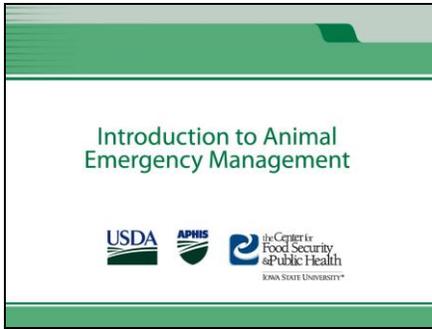
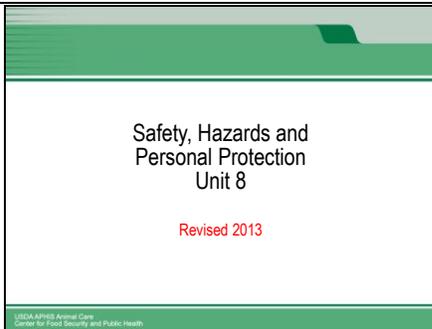


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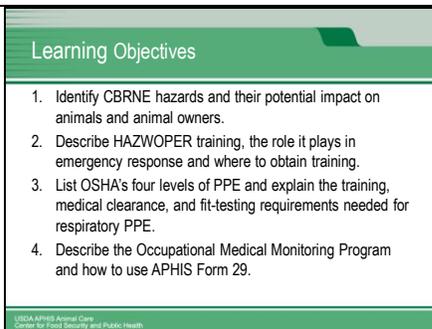
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This is the eighth segment in the Introduction to Animal Emergency Management Course. Prior to today, you should have completed the seven previous units.

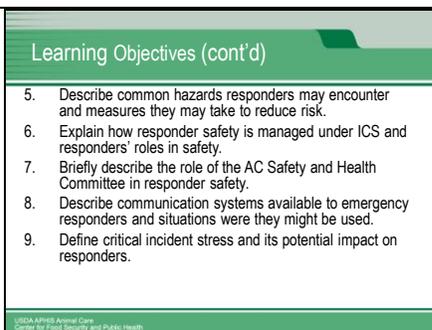
Today we are going to discuss health and safety, for emergency responders, mitigation strategies for emergency personnel and a brief overview of personal protective equipment. The next segment of this course, Unit 9, which you will take on-line after today's session, will cover Personal Protective Equipment (PPE) in more detail.

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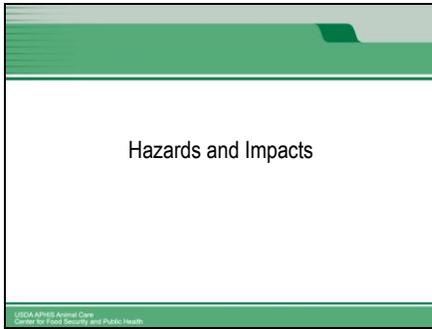


These next two slides describe the learning objectives for this session.

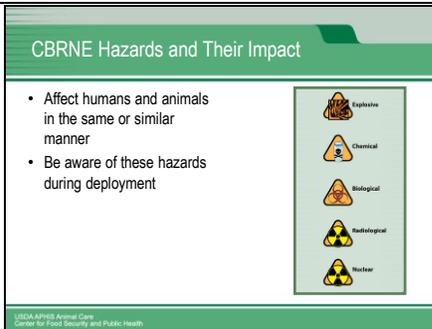
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In Unit 1 you were introduced to CBRNE hazards (chemical, biological, radiation, nuclear and explosives). CBRNE hazards that affect humans also affect animals in the same or similar manner. It is important to be aware of these different hazards during emergency deployment. Today we're going to briefly review these hazards and discuss ways to protect yourself from hazards while on deployment. **The course materials contain links to more detailed information about CBRNE hazards.**

*Graphic: Andrew Kingsbury, CFSPH*

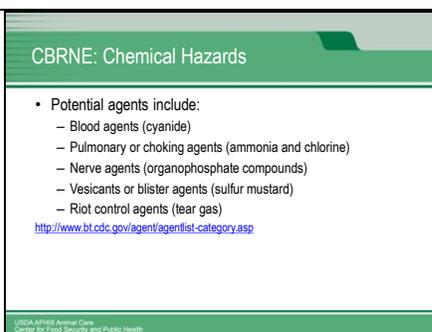
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Many of the CBRNE hazards that affect animals are also of concern to humans. During an emergency response, a variety of hazards may be present. For example, a dog rescued from contaminated flood waters may directly contaminate the responder or have a zoonotic disease. In cases of livestock, humans may be indirectly affected by CBRNE hazards via the food chain, through food made from contaminated plants or animals.

