders. They are members of the community and will spread the word.
What to Teach
At an injury scene, focus on sharing one or two effective ways to prevent the same type of injury from happening to the same people again or from happening to others. Consequently, injury prevention topics include the factors that contribute to all types of injuries: motor vehicle crashes, falls, poisonings, suffocation, drowning and submersions, fires and burns, etc.

Transportation subtopics might include:
• Restraint systems: seatbelts, child safety seats, airbags
• Pedestrian safety: children and elderly
• Motorcycle safety
• Bike, scooter, skateboard safety
• Helmets (bicycle, motorcycle, skateboarding, etc.)
• Unsafe driving
  —Speeding
  —Driving under the influence (illegal or legal)
  —Aggressive driving
  —Drowsy or distracted drivers
  —Hazardous weather

Each of these subtopics has specific safety points that may be applicable to a given situation. If you list all the subtopics for each of the ten leading causes of injury deaths, there are literally hundreds of risk factors you could talk about. If you include health issues, the number of topics mushrooms to thousands.

Start by learning the risk factors and countermeasures for those injuries or health concerns that cause the most deaths and severest injuries in your area. Your observations at a scene should identify the risk factors present. Your knowledge of the corrective measures likely to reduce those risks will supply the content of your message. Talk about the most important or obvious first and use the “who, what, why, when, where, and how” method to order what you say.

Tailor your message to the audience and the event.
You will want to tailor your message to different age and cultural groups.
• Who is at risk and who should take corrective measures
• What corrective measure(s) to take
• Why that measure will reduce risk (and by how much)
• When to implement the corrective measure
• Where to implement the corrective measure
• How to implement the corrective measure
How to Teach

1. Identify the message(s) you wish to give and rehearse them, if possible.
2. Keep the mood and the message positive.
3. Use confirming communication techniques, especially description.
4. Project an interested, caring, supportive, and cooperative atmosphere.
5. Don’t belabor the point. Trust people’s ability to learn through insight.

Educational Methods to Keep in Mind

Teaching Modalities

People learn through their five senses: sight, sound, touch, smell, and taste. Some learn best if they see the information, some if they hear it, some if they write it, some if they say it aloud or act it out. When you teach, use as many of these teaching modalities as you can. Talk and demonstrate; say it again. Leave a pictorial or text reminder, and follow up a day or two later, if possible.

Manner of Presentation

One-on-one teaching requires you to be in a position that promotes good eye contact and generally within another’s personal space, but not necessarily within his or her intimate space. Your vocal tones should be confident, friendly toward the person being addressed and convey an interest in the subject. Badgering or intimidation will slam the learning door shut. Avoid medical and injury prevention jargon. Keep your sentences short, and choose words and terms appropriate for the age and interests of your audience.

Lesson plans that show EMS professionals how to identify teachable moments and what to teach at an injury scene are almost nonexistent. One example is contained in Accidents Aren’t: Prehospital Care Professionals as the Critical Link in Injury Control, produced by the Division of Emergency Medicine at Stanford University Medical Center.

The plan for action follows the acronym STARR:

See—Observe the scene
Talk—Gather information
Assess—Judge the acuity of the situation; determine risks at scene
Remedy—Discuss; demonstrate; document data
Review—Monitor over time (follow up)

Preparation is the key to good one-on-one teaching, just as it is for group teaching. You need to know your topic and the notable points about that topic. You also need a good plan for talking about those points.
Delivery Modes
At a scene, you don’t have an hour to teach. You may have five minutes; you may have only 30 seconds. Under many circumstances, prepared and rehearsed messages are the only way to go. You need to be able to quickly focus on just a few points. And you need to be able to get those points across quickly.

Many people’s attention spans are short. They may last about the length of a TV commercial—30 seconds. That is about six sentences at a normal pace, less if the situation warrants a slower rate of speech. What you need for teachable moment occasions, then, is a series of “elevator speeches”—one- to two- sentence messages, each commenting on one specific injury prevention countermeasure. Then when the occasion arises, you will be prepared to assemble a 30-second injury prevention message best fitted to the situation and the time frame.

Planning an Elevator Speech.
What two or three things would you say to someone about preventing a specific injury if you only had the time it takes to ride four floors in an elevator? Watch some thirty-second commercials. Note how they focus their messages, target concerns, hook, and entertain their audiences.

Using the same principles, write your message down; then rehearse it out loud. As Milo Frank points out in How to Get Your Point Across in 30 Seconds or Less, every effective message has several irreplaceable ingredients: an objective, a listener, an approach, a hook, the subject, and the request/closing. When you plan an injury prevention message for one-on-one teaching, plan on using these ingredients.

The subject is 1 to 3 sentences addressing the following:

- **Who** is at risk and who should take corrective measures
- **What** corrective measure(s) they should take
- **Why** that measure will reduce risk (and by how much)
- **When** to implement the corrective measure
- **Where** to implement the corrective measure
- **How** to implement the corrective measure

Ingredients for 30-second Messages

- Situation— Describe a “who, what, why, when, where, and how.”
- Risk factor (injury or health)— List the risk factors observed; pick one or two.
- Countermeasure— List the possible countermeasures; pick one (or two)
- Thirty-second message for a teachable moment
  - objective: what you want, the specific thing you want to change or reinforce
  - listener(s): the age, ethnicity/race, gender, educational level, socioeconomic status, and culture
  - approach: the theme and tone that will speak to the needs and interests of your listener
  - hook: statement used to draw attention and peak the interest of your listener
  - subject: the point or points you will make to accomplish the objective
  - request/closing: a direct or indirect request or recommendation for action
The first three help you focus the message; the last three are the sentences you will plan.

**Other ways to use 30-second messages**

An injury scene is not the only place one-on-one teaching takes place. As a professional with special knowledge of field medicine, people recognize you as a valuable source of injury and health information. They'll ask you about all kinds of things at soccer games, in bowling alleys, theaters, and restaurants, at church and at the grocery store. Under these circumstances, the 30-second message will not only be your best offense, it may also become your best defense.

**Create an injury prevention message of the week.**

You have an injury problem in your service area. Your county has identified four injury problems; they want EMS personnel to help with public awareness. Turn to your 30-second messages on those topics. Pick one for each week (day or month). Include some “Arapahoe EMS, Working to Keep You Safe” ditty and your phone number. Put it on a postcard. Pass it out everywhere you meet the public.

Tell everyone you greet. Stack some at grocery store checkouts. Use them, instead of music, to entertain people in phone purgatory (on hold). Ask others to put it on their phone systems. Having done so, you’ve contributed to the public’s awareness and positioned your unit as an injury and health resource in the eye of all those who hear it.

**Think of what you might put on a business card.**

Follow up with a business card—or a 3 x 5 card. Passing out business cards indicates your willingness to be accountable for your services as well as your willingness to be called on for further injury or health prevention information. Business card (or postcard) sound bites can be a creative, cost-effective way to get out a message. Remember that a card has two sides. Contact information on one side. Sound bites on the other.

**Describe your teaching experience.**

Last, take a moment to evaluate your experience. Describe the teachable moment scenario and ask yourself these questions:

- What did you say and do?
- Did your effort accomplish the purpose you intended?
- Were there other effects you had not planned on?
  - —Good?
  - —Bad?
  - —Why?
- What would you change or do differently next time to increase the effectiveness of your actions?
EMS prehospital professionals’ credibility as models and teachers of injury prevention rests on their role as medical professionals. Professionalism is defined by clinical expertise, on-going examination of your beliefs and adoption of professional ethics and standards, and a willingness and ability to develop communication techniques that demonstrate these values.

Adopting lifestyles and practices that promote health and reduce injury risks as well as teaching others to do the same is an expected outgrowth of your professional behavior.

Assessing risks and collecting appropriate and usable injury data are also key to understanding what injury prevention measures you should be role modeling and teaching to others.

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Further Reading

Pratt PT. Attitude Awareness: Creating Your Own Healthy Outlook. College Station, TX: The Center for Applied Creative Technology; 1995.

Activity 2
Compose an Elevator Speech
• STARR Injury Prevention Explained
• STARR Example Scenario
• Example Planning Form
• Try It Yourself Worksheet

from Accidents Aren’t: Prehospital Care Professionals as the Critical Link in Injury Control
References


King J. Accident’s Aren’t: Injury Prevention and EMS. Atlanta, GA: Emory School of Medicine, Department of Emergency Medicine. Course Lecture.


Pratt PT. Attitude Awareness: Creating Your Own Healthy Outlook. College Station, TX: The Center of Applied Creative Technology; 1995.
Stanford University Medical Center, Division of Emergency Medicine. Accidents aren't: Prehospital care professionals as the critical link in injury control. Stanford, CA: Stanford University Medical Center, Division of Emergency Medicine; 1993. Curriculum participant and instructor manuals.
Activities

1. Leaders & Followers Worksheet
   Identify the characteristics or behaviors of leaders and followers using the Leaders and Followers Worksheet.

2. Compose an “Elevator Speech”- 30-Second Message
   a. STARR Injury Prevention Explained
   b. STARR Example Scenario.
   c. Example 30- Second Message Planning Example
   c. Try it Your Self:
      Compose a different 30-Second Message from another injury scenario.

Appendices

A: Other Resources

B: Instructor Resources
Activity 1

Leaders and Followers

Identify the characteristics and behaviors that leaders, followers, or both should demonstrate. Be prepared to justify your answers.

Leader (L), Followers (F), Both (B)

- L  F  B  Presence
- L  F  B  Tact and diplomacy
- L  F  B  Reliability (self-control, clarity of mind)
- L  F  B  Compassion
- L  F  B  Be technically and tactically proficient.
- L  F  B  Know yourself and seek self-improvement.
- L  F  B  Know your people and look out for their welfare.
- L  F  B  Keep your personnel informed; it makes them feel as if they belong to the team.
- L  F  B  Set the example: work with, not over.
- L  F  B  Ensure the task is understood, supervised, and accomplished.
- L  F  B  Train as a team.
- L  F  B  Make sound and timely decisions.
- L  F  B  Develop a sense of responsibility for subordinates.
- L  F  B  Employ coworkers in accordance with their individual capabilities.
- L  F  B  Seek responsibility and take responsibility for your actions.
- L  F  B  Recognize individual differences in personal values and styles and form generalizations about their impact on behavior in emergency management situations.
- L  F  B  Assess their own styles of influencing others in the local emergency management setting.
- L  F  B  Assess their own styles of exercising leadership and power in their roles in emergency management.
- L  F  B  Develop solutions for organizational problems in terms of work motivation and group dynamics.
- L  F  B  Integrate knowledge about different styles of leadership and influence and understand their impact on behavior in an emergency management context.
Leaders and Followers  

Activity 1

L  F  B  Develop a plan for influencing others in their local emergency management systems.

L  F  B  Communicate verbally and nonverbally in a direct and forthright manner.

L  F  B  Speak out to identify one’s position.

L  F  B  Respond constructively to criticism.

L  F  B  Tolerate error.

L  F  B  Exhibit self-starting, self-reliant behavior.

L  F  B  Advocate for self.

L  F  B  Be dependable and reliable.

L  F  B  Acknowledge one’s contribution.

L  F  B  Seek and obtain feedback.

L  F  B  Reflect, both prospectively and retrospectively.

L  F  B  Note what is going on around them.

L  F  B  Appraise self realistically.

L  F  B  Clarify values continually.

L  F  B  Expand the boundaries of one’s behavioral repertoire.

L  F  B  Clarify relationships with others.

L  F  B  Be sensitive to the feelings, values, and agendas of others.

L  F  B  Listen to and hear others.

L  F  B  Develop dialog skills.

L  F  B  Develop collaboration skills.

L  F  B  Empower others.

L  F  B  Contribute to the learning of others.

L  F  B  Have enthusiasm for inquiry and discovery.

L  F  B  Be content prepared.

L  F  B  Contribute beyond requirements.

Total up your answers:
Leader (L)
Followers (F),
Both (B)

What can you conclude from these totals?
Activity 2

Compose an Elevator Speech

Instructions

a. Review STARR Injury Prevention Explained
b. Review STARR Drowning Scenario.
c. Review 30-Second Message Planning Example
d. Try it Yourself: Compose a different 30-Second Message from another injury scenario.
   • Participants (in small groups or individually) use the blank 30-Second Message Planning worksheet to compose an elevator speech for the scenario provided.
   • Participants, then share, discuss, record ideas in order to create the best message.
   • If possible, the resulting message should be distributed to all as participants leave the workshop.

The Try it Yourself 30-Second Message Planning Sheet is made so you may copy it and put your own Elevator Safety/Injury Prevention messages in a binder.
Compose an Elevator Speech

STARR Injury Prevention Explained

SEE—As a part of your routine scene survey:
- Look for any factors that may have contributed to the injury.
- Identify risk factors that if not changed may result in other injuries.
- Look for safety factors already in use that helped reduce the seriousness of the injury.

TALK—Gather information from emergency personnel and witnesses
- What did they see happen?
- What did they do?
- Why do they think the injury occurred?
- Has this happened before?

ASSESS—Identify high risk
- individuals
- agents
- environments
- demands of the task (and behaviors)
  Also note safety measures in place.
  What factors all came together to cause the injury?

REMEDY—
Determine if the call is Critical or Noncritical. If the patient is not critical, look for a teachable moment. During a teachable moment—and ever sensitive to the feelings and values of others—you can
- Discuss safety measures.
  —first, praising those safety practices that have been used,
  —then providing information about those that have not.
- Demonstrate as you talk.
- Document what you see, hear, discuss, and demonstrate.

REVIEW—
Is this person still at risk? Does the agent, environment, or task present a risk for others? Consider a call back to expand on the information given at the scene. Consider making a referral to another agency who can help with educational or care responsibilities.

Is this injury scene part of a pattern that suggests there is a high risk population, agent, environment or task within your community? How many similar injury scenes has your agency attended? Have other area EMS agencies been called to similar scenes? Is your medical director or receiving hospital seeing an increase in a certain type of injury?
Activity 2

STARR Drowning Scenario

You are summoned to a family home to aid a possible drowning victim. (Dispatch may have given you more information; radio chatter may have given you more clues—all of which need to be verified on scene.) As you approach the victim, you note the scene and take over patient care. Your partner obtains a short history from the fire fighter first responders, the babysitter, and onlookers.

SEE
- A residential backyard with a swimming pool.
- A water-soaked, fire fighter first-response team huddled over a small, cyanotic child. They are administering CPR.
- A distraught teenaged girl and anxious but calmer elderly couple standing nearby.
- A fence around the pool with the gate open. A gaily decorated dinosaur floating in the pool. No water rescue equipment. No pool-side phone. No water depths marked on the pool edges.

TALK

The first-response team states they have just found a pulse after performing CPR for one minute. A fire fighter walked into the pool, reached down and hauled the child to the surface; water depth, 3-feet. The child is two-years-old. As you take over the child draws a breath and coughs.

The teenage babysitter, states the child was playing in the yard. She went inside to answer the phone; she was inside about five minutes; when she came out the child was underwater in the pool. She doesn’t swim, didn’t know how to get the child out of the pool, didn’t know CPR—so ran inside and called 911. Then she called the neighbors, whose number was posted beside the kitchen phone.

The neighbors state they had just gotten to the scene when the fire fighter first-response team arrived but had not removed the child from the pool. Both appear over 65; neither swim or know CPR.

ASSESS

Situation still acute. Focus must remain on patient care.

Identify high risks
Individuals
- high risk age group for drowning
- inexperienced frantic caretaker
- elderly back-up team

Agent
- swimming pool

Environment
- fence, but no self-locking gate
- toy in pool
- no pool-side phone with emergency numbers taped to it
- no numbers marking the water levels in the pool
- no water rescue equipment

Demands of the task (and behaviors)
- child left unattended
- no one familiar with the water depths in the pool
- neither sitter or neighbors swim or know water rescue techniques
- neither knows CPR

Safety measures taken or in place.
- fenced pool
- babysitter called 911 first
- neighbors’ number posted on kitchen phone
REMEDY
On scene is limited due to acuity of situation.

• Discuss
Do tell the babysitter she did the right thing by calling 911 and that having emergency numbers taped near the phone is a good safety measure. Do tell the neighbors that they did the right thing coming immediately.

• Demonstrate
Hold your phone or radio and point to 911 on the key pad as you talk; it may occur to one of the three that having a cell phone would have made calling for help quicker and that having one could have avoided leaving the child unattended.

• Document all.

REVIEW
It appears the child will recover.

1. Deal with continuing individual risks.
Consider a call back and/or referral to agencies that offer a pool safety assessment and can provide instruction in water rescue equipment and techniques, swimming and CPR.

2. Determine if this injury scene suggests a pattern. Is there a high-risk population, agent, environment or task within your community?

• Review your run reports. How many similar injury scenes has your agency attended?
• Inquire about other agencies’ records. Have other EMS agencies in your area been called to similar scenes?
• Ask your medical director. Is he or she seeing an increase in a certain type of injury? Are area hospitals seeing more of this type of injury?
• Analyze the records. What appear to be the most prevalent high risk factors? What needs to be changed to prevent these incidents? How could it be changed?

Adapted from and use with the permission of King J. Accident’s Aren’t: Injury Prevention and EMS. Atlanta, GA: Emory School of Medicine, Department of Emergency Medicine. Course Lecture.

Compose an Elevator Speech

Activity 2

STOP

Before you read this, turn the page and look at the example planning sheet.

Customizing STARR
(see, talk, assess, remedy, review) using CASE TWO in "Accidents Aren't".

30-Second Planner Example

Lesson 1

Knowing CPR (cardiopulmonary resuscitation) saves lives.

1. Mouth and throat: Prop the person on his or her side so water can drain out of his
   airway and start CPR.

3. Telephone: Rescue personnel (poolside phone).

   Pull lift, or roll the person out of the water.

   If the water is too deep, snag clothing with a long-handled tool
   near the victim, grab and reach under the water. Get a firm hold on
   the victim. Snag and pull the victim to poolside.

   If the water is shallow, stand with your feet on either side of the
   pool and pull or push the child into shallow water where you can get a
   firm hold (on hair, clothing, or limb) and pull the victim to poolside.

   Know the depths in the pool.

   Even a non-swimmer can get a submerged child out of
   a swimming pool.

2. Get the person out of the pool quickly:

   1. Yell for help and keep yelling. A neighbor may hear you.
   2. Get the person out of the pool quickly.
   3. Telephone rescue personnel (poolside phone).

   Learn to save a life.

- 30-Second Prevention Message

- Learn to save a life.
Injury Situation
Describe what you see at the scene.

EMTs are called to a home to aid a possible drowning victim. When you arrive, the fire fighters have pulled a two-year old boy from the water, begun CPR, and have a pulse. As you approach, you note the scene, and your partner begins to obtain a short history from the fire fighters and babysitter.

**See**
- Child cyanotic
- Babysitter on scene, frantic
- Neighbors on scene, anxious but calm
- Fencing around the pool; gate not self-locking
- No water rescue equipment
- No telephone near the pool
- No water depth marks

**Talk:** Sitter states:
- Child playing in yard near pool.
- She went inside to answer the phone (@ 5 min.); on her return, child was underwater.
- She doesn’t swim; didn’t know how to remove the child from the water.
- She went inside; called 911 and the neighbors

Others state
- No one on the scene swims or knows water rescue or CPR.
- Child found in 3-foot of water.

**Risk Factors**
List the circumstantial variables that contributed or could contribute to risk; pick one or two.

**Assess**
Situation Acute: Child has a pulse and has taken a breath. Focus remains on patient care. Discussion may not be possible, but listen for a teachable moment anyway.