*Photo: FEMA, Dave Saville*

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Potential chemical agents include: blood agents (cyanide), pulmonary or choking agents (ammonia and chlorine), nerve agents (organophosphate compounds), vesicants or blister agents (sulfur mustard), and riot control agents (tear gas).

Chemical hazards can have a variety of effects ranging from mild skin or eye irritation to death. It is important to know what chemical hazards are present at an incident site. This information should be provided during briefings at the incident site.

The link on this slide is to the CDC's chemical hazard site which has more information on chemical bioterrorism agents. <http://www.bt.cdc.gov/agent/agentlist-category.asp>. The link is included in the course materials.

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**CBRNE: Biological Hazards**

- Potential agents:
  - Anthrax
  - Brucellosis
  - Plague
  - Smallpox
  - Tularemia
- Categorized based on:
  - Dissemination, transmissibility, morbidity/mortality, public perception



<http://www.bt.cdc.gov/agent/agentlist-category.asp>

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Potential biological agents include: anthrax, brucellosis, plague, smallpox, and tularemia. The CDC categorizes biological agents based on factors such as dissemination and transmissibility, high morbidity and mortality, public perception, and difficulty of public health response. Many of these biological agents can be used in bioterrorism. This link will take you to the CDC's Emergency Preparedness and Response Site, Bioterrorism Agent List for more information on biological hazards <http://www.bt.cdc.gov/agent/agentlist-category.asp>. The link is included in the course materials.

*Graphic: Andrew Kingsbury*

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**CBRNE: Radiological & Nuclear Hazards**

- Intentional (terrorism)
  - Contamination of food/water with radioactive materials
  - Release of radioactive material into environment
    - Dirty bomb
  - Exploding nuclear device
  - Intentional damage to a nuclear reactor
- Unintentional or unplanned
  - Nuclear reactor accident
  - Transportation accident (unintentional spill of radioactive material)



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Radiation emergencies can be due to either intentional or accidental or unplanned acts. This slide lists some intentional and unintentional or unplanned actions which could lead to a radiation emergency. In 2011 Japan experienced an earthquake, tsunami and radiation release from damaged nuclear reactors. This experience highlights the need for animal emergency management personnel to understand and be aware of radiation risks. Special protection and decontamination methods will be needed in the event of a radiological emergency.

Intentional releases of radiation can occur several ways. Food and water supplies can be intentionally contaminated with radioactive materials. The Release of radioactive materials into the environment can occur several ways either by using wind currents or natural traffic patterns or conventional explosive devices (dirty bomb). A dirty bomb or Radiological Dispersal Device is a conventional explosive device surrounded by or contaminated with radioactive material. When the bomb explodes it spreads the radioactive material over a wide area. The radioactive material would cause low level contamination over a large area, creating fear and making the area unusable for a period of time while the area is decontaminated.

Potential nuclear devices include: nuclear bomb, suitcase bomb (a small nuclear bomb), or an improvised nuclear device (an illicit nuclear weapon bought, stolen, or otherwise originating from a nuclear state, or a weapon fabricated by a terrorist group from illegally obtained fissile nuclear weapons material that produces a nuclear explosion) (DHS/FEMA, 2008)

An unintentional or unplanned release of radiation could occur due to an accident at a nuclear facility or as result of an accident during the transportation of nuclear material.

*Graphic: Andrew Kingsbury, CFSPH*

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### Radiation

Energy moving in the form of particles or waves

- Non-ionizing Radiation:
  - Heat, light, radio waves, microwaves
- Ionizing radiation: radiation displacing electrons from atoms:
  - Alpha particles, beta particles, gamma rays
  - May cause skin or tissue damage

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Radiation is defined as energy moving in the form of particles or waves. It takes on two different forms: Non-ionizing and Ionizing.

Non-ionizing radiation is electromagnetic radiation ranging from extremely low frequency to ultra violet - the most common form is sunshine which provides light and heat. Sunshine has infrared, visible and ultraviolet frequencies.

Ionizing radiation can be either particulate or electromagnetic. Particulate radiation consists of alpha and beta particles and neutrons. Ionizing electromagnetic radiation travels in waves and consists of x-rays and gamma rays.

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### CBRNE: Explosive Hazards

- Produce combustion and fire
- Result in burns and blast injuries
- May be:
  - Intentional (terrorism)
  - Unintentional

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Explosives are substances that produce combustion and fire causing burns and blast injuries. Explosions can be unintentional or due to acts of terrorism or war.

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### Wireless Information System for Emergency Responders (WISER)

- Assists first responders in hazardous material incidents
- WISER software for PCs  
<http://wiser.nlm.nih.gov/>
- WebWISER  
<http://webwiser.nlm.nih.gov>



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WISER or Wireless Information System for Emergency Responders is a system developed by the National Library of Medicine designed to assist first responders during hazardous material incidents. WISER provides a wide range of information on hazardous substances, including substance identification support, characteristics, human health information, and containment and suppression guidance. WISER software for PCs can be downloaded at <http://wiser.nlm.nih.gov/>. Unfortunately, WISER cannot be installed on APHIS computers, but APHIS employees can access WebWISER from their PC or smart phone at: <http://webwiser.nlm.nih.gov>

The WebWISER site also has links to additional resources, including TOXNET, the Household Products Database, and more. These links are in the course materials for this Unit.

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### Hazards

- Type of hazards depends on:
  - Nature of the emergency
  - Location of disaster site
  - Time of year
  - Weather conditions
- Different protocols for each type



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There are many different types of hazards a responder may encounter on deployment. The types of hazards encountered depend on the nature of the emergency (e.g. natural disaster, animal disease outbreak, terrorism incident) as well as the location of the disaster site, time of year, and weather conditions.

There are different hazards and safety protocols for each type of disaster. For example, the safety protocol for a flooding disaster will be different than the safety protocol for an earthquake. Despite this, there are some common hazards which may be present at most types of disaster. Responders should be aware of the basic safety measures for dealing with these hazards.

This hazards we discuss today are only a few of the hazards you may encounter on a deployment. If you are deployed, you should receive a health and safety briefing upon arrival at the incident site and you must have received a health and safety briefing before beginning work on the deployment.

*Photo: FEMA: Jocelyn Augustino*

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### HAZWOPER Training

- HAZWOPER = Hazardous Waste Operations
  - Awareness level training available on AgLearn
  - 10 modules, search "HAZWOPER"
  - Commonly offered in classroom sessions locally
- Provides awareness on recognizing hazardous materials, personal protection, and avoiding exposure

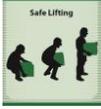
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Many, if not most, emergency response personnel should consider hazardous materials training at least at the awareness level. USDA employees can access 10 HAZWOPER modules on AgLearn and others can find alternate web-based training. There typically regular local offerings via local fire and emergency management agencies.

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**Physical Hazards**

- **Lifting**
  - Back injuries
  - Use proper technique
- **Slips and Falls**
  - Wet, icy surfaces or rough terrain
  - PPE limits range of motion
- **Animals**
  - Assume all wild animals are rabid and all snakes are venomous
  - Use buddy system
  - Wear DEET, long sleeve shirts and long pants




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Here are a few of the common hazards which may be encountered on deployment.

**Lifting:** Back injuries are one of the most common work-related injuries. It is important to use proper techniques such as keeping yourself in an upright position when squatting, tightening your stomach muscles, lifting with your legs, and asking another person or using a mechanical device if the object is too heavy.

**Slips and Falls:** Slips, trips, and falls may occur in any emergency response incident. You may encounter wet or icy surfaces or rough terrain. Wearing PPE may limit your range of motion and vision or affect your balance.

**Animals:** Responders should use care around animals and assume that all wild animals are rabid and all snakes are venomous. If bitten, seek medical attention and consult a physician regarding the need for the post-exposure rabies or anti-venom prophylaxis. In some situations, responders may encounter wild and domestic animals. If confronted by an animal, do not stare into its eyes, back away slowly and place a barrier between you and the animal. If bitten, consult a physician regarding the need for post-exposure rabies prophylaxis.

Ants, bees, wasps, mosquitoes, spiders, ticks, scorpions and other insects may be present. Responders should wear a DEET containing insect repellent on exposed skin, wear long sleeved shirts and long pants, be cautious of hand and feet placement, and observe bites for signs of swelling and redness. Do not put hands into holes or under objects (lumber, scrap metal etc.) without checking for insects, snakes or other animals. Seek medical attention, if necessary, for any bites or stings.

*Top Graphic: Oriana Hashemi-Toroghi, CFSPH*

*Bottom Photo: Megan Keplinger, CFSPH*

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**Heat Illness**

- Be aware of signs
- Drink plenty of fluids
- Replace salts and minerals
- Wear appropriate clothing and sunscreen
- Take breaks

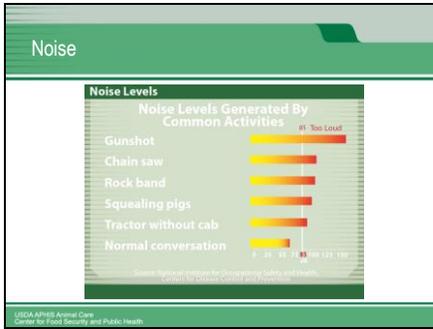


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**Heat:** Heat related illnesses can occur when working in warm and humid environments and as a result of heavy exertion. Wearing PPE can increase the risk of heat related illnesses. Responders need monitor themselves and co-workers for signs of heat related illnesses. To prevent heat related-illness, drink plenty of fluids, replace salts and minerals lost through perspiration, wear appropriate clothing and sunscreen, and take regular breaks. This chart is provided in the course materials

*Graphic: Oriana Hashemi-Toroghi, CFSPH*

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Excessive noise is another environmental hazard that responders need to be aware of. Exposure to hazardous noise can cause permanent hearing damage. Noise is considered hazardous at levels of 85 dBA (decibels) or more for a period of eight hours. Hearing protection must be worn when noise levels exceed 84 dBA.