**Risk Factors**
- High risk age group
- Interrupted supervision
- No self-locking gate
- No water alarm
- No telephone near pool
- No water rescue equipment
- No water depth marks
- Lack of knowledge
  - Swimming
  - Depths in pool
  - Water rescue techniques
  - CPR

**Countermeasures**
List the measure that will reduce those risks; pick one or two for your 30-second message.

- Install self-locking gate.
- Install water alarm system or pool cover
- Keep toys out of pool
- Have a phone or portable phone nearby with emergency numbers glued to it.
- Mark depths pool sides.
- Rescue equipment needed:
  - Tossable flotation device on a line secured to poolside
  - Long-handled hook or other grabbing/pushing device
- Knowledge needed:
  - Proper supervision for age characteristics and cognitive abilities of small children
  - Keep toys out of pool
  - Know pool depths
- Instruction and demonstrations:
  - Pool safety measures
  - Swimming
  - Water rescue techniques
  - CPR
  - Babysitting course

**Thirty-Second Message Planner**

**REMEDY:** Discuss & Demonstrate

Plan for each of the following:

**Objective:** Reduce the amount of time child is in pool and restore breathing quickly.

**Listener:** Non-swimming babysitter and neighbors

**Approach:** Even a nonswimmer can get a child out of a pool.

**Hook:** Learn to save a life.

**Subject:** Water rescue techniques for non-swimmers

1. Know pool depths: they should be marked on the sides of the pool.
2. The “squat and grab” method
3. The hook and pull/push method

**Request:**
Yell and phone for help. Recommend CPR instructions.

Using the CASE TWO in “Accidents Aren’t”: STARR: see, talk, assess, remedy, review
### The Elevator Speech: 30-Second Message Planner

#### Injury Situation
Describe what you see at the scene.

EMTs are called to

#### Risk Factors
List the circumstantial variables that contributed or could contribute to risk; pick one or two.

#### Assess

#### Talk:
Principals state

Others state

#### Countermeasures
List the measure that will reduce those risks; pick one or two for your 30-second message.

#### Thirty-Second Message Planner

REMEDY: Discuss & Demonstrate

Plan for each of the following:

- **Objective:**
- **Approach:**
- **Hook:**
- **Subject:**
- **Request:**

---

### Try it Yourself

Activity 2
Activity 2

Try it Yourself

30-Second Message Planner

30-Second Prevention Message
Other Resources

Cross Cultural Health Care Program.
http://www.xculture.org/
The CCHCP library provides current and often difficult to obtain resources on cross-cultural health care. Look at the cultural profiles in the “Books & Resources” section under “Downloadable Documents”: http://www.xculture.org/resource/library/index.cfm#downloads.
Audiovisual Materials to Consider/Review:
Acquire clips from the TV programs to illustrate variations in beliefs, values, assumptions, prejudice, etc.: for instance, All in the Family, South Park, or Fireside.

The Nonverbal Communications Series of Dane Archer (Listing with brief descriptions, extended descriptions and preview videos available at http://www.cmil.unex.berkeley.edu/media/sales/o4medicine/medmain4.html-includes all of the below; can be purchased ($195 - 295 ea) or rented ($50 -70 ea) separately. May be available through interlibrary loan.

- The Human Body: Appearance, Shape and Self Image (37min; Color; 1998)
- The Human Face: Emotions, Identities and Masks (38min; Color; 1995)
- The Human Voice: Exploring Vocal Paralanguage (30 min; Color; 1993)
- The Interpersonal Perception Task (40 min; Color; 1987)
- IPT-15 (20 min; Color; 1993)
- Personal Space: Exploring Human Proxemics (28 min; Color; 1999)
- Sexism in Language: Thief of Honor, Shaper of Lies (29 min; Color; 1995)
- A World of Differences: Understanding Cross-Cultural Communication (34 min; Color; 1997)
- A World of Gestures (28 min; Color; 1991)


Communicating non-defensively. Carlsbad, CA: CRM Films; 1994. (1 guide; 21 min)

Schrank J. Reading people: the unwritten language of the body. Stage Fright Productions; aka. Zurick, Ill: Learning Seed; 1998. (1 guide; 22 min.)—Explores our use of personal space. Illustrates common examples of defensive behaviors.
EMS professionals are the leading edge of a long chain of information observed and recorded by numerous rescue personnel, both on the scene and at treatment facilities, that help us understand why that injury occurred. You, as the first medical professionals on the scene, are able to observe and record circumstantial variables that others may not have a chance to see first-hand.

Signs and symptoms that threaten a life are first things to observe and treat. But EMS professionals also can observe and record details essential to injury prevention efforts—details about safety measures that are or are not in place prior to, during, or after an injury event.

Additionally, the run report form you use to record this information may be changing. You need to understand that these changes often reflect efforts to standardize data collection and coding systems and create computer databases that will allow “real time” feedback on injuries—feedback we have been used to waiting years to get. Feedback that we need in order to give accurate and workable safety information to people to help them prevent being injured in the first place.

Goals
• To familiarize EMS professionals with the importance of collecting information about injuries in forms that can be shared
• To give EMS professionals a working understanding of risk identification and intervention measures they can employ in the course of their duties

Content Sections
A. Understanding Injury Data
B. Documenting Injury Data
C. Identifying Injury Risks & Hazards

Upon completion of this module,
EMS professionals should be able to
1. State the first 5 leading mechanisms of nonfatal injuries.
2. Identify the single most important use of injury data.
3. Describe how uniform standards help in injury surveillance.
4. List 6 sets of facts EMS should document for each injury event.
5. Name and describe 2 screening tools specific to injury risks.
6. List 5 types of human and community service agencies and the information needed about each.
Outline: Module IV

SECTION A: Understanding Injury Data
Fatal versus Nonfatal Injury Data
   The 10 Leading Causes of Nonfatal & Fatal Injuries Compared
Surveillance
   What injury surveillance tells us.
   Surveillance observes and records 6 sets of information.
   Surveillance describes injury risk.
   Surveillance helps us plan, implement, evaluate, and revise interventions.
   Surveillance helps us share.
Collection Systems: Uniform Standards & Codes
   Uniform Data Standards, or Datasets
   Coding Systems
   Linked Data Systems
   Uniform Prehospital Emergency Medical Services (EMS) Dataset
   Local data sources are best.

SECTION B: Documenting Injury Data
EMS Run Reports
   Check boxes
   Fill-in-the blanks
   Narratives tell the rest of the story.
What should your report record?
   The Haddon Matrix: A Mnemonic Tool Specific to Injury Events

SECTION C: Identifying Injury Risks & Hazards
Risk Assessment
   Assessing Risk Factors During a Call
   Theme of the Week/Theme of the Month Assessments
   The Planned “Safety” Visit
Creating Screening Tools
   Use a screening mnemonic to remember what to do.
   Use an injury risk checklist to remember what to look for.
A word about background information
Create Injury Prevention Binders
   Create an Injury Checklists binder.
   Create a Safety Information binder.
   Create safety visit records.
Referrals
   Learn about mandatory reporting and referral situations.
   Keep a list of human and community service agencies.
   Keep referral records.

Supplementary Materials
Activities
   1. Write a Better Narrative
   2. Create an Injury Risk Checklist.
Appendices
   A: E codes
   B: Causes of Injury Categories
   Intent of Injury Categories
   C: Example of Injury Prevention
   Binder Materials
   D: Other Resources

Further Reading
References
To prevent injury, we have to understand it. To do so, we have to observe and record the circumstances surrounding individual injury events, join them all together (aggregate), then sort the whole bunch into meaningful chunks of information, or categories (analysis).

At the least, circumstantial details should reveal the mechanism (motor vehicle, fall, burn, firearm) and intent of injury (unintentional or intentional).

More helpful is to uncover the underlying causes, or risk factors, prevalent in different injury incidents. It is these underlying causes, or contributing factors, that must be modified to reduce the risk of similar injuries.

Fatal versus Nonfatal Injury Data
While deaths remain easier to count, national “mortality data reflect less than 1% of all injuries.” Thus “at the community level, and for some small states, there are simply too few cases of injury deaths to adequately profile the injury problem and target local prevention efforts” (Cristoffel & Gallagher 1999, 271). Efforts are underway to capture better nonfatal injury data through adjustments to The National Electronic Injury Surveillance System (NEISS). “The NEISS, maintained and operated by the US Consumer Product Safety Commission (CPSC), is an ongoing surveillance system routinely used to monitor consumer product-related injuries treated in US hospitals [emergency departments]” (Quinlan et al 1999, 638).

Reports of Nonfatal Injuries Total: 98,679,000
Not only are there more nonfatal injuries, the causes of nonfatal injuries differ from the causes of fatal injuries, as a study using NEISS to collect data points out:

**The 10 Leading Causes of Nonfatal & Fatal Injuries Compared**

<table>
<thead>
<tr>
<th>Nonfatal Injuries</th>
<th>Fatal Injuries</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Falls</td>
<td>1. Motor Vehicle Traffic</td>
</tr>
<tr>
<td>2. Struck by/Against</td>
<td>2. Falls</td>
</tr>
<tr>
<td>3. Cut/Pierce</td>
<td>3. Poisoning</td>
</tr>
<tr>
<td>5. Overexertion</td>
<td>5. Suffocation</td>
</tr>
<tr>
<td>6. All Assaults</td>
<td>6. Drowning/Submersion</td>
</tr>
<tr>
<td>7. Natural/Environmental</td>
<td>7. Fire/Burn</td>
</tr>
<tr>
<td>8. Pedal cyclists, other</td>
<td>8. Medical Care/Adverse Effects</td>
</tr>
<tr>
<td>9. Transportation, other</td>
<td>9. Transport, Other</td>
</tr>
<tr>
<td>10. Foreign body</td>
<td>10. Other Unspecified/Classifiable</td>
</tr>
</tbody>
</table>

(All Injury Study, 1997, Quinlan et al 1999)

Surveillance is the key to identifying the underlying causes, or contributing factors, of both fatal and nonfatal injuries.

**Surveillance**

Data collection and risk analysis (assessment) are commonly lumped together under the term surveillance. Surveillance, or “the action of ascertaining facts regarding the conditions or condition of something to provide exact information to persons responsible,” is the backbone of injury prevention.

**Collecting Data** is the process of observing and recording deaths and nonfatal injuries and the circumstantial variables surrounding injury events—a way of detailing all attributes of the humans, agents, environments, and task demands present.

**Analyzing Data** (or assessing data) is the process of sorting, categorizing, comparing, and interpreting data to determine which circumstantial variables contributed to specific injury events, which populations are most at risk, and what costs are associated with those injuries.

**What injury surveillance tell us**

“Experts use surveillance data “to understand an injury problem well enough to design programs that correctly target the causes, specific risk factors, populations at greatest risk, geographical location, and temporal [time and seasonal] issues ...” (Cristoffel & Gallagher 1999, 268). Thus, point-by-point
information documented by surveillance tools is crucial to all phases of primary injury prevention intervention. Those steps, as stated in Module I, are:

2. Intervene: Plan new or choose effective programs to replicate.
3. Share Results: Inform the media and the public.

**Surveillance observes and records 6 sets of information.**

Surveillance details the Who, What, Why, When, Where, and How of injury events. Through data collection and analysis we discover the characteristics of the hosts, agents, environments, and task demands of injury events.

We find out:

1. Who was being injured—their physical attributes and behaviors.
2. What kind of injuries were sustained to what body part (fracture, soft tissue; head, leg, lungs)—their attributes and behaviors, fatal or nonfatal, level of care required, and costs.
3. What agents or mechanisms were involved (motor vehicle, fall)—their attributes and behaviors.
4. What environments and under what conditions the injury was sustained.
5. What actions the person(s) or agent(s) was engaged in before, during, and after the injury event.
6. What safety measures were or were not in place.

**Surveillance describes injury risk.**

When a circumstantial variable turns up over and over again in combination with a specific type of host, agent, environment and/or task, it is considered a contributing or risk factor. For instance, data analysis of motor vehicle crashes involving drivers over 75 tells us that senior drivers are three times more likely to be struck by another vehicle than to strike another vehicle themselves. When struck, they are seven times more likely to have been making a left-hand turn but no more likely to be making a right-hand turn than younger drivers. Making left-hand turns, then, is considered a risk factor for senior drivers. Making right-hand turns is not. (Traffic Safety Facts 1999, Older Population). We would not be able to draw these types of conclusions without data collection and analysis.

**Surveillance helps us plan, implement, evaluate, and revise interventions.**

The above description reveals a kernel of information around which an injury prevention plan might be formed: right-hand turns are not a risk factor for people over 75 years of age driving motor vehicles. What if we could get seniors to plan and use routes to their favorite destinations using only right-hand turns?
To implement a plan based on the favorite destinations question, more information is needed about where seniors live, where they go, and what intersections seem to pose the most risk.

To evaluate the success or failure of a program, we need to measure throughout the intervention process. Comparing the number of injury incidents before, during, and after an intervention tells us whether those injuries increase, decrease or stay the same.

Asking why or why not (evaluation) determines if and how a program should be revised to increase its effectiveness.

**Surveillance helps us share.**

Sharing information about prevention successes and failures helps other EMS professionals and community coalitions replicate those successes without reinventing the wheel. Providing concrete information about injury risks and measures that counteract those risks to the media and the public encourages participation and support.

Surveillance also provides much of the information requested by funding sources in proposals and in oversight documents—the information on which grantors make decisions about granting monetary support to an organization or for a program.

**Collection Systems: Uniform Standards & Codes**

Injury data is made up of individual pieces of information, or factlets, (called data elements) about one event or one person’s situation. We can make more accurate conclusions about what is, or what is not, a contributing factor or an appropriate intervention only when the factlets in a large number of similar injury events are compared with each other.

To be useful, large amounts of data must be sorted into meaningful chunks of information. Sorting allows us to look at just one age group (e.g., injuries to people over 75 years). Or just one mechanism of injury (e.g., falls). Or just one contributing factor (e.g., alcohol). Sorting also allows us to combine things (e.g., to compute, say, how many people over 75 injured in a fall at home had a few drinks before they fell). Sorting is greatly facilitated by computers.

The problem is that computerized factlets collected from one source must match those collected from another so that apples can be compared to apples. Currently, different local agencies and states collect different pieces of information about injuries and often name them differently as well—“data element definitions may differ, similar data elements may have different meanings, and/or others may have the same meanings but different values” (Final, Model Minimum Uniform Crash Criteria (MMUCC)).

This lack of uniformity is not helpful. To solve this problem, efforts are underway to have all states collect the same factlets and to standardize the way they classify or code the information these factlets provide.
Uniform Data Standards, or Datasets

Uniform standards and datasets, then, are about matching pieces of information so they can be accurately read and sorted into meaningful chunks of information by computers. Correcting differences so data can be read and matched correctly (or data scrubbing, as some have named it) is a very time consuming and costly process. It is much more tedious and painful than learning to put the information in the correct format in the first place. That’s why writing a date as YYYYMMDD per instructions provided by the standard rather than as MMDDYYYY and other seemingly persnickety requirements are critical.

Of particular importance to understanding EMS data collection requirements are the standards set out by NHTSA’s Uniform Prehospital Emergency Medical Services (EMS) Dataset, which is discussed later.

Coding Systems

Coding systems convert words into an alphanumeric system. Because a computer does not automatically read “knifing” as belonging to the valid injury category “Cut/Pierce,” coding systems also help eliminate differences in the way pieces of information are recorded by defining and naming things in the same way. Each agency in the chain of information needed to fully describe and evaluate information about injury has its own coding system. Medical people, law enforcement, and insurance people each have their own coding systems.

ICD-9-CM Code System is specific to medical data.

The ICD system is revised every 10 years. ICD-9-CM has been in use since 1993. ICD-10-CM, due out sometime after the year 2000, “will introduce a new alphanumeric coding system for external cause of injury for use in morbidity (nonfatal) data systems . . . for recording more detail about injury circumstances (e.g., intent, mechanism, place of occurrence, and activity at the time of injury).” (Annest et al 1998, 3)

Appendix A: E codes

Table 1. Recommended framework of E code groupings for presenting injury mortality and morbidity data (June 15, 2001: http://www.cdc.gov/ncipc/whatsnew/matrix2.htm)

E codes are designated for all valid injury categories. E codes are especially important to injury prevention because they also help classify the intent (self-inflicted, assault, legal intervention, etc.). E codes must be recorded on all death certificates. Additionally, efforts to make E codes the standard for recording medical information about all nonfatal injuries are underway.

While not all medical facilities use them, E codes are widely “used to code external cause of injury for visits in hospital, emergency department, and ambulatory care settings across the United States” (Annest et al 1998, 3). Information about the use of E codes to collate injury mortality data is published on the Centers for Disease Control and Prevention (CDC) Web site. Go to http://www.cdc.gov/ncipc. Then type “E Codes” into Search.
Linked Data Systems
Linked data systems collate data collected by multiple sources that describe a single patient or incident. Sources usually include data collected by law enforcement at the scene; data collected by EMTs at the scene and en route; medical data collected in emergency department, inpatient hospital, or outpatient settings; and data collected by insurance agencies. The resulting expanded injury dataset allows a much more complete picture of the causes and outcomes of injuries and their costs in lives, medical care, and property (Why Data Linkage? 1996).

CODES, A NHTSA Model to Build On
CODES (Crash Outcome Data Evaluation System) links statewide motor vehicle-related injury data matching individual vehicle, crash, and human behavior characteristics to their specific medical and financial outcomes. Data are collected by police at the scene; EMS data collected by EMTs at the scene and en route; emergency departments, inpatient hospitals, or outpatient records; and third party payers. “Linkage enables persons involved in a motor vehicle crash to be traced from the scene to their final medical and financial outcomes” (Revised Catalog of Types of Applications Implemented Using Linked State Data, 1.3 Description of CODES).

In order to link data, the information by an individual system must match that collected by others and be computerized, so uniform data definitions and naming forms are crucial. At this point,

“Almost all of the states have computerized crash data statewide. Half of the states have developed state EMS data systems, but less have statewide emergency department data systems. A majority of the states have computerized state hospital discharge data systems. All of the states have computerized Medicaid and Medicare data systems, but few states have statewide computerized data files for private vehicle or health insurance claims data. Access to data for the less seriously injured

Implementation of CODES
victims, a group that includes many of the successes for highway safety, is difficult to obtain because the data may not be computerized.”

(Revised Catalog of Types of Applications Implemented Using Linked State Data, 2.1 Data Resources and Case Selection)

Clearly, EMS agencies are not the only ones faced with changing data collection tools to accommodate data linkage. In fact, there are many, many specialized databases that address injuries. All are being encouraged to incorporate national standards for electronic data interchange that enable computer-based record systems to communicate and integrate with other automated information systems.

Linking injury specific information from them all is a nightmare best left to statisticians. Your role is limited to providing accurate information in the order and naming-form they need. The Uniform Prehospital Emergency Medical Services (EMS) Data Conference, Final Report speaks to this data collection role.

Uniform Prehospital Emergency Medical Services (EMS) Dataset

81 EMS Data Points and their Definitions

The Uniform Prehospital Emergency Medical Services (EMS) Data Conference, Final Report (the product of an August 1993 conference sponsored by NHTSA) is a national effort to develop uniform specifications for data entered in EMS systems using E codes. The report recommends that 81 data elements be collected: 49 are considered essential and the remaining 32 are considered desirable for “development of statewide population based EMS databases needed for prehospital EMS system evaluation.

“When linked with other prehospital data records, such as motor vehicle crash reports, EMS dispatch data, and with databases of emergency department, inpatient, and ambulatory care, the linked databases provide a means for outcome evaluation of EMS and for injury epidemiology and prevention program development” (Uniform Prehospital, Abstract).

The full report further defines each element. The current data points are coded according to the ICD-9-CM alphanumeric system. Undoubtedly, adjustments will be made to ICD-10-CM in order to include more detail about the intent, mechanism, place of occurrence, and especially to include more detail about activity surrounding the time of injury.
Emerging EMS State Data Systems

PreMIS: Prehospital Medical Information System

When fully implemented, North Carolina’s EMS Information System PreMIS will make possible a standard method of documenting patient care to permit tracking of hospital diagnoses and patient outcome information, system comparison across agencies, involvement in public health and injury prevention initiatives, and EMS research.

The initial dataset is configured from a combination of the National Highway Traffic Safety (NHTSA) Prehospital Dataset, the Emergency Department Dataset (DEEDS) from the Centers for Disease Control, the Vehicle and Fatal Accident Reporting Systems from Highway Safety [FARS], the North Carolina Medical Examiner’s Database, the NHTSA Crash Outcomes Data Project [CODES], the North Carolina Trauma Registry, and other injury surveillance and EMS specialty datasets (PreMIS, FAQs http://www.premis.net).

Local data sources are best

Local data sources are best for identifying population demographics, injury patterns and for evaluating the successes of programs, and policies in a given community.

All data comes from local sources—albeit, multiple sources. EMS data and reports from law enforcement, medical examiner and coroner, schools, fire services, child protective services, emergency departments and hospital discharge data, and data from insurance agents, unions, local parks and recreation departments, and surveys about behavioral risks—all start in Anytown.

States merely collect it and pass it on to national data collection systems that have the capability to sort and analyze numbers large enough to draw accurate conclusions about the causes of—therefore the risk factors involved—in injury events.

Collection systems, however, are reliable indicators of trends only if the people who collect the information understand how to do so and attend to the details of the task. The accuracy and usefulness of state and national databases, and the decisions derived from them, are completely dependent on the quality and consistency of local data collection.

Because EMS professionals are often the first at a scene, certainly they are the first medical personnel on site, the information and details you observe and record are absolutely essential to injury prevention efforts.

° ° °

Check It Out Online
Data Element Dictionary
A searchable Uniform PreHospital EMS Data Element Dictionary is available from the Utah CODES Website: http://codes.med.utah.edu

Appendix B
Causes of Injury Categories and Intent of Injury Categories
EMS professionals already record lots of valuable, meaningful data that contribute to injury risk identification and analysis. (We all know you wouldn't have a job if you didn't do your paperwork.) Much of the information you have provided has already helped identify what is happening to the people with whom you live, work, and play.

Careful documentation has helped identify the leading external causes of injuries and determine the safety measures that prevent or reduce those injuries. Access to this information has revealed populations at risk and many of the underlying causes, or risk factors, prevalent in different injury incidents.

The information you gather is extremely important to injury prevention efforts because it helps you and other professionals
- focus (and justify) local injury prevention efforts using countermeasures proven effective in state or national venues;
- acquire public and private support as well as funding, for your injury prevention efforts; and
- reduce costs for which you are not reimbursed.

More good work is needed, however. Your documentation should continue to record the multitude of circumstantial variables that may contribute to injury you observe while on a call or en route to a treatment facility—especially the details about the scene of and the activity surrounding the time of injury.

EMS Run Reports
EMS run reports collect data about individual injury events via run reports in three ways: check boxes, fill-in-the-blanks, and in narratives. However, run report forms vary from state to state, even within a state, so the types and details of injury information they record—and how they record it—varies. Consequently, crucial injury details not included in check box or fill-in-the-blank spaces should be included in the narrative part on your form.

Check boxes
Check boxes (or bubble-in items) help make the task of documenting data quicker and data analysis easier. They are most helpful for recording discrete items, such as gender, whether seatbelts were used or alcohol or drugs were suspected.

Fill-in-the blanks
Patient and incident identifying information and dates are fill-in-the blank data elements, such as name, date of birth, address, body part injured, and type of injury. To facilitate matching and ease data analysis, each data
element, whether using numbers or letters should be written exactly as specified in your instructions: e.g., for a date your standard may be YYYYMMDD = 19991205 = December 5, 1999.

It is extremely important to the injury prevention effort that EMS professionals check all the boxes and fill-in all the blanks provided on their run report forms. However, check boxes and fill-in-the-blanks have obvious limitations. Neither is able to describe the activities and “events leading up to the injury or illness” (Heckerson & Shepard 1999, 79) nor those occurring during or after the injury event.

For instance, checking “Cut/Pierce” (if there even is such a box or bubble on your form) does not tell us whether the patient (having poured half a bottle of wine on the chicken she was cooking and the other half down her throat) stabbed herself in her own kitchen while trying to kill a fly with her chef’s knife . . . or . . . was assaulted by a hungry, axe-wielding ghoul straight out of Nightmare on Elm Street, who—upon smelling the chicken—came in for a bite. That’s where narratives are most useful.

**Narratives tell the rest of the story.**

Ideally, your narratives should “give details not reflected by the checked boxes” (Munger 2000, 51). Identifying what injury information should be in your narrative, then, should be a matter of remembering what information your form does not record in check box or fill-in-the-blank spaces. If only it were that easy. Actually, details not reflected by the checked boxes are those for which:

1. just checking the box does not tell the whole story
2. there is no check box

Additionally, since computers can now search free-text for key words, using approved terms in your narratives becomes important to matching data elements in different injury databases. Familiarity with the data elements and their definitions as detailed in the Uniform Prehospital Emergency Medical Services (EMS) Dataset will aid this process as will knowing the valid injury categories used in the ICD-9-CM E code system.

**When just checking the box does not tell the whole story**

Just the name or E code of an external cause of injury or location type does not tell us as much about the injury as we’d like.

In the full report, each of these names/terms is defined further. The category Uniform Prehospital EMS Data Elements for Location Type, in the margin note on the page to the right, provides an example.
Home/Residence
includes apartment, boarding house, farm house, home premises, residential house, noninstitutional place of residence, private driveway, private garage, private garden, private home, private walkway, swimming pool within private house or garden, and yard of home. Excludes home under construction but not occupied, or institutional place of residence.

If you merely check Home/Residence for the location type, what does it not tell us? What information is missing about the type, setting, and physical conditions at the scene that would help you or other injury prevention professionals choose, plan, or implement an intervention for the population at risk. You need to tell the rest of this story in your narratives.

When there is no check box
Only through a narrative can you fully describe the activities and “events leading up to the injury or illness.” Only a narrative can fully portray the physical and emotional characteristics at a scene, detail the chronology of events, picture the conditions of a road or other features, depict the conditions, actions, and reactions of the people involved in an injury event. Chronological accounts and descriptions are particularly helpful to accounts of injury events.

Describing what happened in the order it happened (chronological order) always helps our understanding of how things played out and where they started to go wrong. Depicting the settings, situations, and conditions helps us picture the hazards of a task or scene. Describing the characteristics, conditions, attitudes, and reactions of all involved—including observed risks and safety measures already in place—before, during, and after the injury event is especially important to our ability to identify the underlying causes of injury.

Note the word “describe.” Describe means to accurately record what you actually see, hear, or are told in words—both your independent observations and statements made by others. Please note any inconsistencies or discrepancies between what you are told and what you actually see. Always make sure your impressions, feelings, and/or suspicions are noted as such. Making judgements and/or drawing conclusions are not appropriate.

Your agency may require that you follow a consistent format using an acronym mnemonic (memory tweeker) when writing your narratives. And much of the space assigned to narrative may have to be devoted to information about the patient’s condition and treatment. Nevertheless, you also should include injury information not reported in check box/fill-in-the-blanks format in your narrative—especially the activities and events leading up to, during and after the injury or illness and your observations and impressions of people’s behavior.
What should your report record?

The following provides a fairly comprehensive idea of the information state and national injury prevention specialists need to have to determine what population to target and what injury prevention measures to implement. Surveillance of some situations, such as domestic violence incidents, may require documenting pieces of information specific to those situations.

1. What agent or mechanism of injury was involved.
2. How many people were involved.
3. Who was injured. Who was not. And his or her
   - date of birth (age)
   - residential address
   - gender
   - race/ethnicity
   - occupation/socioeconomic group
   - mental/physical impairments
   - alcohol/drug use
   - actions/reactions/attitudes
4. What kind of injuries were sustained to what body parts and the outcome (fatal or nonfatal)
5. Where and when the injury happened.
   - Location type/setting
   - Date/Time
   - Physical conditions at the scene
   - Special event or season, if applicable
6. What actions were taken by the person(s) or agent(s) before, during, and after the event.
7. What safety measures were or were not in place or practiced.
   - Use of protective devices
   - Absence of protective devices
   - Risks overcome
8. What role did intent play.
9. What was the cost to your unit (in personnel time, injury, and anxiety; in equipment and supplies). Whether the costs were fully reimbursed or not.

The Haddon Matrix: A Mnemonic Tool Specific to Injury Events

Even if you do not use the matrix to record what you see and hear, feel or suspect, its visual image can remind you of risk and safety factors you should observe and record.

Knowing what details to put in each Haddon Matrix column requires knowing what is a risk and what is a safety measure.
Using the Haddon Matrix as a Mnemonic Tool

**Describe the injury event**
- Mechanism & Intent

- Situation & Task Factors

<table>
<thead>
<tr>
<th>Host</th>
<th>Agent/Vector(s)</th>
<th>Physical Environment</th>
<th>Social/Cultural Environment</th>
</tr>
</thead>
<tbody>
<tr>
<td>• injured/not injured</td>
<td>• type</td>
<td>• date/time</td>
<td>• special event or season, if applicable</td>
</tr>
<tr>
<td>• date of birth (age)</td>
<td>• defects</td>
<td>• address</td>
<td>• others involved</td>
</tr>
<tr>
<td>• residential address</td>
<td>• safety features</td>
<td>• location: type/setting/physical conditions</td>
<td>• number/names</td>
</tr>
<tr>
<td>• gender</td>
<td></td>
<td>• weather</td>
<td>• injured/not injured</td>
</tr>
<tr>
<td>• race/ethnicity</td>
<td></td>
<td>• visibility</td>
<td>• roles (passenger, parent/caretaker, etc.)</td>
</tr>
<tr>
<td>• occupation/socioeconomic group</td>
<td></td>
<td>• risk/safety measures</td>
<td>• mental/physical impairment</td>
</tr>
<tr>
<td>• mental/physical impairments</td>
<td></td>
<td>• other</td>
<td>• actions/reactions/attitudes</td>
</tr>
<tr>
<td>• alcohol/drug use</td>
<td></td>
<td></td>
<td>• risk/safety measures</td>
</tr>
<tr>
<td>• risk/safety measures</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• attitudes and reactions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Risk factors and safety measures are opposite sides of the same coin. Adjust a risk factor so it is no longer a risk and you have a safety measure or injury prevention countermeasure (e.g., alcohol is a risk factor; no alcohol is the countermeasure).

Risk assessment searches out those human actions and tasks, agents and environments that have put people at risk of being injured in the past—the contributing factors of injury events. The idea being that your knowledge of these details can be used to put safety measures in place that will help others avoid being injured in similar circumstances.

EMS professionals—in the course of their normal duties—should be prepared to assess injury risk and advocate safety measures for different types of injury events before, during, and/or after an injury event—on the spur of the moment or in a planned risk assessment and safety inspection. They should be prepared to reinforce safety measures already in place with praise, and encourage the use of others not in place when the situation allows. When a one-shot talk or demonstration will not be enough to create a safe situation, EMS should consider referring people to an appropriate agency for further assistance.

Risk Assessment
Of the many scenarios in which risks and safety measures can be assessed, the two that are important to this discussion are 1) assessing risks during an emergency call, and 2) assessing risks during a safety visit. Both are attempts to deliver the right help at the right time and turn injury risk situations into safety situations. Both use the same information, just more or less of it depending on the situation and the time available.

Assessing Risk Factors During a Call
The risks assessed during an emergency call can be further divided into risks that are

• directly related to the nature of the call
• risks unrelated to the call that forecast other types of injuries
• theme of the week assessments

Assessing injury risk factors during a call depends on the type of call.
The first order of business during any emergency call is always to size up the scene with an eye to your safety and to creating an environment in which the patient can be properly assessed and treatment begun. Then the emphasis is on assessing the immediate threat to the patient. Nevertheless, not all scenes involve critical situations.
Types of Calls

Critical Situations

In critical situations, everyone is too busy or upset to think about much else. Even so, many of the details EMS professionals observe or ask about in the course of assessing and delivering critical patient and family care are directly related to identifying contributing factors present before or during the time of an injury event.

Seatbelt use and alcohol on someone’s breath at the scene of a motor vehicle crash are two examples. Smoking materials in the pocket of a person having a heart attack or no access to a pool-side phone at the site of a drowning are others.

Of course, you will relate the chronology and describe the events surrounding these calls and the actions, reactions, and attitudes of those involved in your run report. If you do have time to talk about safety—and the people are in a receptive frame of mind—keep it short, to the point, displaying empathy and consideration for the emotions of those involved.

Less Demanding Emergencies

There also are calls in which resolving the emergency is less demanding, everyone involved is fairly composed, and the outcome appears manageable and more favorable. Under these circumstances, people will be more open to having you talk about ways to prevent similar injuries in the future.

Talk first about those risks related directly to the present problem. If you have sufficient time to look around, you can note and talk about ways to remedy circumstances that constitute hazards for the ages and natures of the people you see—the smoke alarm; the pill bottle within easy reach of a three-year-old; the light cord stretched across a doorway; or the unlocked gate to the pool, for instance. Again be brief and stay on message.

No Transport Calls

Then there are those trips that turn out to be pretty much false alarms. Little treatment and no transport by ambulance is necessary. Instead of tromping off in a huff, grumping that your time, training, and resources have been wasted on idiots, move to Plan B: injury prevention. You are already there. Don your other hat, the one your wear for your public relations role, and see what you can do to create a teachable moment geared to the ages, social, and environmental circumstances of those present that may help save your resources for true emergencies in the future.

Turn the trip into a mini safety visit. Address the reasons for the call first. Then take a moment or two to assess and speak to other injury risk factors and safety measures important to the well being of the caller.
Theme of the Week/Theme of the Month Assessments
The theme approach to risk assessment during noncritical calls is based on the assumption that the people who call you have more than one injury risk problem. Based on what your data tells you, your agency selects a risk factor, or set of risk factors, known to pose a risk to the kinds of people who call you frequently and the safety measures that help counteract that risk.

The message’s theme may be geared to a particular age group, mechanism of injury, agent, environment or task—or some combination of them. These messages may revolve around a season, a geographical hazard, or an annual event.

The Planned “Safety” Visit
Unlike a risk/safety assessment during a call, a planned safety visit is a scheduled one-on-one injury prevention intervention. EMS professionals offer to provide injury risk/safety assessments for one or another mechanism of injury (fires or falls, for instance) as a special service to people at risk (seniors or families with young children). The service is publicized.

People request an appointment. An EMS professional (or collaborative team) appears at the appointed time wearing his or her best public relations persona, prepared for the teachable moment. Because it is not an emergency situation, much more time is spent and many more subjects can be addressed in more detail. Besides being a superb public relations tool, safety visits can help reduce injury, and may help save your resources for true emergencies in the future. They may also help identify people in need of other community resources.

Right before Wrong
In all scenarios, the key rule is to tell people what is right before you launch into what is wrong and what to do to fix it. Any evidence that people are using safety measures is the “success” story. Praise people for using them before you talk about other measures they should be using as well.

In any type of risk or safety assessment, it is essential that the professional doing the review be thoroughly familiar with what is a risk factor and what is a counter- or safety measure for many different causes of injury. Good screening tools coupled with good background information can help.

Creating Screening Tools
It is almost always best to have a plan. For safety or risk assessments, a plan that provides a consistent structure works best. Risk assessment plans have two parts: a scheme for remembering what to do and a scheme for remembering what to look for and where. The first question you should ask is: Does a screening tool already exist that will (perhaps with a little adjustment) serve the purpose? Certainly, booklets and checklists appropri-
ate for safety visits are available for many injury situations and at-risk populations. Look for existing ones before you put a lot of time and effort into creating one from scratch.

**Use a screening mnemonic to remember what to do.**

EMS prehospital professionals, in keeping with virtually every other professional group, are in love with acronyms and acronyms work well as memory aids (mnemonic)—especially if they spell a word that mirrors the task. STARR, from Accidents Aren’t (used to discuss the teachable moment and 30-second message planning in Module III), is a good example of an all-purpose screening mnemonic.

Another all-purpose mnemonic is R•A•D•A•R, suggested by Sue Hohenhaus as a way to screen for situations in which domestic violence is suspected. The word radar fairly screams “look carefully and listen better,” so we’ve chosen to use it as our all-purpose reminder of what to do to assess injury risks. The letters remind the user to

- **R**outinely screen for (Observations)
- **A**sk about (Observations)
- **D**ocument findings
- **A**ssess for patient safety
- **R**eview the options and make referrals

**Use an injury risk checklist to remember what to look for.**

Risk checklists can be invaluable sources for risk assessment and safety (read injury prevention) information. First they instruct us about what is and what is not a risk or safety factor. Second, with a little adjustment, they act like a good road map of what to look for and where to look. Some of them form their own screening mnemonic; DEMENTIA, is one.

Consider creating an injury or safety checklist as a run report cheat sheet. List data elements to review and assess not included elsewhere on your run report that should be included in the narrative. Then try checklists as a reminder of what to look for and where to look in specific injury situations. Your agency may already use a separate report form for some types of injury problems, domestic violence, for instance. Take these cheat sheets with you on calls. Have them handy when you are completing paperwork. Start your cheat sheet file by creating checklists for the injury problems your unit sees the most—the “big 3” identified for your service area.

**Use safety checklists to create injury risk checklists - cheat sheet.**

Safety information often tells you why someone should do that rather than this. In the process, safety information tells you what is or is not a risk factor or safety measure. The information on them often gives you the background you need to promote prevention behaviors. To turn safety information into a useful checklist—that stripped down check-the-box-as-

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**STARR**

- **See**— observe the scene
- **Talk**— Gather information
- **Assess**— Judge the acuity of the situation; determine risks
- **Remedy**— discuss; demonstrate; document data
- **Review**— Monitor over time (follow up)

**DEMENTIA**

- **D**rugs
- **E**motional disorders
- **M**etabolic or endocrine disorders
- **E**ye or ear disorders
- **N**utritional deficiencies
- **T**umors and trauma
- **I**nfected
- **A**rteriosclerotic complications
  
  (Nixon 1996, 23)
Use Online Search Engines

Don’t forget to try out the “search” function on Websites. It is often the fastest and easiest way to find what you are looking for or to locate a document that has been moved or renamed.

NHTSA Web site at
http://www.nhtsa.dot.gov/people

Check It Out Online

Guide to Community Preventative Services:
http://www.thecommunityguide.org/home_f.html
  • Systematic Reviews and Evidence
  • Based Recommendations
  • Links to CDC and MMWR

done format—you may have to erase a lot of information from a brochure or web page. But save the originals as background information. And use them to teach new recruits and refresh the memories of old hands.