The chart on this slide shows the noise level emitted during various activities.

A “rule of thumb” for determining noise level: if you cannot hold a conversation in a normal speaking voice with someone standing at arm’s length (approximately three feet away), the noise level may be hazardous. This figure illustrates a few examples of various sounds with the decibel scale across the bottom for reference.

Graphic: Oriana Hashemi-Toroghi, CFSPH

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**Other Hazards**

- Debris
  - Many types of contaminants
  - Respiratory hazards
  - Tetanus vaccination
- Cold
- Electricity
  - Watch for downed conductors or line
  - Assume all power lines are energized

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Here are some additional hazards responders may encounter.

**Debris:** Many field response activities may expose responders to debris. Debris fields after a disaster potentially contain many different hazards, including mechanical hazards, chemicals, mold and other disease agents, and animals. Respiratory hazards such as asbestos, silica and lead may be present, requiring the use of respiratory PPE. Responders should be current on their tetanus vaccination prior to deployment and have no pre-existing health conditions that restrict the ability to perform manual labor. It is safe to assume that any structure built before 1982 may contain asbestos (OSHA Safety and Health Checklist).

**Cold:** Cold stress can lead to hypothermia or frost bite. Responders should wear appropriate clothing for weather conditions, stay dry, take regular breaks and monitor each other for signs of cold stress.

**Electricity:** The risk of electrical shock exists wherever electricity is used. It is important for responders to inspect their work area for downed conductors or lines, assume all power lines are energized, and use caution in wet areas.

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**Critical Incident Stress**

- Any event outside the usual human realm of experience that is markedly distressing
- Examples:
  - Catastrophic events
  - Severely injured humans or animals
  - Dead bodies
  - Loss of colleagues

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Responders may be called on to provide assistance in a variety of capacities under many different situations. Some of these situations may expose responders to traumatic situations involving human and animal death and suffering. Exposure to traumatic events during the course of a disaster response can have a significant effect on the mental health of responders. Responders need to understand the psychological impact of emergency response activities; the effects such exposures may have on themselves, their colleagues, and disaster victims; and how to care for themselves and others.

Critical incident stress is any event outside the usual human realm of experience that is markedly distressing (invoking intense reactions of fear, helplessness, or horror) and undermines a person’s sense of safety, security, and competency in the world, resulting in psychiatric injury. Examples of these types of events include catastrophic events, severely injured humans or animals, dead bodies, or the loss of colleagues.

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### Psychological Hazards

Common Symptoms of Stress Following a Traumatic Event			
Physical *	Cognitive	Emotional **	Behavioral
<ul style="list-style-type: none"> <li>- Chest pain *</li> <li>- Difficulty breathing *</li> <li>- Shock symptoms *</li> <li>- Fatigue</li> <li>- Nausea/vomiting</li> <li>- Dizziness</li> <li>- Profuse sweating</li> <li>- Rapid heart rate</li> <li>- Throat</li> <li>- Headaches</li> <li>- Visual difficulties</li> <li>- Clenching of jaw</li> <li>- Non-specific aches and pains</li> </ul>	<ul style="list-style-type: none"> <li>- Confusion</li> <li>- Nightmares</li> <li>- Disorientation</li> <li>- Heightened or lowered alertness</li> <li>- Poor concentration</li> <li>- Memory problems</li> <li>- Poor problem solving</li> <li>- Difficulty identifying familiar objects or people</li> </ul>	<ul style="list-style-type: none"> <li>- Anxiety</li> <li>- Guilt</li> <li>- Grief</li> <li>- Denial</li> <li>- Severe panic (trem)</li> <li>- Fear</li> <li>- Irritability</li> <li>- Loss of emotional control</li> <li>- Depression</li> <li>- Sense of failure</li> <li>- Feeling overwhelmed</li> <li>- Blaming oneself or others</li> </ul>	<ul style="list-style-type: none"> <li>- Intense anger</li> <li>- Withdrawal</li> <li>- Emotional outburst</li> <li>- Temporary loss or increase in appetite</li> <li>- Excessive alcohol consumption or substance abuse</li> <li>- Inability to rest, pacing</li> <li>- Change in sexual functioning</li> </ul>

\*Seek Medical Attention Immediately if you experience chest pain, difficulty breathing or symptoms of shock (shallow breathing, weak, rapid pulse, nausea, shivering, pale and moist skin, mental confusion, and dilated pupils).  
\*\*Seek Mental Health Support if your symptoms or distress continue for several weeks or interfere with your daily activities.