Where to Find Safety Checklists.

Start by collecting the information most useful to reducing the “Big 3” injury problems in your community.

Brochures, flyers, etc.

Safety information is distributed in print form via brochures, flyers, and pamphlets found in all manner of public and private facilities, from physician’s offices and public health facilities to the hardware store. They come in the owners’ manuals packed with most products (cell phones, for instance). Collect them. Put the date on them.

Professional Publications

Various professions publish collections of safety information, often intended as prompts for presentations. NHTSA, for instance, publishes Safety Advice from EMS, a binder with 11 lesson plans centered on motor vehicle safety issues. EM S and JEM S journals often contain practical risk screening ideas and aids. Get these and save them.

The Internet

Safety and health checklists are also readily available on the Internet, though it is best to stick to universally accepted sources. If your EMS agency does not have access—or restricts access—to the Internet, use a computer at your local public or community college library. Take a look at NHTSA’s Website under “People” for motor vehicle-related safety information. Definitely look in the CDC’s Safe USA Website. A limited list of what we consider “best sources” is listed in “Other Resources” information at the end of this module. Information on the Web changes daily; print the stuff you find there! Put a date on each.

A Word about Background Information

Again, though very useful, checklists have their limitations. They tell us what to look for but they do not tell enough about the characteristics of people, agents, environments, and task demands for us to understand why people may resist or be unable to follow advice. Investigative research reports are better at expanding on medical information and population characteristics that greatly increase our knowledge of what to look for. They are excellent training material. Accessing these reports before embarking on a full-blown effort to assess injury risks can add greatly to your knowledge, increase the accuracy of your efforts, and can help you anticipate barriers.
Create Injury Prevention Binders

Create an Injury Checklists binder.
Once you have a cheat sheet, date it and put a copy in a binder labeled Injury Checklists. You can copy the sheets in this book to take on calls and to use as a reminder of what to put in your narratives. If you have found background information or developed more comprehensive checklists for safety visits, create a binder for these as well.

Create a Safety Information binder.
Save unaltered copies of all safety information. Sort all the injury risk and safety information you collect by mechanism of injury. Date them. If possible or needed, cross-reference each to special populations (ages, races/ethnic communities, and socioeconomic groups). Safety information to prevent drowning, for instance, includes information about preventing children, adults and/or teens from drowning, as well as information about preventing drowning in swimming pools and/or natural bodies of water, boating, etc. Use the information to teach new personnel and refresh the memories of old hands about risk assessment and prevention measures. Build on these homegrown injury source books until you have a section for most of the leading causes of fatal and for most of the leading causes of nonfatal injuries.

Valid injury categories to consider include

**Leading Causes of Unintentional Injury Deaths (USA, 1998)**

- Motor Vehicle Traffic
- Falls
- Poisoning
- Suffocation
- Drowning/Submersion
- Fire/Burn
- Natural/Environmental
- Struck by, against
- Pedestrian, other
- Drug/Adverse Effects
- Pedal cyclist, other
- Cut/Pierce
- Overexertion
- Transportation, other
- Foreign bodies

**Leading Causes of Intentional Injuries**

- All assaults
- Homicide
- Suicide
- Domestic violence
- Child abuse or neglect
- Elder abuse or neglect
- Spousal abuse

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**Superscript numbers** indicate the leading causes of nonfatal injuries according to the All Injury Study, 1997.
Create safety visit records.
A binder is also the best way to keep records of safety visits your unit makes. For each type of visit, you want to record:

- The reasons you decided to do safety visits for that population and type of risk: the problem you are hoping to mitigate
- What you expect the benefits will be: a measurable expectation(s)
- The checklist or safety booklet used
- Copies of advertisements in newspapers, or aired on TV or radio stations, a grocery store flyer, etc.
- The number of individuals visited and the dates
- The costs to you in personnel time/salaries, in materials, in technical services, etc.
- The results: determined by measuring how the number of people or incidents changed. To do this, measure
  1. Before Intervention
  2. At Intervention
  3. After Intervention

Risk assessment alone and safety messages may not be enough to help people stay injury free. When you cannot do all that is needed, it is time to think about referring people to others who can do more.

Referrals
Referrals are intrinsic to being a health care professional and patient advocate. The first rule about referrals is to make the right assessment and choose the right person and/or agency to contact. Laws mandate that some situations be reported. Common sense dictates others.

Learn about mandatory reporting and referral situations.
Child abuse tops the list of situations you are required by law to report. In most states, if a person even suspects child abuse, they MUST report it. And the law protects anyone reporting child abuse from recriminations. To report child abuse—and for any other situation laws require you to report—you need to know the

- signs and symptoms
- laws and liabilities
- referral process
- follow-up requirements and/or procedures

Your first choice is always to inform the medical team in the ED. Always document any referrals you make in mandatory reporting situations—including the person or persons you talked to. If your report does not seem to make an impression, and you feel strongly that what you observed indicates a real and present danger to a patient or other person, consider contacting the appropriate agency yourself.
Agency Information to have on hand

- Name of the right agency and person to contact
- Contact numbers
- When to contact them: 24/7 or business hours and weekends
- Referral Method
- General Requirements/Eligibility Criteria
- A summary of the services each agency provides
- Information brochure/pamphlet, etc.

Keep a list of human and community service agencies.
There are even more situations in which common sense indicates that some sort of intervention or assistance is needed to prevent injury or other harm. Sometimes the situation is dire and warrants a referral to a government agency. At other times—especially since many people are very hesitant to place themselves into the clutches of social services—a private, nonprofit community service may be more appropriate. A person who is simply OLD—old, lonely, and/or distressed—who would benefit from a senior day out or activities program or from a PALS visiting service. A young single mother who might benefit from a new mother mentoring program. A teen who would benefit from a Boys and Girls club or a Big Brother or Sister.

List community service resources in your area.
Put a 3-ring binder together for human resource agencies. Contact your health department or community health center for a list of agencies. (Many telephone books have a page devoted to human services agencies.) Each agency should have one page that details all that agency’s information.

Keep referral records.
Keep track of the people you refer, their names, the date of and reason for the referral, the agency, and any follow-up or feedback received.

All this requires work and possibly funds. Information not readily at hand has to be found and new methods of approaching problems learned. Start small. Gather the information that will help you reduce the most problematic injury in your service area. Build your risk assessment and safety knowledge and compile resources as needed.

Some of the things suggested in this module you already do in the course of your work, some may be required of you in the future because times, they are a‘changing. The point is to get a workable system for your unit or agency that will collect data about and work to relieve injury risks—a system that works to enhance shared data systems and local intervention efforts. A system that helps you maintain that trust patients lend to EMS professionals as medical professionals.

A system that looks forward to collaboration with other safety efforts—perhaps as a member of a safety coalition.

•••

Further Reading
References


King J. Accidents Aren’t: Injury Prevention and EMS. Atlanta, GA: Emory School of Medicine, Department of Emergency Medicine. Course Lecture.


Stanford University Medical Center, Division of Emergency Medicine. Accidents Aren’t: Prehospital Care Professionals as the Critical Link in Injury Control. Stanford, CA: Stanford University Medical Center, Division of Emergency Medicine; 1993. Curriculum participant and instructor manuals.


Supplementary Materials
Module IV

Activities
1. Write a Better Narrative
2. Create an Injury Risk Checklist.

Appendices
Appendix A: E codes

Appendix B: Causes of Injury Categories
Intent of Injury Categories

Appendix C: Example of Injury Prevention
Binder Materials

Appendix D: Other Resources
Activities

**Instructor Note**
If possible, participants should bring a blank run report form from their agency.

Materials needed:
- Filmed injury scene, or a written scenario, or a completed sample run report (patient identifying information removed).
- A blank run report for each participant, or have them bring one.

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**Activity 1: Write a Better Narrative**

A. Compare the injury information included on different forms.

B. Have participants list injury-specific information not included in checklist or fill-in-the-blank spaces.

C. Have each participant complete his or her form for the scenario provided, including the information not in checklist or fill-in-the-blank spaces in their narrative.

(Refer them to the E Codes and Cause/Intent Categories in Appendices A and B for the correct terminology.)

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**Activity 2: Create an Injury Checklist**

Using the form at the right, create an Injury Risk Checklist for the mechanism/intent of injury in the filmed scene, scenario, or sample run report provided. In small groups or individually; compare and collaborate to create a final checklist.
## Activity 2 Worksheet

### Injury Risk Checklist

<table>
<thead>
<tr>
<th>Risk</th>
<th>present</th>
<th>Suggestion/Action</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>YES</td>
<td></td>
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### Table 1. Recommended framework of E-code groupings for presenting injury mortality and morbidity data

(June 15, 2001)

<table>
<thead>
<tr>
<th>Mechanism/Cause</th>
<th>Unintentional</th>
<th>Self-inflicted</th>
<th>Assault</th>
<th>Undetermined</th>
<th>Other¹</th>
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<tr>
<td>Cut/pierce</td>
<td>E320.0-9</td>
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<td>E966</td>
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<td>Drowning/submersion</td>
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<td>E957.0-9</td>
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<td>Fall</td>
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<td>E980.1,2-7</td>
<td>E961.0, E968.0,3</td>
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<td>Fire/flame</td>
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<td>Hot object/substance</td>
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<td>All injury</td>
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<td>Adverse effects</td>
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<td>All external causes</td>
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¹Includes legal intervention (E970-E978) and operations of war (E990-E999).

²Three 4th-digit codes (.4 [occupant of streetcar], .5 [rider of animal], .8 [other specified person]) are not presented separately because of small numbers. However, because they are included in the overall motor vehicle traffic category, the sum of these categories can be derived by subtraction.

³E968.5 (assault by transport vehicle), E906.5 (bite from unspecified animal), E922.4 (unintentional injury [gunshot wound])
1. **Cut/pierce/stab**: Injury resulting from an incision, slash, perforation, or puncture by a pointed or sharp instrument, weapon, or object. This category does not include injury from being struck by or against a blunt object (such as the side of a night stand) or bite wounds; these injuries fall in the category “struck by/against.”

2. **Drowning/near drowning/submersion**: Suffocation (asphyxia) resulting from submersion in water or another liquid.

3. **Fall**: Injury received when a person descends abruptly due to the force of gravity and strikes a surface at the same or lower level.

4. **Fire/burn/smoke inhalation**: Severe exposure to flames, heat, or chemicals that leads to tissue damage in the skin or places deeper in the body; injury from smoke inhalation to the upper airway, lower airway, or lungs.

5. **Firearm gunshot**: A penetrating force injury resulting from a bullet or other projectile shot from a powder-charged gun. This category includes gunshot wounds from powder-charged handguns, shotguns, and rifles. This category does not include injury caused by a compressed air-powered paint gun or a nail gun, which falls in the “other specified” category.

6. **Machinery**: Injury that involves operating machinery, such as drill presses, fork lifts, large power-saws, jack hammers, and commercial meat slicers. This category does not include injury involving machines not in operation, falls from escalators or moving sidewalks, or injuries from powered lawn mowers or other powered hand tools or home appliances.

7. **Motor Vehicle Traffic**
   Transportation-related causes: Injury involving modes of transportation, such as cars, motorcycles, bicycles, and trains. This category is divided into four subcategories according to the person injured: motor vehicle occupant, motorcyclist, pedal cyclist, pedestrian, and other transport. For cases involving at least one of these transport-related causes, the system notes whether the injury occurred in traffic (i.e., on a public road or highway). Specifically, the categories for this data element include traffic-related, not traffic-related, and unknown/unspecified:
   - **Motor vehicle occupant**: Injury to a driver or passenger of a motor vehicle caused by a collision, rollover, crash or some other event involving another vehicle, an object, or a pedestrian. This category includes occupants of cars, pickup trucks, vans, heavy transport vehicles, buses, and SUVs. Injuries to occupants of other types of vehicles such as ATVs, snowmobiles, and go-carts fall in the category of “other transport.”
   - **Motorcyclist**: Injury to a driver or passenger of a motorcycle resulting from a collision, loss of control, crash, or some other event involving a vehicle, object, or pedestrian. This category includes drivers or passengers of motorcycles (classic style), sidecars, mopeds, motorized bicycles, and motor-powered scooters.
   - **Pedal cyclist**: Injury to a pedal cycle rider from a collision, loss of control, crash, or some other event involving a moving vehicle or pedestrian. This category includes riders of unicycles, bicycles, tricycles, and mountain bikes. This category does not include injuries unrelated to transport (moving), such as repairing a bicycle.
Appendix B  CAUSE OF INJURY CATEGORIES

• Pedestrian: (struck by or against a vehicle): Injury to a person involved in a collision, where the person was not at the time of the collision riding in or on a motor vehicle, railway train, motorcycle, bicycle, airplane, streetcar, animal-drawn vehicle, or other vehicle. This category includes persons struck by cars, pickup trucks, vans, heavy transport vehicles, buses, and SUVs. This category does not include persons struck by other vehicles such as motorcycles, trains, or bicycles; these cases fall in the category of “other transport.”

• Transport, other: Injury to a person boarding, alighting, or riding in or on all other transport vehicles involved in a collision or other event with another vehicle, pedestrian, or animal not described above. It includes railway, water, air, space, animal and animal-drawn conveyances (e.g., horseback riding), ATVs, battery-powered carts, ski lifts, and other cable cars not on rails.

Motor vehicle, Traffic-Related: Any vehicle incident occurring on a public highway, street, or road (i.e., originating on, terminating on, or involving a vehicle partially on the highway). If a report did not specify traffic-relatedness and the event involved a motor vehicle crash (i.e., collision involving a car, pickup truck, van, heavy truck, or SUV), this system assumed the event was traffic-related; this policy is consistent with ICD-9-CM coding rules. If a report without specification involved motorcycles, ATVs, go-carts, and other off-road vehicles, this system did not assume the event was traffic-related. Also, boarding and alighting injuries fall into the category of unknown/unspecified unless the report noted the injuries occurred in traffic.

• Non-traffic: Any vehicle incident that occurs entirely in any place other than a public highway, street, or road.

• Unknown / unspecified: Any vehicle incident that is not a motor vehicle crash and that did not have a report specifying whether the incident happened on a public highway, street, or road.

8. Natural / environmental: Injury resulting from exposure to adverse natural and environmental conditions (such as severe heat, severe cold, lightning, sunstroke, large storms, and natural disasters) as well as lack of food or water.

• Bites and stings: Injury from a poisonous or non-poisonous bite or sting through the skin, other than a dog bite. This category includes human bite, cat bite, snake or lizard bite, insect bite, stings from coral or jelly-fish, or bites and stings by other plants and animals.

• Subcodes are available to include dog, cat, rat, and other specific bites.

9. Overexertion: Working the body or a body part too hard, causing damage to muscle, tendon, ligament, cartilage, joint, or peripheral nerve (e.g., common cause of strains, sprains, and twisted ankles). This category includes overexertion from lifting, pushing, or pulling or from excessive force.

10. Poisoning: Ingestion, inhalation, absorption through the skin, or injection of so much of a drug, toxin (biologic or non-biologic), or other chemical that a harmful effect results, such as drug overdoses. This category does not include harmful effects from normal therapeutic drugs (i.e., unexpected adverse effects to a drug administered correctly to treat a condition) or bacterial illnesses.

11. Struck by / against or crushed: Injury resulting from being struck by (hit) or crushed by a human, animal, or inanimate object or force other than a vehicle or machinery; injury caused by striking (hitting) against a human, animal, or inanimate object or force other than a vehicle or machinery.
12. **Inhalation/ingestion/suffocation**: Inhalation, aspiration, or ingestion of food or other object that blocks the airway or causes suffocation; intentional or accidental mechanical suffocation due to hanging, strangulation, lack of air in a closed place, plastic bag or falling earth. This category does not include injury resulting from a foreign body that does not block the airway.

13. **Other specified and classifiable**
   - **BB/pellet gunshot**: A penetrating force injury resulting from a BB, pellet, or other projectile shot from a BB or pellet gun (a compressed air or CO₂-powered BB or pellet gun). This category includes gunshot wound from a BB or pellet rifle or pistol. This category does not include injury caused by a compressed air-powered paint gun or nail gun, which falls in the category “other specified.”

14. **Other specified, not elsewhere classifiable**: Injury associated with any other specified cause that does not fit another category. Some examples include causes such as electric current, electrocution, explosive blast, fireworks, overexposure to radiation, welding flash burn, or animal scratch.

15. **Unknown/unspecified cause**: Injury for which the emergency department report does not provide enough information to describe the cause of injury.

**Miscellaneous**
- **Dog bite**: Injury caused by a dog bite. This category does not include injury from other animal bites.
- **Foreign body**: Injury resulting from entrance of a foreign body into or through the eye or other natural body opening that does not block an airway or cause suffocation (asphyxia). Examples include pebble or dirt in eye, BB in ear, or small children’s toys in esophagus.
Appendix B  INTENT OF INJURY CATEGORIES

Unintentional: Injury or poisoning that is not inflicted by deliberate means (i.e., not on purpose). This category includes those injuries and poisonings described as unintended or “accidental”, regardless of whether the injury was inflicted by oneself or by another person. Also, includes injury or poisoning where no indication of intent to harm was documented in the ED record.

Self-inflicted: confirmed or suspected: Injury or poisoning resulting from a deliberate violent act inflicted on oneself with the intent to take one’s own life or with the intent to harm oneself. This category includes suicide, suicide attempt, and other intentional self-harm.

Assault: confirmed or suspected: Injury from an act of violence where physical force by one or more persons is used with the intent of causing harm, injury, or death to another person; or an intentional poisoning by another person. This category includes perpetrators as well as intended and unintended victims of violent acts (e.g., innocent bystanders). This category excludes unintentional shooting victims (other than those occurring during an act of violence), unintentional drug overdoses, and children or teenagers “horsing” around.

Assault—sexual: This category includes rape, completed or attempted; sodomy, completed or attempted; and other sexual assaults with bodily force, completed or attempted. Also involves
- the use of physical force to compel another person to engage in a sexual act against his or her will, whether the act is completed or not.
- attempted or completed sex act involving a person unable to
  1) understand the nature of the act,
  2) decline participation, or
  3) communicate unwillingness to participate for whatever reason
- abusive sexual contact: intentional touching, either directly or through the clothing, of the genitalia, anus, groin, breast, inner thigh, or buttocks of any person against his or her will or of a person who is unable to consent (e.g., because of age, illness, disability, the influence of alcohol or other drugs) or refuse (e.g., due to the use of guns or other non-bodily weapons, or due to physical violence, threats of physical violence, real or perceived coercion, intimidation or pressure, or misuse of authority).

Assault—other: This category includes a majority of the assaults and excludes cases where the reason for the assault was classified as sexual assault (as defined above). If the emergency department record did not indicate that the assault involved sexual assault, then it was coded as other assault.

Legal intervention: Injury or poisoning caused by police or other legal authorities (including security guards) during law enforcement activities. Includes injuries and poisonings (mace, pepper spray) inflicted during legal action or execution, or while attempting to enforce the law such as arrest or restraint of arrested persons.

Adapted from
Items to collect might include
- Statistics
- External and Internal Causes
- Slide Presentation
- Selected Programs
- Sample Risk Checklists
- Sample Safety Visit Record

Statistics

Fall Facts
Thirty-five to 40 % of persons over 65 years of age fall at least once a year and seek medical attention.

Of persons over 65 who suffer a hip fracture, 60% are discharged to a nursing home.

50% of women age 65 have a hip at fracture threshold due to bone loss. At age 85, 100% of women have a hip at fracture threshold.
York County Fire & Life Safety, Williamsburg, VA.
In Parra& Stevens, Home Checklists: 15.

Internal and External Causes
Includes a link to the American Academy of Family Physician’s patient information handout also written by the author.
Copyright (c) 2000 by the American Academy of Family Physicians. (A person viewing it online may make one printout of the material and may use that printout only for his or her personal, non-commercial reference. Contact afpserv@aafp.org for copyright questions and/or permission requests.)

Slide Presentation
Appendix C

Injury Prevention Binder Materials

Selected Programs

Each of the 18 featured program summaries includes the name of the organization, a description of the target populations, program goals and procedures, strengths and weaknesses, types of program materials used, funding method, and contact information. Most of these programs are currently in operation. Order the booklet online.


Health professionals who would like to use these materials in a fall prevention program can order them online. The kit contains hard copies of all materials as well as camera-ready masters of the brochure and the checklist that can be used for photocopying.


Contains Fact Sheets & Patient Education Brochures
- Don't Let a Fall Be Your Last Trip
- Getting Up From a Fall
- Home Safety Checklist
- How to Reduce Your Risk of Falling
- Ladder Safety Tips


This booklet gives tips on home safety in a checklist format. Although geared for older consumers, it contains critical information for people of all ages. Available in English (HTML) and Spanish (PDF).

Sample Checklists & Safety Visit Records forms are available at http://www.cdc.gov/ncipc/falls.

US Fall Prevention Programs for Seniors: Selected Programs Using Home Assessment and Modification.
Look under Home Safety Checklists.

Older people are less able to protect themselves because they are generally frailer and have
- Slow reaction times
- Less strength and flexibility
- Osteoporosis
- Thinner skin
- Less muscle mass

Don't Let a Fall Be Your Last Trip includes
"What to do if you fall":
- Don't panic. Assess the situation and determine if you are hurt.
- Slide or crawl along the floor to the nearest couch or chair and try to get up.
- If you can't get up, call for help.
- If you are alone, crawl slowly to the telephone and call 911 or relatives.
STATISTICS

National Highway Traffic Safety Administration (NHTSA)
http://www.nhtsa.dot.gov
  • Traffic Safety Facts
  • Regions/State Information
  • State Data System
  • State Traffic Facts

Governors Highway Safety Association Representatives (GHSA)
http://www.statehighwaysafety.org

National Center for Injury Prevention & Control
http://www.cdc.gov/ncipc/
  • WISQARS
    http://www.cdc.gov/ncipc/wisqars/
  • Scientific Data, Statistics, Surveillance, & Mapping
    http://www.cdc.gov/ncipc/oep/data.htm
  • State Injury Profiles
    http://www.cdc.gov/ncipc/StateProfiles
  • Other Sources of Injury Data
    http://www.cdc.gov/ncipc/osp/othrdata.htm
  • Injury-Related Websites
    http://www.cdc.gov/ncipc/injweb/websites.htm

National Center for Health Statistics
http://www.cdc.gov/nchs/about/major/ahcd/ahcd1.htm

http://www.cpsc.gov/library/data.html

US Census Bureau, State and National Profiles
http://www.census.gov
  • State & National Profiles

Children’s Safety Network, Injury Prevention Web
www.injurypreventionweb.org/info/data.htm

Other Resources

National Safety Council
http://www.nsc.org/
  • Safety, Health and Environmental Resources

SAFETY INFORMATION

Ideally, this list would follow the order of leading causes of injury fatalities and nonfatal injuries and include best sources for print and electronic information covering statistics, diagnosis, sample programs, and sample injury risk/safety checklists. This list is only a beginning.

US Dept of Homeland Security
http://www.ready.gov/

GENERAL, ALL-PURPOSE

CDC Safe USA
http://www.cdc.gov/safeusa
  • CDC, National Injury Prevention and Control:
    http://www.cdc.gov/ncipc/
  • National Center for Injury Prevention and Control publications are available free of charge. A maximum of 18 publications at a time may be chosen”
  • For Electronic Copies visit http://www.cdc.gov/ncipc/pub-res/pubs2.htm

American Academy of Pediatrics
http://www.aap.org Select “You and Your Family.”

Consumer Product Safety Commission, General Publication Categories
http://www.cpsc.gov/cpscpub/pubs/pubcat.html

Safe Kids
http://safekids.com
Appendix D

Other Resources

**MOTOR VEHICLE TRAFFIC**

**NHTSA, Traffic Safety Information**
http://www.nhtsa.dot.gov/people/

**AAA Foundation for Traffic Safety**
http://www.aaafts.org/
- AAA Research and Brochures for Older Drivers http://www.seniordrivers.org/research/index.cfm
- AAA Distracted Driving Research, Phase 1 Study (html or pdf)

**Motor-Vehicle Occupant Injury:**

**FALLS IN THE ELDERLY**

**A Tool Kit to Prevent Senior Falls.**

http://www.aafp.org/afp/20000401/2159.html

**Older Consumer Safety.**

**FIRE/BURN**

**US Fire Association Web site**
Choose Home Fire Safety.

**National Fire Protection Association Web site**
http://www.nfpa.org/

**National Institute for Occupational Safety and Health (NIOSH) Website**
http://www.cdc.gov/niosh/homepage.html

**National Ag Safety Website Database (NASD).**
http://www.cdc.gov/nasd/
A database of materials devoted to increased safety, health and injury prevention in agriculture

**The Police Notebook: Home Fire Safety**
http://www.ou.edu/oupd/fireprev.htm
University of Oklahoma.

**Parra EK, Stevens JA. U.S. Fall Prevention Programs for Seniors: Selected Programs Using Home Assessment and Modification.**
Atlanta, GA: Centers for Disease Control and Prevention, National Center for Injury Prevention and Control Web site. [Hard copies available through an online order form.]

**Prevent Falls. Your Orthopaedic Connection,**
http://orthoinfo.aaos.org/all.cfm
American Academy of Orthopaedic Surgeons Web site (All documents).
Other Resources

DROWNING/SUBMERSION
American Academy of Pediatrics
http://www.aap.org Choose Search and type in ‘Drowning.”

American Red Cross
http://www.redcross.org
Choose Services, then Health & Safety Services.

CDC, National Center for Injury Prevention and Control
http://www.cdc.gov/ncipc/factsheets/drown.htm

United States Lifesaving Association
http://www.usla.org/PublicInfo/safety.shtml
“When individuals work together, we call it teamwork. When groups work together, we call it collaboration and we refer to them collectively as a coalition.”

(Safe Communities: The First Six Months 2000, 3)

**MODULE V**

**Strategies for Implementing Effective Safety Coalitions**

Injury prevention is not something that is accomplished in a week. Injury prevention requires change—change in the way we and others think and agree to behave, change in our regulations and willingness to enforce those regulations, and often change to the products we all use. To induce even one minor modification often requires repeated and collective efforts on many fronts.

Consequently, teamwork and collaborative efforts are the ideal way to tackle long-term problems. What injury problems EMS professionals work towards correcting, and how they do so, will depend a great deal on where and for whom they work as well as on the populations they serve. EMS agencies can work alone or in concert with others; they can lead or they can join others. This module lays out some of those choices.

**Goal**

To familiarize EMS professionals with ways to expand their injury prevention roles beyond their traditional prehospital mission.

**Content Sections**

A. First Efforts
B. Partner
C. Form An Injury Prevention Coalition

On completing this module, the EMS professional should be able to

1. Identify 4 steps towards injury prevention EMS professionals can take even if their role in injury prevention is limited by circumstances.
2. List 3 state or national organizations from whom to seek advice and ideas.
3. Name the first and most important component of getting a plan that will address an injury problem.
4. Explain the benefits of collaborating with others in a safety coalition.
5. Identify the resources and assistance available through NHTSA’s Safe Communities Program.
6. Name 3 other national safety and injury prevention coalition models and explain their foci.
7. Identify the major steps to forming a safety and injury prevention coalition.
Outline: Module V

SECTION A: First Efforts
Begin with yourself, your crew and your duties.

1. Become familiar with the injury problem.
2. Learn and practice safety and injury prevention in your personal lives and on the job.
3. Understand what it means to be a role model and teacher of injury prevention.
4. Learn and practice ways to improve your critical role in collecting injury data and assessing risks in your own community or service area.

Don’t just stand by! Get specific.

Don’t just stand there. Get festive!
Don’t just be present. Perform!

Pick one injury problem to work on.

Get a Plan
Identify a compelling reason to get involved.
An interested person (or two)
Get an idea of who is interested and who is not.
Ways to get past all the objections.

Seek advice and ideas.
Your State’s EMS Office
Governor’s Highway Safety Programs
NHTSA’s 10 Regional Offices

SECTION B: Partner
Team up with another agency.
Team up with your law enforcement and highway safety personnel.
Team up with your local hospital.
Team up with your public health department.
Team up with your fire department.

Join an Existing Injury Prevention Coalition
Advantages of Joining an Injury Prevention Coalition
Essential Characteristics and Benefits of Coalitions
One Example: Safe Communities (NHTSA)

SECTION C: Form An Injury Prevention Coalition
First, Sign up for a NHTSA Safe Communities Workshop.
Second, Just Start.

Coalition Building Resources
A Bird’s Eye View of Coalition Building

Further Reading
References

Supplementary Materials
Appendices
A: Where to go for advice
B: Other National Safety Coalitions
C: Coalition & Program Planning Tools
D: Other Resources
SECTION A
First Efforts

“Emergency Service Programs have been successful in teaching the public in the use of ‘911’ and what the public needs to do when someone is sick or injured. Now it is time for EMS to take a more active and visible role in injury prevention.” (Johnson 2000)

Okay, you’ve heard the news:

“Increasingly, EMS professionals are being encouraged to engage in injury— and illness—prevention activities. Among other things, they conduct public education campaigns, distribute child safety seats, check elderly patients’ homes for hazards and conduct blood-pressure checks. . . . [This despite the fact that] under current fee-for-service rules, EMS professionals often only get paid when they take a patient by ambulance to an ED.” (Garza 1998)

You’re in the business of saving lives. Injury prevention promises to save lives. So, you decide to give injury prevention a stab. First thing you learn is that effective injury prevention requires a systematic approach—an approach that

- Defines the injury problem or problems by looking at the data
- Identifies possible solutions, or countermeasures
- Implements those solutions
- Measures the effect these solutions have on the injury problem
- Shares the results with others
- Garners some warm and fuzzies for your service in the process (goodwill, promotional visibility, networking opportunities, etc.)

Injury prevention is already looking like another full-time job, and you, along with everyone on your team, have your hands more than full as it is. Then somebody whispers, “Oh, and you need buy-in from the community.” And you think, what you especially need is buy-in from your employer and supervising entities, your leaders, and the rest of the crew because without it you’re dead in the water.

Let’s say that your EMS service is not currently involved in any injury prevention activities at all and there are any number of reasons that this may be the case. You’d like to get started, but support for your involvement is missing. How do you get started?

Begin with yourself, your crew and your duties.

Even if your current efforts are limited, injury prevention is crucial. Learn the possibilities. Teach your coworkers. Prepare yourself and those you work with for that future.

1. Become familiar with the injury problem.

Learn about

- the causes of injury most prevalent in the nation and in your state;
- the components that interact to cause injuries—the people, the tasks they perform, the agents they use, the ways they use those agents, and the environments in which they use them; and
• the strategies that form the core of a systematic approach to prevention—surveillance, risk and countermeasures identification, and the six Es for implementing injury prevention efforts.

2. Learn and practice safety and injury prevention in your personal lives and on the job.
Institute measures to protect yourself. Identify and work to correct risk factors that threaten to decrease your ability to perform the tasks your job requires—those factors that threaten your general health, physical fitness, and emotional well-being and safety. Learn and practice all protocols intended to keep you and your coworkers injury-free on the job. Encourage your coworkers to do the same.

3. Understand what it means to be a role model and teacher of injury prevention.
Increase the quality of your professional responses to patient care. Learn and practice professionalism—those ethics demonstrated by compassionate communication skills that mark you as a human service professional. These tenets and skills help keep you safe, allow you to role model safety, and prepare you to teach others about injury prevention.

4. Learn and practice ways to improve your critical role in collecting injury data and assessing risks in your own community or service area.
Given what you now know about the people, agents, environments, and task factors that cause injuries, analyze the quality of injury information on your run reports. Make a plan for documenting more details about injury factors at a scene. Make sure you are reporting suspicious incidents involving abuse and other violence to people who will act on your information. Become more involved in referring people at risk to appropriate agencies for assistance.

    Cultivate . . . nurture . . . and encourage your coworkers’ participation in these endeavors. Share stories. Promote and duplicate actions that produce positive outcomes. Promptly rethink those that result in dubious outcomes. It’s a good bet that, pretty soon, you’ll be looking at enthusiasm among the ranks. Demonstrate that you are a team of professionals concerned with the injury problems in your service area and are working to improve your response to it. Then present your case for further involvement.
Don’t just stand by! Get specific.

How many times does your agency draw standby duty for civic or recreational happenings? What are the events and happenings at which you are requested to standby? What injury prevention message would target the safety needs of the people attending? What kinds of injuries increase before, during, and after these festivities? How can these injuries be prevented? Is there already an action card you can reproduce and hand out or can blow up as a poster? Plan a way to promote a specific injury prevention message that relates to the reason you are on standby, without jeopardizing your purpose for being there. And remember, keep the message positive.

Don’t just stand there. Get festive!

Open houses and health fairs are another way EMS professionals participate in community events. Some EMS professionals even put on health fairs or festivals as fundraising events for their service. Parades, colorful visual aids, demonstrations, skits or role-playing opportunities, hands-on activities, and games help plant injury prevention information into long-term memory. Prizes may help keep people around for the lesson.

Pick a prevention message that addresses an injury prevalent in the audience you expect to attend. Follow up with a take-home fact sheet or an emergency action card. Target your approach to the age and concerns of those expected to attend: music appropriate for teens is unlikely to attract seniors, for instance. Get an upbeat, welcoming manner, a big, colorful banner, a popcorn, gum ball, or cotton candy machine, and some music, then . . . prepare for fun!

Game wheels work well. Big and colorful enough—maybe with music or a siren as the wheel turns—and a game wheel might double as your banner. Just relate the facts on the wheel to the risk factors most likely to threaten the specific people attending the event.

Don’t just be present. Perform!

Droning elicits drowsing. Presentations to local civic, school, and social groups need to persuade people to practice safe behaviors. Liven up your presentations with pertinent stories; colorful, informative videos and still visuals; demonstrations; audience participation activities. . . .

Always pass out a take-home fact sheet or an action card.

Do a stupendous job at what you already do and you will be practicing injury prevention!

A “fair” example

Water Safety/Drowning Displays

Ideas for Health Fairs

Drowning prevention information from Children’s Hospital and Regional Medical Center, Seattle, WA: http://www.seattlechildrens.org/dp/Educators/Materials/healthfairs.htm.

“At children’s events, kids get to spin our ‘Health and Safety Wheel’ for a prize after answering a safety question.”

(Boca Raton Community Hospital: Community Outreach: http://www.brch.com/smartheart-index.htm)
Pick one injury problem to work on.

There is nothing wrong with starting small. Even ants only build one anthill at a time. Your anthill should start with one injury problem in your community—the one that is both most prevalent and most preventable. Discover what that problem is by reviewing the data on injuries in your community.

All injuries are local problems; so it is no surprise that most solutions start with local efforts. Your EMS service area—whether a small rural town or district or corner of a very large megalopolis—can be thought of as a local community. Every EMS community contains people who have been injured and others who are at risk from similar injuries.

You and your coworkers know who is being injured because you are the people they call when they need emergency assistance. You know what causes injury and why because you pick people off your streets, pull them out of cars, or haul them down flights of stairs. You’ve been at those intersections, in their homes, clubs, sports facilities, business and public meeting places, so you know where they are being injured. Since you have assessed and treated their injuries, you know how they have been injured. And that is where you start.

Get a Plan

You do need a plan, even if it is not, at first, the full blown one recommended. What you’ll need are:

- a compelling reason to get involved (one injury problem and the data that proves it is a problem),
- an interested person (or two),
- an idea of who else is interested and who is not, and
- an action plan that spells out the problem and the solution(s) you wish to implement.

Identify a compelling reason to get involved.

Find a problem serious enough to justify intervention. Start with your hunches (e.g., too many toddlers drowning or too many young adults disabled in crashes on a corridor road to your community’s shopping or entertainment offerings).

Follow your hunch up with a serious look at the data—your run reports and dispatch records. If possible, also check the leading causes of emergency room visits; other areas transporting patients to that hospital also may be experiencing a rise in the same type of injury. What do these various reports say about the times, locations, mechanisms, and the events surrounding the injury you are looking at and about the population at risk? Is your hunch correct? Is the problem serious enough to justify an intervention effort?

Information available to you

- **Who**: (and their physical and cognitive status)
- **What**: Mechanism of injury
- **Why**: Events / tasks leading up to the incident
- **Where**: Scene / location type and conditions
- **How**: Type of injury (primary injury data)
- **Use / absence of protective devices**
- **Risks still present and those overcome**
Then, do some analysis of other injury data you find. Compare it to injury data for your county, nearby counties, and your state. Is the injury you are looking at one of the top three causes of deaths or nonfatal injuries or should you be looking at another type of injury event?

One Compelling Reason

“A couple of years ago, there were several drownings involving infants. On many occasions, an older sibling found the infant in the pool, so we felt it would be a good idea to go into the schools and teach these kids what to do if something like that happens, said Metcalf [Community Health Coordinator].

“. . . Developed by one of [Boca Raton Fire-Rescue Services’] firefighters after he worked his 13th drowning over one summer alone, Kid Keepers has now reached about 700 fifth graders, who are taught basic CPR and rescue breathing methods.”

(Spivak 1998, 20-21)

An interested person (or two)

You need a leader—someone who is personally and professionally committed to the project. Personal commitment usually begins with a personal or professional experience, often some of both. A parent of a teen who has just gotten his learner’s permit, a child of rapidly aging parents for whom driving to the grocery store has become a challenge, a friend of a suicide or domestic abuse victim, for instance.

Professional commitment is often fostered by recurring injuries that weigh on the mind. It may be a specific type of injury. It may be a vulnerable population, “frequent flyers” for instance. Or it may be a catastrophic event that provides the motivation to “do something,” like the disaster that killed 10 teens on their way home from band practice in Plymouth, NC. It may be that your lead agency—fire department, hospital, or public health department—is pushing some safety program. Perhaps you just want to add your efforts to those of other EMS services across the nation who are moving into injury prevention roles.

The interested person (or two) must be willing to

- investigate ways others have attempted to correct similar problems;
- choose what you want to do, and where, paying attention to what can be done;
- estimate the resources you will need to do so; and
- determine ways to measure your success.
Get an idea of who is interested and who is not.
This interested person (or two) must also be willing to determine who is going to be with you and who is going to be opposed.

Potential helpers
Your unit and lead agency— Who is already interested? Who is opposed and why? What would be in it for them if they did participate?

Your community— Who else might be interested in helping and why? Who is likely to be opposed and why? What would be in it for them if they participate?

The people at risk and survivors of an injury— They are your target population. Who will be interested in what you have to say? Why will they be interested? Who might be opposed and why? What do you expect them to do after they have received the information? Will they do it? Why or why not?