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Traumatic events can produce strong emotional reactions which may interfere with an individual's normal response functions. The reactions can range from mild, transient distress to moderate psychological symptoms to a psychiatric illness or disorder.

It is common during traumatic events for responders to experience a number of physical, cognitive, behavioral or emotional symptoms. Some people experience emotional aftershocks weeks or months after they experienced a traumatic event. Others may experience these reactions while still at the scene, where they must stay clearly focused on constantly changing hazards to maintain their own safety and to rescue injured victims.

The chart on this slide lists some of the common symptoms of stress which may appear following a traumatic event. This chart is not all-inclusive and is not meant to be a diagnostic tool. If you or someone you know experiences these or other signs, consult a physician or mental health provider. This chart is provided in the course materials.

*Graphic: Dani Ausen, CFSPH*

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### APHIS Employee Assistance Program

[http://www.aphis.usda.gov/mrpbs/hr/benefits/employee\\_tools.shtml](http://www.aphis.usda.gov/mrpbs/hr/benefits/employee_tools.shtml)



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The USDA APHIS Employee Assistance Program is a professional counseling and referral service available to assist USDA employees and their families. The service is available 24 hours a day, 7 days a week. The telephone number and weblink is included in the course materials.

*http://www.aphis.usda.gov/mrpbs/hr/benefits/employee\_tools.shtml*

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### Impacts of Disaster Response

- All responders are vulnerable to traumatic stress
  - Minimize emotional impact
  - Over-dedicate themselves
  - Sacrifice rest
- Save lives
- Rebuild communities



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While there are many negative impacts of emergency disaster response on the mental health of responders, there are some positive impacts including saving the lives of humans and animals, rebuilding communities, and providing health care and emotional support to those in need.

*Photo: FEMA: Bri Rodriguez*

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### Health and Safety: Federal Regulations and Requirements

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**OSHA General Duty Clause**

Each employer—

(1) shall furnish to each of his employees employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm to his employees

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The Occupational Health and Safety Administration regulates workplace safety. The OSHA General Duty Clause states that each employer shall provide employees with employment and a place of employment that is free from recognized hazards that cause or are likely to cause death or serious physical harm.

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**Employee Health and Safety Message**

- At check-in review safety plan
- Safety briefing or read plan before beginning activities
- Notify incident supervisor of hazards or concerns
- ESF 11 staff and home program emergency response contacts are back up



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During deployment ESF #11 Staff will present the following safety message to all responders: I am going to read the entire text, you can follow the highlights on the screen. A copy of this message is in your course materials.

*Employee Health and Safety Message:*  
*All personnel should review the Safety Plan contained within the Incident Action Plan (IAP) when they check-in at their assigned duty station (typically a FEMA Regional Response Coordination Center/Joint Field Office or a State Emergency Operations Center). They should receive a safety briefing and/or read the Safety Plan **prior** to performing response activities. If an IAP, safety plan, or safety briefing are not available, the employee should notify their Incident supervisor. Your Resource Order will have an initial incident contact (where you check in to the incident) and this person can help you identify your incident supervisor. Health and Safety issues/concerns should be worked out with the incident supervisor if at all possible with your home program emergency response contacts and ESF 11 staff as back-up.*

Responders who identify hazards shall immediately notify their supervisor. Responders may also refuse to perform tasks that create an imminent danger. Responders have the right to complain about unsafe or unhealthful working conditions to OSHA or other agencies with jurisdiction. Responders who file complaints will not be subject to any discrimination as a result of them exercising their right. (APHIS, HASP)

*Photo: USDA*

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**APHIS Animal Care Safety and Health Committee**

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**Role**

- Identifies and addresses safety, health, and wellness issues within Animal Care
- Provides advice and recommendations to the Deputy Administrator
- Monitors the AC respirator fit-testing program

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The Animal Care Health, Safety, and Welfare Committee makes recommendations to the Animal Care Management Team on measures to maintain or improve the safety and health of Animal Care employees. Emergency response is just one element. Emergency Programs utilizes the Animal Care Health, Safety, and Welfare Committee to help address ongoing concerns related to emergency preparedness and response. The Animal Care Health, Safety, and Welfare Committee supervises the employee respirator fit-testing program.