Ways to get past all the objections.
Anticipating the reason people may be disinterested or opposed to your injury prevention initiative will allow you to be prepared to counter the objections. Maybe, you have tried to institute a prevention program but interest lagged and the effort petered out for lack of people, time, or funding. Maybe, your community thinks of safety interventions as just one more big brother move suffocating their independence. Maybe, a perfectly good program was shot down by higher ups with liability objections, and the experience has made you wary. Whatever the reasons
- List all objections. Be specific.
- Analyze the reasons behind each objection. Be specific.
- Research ways others have overcome similar obstacles.
- Brainstorm solutions likely to work for you, the actions necessary to implement them, and the costs to your unit and to the people you are trying to protect—in time, money and in mental will power. Again, be specific.

Create a list of talking points that will counter objections from your leaders and crew, from the community at large, and from the people at risk. Evidence in the form of data is your best ally. Gather the facts and the local stories that support your claims that the injury you choose is indeed a problem. Investigate prevention programs others have used to reduce a similar injury problem—especially ones that could be easily adapted to your situation and resources.
Form an action plan based on what you find.
Identify the risks for the injury type you wish to prevent. Determine whether you will try to persuade or require people to use safety measures, or will lobby for measures that provide automatic protection to reduce the risks. Decide how best to get your message to the people at risk and how you will measure success. Format a plan that includes the following and write it down:

Describe the
- Injury Problem (using data to back up your claims)
- Mission/ Goal /Objectives
- People at Risk:
  - Who they are.
  - How they would benefit. How you will overcome possible objections.
  - How you will tailor and distribute your message to reach them.
  - What could be in it for others. How you will overcome their possible objections.
- Measurable changes you will work toward (mission, goal, objectives)
- Strategies and methods you will use to effect the change you envision (the 6 Es)
- Actions and tasks needed to accomplish these strategies

Seek advice and ideas.
Where do you go for advice, ideas, materials and resources, and how do you go about using them? First, contact the agencies in your state known to be working on injury prevention. Take a look at their Web sites. If your state's sites do not have training manuals and materials about injury prevention for EMTs, look at the materials other states have adopted. Some examples of resources follow.

Your State's EMS Office
State EMS and EMSC organizations are increasing their injury prevention information, training, and program resources. Many of their Web sites have pages devoted purely to injury prevention subjects. These efforts allow easy access to others’ ideas and methods. They promote programs that address that state’s injury prevention priorities and encourage replication across the state. Call yours.
National Association of State EMS Directors (NASEMSD)
The “Members List” on their Web site gives addresses for all members. The “EMS Links” section under Public Website provides links to pertinent sites in the following categories:
- Associations
- Communications
- Commercial Suppliers
- EMS Web Sites
- Medical Sites
- Publications Sites

Emergency Medical Services for Children (EMSC)
“The EMSC Program supports two resource centers. The EMSC National Resource Center (NRC), located in Washington, DC, provides support and assistance to states on a variety of topics, operates a clearinghouse, and provides information to professionals and the public. The National EMSC Data Analysis Resource Center (NEDARC), located in Salt Lake City, UT, specializes in providing assistance on data collection and analysis. The EMSC Web site, located at www.ems-c.org, provides additional information (www.ems-c.org/about/frameabout.htm).

Resources available under “State Activities” include:
- Coalition Building Methodology
- Coalition Building or Collaboration—General
- Grantee Project Reports—General
- Needs Assessment
- Program Evaluation Methods
- Project Evaluation
- Project Management—General
- State EMS and EMSC Web Sites
- State Legislation
- Strategic Planning

Your Governor’s Highway Safety Program
Your governor’s highway safety program works closely with NHTSA and is your “state’s voice on highway safety. . . . Areas of focus include: occupant protection, impaired driving and speed enforcement, as well as motorcycle, school bus, pedestrian and bicycle safety, and traffic records” (http://www.naghsr.org/html/about.html).

Look for your state’s Web site under State Info.
National Highway Traffic Safety Administration (NHTSA): 10 Regional Offices
Each Regional office works on the agency’s mission to save lives, prevent injuries, and reduce traffic related healthcare and other economic costs. Each provides numerous services to its states, as well as other public and private sector customers. These services include, but are not limited to, providing technical assistance, promoting legislation, administering the agency’s grant fund programs, assisting in coalition building and delivering training.” A list of all regional offices is provided in Appendix A. For online links to the 10 Regional offices: http://www.nhtsa.dot.gov/nhtsa/whatis/regions.

When the going gets lonely or burdensome, look for help.

Instructor’s Note
Pick the state(s) appropriate to your audience and example, either as a handout or through a Web connection, and discuss the resources they make available.
Teaming up with another community organization, such as your local hospital, health department, police department, schools, or another governmental or nongovernmental agency can spread resources and reach populations you may not ordinarily have access to. Joining a coalition made up of several other agencies working to prevent injuries means that much more can be accomplished.

Team up with another agency.
Sometimes single-issue activities have trouble attracting the interest and participation of a target audience. Teaming with other agencies can allow you to present several prevention activities at once.

“For example, a public health office may have to conduct an immunization program every fall before school starts, but they may have a difficult time getting parents to come with their children. The police or sheriff's office may want to conduct a missing child identification program but don’t have the staff to visit every school classroom. Your EMS service unit just got a load of smoke detectors that need to be distributed in your spare time. Can you see how joining efforts with other agencies might make for a more effective program? You could, for example, conduct a week long project: as an incentive for bringing their children to the immunization clinic, parents are provided with a smoke detector and given the opportunity to register their child with the law enforcement’s missing child alert program. The planning may take time, but the actual event has a greater chance for success. You will have a better turnout, you’ll have more volunteers to help, and it might be easier to get a local vendor to donate food or drinks. Certainly the media will be more interested in covering the day's activities.”
(The New Mexico EMS for Children Project 1994-1996, 4-5)

Examples of successful EMS team relationships can be found in many professional journals and Web sites. Many conferences also include a sharing session.

Team up with your law enforcement and highway safety personnel.
NHTSA provides “planners” to help local EMS, police and highway safety personnel organize meaningful injury prevention programs. These include:

- Buckle Up America
- Click It or Ticket
- You Drink & Drive, You Lose
- Child Passenger Safety Training Program
- Ride Like a Pro (bike safety program)
- Getting to School Safely Action Kits

... and much more
Team up with your local hospital.

“In 1995, [Boca Raton Fire-Rescue] approached Boca Raton Community Hospital and asked if we could form a partnership with them to work on health screening programs for seniors,’ says Metcalf. . . . ‘The result, in terms of seniors programs, was screenings for heart disease, diabetes and stroke, which have received great response from citizens. . . . We’re teaching people how to prevent heart disease, stroke and diabetes, and if they have one of these conditions, how to take care of themselves. . . . We’re also showing them the right way to access the healthcare system and get in touch with physicians in the area.” (Spivak 1998, 20-21)

Now Boca Raton carries out several activities in partnership with the community hospital.

Team up with your public health department.

Local public health departments provide many programs that address safety as well as health issues. Check them out. Ask how you can help. Immunization programs are one way EMS professionals are helping.
**Shots Across Texas Goes to the Fire Station**

The “Shots Across Texas Goes to the Fire Station” campaign enlists firefighters and paramedics to become immunization partners with the public health department. There are several good reasons why emergency personnel make great volunteers. They are:

- Medically trained
- Knowledgeable about their communities, and
- Local heroes

Inviting firefighters and paramedics to become immunization partners provides an opportunity to expand the presence of public health in communities where there is a need.

Children are intrigued by fire stations. Maybe it’s the big, red fire engines or the sound of the sirens that make little hearts race. Whatever the appeal, one thing is certain: fire stations provide a perfect setting for immunization clinics. They are—

- Friendly and accessible
- Located in rural and urban areas
- Situated in neighborhoods where people live
- Fun places to visit

(Excerpted from Texas Department of Health Web site: http://www.tdh.state.tx.us/immunize/coalfire.htm)

Kids and parents can have as much fun at an EMS station as they can at a fire station.

**Team up with your fire department.**

EMS units interested in conducting home safety visits may want to team up with firefighters. Many fire departments conduct home safety visits to check smoke detectors and leave fire prevention and safety literature. Many target areas in which the elderly poor live. EMS personnel could go along. While the firefighter is testing or installing smoke alarms, the EMS professional could evaluate the circumstances and setting in the home, note and discuss hazards and risk factors for falls, install a night light, and leave fall prevention literature.

**But the vision is more . . .**

The new emphasis on wellness for all citizens sees EMS professionals as integrated members of a community-wide public health and safety team that addresses the injury prevention issues for all ages and stages.
Join an Existing Injury Prevention Coalition

Combining your efforts with others who are already working to mitigate similar injury problems (motor traffic related injuries) or address the same age group (children), or ethnic community (Native Americans) is an excellent way to learn. And it is a good way to both get and give support and assistance.

Joining an existing coalition does not mean that EMS—or anyone else involved—must abandon their mission or turn over all their resources to a common pool. However, participants should come to the table prepared to share some of their resources—expertise on a facet of the problem, personnel time and talents, materials and equipment—as well as some of their funds in pursuit of the common mission.

Advantages of Joining an Injury Prevention Coalition

Injury coalitions provide long-term leadership to their communities in the effort to reduce unintentional and intentional injury. They identify and target the injury problems most prevalent in their local areas. Then, by calling on the combined resources of their diverse membership, they plan and implement strategies to address those problems by:

- Calling attention to the problem, through media and public awareness activities
- Providing educational materials and programs
- Distributing lifesaving safety devices to families in need
- Advocating for improvements to injury prevention education, legislation and enforcement, environmental, and engineering safety measures as well as economic incentives.

(Excerpted from SAFE KIDS Web site, Get Involved with a Coalition Near You! http://www.safekids.org/tier2_rl.cfm?folder_id=182)

Coalitions are “usually made up of concerned citizens and existing organizations or groups that have decided to work together in a structured way towards a common mission.”

(SAFE KIDS, Get Involved with a Coalition Near You! http://www.safekids.org/tier2_rl.cfm?folder_id=182)

Essential Characteristics and Benefits of Coalitions

Elements

- Expanded Data Sources
- Extended Partnerships
- Citizen Involvement
- A Systematic Approach to Injury Prevention

Benefits of Coalitions

Coalitions address all aspects of the injury spectrum in a community through a logically stepped, methodically implemented plan. Collaboration results in access to an abundance of resources and talents. Members share responsibilities, divvying up tasks according to interests and expertise—the ability to enlist experts to help with data gathering and statistical analyses being just one example. And unified efforts often lead to better funding.
Integrated, Comprehensive Injury Prevention
Coalitions at the state and local levels often stand a better chance of effecting long-term reduction in injuries through comprehensive injury prevention and control than do many single-issue safety programs. Local efforts can emphasize preventing and mitigating nonfatal injuries, which cost Americans more than fatal injuries do, by addressing the continuum of needs injury presents:
- Prevention
- Acute care
- Rehabilitation

Cost Effectiveness
Because coalitions share resources, responsibilities, and tasks, they avoid duplication of efforts and expenses. This means that more resources can be directed at solving top-priority problems.

Systems-Based Solutions
Coalitions marshal the people, materials, and expertise needed to implement evidence-based solutions that
a. Define the major problem(s) through data collection and analysis.
b. Intervene by designing, planning, implementing and evaluating programs (based on measurable goals) that address the most severe problems.
c. Report the results to all interested parties and the public.
d. Replicate successful programs.

Community Support and Participation
Coalitions recognize that most injury problems are local and that the solutions, and the costs of those solutions, must be supported by the community at large. Thus, coalitions actively recruit their working members from a wide range of civic and governmental organizations, from agencies involved in all aspects and dimensions of injury prevention, and from the target population. Each member gets to know and collaborate with some people who have not previously been in their network.

Participation of many agencies also secures access to the expertise of each and to the many data files and records systems those agencies own. The integral involvement of civic, governmental, and interested citizens in investigating community injury problems and possible solutions helps them own both the problem and the solution. Ownership elicits the support needed to promote an injury prevention strategy and gives it time to work.
Synergism
Coalitions constantly draw in new partners who bring new ideas, fresh enthusiasm, and robust energy. And, two or more often can do what one cannot do alone.

Leverage
Combining the passion, evidence, and knowhow of safety experts, community power brokers, and ordinary citizens allows coalitions to advocate for improvements from a position of knowledge, and it strengthens the message.

One Example: Safe Communities
The NHTSA Safety Coalition Model

- Purpose: to Promote Primary Injury Prevention (PIP)
- More than 1,100 programs nationwide (as of 2003)

Safe Communities is a unique approach to transportation safety advocacy and motor vehicle injury control, but it is more than just a traffic safety program. It encourages prioritizing injury problems and tackling those of most concern first. Consequently, Safe Communities promotes community-based solutions to address other injury problems as well as transportation safety.

Safe Communities Have the Following Elements:

a. A Safe Community program uses an integrated and comprehensive injury control system with prevention, acute care, and rehabilitation partners as active and essential participants in addressing community injury problems.

b. The community has a coalition or task force that is comprehensive and community-based with representation from citizens, law enforcement, public health, medical, injury prevention, education, business, civic and service groups, public works offices, and traffic safety advocates. Members provide program input, direction, and involvement in the Safe Community program.

c. The coalition conducts comprehensive problem identification based on the collection and analysis of local data. They use estimating techniques that determine the economic costs associated with traffic-related fatalities and injuries, fitting it into the context of that community’s total injury problem.
d. The coalition conducts program assessments from a “best practices” and a prevention perspective to determine gaps in highway and traffic safety and other injury activities.

e. The coalition implements an intervention plan focusing on specific strategies which will effectively address the problems and program deficiencies through prevention countermeasures and activities.

f. The coalition evaluates the program to determine the impact and cost benefits where possible.

(Adapted from the Safe Communities Web site, Best practices for a safe community: Elements of a safe community: http://www.nhtsa.dot.gov/safecommunities/scbestp/)

Is money available?
Coalitions need money to begin and they need money to continue. Most importantly, they need money to cover two distinct costs: administrative costs and money dedicated to program costs—planning, implementing and evaluating program initiatives. NHTSA provides some money and some very good guidance on where to look for future funding.

Start-up Funds
Safe Communities start-up money and/or funds for innovative national or state-sponsored initiatives may be (or have been) available from the lead agencies:
• National Highway Traffic Safety Administration
• Your State’s Governor’s Highway Safety Program

Sustaining Funds
However, your local coalition should plan to seek sustaining funds from many sources. Some examples of long term funding sources include:
• Fees for services
• Earmarked funds (including fines and surcharges)
• In-kind contributions for goods and services
• Pro-bono and volunteer support
• Grants and donations from multiple funding sources
• Sponsorship by another organization, including state and local governments

(Safe Communities: The First Six Months 2000, 16)

Resources for Safe Communities Programs
Resources produced especially for Safe Communities are numerous and growing. They incorporate marketing, organizational, and program materials. Many can be downloaded and/or ordered online through the Safe Communities Web site. For hard copies or to request a materials resource catalog, contact NHTSA’s Safe Communities Service Center (address on the next page) or the regional offices.
Resources of Special Interest

Getting Started: A Guide to Developing Safe Communities
Offers guidance for community practitioners on how to implement a Safe Community.

Safe Communities Start-Up Kit
Can be obtained by ordering from the Safe Communities Service Center Product Shop.

Safe Communities Time Line: Steps in Building a Safe Community
A helpful timeline checklist for Safe Communities to assist a coalition in organizing and scheduling components needed to successfully manage a community-based injury prevention program. It is available from the Safe Communities Service Center, Safe Communities Workbench.

A Dialogue about Safe Communities
Discussions by 12 Safe Communities in New England; includes practical tools for gathering information, measuring behavior change, data mapping, partnering with the media and other useful subjects. It is available from the Safe Communities Workbench.

Safe Communities: Getting Started: A PowerPoint presentation
Designed to serve as an orientation tool for new coalitions and potential coalition members by giving them a basic understanding of the Safe Communities model of injury prevention and control. (You can download this presentation from the Web site.)

Safe Communities: The First Six Months: A 22-page introduction to Safe Communities and organizational planning guide addressed to individuals and community groups interested in getting started on injury prevention.

Safe Communities Workshop
An instructor-led training program designed to help solidify and give direction to a core team of local experts and others interested in developing a comprehensive injury prevention coalition. Workshops are held at the state level and strive to help a nucleus of typically five to eight people.

Safe Communities Technical Assistance Folios
Technical assistance write-ups on a variety of topics about Safe Communities and written by individuals working at the community level. Topics include data collection, monitoring and evaluation, coalition building, and roles of different partners.

Check It Out Online
http://www.nhtsa.dot.gov/safecommunities/servicecenter
The place to go to see if your community has a “Safe Communities Coalition.” AND find a wealth of other injury prevention information!
Best Practices Showcase
An online clearinghouse of tried and true activities, programs and ideas conducted by Safe Communities Coalitions throughout the country. A Best Practices Newsletter is also available.

Traffic Safety Digest: A compendium of innovative state and community traffic safety programs published quarterly; it includes write-ups of Safe Communities in action.

Safe Tribal Communities presentations
(Adapted from The Safe Communities Web site)

Investigate existing safety coalitions.
Your community may already have a safety coalition. Find out if this is so. Inquire among the people most likely to know: human service and public health and safety agencies. Safety coalitions come in almost every form, size, and color. They address international, national, regional, state, and local concerns. They can be single-issue organizations or umbrella organizations for a broad variety of health maintenance and injury prevention endeavors. In fact, there is an organization addressing practically every “problem”—and a humongous number of them have Web sites. Those listed at the left, for instance, have gathered together many different partners to address a broad spectrum of injury and health risks. They provide resources for implementing a broad scope of solutions as well as partner with and provide online links to other organizations. All have exceptionally good links to special interest advocacy coalitions and groups divided by injury topic and/or population (e.g., Bike Safety; MADD). Try the links in the sites listed above first.

Use a general search engine.
If you prefer to put your efforts into a single-issue injury or health problem or address a specific population, you also can type a key word into a general search engine. In Google (http://www.google.com) for instance, typing in “drowning prevention programs,” nets about 9,540 hits (listed in 10-site increments) in 0.38 seconds. Narrowing the search to “teens and drowning prevention” nets about 3,110 hits in 0.29 seconds.

If your community does not have an existing injury prevention coalition or if, for some reason, your mission and theirs is not the same, consider forming a new safety coalition.

Appendix B
Other National Safety Coalitions
(and one resource) include

- National Organization for Youth Safety (NOYS)
- SafeUSATM
- SAFE KIDS Campaign
- Healthy People 2010 — resource

Check It Out Online
Great Jumplists
Governors Highway Safety Association:
http://www.naghsr.org/html/resources_main.html
- Highway Traffic Safety Web sites
- State Highway Safety Web sites
- Federal Agency Web sites

SECTION C
First, Sign up for a NHTSA Safe Communities Workshop.
The Safe Communities workshop is designed to help solidify and give direction to a core team of local experts and others interested in developing a comprehensive injury prevention coalition. Workshops are held at the state level and strive to help a team of typically five to eight people:

1. Form a cohesive and working team with the knowledge and skills to plan, manage, and sustain effective injury prevention and control projects.

2. Establish collaborative partnerships with your state’s
   • Highway safety office
   • Department of Health (health planners and educators)
   • Division of Emergency Medical Services
   • Emergency room physicians and emergency nurses
   • Department of Public Safety (disaster planning and relief)
   • Hospitals and Trauma Centers
   • Long-term care and rehabilitation specialists
   • State associations of chiefs of police, firefighters
   • Those who have been personally touched by a death or disability
   • Members of target groups and community groups

Workshop organizers select several communities that appear to be fertile ground for a Safe Communities program. They identify and invite five to eight representatives from each community who represent a broad range of expertise and interests, and conduct a coalition-building workshop.

The workshops consist of seven modules designed to be taught over a four-day period. Each accommodates five to six teams of about five to eight participants (about 35 people). These modules are

I. A two-hour evening introductory and icebreaker session that begins the workshop.

II. Develops knowledge of the comprehensive problem of injury and prevention strategies.

III. Helps each team define its own community and begin to identify the most pressing injury problems it faces.

IV. Aims at developing skills to get their community involved; participants plan ways to
   —recruit some of their communities’ movers and shakers,
   —build effective media relations, and
   —gain support from the community at large.

“If you think you’re too small to have an impact, try going to bed with a mosquito.”
V. Focuses on helping the team determine its top priorities for injury prevention and control, addressing data and other information sources.

VI. Focuses on the “nuts and bolts” of community program management: establishing performance objectives, designing program activities consistent with the objectives, and measuring progress toward the objectives.

VII. Helps the team prepare detailed plans of action for the next month, plans that include:
- lists of additional community leaders to contact;
- setting a date, time, place and agenda for the coalition’s organizational meeting; and
- developing a structure for the coalition.

Participants receive supplemental materials, including the following:

- Basic Community Snapshot
  (Community Profile and Contacts Assignments form—Recruiting)
- Questions that Define the Community’s Injury Problems
  (Injury Profile)
- Resource kit identifying other helpful sources and materials
- Workbook
  (Adapted from Safe Communities Workshop, Instructor Manual)

Contact your state highway traffic safety office to see if your community can become a part of their Safe Communities network. Then recruit a core team and attend a workshop.

Remember, too, that NHTSA’s Safe Communities is but one of several nationally recognized injury prevention coalition models. Look for one in your community before you set off on your own. A sampling of others can be found in Appendix B.

The coalition you choose to join may depend on the primary health or injury focus of your lead agency—public safety, a hospital, a health department, a fire-rescue department, or a private EMS service—and what they see as the top health or injury priorities. Or it may depend on the reason you wish to become involved—childhood injuries, an increasing senior population, a rise in domestic violence.

**Second, Just Start.**

Chances are good that your EMS service is already working with other public safety and health organizations in your community, at least informally. Moving those people towards forming a comprehensive injury prevention coalition can just start with that group and expand from there. While this module is not intended to be a step-by-step guide on how to form a coalition, you should be aware that there is a wealth of literature on
community and coalition building that can guide your steps. Because they provide an overview of the knowledge needed and activities inherent to forming a new coalition, a few are detailed below.

**Coalition Building Resources**

Any time you start a new endeavor, it’s a good idea to educate yourself. These sources are highly recommended reading for anyone seriously considering forming a new coalition (or, for that matter, involved in an existing one).

**Developing Effective Coalitions: An Eight Step Guide**


This 29-paged paper includes sections on
What is a Coalition? and Advantages of a Coalition

The Eight Steps

1. Analyze the program’s objectives and determine whether to form a coalition.
2. Recruit the right people.
3. Devise a set of preliminary objectives and activities.
4. Convene the coalition.
5. Anticipate the necessary resources.
6. Define elements of a successful coalition structure.
7. Maintain coalition vitality.
8. Make improvements through evaluation.

**The Spectrum of Prevention: A Decision Tool**

The Spectrum is a systematic framework and tool which promotes a multifaceted range of activities for effective injury prevention. It was originally developed by Larry Cohen (founder and Executive Director of the Prevention Institute) who based it on the work of Marshall Swift in treating developmental disabilities. It has been used nationally in a wide range of prevention initiatives including traffic safety, violence prevention, tobacco prevention, nutrition, and fitness. It can be used to help coalitions

- clarify their objectives
- identify the breadth of what the group may accomplish and the scope of the coalition’s activities
- take a broad, creative look at activities that can accomplish the objectives
- develop strategies and plan intervention activities
- think through grant activities that will be successful
The Spectrum identifies six levels of intervention that are complementary. When used together, they produce a synergy that results in greater effectiveness than would be possible by implementing any single activity or linear initiative. As the most important activities related to prevention objectives are identified at each level, they will lead to interrelated actions at other levels of the Spectrum. The levels, listed from highest to lowest, are:

6. Influencing Policy Legislation
   Developing strategies to change laws and policies
5. Changing Organizational Practices
   Adopting regulations and shaping norms
4. Fostering Coalitions and Networks
   Convening groups and individuals for greater impact
3. Educating Providers
   Informing professionals who influence others
2. Promoting Community Education
   Reaching groups with information and resources
1. Strengthening Individual Knowledge and Skills
   Enhancing individual capacity

(Adapted from The Prevention Institute Web site [Tools and Frameworks]: http://www.preventioninstitute.org)

To learn more, take a look at:

**The Spectrum of Prevention**
Available from the Prevention Institute Web site [Tools & Resources]: http://www.preventioninstitute.org

**Kids’ Plates: The Spectrum of Prevention for Childhood & Adolescent Injury Prevention**
Available from the Prevention Institute Web site http://www.preventioninstitute.org/spectrum.html

**Spirit of the Coalition**

“A lively and highly accessible book filled with real world illustrations and a wealth in practical tools. Berkowitz and Wolff’s book is a ‘must own’ for anyone engaged in the art and science of coalition building.”
—Meredith Minkler, DrPH School of Public Health, University of California, Berkeley

Actual samples of materials coalitions have used, such as planning documents, membership brochures and publicity flyers, are provided. Order from the American Public Health Association Web site [Books, L-Z]: http://www.apha.org/media/abc2.htm
From The Ground Up: A Workbook on Coalition Building and Community Development
Edited by Tom Wolff, PhD and Gillian Kaye

This helpful workbook, a companion book to The Spirit of the Coalition, is a “toolbox” for building coalitions and developing health communities. Order from the American Public Health Association Web site [Books, L-Z]: http://www.apha.org/media/abc2.htm

Community How To Guides On Underage Drinking Prevention

The basic process and information contained in these Guides can be applied by any community-based organization striving to affect a social problem through changing community norms. The appendices for each topic include tools useful to coalition planning and implementation activities.

The Citizen’s Handbook
A Guide to Building Community in Vancouver

Vancouver Citizens Committee
522 East 10th Avenue
Vancouver, B.C. Canada V5T 2A4
Phone: 604 877 0109
Email: Charles Dobson: cdobson@eciad.bc.ca

While not injury prevention specific, The Citizen’s Handbook’s claim of being, “As far as we know, this is the most complete grassroots organizing guide available on the Internet” is not far short of the truth.

Community Tool Box: Bringing Solutions to Light Web site
A “how-to” Web site created and maintained by the University of Kansas Work Group on Health Promotion and Community Development in Lawrence, KS, and AHEC/Community Partners in Amherst, Massachusetts. The site has been on line since 1995, and it continues to grow on a weekly basis.

Sections address leadership, strategic planning, community assessment, advocacy, grant writing, and evaluation, to give just a few examples. Each includes a description of the task, advantages of doing it, step-by-step guidelines, examples, checklists of points to review, and training materials. Included are a troubleshooting guide and a community grant application.

(Adapted from University of Kansas, Community Tool Box Web site, What is the Community Tool Box?: http://ctb.lsi.ukans.edu/orientation/what.html)

This discussion addresses some of the special preparation that long-term collaborative relationships require. The skills needed to nurture rewarding associations include an understanding of trust, basic respect for human differences, as well as a working knowledge of group dynamics and effective meeting and communication methods.

**Reaching Out: A Guide to Effective Coalition Building,** EMSC National Resource Center


The guide defines coalition building, discusses desired outcomes of successful coalitions, and suggests the membership potential of state, regional, and local organizations and individuals. A checklist of coalition building tips and a model EMSC outreach plan are included.

**A Bird’s Eye View of Coalition Building**

The steps outlined below are recommended by most sources.

1. **Identify others concerned with reducing traffic and other injuries.**

Start with the leaders of your’s and other EMS services in your community, their medical directors, and their chief officers. Have a brainstorming session to identify organizations within the community that are already working on the identified issue. Then look for citizens and members of the target audience that should be involved. List injury and health problems each is most likely to be concerned with solving.

Areas from which to recruit include:

- Medical Entities
- Human Service Agencies
- Law Enforcement
- Local Government
- Business Leaders and Associations
- Education Representatives
- Community Advocates
- Local Media
- Fraternal and Service Groups
- Youth Groups
- Local and Regional Foundations
In your recruiting, keep in mind that there are three types of people that will be important to your coalition:

1. **Grass Roots People** are those closest to the issue or local people. Examples might include:
   - EMS and other health care professionals
   - Law enforcement personnel
   - Parents and youths
   - School teachers
   - Survivors of injury events or their relatives
   - Religious leaders and associations
   - Local business people: liquor establishments, athletic clubs and stores
   - Members of business, civic, and social clubs: Jaycees, Civitans, Junior League, Big Brothers, Big Sisters.

2. **Community Leaders** have credibility and respect; they often are activists who play larger roles than their specific titles. An example may be the school teacher who is also head of a neighborhood association, involved with PTA at another school, and is on the Chamber of Commerce board.

3. **Grass Tips People** hold official posts in the community; they are the designated heads of organizations and agencies. They usually do not have the interest or time to attend meetings of this nature, but often delegate other people. Examples include city, county and state governmental officials, school board members, heads of civic organizations such as the Chamber of Commerce, and the CEOs of major employers.

(Adapted from New Mexico’s EMS for Children Project)

2. **From this list, recruit a core team.**
What you are looking for is a core group of five to eight made up of local experts and others interested in developing a comprehensive injury prevention coalition. These people will investigate the appropriateness of forming a new coalition. If you decide to proceed, they will also recruit the additional members and plan the organizational meeting. A suggested list of organizations from which to recruit members and a contact planning and assignment form is included in Appendix C.

3. **Form an organizational and financial plan (a business plan).**
Two documents are key to understanding the components of planning and administering both organizations and programs: the business plan and the grant application. Complete examples of both, and you will have not only a plan for your entity and a way to tell others about it, but you will have learned many of the key components of program planning and management. Your organizational
plan should include a mission statement (identifying your reason for being and your focus), and a statement defining the areas you will operate in and setting out the guidelines for strategies you will implement.

a. Decide your coalition’s purpose and scope.

- The injury problems you will tackle first, second, third
- The populations you will address first, second, third
- Which strategies and activities are most appropriate for the injury problems and audiences you have identified
- Agencies and people from whom you will need buy-in from and how to get it
- Community objections you may encounter and how to decrease these objections

b. Investigate whether traffic safety or other injury prevention programs are already at work in your area with an eye trained on collaborative partnering.

In a business plan, these are other people or agencies who offer the same or similar services—the competition. For a new injury coalition, they are future collaborators. Other entities likely to be conducting or promoting primary injury prevention (PIP) programs include

- Health, Human Service & Educational organizations
- Law Enforcement agencies
- Public Health departments
- Public Safety groups
- Medical community (Hospitals, Outpatient Facilities, Physicians, Home Health, Assisted Living and other Residential Facilities)
- Community Colleges & Universities
- Community groups (United Senior Citizens, PTAs, AARP)
- Large Corporations/Major employers in the community

c. Identify what will be different about your coalition’s information, education, and advocacy programs.

If you cannot find a difference, join an existing coalition.

4. Solicit executive and managerial leadership.

Organizations typically have an executive board chosen or elected from its membership. They also require department managers, in this case committee chairs, who have a special interest or expertise in a given area. Many also have advisory boards who lend credibility, general support, and who on occasion may use their clout to push for an objective. Name all networking and skill needs you can think of and write job descriptions for all.
The Executive Board

is charged with assuring the overall health of the coalition, namely direction, oversight, fundraising, and networking. Board members define the group’s mission and parameters; “establish priorities among competing projects; set policies; acquire needed resources; monitor budgets; and hire, train, motivate, and evaluate staff members (Anderson 1994, 213). It is this Board that should determine what legal form the coalition will assume: private, nonprofit or some other type of organization. The board should elect a chair and choose or acquire a treasurer and a secretary.

In a coalition, networking is a key function of the board; thus, recruiters need to assure that their coalition will include a broad segment of the community. Suggested networking relationships to foster include:

- Medical Liaison
- Human Services Liaison
- Liaison to other health & safety coalitions
- Liaison to government entities
- Law Enforcement Liaison
- Business & Industry Liaison
- Liaison to other community advocates and activists, including citizens-at-large and youths
- Media Liaison

Key Committees

Task forces, or key committees, work on the ongoing needs of the coalition. These people are the coalition’s department or “project managers” who carry out the will of the coalition. In their respective areas, they “establish goals, create project schedules, coordinate their efforts with those of other people . . . and perform other managerial tasks required to complete their projects” (Anderson 1994, 213). These committees and their respective chairs might include:

1. Bylaws & Procedures Coordinator
   - Leads the effort to formalize the structures and rules that will guide the coalition

2. Membership Coordinator
   - Solicits key players in the community
   - Forms partnerships w/other coalitions
   - Assists in planning and delivering training
   - Coordinates meetings

3. Financial Coordinator
   - Solicits local monies/in-kind donations
   - Researches and write grant sponsorship proposals
   - Performs accounting and compliance responsibilities
4. Data Collection & Analysis Coordinator
   - Researches current collection systems and databases
   - Plans, implements, and evaluates data collection & analysis

5. Program Coordinator
   - Researches existing injury prevention programs
   - Oversees the planning, implementation, and evaluation of programs
   - Assists in planning and delivering training

6. Volunteer Coordinator
   - Recruits
   - Plans and delivers training
   - Plans and hosts recognition program(s)

7. Marketing & Media Relations Coordinator
   - Plans marketing / media campaigns
   - Helps select and customize existing program materials for target audiences
   - Writes, designs/edits/produces public information and relations materials (checklists, flyers, posters, etc.; print / radio/TV spots)
   - Plans and implements media placement

8. Others as necessary

5. Set your injury prevention goals.
   Tap into data sources that tell you about your community and the injuries that occur within it. Three major sets of information will help.

Your Community's Profile
You should know what your community looks like as a whole. Data you will need includes
   - How many people live in the community
   - Their ages, gender, race/ethnicity, and general physical health
   - The type of work they do (or not) and their general economic health
   - Where and how they recreate: business, civic, cultural, and seasonal happenings
   - What the landscape looks like—urban, suburban or rural; highways or byways, mountains or beaches.
   - Hazards posed by your community’s geography/environs

Data from the community profile helps:
   - calculate injury rates in your community’s population to allow accurate comparisons between dissimilar populations in other communities, across the state and the nation,
   - identify the age, gender, race/ethnicity, or socioeconomic groups most affected by an injury type, and
   - study factors that may affect changes in injury rates

(Abrams 1991, 307-309)
The Injury Profile

Investigate the statistics that detail the types and causes of injuries in your community. An injury profile details information about the following:

- Mechanisms & Intents
- Specific age and population groups affected
- Situation & Task Factors
- Product or Environmental hazards
- Safety Measures—in place or not
- Costs

Questions to ask are:

- How frequently do [__________________] injuries occur in the community?
- Are the numbers and/or rates of [__________________] changing over time?
- How do the community's [__________________] injuries compare to similar communities or the state?
- Where are the [__________________] injuries occurring and what are the circumstances surrounding the injuries?
- Who is being injured and how seriously?
- What are the medical care and other costs associated with these [__________________] injuries? (What are the EMS and other costs associated with these [__________________] injuries? Are your costs fully reimbursed? If not, what is the difference between your actual cost and what you are reimbursed?)

Costs include:

- Medical Charges, those paid and especially those uncollected
  — EMS Care and Transport Charges
  — Emergency Department Charges
  — Hospital Discharge Charges
  — Rehabilitation/Long-term Care Facilities
- Property damage
- Years of Potential Life Lost and Time Out of Work
  — Rehabilitation/Long-term Care Facilities
  — Medical Examiner/Coroner Records
  — Employer Records/Estimates of time out of work

A community profile can help you understand the people who make up your community and the behaviors, agents, environments, and tasks, which do—or do not—put your people at risk.

The information helps justify intervention efforts and provides “a baseline analysis, which documents the size and nature of injuries in your community before the implementation of a program or particular countermeasure” (Viro 1999, 6).
Then identify the “Big 3” types of injury in your community. In most communities, motor vehicle/traffic injuries lead other causes of injury by far. The kinds of injuries prevalent in your community may surprise you. Set doable, measurable prevention goals and objectives for the top 3 problems.

Try to tackle injury prevention challenge not already being addressed by others; review whether or not anybody else is addressing one of these injury problems and either recruit them or join them.

6. Identify the resources and funds the coalition will need and create an estimated budget.

Required resources and funds are usually divided between administrative costs and program costs.

**Administrative Operation Resources and Funds**
Estimate these expenses for start-up and for 1, 3, and 5 years later.
- Staff/volunteers
- Operating space
- Materials, supplies & equipment
- Meeting and training expenses
- Total administrative funds needed

**Program Resources and Funds**
Take into consideration that, eventually, resources must be devoted to planning, publicizing, implementing, and evaluating any programs you anticipate initiating to address your identified injury problems.
- Staff/volunteers
- Operating Space
- Materials, supplies & equipment
- Meeting and training expenses
- Total program funds needed

**Investigate ways you might get these resources and funds.**
Ways to get the personnel, material and financial support you need range from yard sales and spaghetti suppers to corporate sponsorship. Sources include:
- Fees for services
- Earmarked funds (including fines and surcharges)
- In-kind contributions for goods and services
- Pro-bono and volunteer support
- Fundraising events or projects (e.g., a yard sale, a cookbook)
- Grants and donations from multiple funding sources
- Sponsorship by another organization, including state and local governments

(Adapted from Safe Communities: The First Six Months)
Research, then request grant applications.

Grant funding may also come from coalition member organizations and local corporations’ community outreach funds, as well as national, state, and local philanthropic entities. Investigate different granting organizations. You will need to know the types of efforts they give priority to and the kinds of uses to which funds can be applied. Look for those that grant money for operating costs as well as those that provide funds for programs. Learn the difference and apply for both OPERATION (Administrative) funding and PROGRAM funding.

A number of states provide a list of foundations that may provide grants, information on what types of projects or these organizations are most likely to fund, advice, and sample forms for applying. For instance,

- Your State’s EMS office
- National Highway Traffic Safety Administration
- Your State’s Highway Safety Representative
- Foundations (local, regional, national)

Complete Applications and/or Write Grants


You will need to ask grantors

- How much money you can expect to be awarded
- How to apply
- What the money may—and may not—be used to do
- What compliance reporting and accounting requirements are expected

Online grant sites to visit

- National Network of Grantmakers: http://www.nng.org/
- The Foundation Center: Your Gateway to Philanthropy on the Web: http://www.fdncenter.org/
- Grantmakers in Health: http://www.gih.org/
- The Grantsmanship Center: http://www.tgci.com/

Much of the information needed for grant applications should already be detailed in your organizational or business plan. Added material will address your request. Always

- set doable and measurable goals and objectives,
- identify and analyze primary and secondary audiences,
- set time frames,
- plan, implement, and evaluate the intervention, and
- carry the intervention out as planned.
7. Plan and Evaluate Programs.
Program planning has almost the same steps as organizational planning. Again be guided by your business plan and a grant application form. Describe the problem and choose potential strategies for interventions:
- the exact problem the program will address,
- specific strategies for interventions,
- how you will measure success (goals and objectives), and
- existing programs that meet these needs.