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**Health and Safety on a Response**

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**Role of Incident Safety Officer**

- Identifies hazards
- Establishes safe work procedures
- Daily briefings to responders on safety
- Assesses need and use of PPE
- Reports to Incident Commander
- Prepares HASP



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All emergency responses will utilize the Incident Command System to manage people and resources. The Incident Safety Officer (SO) is a member of the Command Staff and reports directly to the Incident Commander (IC). The Safety Officer has the authority to issue an immediate stop work order to halt unsafe activities.

**The Safety Officer:**

- Identifies hazards at the response to headquarter and field sites, and seeks ways to abate hazards.
- Establishes safe work procedures
- Issues communications, conducts meetings and briefings for Section Chiefs and response personnel to discuss health and safety information.
- Ensures that all responders are briefed about the nature of the hazards they will be dealing with and all safety and hygiene requirements specific to the area are explained before personnel enter.
- Assesses the need for PPE and assures proper PPE use, cleaning, and maintenance.
- Inspects and assures safe working procedures are followed
- Provides training
- Reports to and briefs the IC on the health and safety status of the deployment
- Prepares a Health and Safety Plan (HASP) specific to the incident
- Give a daily briefing on the tasks for each day even if the work does not change in accordance with 29 CFR 1910.120.
- Ensures that safety related supplies are on hand

For more information see: FAD Prep NAHEMS: Health and Safety Guideline (2011)

*Photo: Safety Officer, FEMA by George Armstrong*

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**Responder's Role**

- Be aware of your own health status, physical limits
- Follow safety procedures
- Use the prescribed PPE
- Report unsafe actions and conditions
- Promptly report all injuries
- Read the incident HASP
- May refuse to perform tasks that pose imminent danger

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Protecting the health and safety of personnel assigned to emergency response activities is everyone's responsibility. Everyone, from each team member to the Incident Commander, is responsible for maintaining safe working conditions. Individuals must be aware of their own health status and physical limits and should follow safe work procedures, correctly use the prescribed PPE, report unsafe actions and conditions, and report all injuries to supervisors. All responders are responsible for reading the incident HASP (Health and Safety Plan).

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**Personal Protective Equipment**

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**Personal Protective Equipment (PPE)**

**PPE:**  
Special clothing or equipment that places a barrier between an individual and a hazard.

**Purposes:**

- protect responder from potentially life-threatening hazards
- prevent spread of hazards

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PPE is special clothing or equipment that places a barrier between and individual and a hazard. PPE has two purposes:

- to protect the responder from potentially life-threatening hazards and
- to prevent the spread of hazards

*Source FAD-PreP NAHEMS Guidelines: Personal Protective Equipment (2010) p.2*

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**OSHA's 4 Levels of PPE**

- Level D: basic work uniform
- Level C: air purifying respirator
- Level B: highest level of respiratory protection
- Level A: skin, respiratory, and eye protection



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OSHA has defined four levels of PPE. The levels range from A, the highest level of protection, to D, the lowest level. Going from lowest to highest, here is a brief description of the equipment.

**Level D:** Basic work uniform that protects against nuisance contamination. For example, this level of protection would be adequate for dealing with dermatophytosis (ring worm) or canine distemper in an animal shelter. A dust mask may be worn voluntarily by the employee with level D.

**Level C:** This level is used when the criteria for using air purifying respirators are met and the concentration and type of the airborne substances is known. Level C PPE would be adequate protection for veterinarians against most biological agents. For example, responding to a highly pathogenic avian influenza outbreak would require this level of protection.

**Level B:** This level is used when the highest level of respiratory protection is necessary. This level differs from level A in that less skin protection is used. For example, this level of protection would be adequate for dealing with a Nipah virus outbreak.

**Level A:** This level offers the greatest level of skin, respiratory, and eye protection. Responding to a large chlorine spill would require this level of protection.

PPE will be discussed in greater detail in Web Module 3 and the course materials.

*Photo: CFSPH*

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**Training, Medical Clearance, Fit Testing Requirements**

- Before performing emergency response activities where a respirator is required you must:
  - Be trained in proper use of respiratory PPE
  - Be evaluated by health care professional
  - Undergo fit testing for the specific type of respirator you will use



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Training and medical clearance are needed before participating in a response that requires the use of PPE. Medical clearance involves evaluation by a health care professional to make sure a responder is physically able to wear a respirator device and work in an infected environment. A fit test must be performed to ensure that the assigned respirator provides an adequate seal to the user's face. The Animal Care Safety and Health, Safety, and Welfare Committee is responsible for overseeing fit-testing requirements.

*Photo: CFSPH*

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**Occupational Medical Monitoring Program**

- Under OSHA's HAZWOPER Standard (29 CFR 1910.120):
  - All APHIS employees must participate to determine risk of exposure to hazardous materials
  - Safeguard employee health and may prevent exposure
  - Not a replacement for limiting exposure
  - Not a substitute for regular routine medical exams.

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Under OSHA's HAZWOPER Standard (CFR 1910.120), all employees participating in emergency response activities must participate in a medical surveillance program (Occupational Medical Monitoring Program) to determine their risk of exposure to hazardous materials or other inordinate hazards.

The Occupational Medical Monitoring Program is designed to protect the health and welfare of APHIS employees exposed to hazardous chemical, biological, or radioactive materials and other hazards such as noise. Although medical monitoring does not replace the need to limit environmental exposures to hazardous materials, nor does it prevent illness or injury, it does serve to safeguard health and prevent exposure to hazards.

Participation in the Medical Monitoring Program should not be considered a substitute for regular routine medical exams with your healthcare provider.  
*FAD PRoP NAHEMS Guidelines: Health and Safety (2011)*

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**APHIS FORM 29**

Occupational Monitoring Program  
Employee and Supervisor complete



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The USDA APHIS Form 29 is used for employees and responders participating in the occupational medical monitoring program. This form must be completed by the employee and their supervisor. Generally, Animal Care field personnel complete this form listing exposures they will or are likely to encounter during the course of their work in the field. Additional exposures may occur during an emergency deployment, be sure to update Form 29 to include these potential exposures. Contact \_\_\_\_\_ for further information

In the course materials there is a link to a PowerPoint presentation on completing APHIS Form 29.  
[www.aphis.usda.gov/mrpbs/downloads/forms/aphis/aphis29.pps](http://www.aphis.usda.gov/mrpbs/downloads/forms/aphis/aphis29.pps)

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**Completing APHIS Form 29**

- Employee completes sections A and B and signs section C
- Form is reviewed/verified - supervisor signs section D.
- Fax form to Federal Occupational Health (FOH).



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Steps to completing the form:

- Employee, who is requesting medical surveillance service, must complete sections A and B and sign sections C
- Form is reviewed/verified and the supervisor signs section D.
- The employee or supervisor faxes the form to Federal Occupational Health (FOH).

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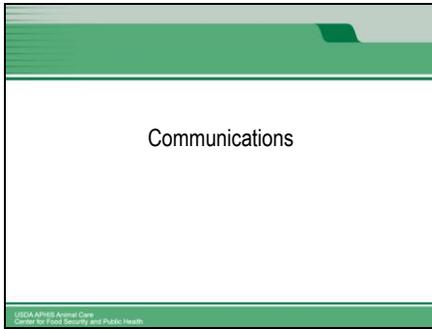
**Completing APHIS Form 29 (cont'd)**

- Reviewed by FOH Medical Advisor.
- USDA/APHIS/MSP Test List is generated (tests, exams, or immunizations for which the employee is eligible) and sent to the employee who brings it to an assigned Occupational Health Clinic for completion.

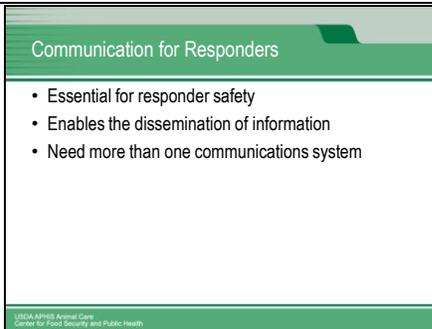
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- A FOH Medical Advisor reviews the form and a USDA/APHIS/MSP Test List is generated indicating the tests, exams, or immunizations for which the employee is eligible.
- The list of test, exams, or immunizations will be sent back to the employee who then brings it to an assigned Occupational Health Clinic.

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Communication is essential to responder safety and an effective response. Effective emergency management and incident response activities rely on flexible communication and information systems that provide a common operating picture to emergency management/response personnel and their affiliated organizations.

The communication system allows for the dissemination of information among command and support elements and, as appropriate, cooperating agencies and organizations.

During an emergency incident, it is important to have more than one form of communication available between responders, ICS, and other affiliated organizations in the event that one or more types of communication become damaged. Responders may have to rely on several different forms of communication in order to stay in contact during a response.

Next we will discuss different types of communication systems which may be available during an emergency response and briefly discuss some of their strengths and weaknesses.

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Land lines can be used for emergency response communications. They are limited in that they are only “point to point” communications. You cannot take them with you on the response. They cannot be easily or quickly extended to reach remote locations. The infrastructure supporting land lines can be damaged during a disaster, making them unusable. Wireless broadcast media such as radio and satellite are used to overcome this limitation. (Garshnek, 1999)

Cellular phones are a good tool for emergency response communication. However, in some emergencies cellular towers may be “down” or overwhelmed by people trying to make calls. A back up source of communication will be needed. Note that text messaging via cell phone may be possible even if voice communication by cell phone is not possible.