Determine the best approach for your target population: persuade, provide automatic protection and/or require compliance. Apply the principles of and plan activities for one or more of the following.

Spectrum of Prevention
1. Strengthening Individual Knowledge and Skills
2. Promoting Community Education
3. Educating Providers
4. Fostering Coalitions and Networks
5. Changing Organizational Practices
6. Influencing Policy Legislation

The Six Es
1. Education
2. Enactment
3. Enforcement
4. Engineering
5. Environmental Modification
6. Economics

Develop a plan for distributing the information you plan to produce.

Investigate existing programs that may meet the need.
Research and choose an existing program(s) and strategies likely to meet your objectives for effecting the injuries you’ve targeted. Choose programs you have the resources to implement. Modify existing programs and strategies to suit the needs of your community. Identify the activities and tasks involved and the people needed to perform them.

Choose implementation and evaluation tools and materials.
There is no sense in putting time and resources into prevention methods that don’t work. So they (and you should as well) ask questions designed to tell effective programs from ineffective ones.
Questions they (and you can) ask to determine whether what you are doing is an effective way to prevent a certain type of injury are

- What types of program countermeasures are most likely to help reduce injuries from [__________________]?
- What type of countermeasures were implemented and how many activities occurred during a given time period?
- What did implementation of these countermeasures cost?
- What effect did the countermeasures have on various groups in the community?
- Was there any change in the frequency or severity of [__________________] injuries and the associated costs occurring in the community after the implementation of the program and particular countermeasures?

(Adapted from Viro C. 1999.)

The answers to these questions fuel injury prevention efforts.

Form marketing and media plan.
Address your needs for buy-in as well as for promoting public interest and participation.

Always estimate and make plans to secure the resources needed:
funding / people / training / materials / equipment.
Include an accounting of your general operational expenses.

Always plan, implement and evaluate the intervention and carry it out as planned.

8. Inform the Media:
Publicize Your New Coalition and achievements.
The media is your ally. Make them a member of your team. Always inform the media when you
- Begin
- Receive a grant
- Plan a program
- Implement a program
- Can report the results of a program
9. Share your program with other injury prevention coalitions and agencies.
Please share both your successes and your failures. It is hard and expensive to reinvent the wheel. And nothing is more irritating than—given all that is on your plate already—to find out you’ve spent days, weeks, months and countless resources doing exactly what someone else has already done.

Your write-up or discussion of your program should include its
• reason for being;
• goals and objectives;
• design, plan, implementation, and evaluation (including the tools you use); and
• results

Comprehensive approaches to injury prevention are the wave of the future.
Injury is the source of much suffering and consumes inordinate amounts of your community’s health and human resources. Circumstances may necessitate that you start small, but building alliances that bring people together and foster lasting awareness and commitment to reducing your community’s injury and health problems is the goal.

Further Reading

Other concepts that will enhance your abilities:
• Running smooth and productive meetings
• Group Dynamics / Conflict Resolution
• Marketing and Advertising Techniques
• Quality Improvement & Control

There is always something new and worthwhile! Plan to keep learning.
References


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Boca Raton Fire-Rescue Services, Community Health Programs Web site. Available at: http://www.ci.boca-raton.fl.us/fire/chealth.cfm


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North Carolina Governor’s Highway Safety Program Web site. Available at: http://www.dot.state.nc.us/services/ghsp


Shots Across Texas Goes to the Fire Station Campaign. Texas Department of Health Web site. Available at: http://www.tdh.state.tx.us/immunize/coalfire.htm


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Appendices

A: Where to go for Advice
B: Other National Safety Coalitions
C: Coalition and Program Planning Tools
D: Other Resources
Appendix A

Where to go for Advice

Sources 1 - 3 may be printed from the web addresses listed.

1. State EMS Director List
   National Association of State EMS Director (NASEMSD):
   http://www.nasemsd.org/

2. State EMS and EMSC Web Sites
   Emergency Medical Services for Children
   http://www.ems-c.org/state

3. Governors Highway Safety Association (GHSA)
   http://www.statehighwaysafety.org

   10 Regional Offices
   http://www.nhtsa.dot.gov/nhtsa
Where to go for Advice

Appendix A

National Highway Traffic Safety Administration (NHTSA)
10 Regional Offices

Region 1
CONNECTICUT | MAINE | MASSACHUSETTS | NEW HAMPSHIRE
| RHODE ISLAND | VERMONT
Volpe National Transportation Systems Center
55 Broadway - Kendall Square - Code 903,
Cambridge MA 02142
Phone (617) 494-3427 / Fax (617)494-3646 / Email: region1@nhtsa.dot.gov

Region 2
NEW JERSEY | NEW YORK | PUERTO RICO | VIRGIN ISLANDS
222 Mamaroneck Ave, Suite 204,
White Plains NY 10605
Phone (914) 682-6162 / Fax (914) 682-6239 / Email: region2@nhtsa.dot.gov

Region 3
DELAWARE | DISTRICT OF COLUMBIA | MARYLAND |
PENNSYLVANIA | VIRGINIA | WEST VIRGINIA
10 S.Howard St, Suite 4000, Baltimore MD 21201
Phone (410) 962-0090 / Fax (410) 962-2770 / Email: region3@nhtsa.dot.gov

Region 4
KENTUCKY | TENNESSEE | NORTH CAROLINA | MISSISSIPPI
| ALABAMA | GEORGIA | SOUTH CAROLINA | FLORIDA
Atlanta Federal Center, Suite 17T30
61 Forsyth Street, SW, Atlanta GA 30303
Phone (404) 562-3739 / Fax (404) 562-3763 / Email: region4@nhtsa.dot.gov

Region 5
ILLINOIS | INDIANA | MICHIGAN | MINNESOTA | OHIO |
WISCONSIN
19900 Governors Dr, Suite 201,
Olympia Fields IL 60461
Phone (708) 503-8822 / Fax (708) 503-8991 / Email: region5@nhtsa.dot.gov

Region 6
NEW MEXICO | OKLAHOMA | ARKANSAS | TEXAS | LOUISIANA | INDIAN NATIONS
819 Taylor Street, Rm 8A38, Fort Worth TX 76102
Phone (817) 978-3653 / Fax (817) 978-8339 / Email: region6@nhtsa.dot.gov

Region 7
NEBRASKA | IOWA | KANSAS | MISSOURI
901 Locust Street, Rm 466, Kansas City MO 64106
Phone (816) 329-3900 / Fax (816) 329-3910 / Email: region7@nhtsa.dot.gov

Region 8
COLORADO | MONTANA | NORTH DAKOTA | SOUTH DAKOTA |
UTAH | WYOMING
555 Zang Street, Rm 430, Lakewood CO 80228
Phone (303) 969-6917 / Fax (303) 969-6294 / Email: region8@nhtsa.dot.gov

Region 9
AMERICAN SAMOA | ARIZONA | CALIFORNIA | GUAM |
HAWAII | N. MARIANAS | NEVADA
201 Mission Street, Suite 2230,
San Francisco CA 94105
Phone (415) 744-3089 / Fax (415) 744-2532 / Email: region9@nhtsa.dot.gov

Region 10
ALASKA | IDAHO | OREGON | WASHINGTON
3140 Jackson Federal Building, 915 Second Ave, Seattle WA 98174
Phone (206) 220-7640 / Fax (206) 220-7651 / Email: region10@nhtsa.dot.gov
Appendix B  National Safety Coalitions

NOYS

Safe USA

SAFE KIDS

Healthy People 2010
The National Organization for Youth Safety, is a coalition of more than 40 nonprofit organizations, companies and government agencies (NHTSA is one) that serves more than 11 million youth members. The organization’s mission is to shepherd resources and build synergistic partnerships that save lives, prevent injuries and promote healthy and safe lifestyles among youth. Since 1994, NOYS has served as a network to share ideas and projects that make a difference on issues important to youth. Each member is committed to the common goal of promoting safe and healthy behavior.

Features include:

Speak Out & Make NOYS Safety Project
This project provides youth an opportunity to join forces with the National Organization for Youth Safety (NOYS) to promote youth safety in their community.

Youth Changing the World Project Manual.
In addition to showcasing successes of other students and giving inspiration and ideas to those who want to become involved in Speak Out, the manual is an excellent tool for first-time planners and students running active programs, providing a step-by-step guide for individuals or groups to start their own projects. Sections include Getting Started, Getting People Involved, Planning Your Project, Project Tools, and Project Resources.

National Youth Diversity Summit on Traffic Safety.
In a high-energy environment, participants learn about relevant traffic safety issues and discuss solutions to cultural and physical barriers that impact youth around the country. NHTSA co-hosted the 2001 summit.

Youth Party Planner: Guide to Safe and Sober Event Planning

For more information contact National Organization for Youth Safety
Email: membership@noys.org.
Web site: http://www.noys.org/

Check It Out Online
Membership Organizations Links
http://www.noys.org/aboutus/memberlist.html

Web links to member organizations concerned with alcohol, health & safety, drugs, tobacco, and violence prevention and current projects.
Appendix B

Safe USA Overview
(6 paged booklet)

Check It Out Online
Partners Links
http://www.cdc.gov/safeusa/partners/partners.htm
Includes access to 10 Injury Control Research Centers.

National Safety Coalitions

“Safe USA is a working alliance of major public and private partners dedicated to reducing significantly the high rates of injuries and deaths related to injuries in the United States and increasing the levels of safety in the nation’s homes, schools, work sites, transportation areas, and communities” (http://www.cdc.gov/safeusa/mission.htm).

“This partnership will ensure that we do not duplicate efforts, that we direct resources where they are needed most and where they can do the most good, and that we increase our effectiveness by capitalizing on the strengths of each member of the partnership” (SafeUSA™ Partnership Council: http://www.cdc.gov/safeusa/partners/partners.htm.)

Features include:

Guidelines for “SafeUSA Communities”
Guidelines are being developed to encourage and guide communities in their efforts to improve safety and take active responsibility for creating a safe environment for themselves and others.

Handbook
The SafeUSA Partnership Council is developing a handbook to provide communities with prevention strategies, characteristics of successful or promising safety programs, and a variety of safety-related resources. The handbook will be available in print and on the SafeUSA web site.

Information Clearinghouse
SafeUSA Web Site (www.cdc.gov/safeusa)
The SafeUSA Web site provides information on a range of safety-related topics and links users to partner Web sites and resources for additional information on specific topics.

SafeUSA Hotline (1-888-252-7751 or 1-800-243-7012 for TTY users)
The hotline provides recorded messages on popular safety topics, free safety publications developed by SafeUSA Partnership Council members, and a fax-on-demand service which provides 24-hour access to numerous SafeUSA fact sheets in English and Spanish as well as access to information specialists and referral information.

National Conference
SafeUSA plans to host a national conference in Atlanta December 3-5, 2001, to formally kick off SafeUSA.
The National SAFE KIDS Campaign is the first and only national organization dedicated solely to the prevention of unintentional childhood injury - the number one killer of children ages 14 and under. Presently, 300 state and local SAFE KIDS coalitions in all 50 states, the District of Columbia and Puerto Rico comprise the Campaign. Former U.S. Surgeon General C. Everett Koop, M.D., Sc.D., is chairman of the Campaign” (About SAFE KIDS: http://www.safekids.org/tier2_rl.cfm?folder_id=184).

“To form a SAFE KIDS coalition, an organization with a vested interest in protecting children must commit resources and staff to “lead” the coalition and recruit members. Coalitions pay no dues to the National SAFE KIDS Campaign and receive free and low cost resources, technical assistance and most importantly, SAFE KIDS grant opportunities to help them serve their communities” (Get Involved with a Coalition Near You! http://www.safekids.org/tier2_rl.cfm?folder_id=182).

The National SAFE KIDS Campaign was launched 1988, under the leadership of pediatric surgeon Martin Eichelberger, M.D., and communications specialist Herta Feely, Children’s National Medical Center [serving the Washington, D.C. region] with funding from Johnson & Johnson. The company continues to support SAFE KIDS year round, with millions of dollars in annual grants, public awareness campaigns, corporate advertising and retail promotions.

Features include
SAFE KIDS Leadership Conference (January).
This conference is an opportunity for coalition coordinators from across the nation to gather in Washington, D.C., to share success stories and strategize for the future.

National SAFE KIDS Week (May).
This multifaceted effort combines community safety events and media outreach with retail promotions that reach millions of households with lifesaving information and tips. Coalitions around the country host thousands of events during the week, where kids, parents and other caregivers can have fun learning from interactive injury prevention demonstrations and receive safety devices and educational materials.

SAFE KIDS Worldwide
is a network of childhood injury control programs that successfully link organizations, communities and the private sectors in effective philanthropy and cause marketing to better protect children.
Healthy People 2010, an initiative coordinated by the Office of Disease Prevention and Health Promotion and the U.S. Department of Health and Human Services, a comprehensive set of health objectives for the Nation. The Healthy People Consortium is an alliance of more than 400 membership organizations committed to making Americans healthier by supporting the goals of Healthy People. It consists of all State and territorial health departments (mental health, substance abuse, and environmental agencies), and national membership organizations representing professional, voluntary, and business sectors.

Coalition for Healthier Cities and Communities

- Healthy Communities State Network
  http://www.healthycommunities.org/cgi-bin/?MIval=state_intro
- Intermountain Regional EMS for Children Coordinating Council (IRECC)

Check It Out Online
Healthy People Slide Show
http://www.health.gov/healthypeople/About/Slideshow_may_2001_files/v3_document.htm
The Spectrum of Prevention

The Spectrum of Prevention Table below can be used to
• clarify coalition or project objectives
• identify the breadth and scope of the coalition’s activities
• take a broad, creative look at activities that can accomplish the objectives
• develop strategies and plan intervention activities
• think through grant activities that will be successful


<table>
<thead>
<tr>
<th>Level of Spectrum</th>
<th>Definition of Level</th>
<th>Examples</th>
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<tbody>
<tr>
<td>1. Strengthening Individual Knowledge and Skills</td>
<td>Enhancing an individual’s capability of preventing illness and injury or promoting healthy activity and safety</td>
<td></td>
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<tr>
<td>2. Promoting Community Education</td>
<td>Reaching groups of people with information and resources to promote health, safety and physical activity</td>
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<tr>
<td>3. Educating Providers</td>
<td>Informing providers who will transmit skills and knowledge to others</td>
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<tr>
<td>4. Fostering Coalitions and Networks</td>
<td>Bringing together groups and individuals for broader goals and greater impact</td>
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<tr>
<td>5. Changing Organizational Practices</td>
<td>Adopting regulations and shaping norms to improve health and safety</td>
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<tr>
<td>6. Influencing Policy and Legislation</td>
<td>Changing laws and policies to influence outcomes in health and well-being</td>
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Coalition Recruiting Guide

Start with the medical people that your EMS service interacts with regularly, then branch out.

Medical People
- Trauma physician and/or program director
- Emergency department physicians and nurses
- Hospital patient-care advocates, case managers, and health educators
- Urgent care physicians and nurses
- Free-care clinics
- Pediatricians and pediatric nurses
- Health Department educators
- Medical language interpreters
- School health nurses

Human Service Agencies
Call your local health department. Look in the telephone book under “Human Services Guide” (listed in the front pages of most telephone books)

Law Enforcement
- District Attorney’s Office
- Police Department
- Highway Patrol
- Sheriff’s Office
- ALE Officer
- University Police

Local Government
- Mayors
- City /Town managers and council members
- County managers and council members
- County Manager
- Planning Director
- Emergency Services
- Public Works
- Parks and Recreation

Business Leaders and Associations
- Chamber of Commerce
- Attorney
- Community Development Corporations and Associations
- Local Industry
- Insurance Agents
- Retail Business

Education Representatives
- Day Care Association
- PTA
- Community After-School Programs
- Transportation program
- University health and wellness program
- Literacy council

Community Advocates
- Local and Regional Foundations
- Clergy and Religious Services
- Public Housing Authority
- Tourism Board
- Medical Auxiliary
- Fraternal and Service Groups
- Recreational Clubs
- Youth Groups
- Survivors of injury events or their relatives

Local Media
- TV
- Radio
- Newspapers
- Community Newsletters
### Coalition Recruitment Contact Planning & Assignment

<table>
<thead>
<tr>
<th>Area/Expertise</th>
<th>Name/Contact Info</th>
<th>Member Responsible</th>
<th>Outcome</th>
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Appendix D

Links Lists
Healthy People 2010
http://www.health.gov/healthypeople/default.htm

Injury Prevention Web

Injury Control Resource Information Network
http://www.injurycontrol.com/icrin/

Governors Highway Safety Association
http://www.ghsa.org

Building Safe Communities Newsletter
http://www.edc.org/HHD/csn/bsc/tslinks.htm

National Organization for Youth Safety (NOYS)
http://www.noys.org/: Membership Organizations Links:
http://www.noys.org/aboutus/memberlist.html

SafeUSA™

SAFE KIDS
http://www.safekids.org
Look at Media: Safety Tips

Business Planning
MIT Enterprise Forum, Inc., BUSINESS PLAN RESOURCES
http://web.mit.edu/entforum; Coose Links & Articles. Scroll for
“The Business Plan Road Map to Success Workbook” [online]

US Small Business Administration

Other Resources

Online Shareware at http://www.sba.gov/starting/indexshareware.html

Funding Sources
Grantmakers in Health
http://www.gih.org/

National Network of Grantmakers “Common Grant Application”
http://www.nng.org/

The Foundation Center: Your Gateway to Philanthropy on the Web
http://www.fdncenter.org

The Grantsmanship Center
http://www.tgci.com

Community / Coalition Building
Civic Practices Network Web site
http://www.cpn.org
Practical methods for public problem solving in every community and institutional setting in America.

Developing Effective Coalitions:
An Eight-Step Guide.
By Cohen L, Baer N, Satterwhite P. Kelly O’Keefe, ed.
Community How To Guides On Underage Drinking Prevention.

http://www.vcn.bc.ca/citizens-handbook/Welcome.html
Or contact
Vancouver Citizens Committee
522 East 10th Avenue, Vancouver, B.C. Canada V5T 2A4
Phone: 604 877 0109
Email: Charles Dobson: cdobson@eciad.bc.ca

Guide to Community Preventative Services
http://www.thecommunityguide.org

Healthy People in Healthy Communities: A Community Planning Guide Using Healthy People 2010
http://www.health.gov/healthypeople
A guide for building community coalitions, creating a vision, measuring results, and creating partnerships dedicated to improving the health of a community. Includes “Strategies for Success” to help in starting community activities.
See also
Healthy People Toolkit 2010: A Field Guide to Health Planning

Community Tool Box: Bringing Solutions to Light.
http://ctb.lsi.ukans.edu

Injury Prevention Training
American College of Surgeons
Committee on Trauma. Injury Prevention
http://www.facs.org/dept/trauma/injslide.html [slides]


US Dept. of Transportation, NHTSA; 1996.
A manual–traffic safety lesson plans for EMS, Fire and Rescue personnel.

The New Mexico EMS for Children Project 1994-1996.
University of New Mexico School of Medicine, Department of Emergency Medicine. EMT’s and Injury Prevention: Advocates for Children. Principal Investigators David Sklar and Robert Sapien. Albuquerque, NM:University of New Mexico School of Medicine, Department of Emergency Medicine.

Evaluation
Demonstrating Your Program’s Worth: A Primer on Evaluation for Programs to Prevent Unintentional Injury.