Internet messages, particularly those from “smart phones” may be more reliable than cellular voice messages. If you are not sure emails are being delivered, try using the delivery verification feature -- “read receipt” which is available with most email programs. During a response, many command and coordination personnel are overwhelmed with email traffic. Avoid sending unnecessary emails. If you need to send emails, be concise and use “reply all” selectively. Try to keep official communications within official channels.

*Photo: FEMA, Dave Gatley*

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Types of Communication (cont'd)

- Satellite phones
  - Used for back up
- Radios
  - FCC regulates frequencies
  - VHF, 800 MHz
  - All responders must have the same type of radio



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Satellite phones can be used to communicate when terrestrial infrastructure is damaged, destroyed, or overwhelmed. Satellite phones can work two different ways.

The satellite phone sends a signal to a satellite orbiting the earth. The satellite processes the call via a gateway and relays the call back to earth to its destination (a regular landline or a cellular phone). Satellite phones also can work without using towers if a call is made from one satellite phone to a second satellite phone.

Radios are another tool for communication. The Federal Communications Commission licenses and manages most two-way radio frequencies. Therefore, you cannot just pick up a frequency and begin transmitting. During the initial briefing, the Safety Officer and the Communications Unit, found within the Logistics section, will provide responders with communication information and frequencies.

Two of the main frequency bands used for public safety communications are VHF, or very high frequency, and 800 megahertz (MHz). These bands are not interoperable, meaning that a VHF radio cannot transmit to an 800 MHz radio. It is important that all responders must have the same type of radio. (Wingfield, 2009)

*Photo: FEMA: Leif Skoogfors*

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Amateur/HAM Radio

- ARES
  - Trained volunteer amateur radio operators
  - MOU's
  - Public service and emergency communications
  - Served as 911 dispatchers after Hurricane Katrina



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Amateur or HAM Radio operators play an important role in providing communication when all other methods fail.

The term “amateur” reflects that these operators help surrounding communities during emergencies without financial compensation. The participants are referred to as “hams.”

ARES (Amateur Radio Emergency Service) is an organization of trained volunteer amateur radio operators who assist in public service and emergency communications. ARES has Memoranda of Understanding (MOU) with a number of organizations including the American Red Cross, National Weather Service, and the Department of Homeland Security. The MOUs between ARES and different organization state the needs and capabilities of each organization in order to prevent misunderstandings or miscommunication during disaster responses. ([www.ares.org](http://www.ares.org))([www.nh-ares.org/MOUGuidance.pdf](http://www.nh-ares.org/MOUGuidance.pdf))

Following Hurricane Katrina a community in Hancock County, Mississippi lost all contact with the outside world, except through ARES operators who served as 911 dispatchers and message relayers.

*Photo: Self contained HAM radio station: FEMA: Michael Moore*

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**CB Radio/Walkie Talkies**

- Frequencies open to public without a license
- Includes CBs and walkie talkies



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Some radio frequencies are open to citizens without licensing via Citizens Band radios or walkie-talkies. Official responders are discouraged from using these frequencies as they are reserved for the general public. In some instances, however, NGOs and voluntary organizations may choose to use such devices.  
*Photo: CFSPH: Oriana Hashemi-Toroghi*

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**Communication for AC Employees**

Maintain contact with supervisor during deployment

Cell phones  
if voice communication over cell doesn't work, try text messages

Discuss communications challenges with supervisor

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Maintaining communication with your supervisor or the incident command post during a deployment is essential. Generally, AC employees will have a cell phone to use for communications.

If cell phone voice communications do not work, try communicating using text messages. If you are still having difficulties, discuss the issue with your supervisor to work out a solution so you can remain in contact. Solutions may include having regularly scheduled call-in times from locations where cell service is available or switching to another type of communication.

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**Conclusion**

1. Identify CBRNE hazards and their potential impact on animals and animal owners.
2. Describe HAZWOPER training, the role it plays in emergency response and where to obtain training.
3. Describe OSHA's four levels of PPE and explain the training, medical clearance, and fit-testing requirements needed for respiratory PPE.
4. Describe the Occupational Medical Monitoring Program and how to use APHIS Form 39.

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You should now be able to:

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**Conclusion**

5. Describe some of the common hazards responders may encounter and some measures they may take to reduce risk.
6. Describe how responder safety is managed under ICS and responders' roles in safety.
7. Briefly describe the role of the AC Safety and Health Committee responder safety.
8. Describe the different communication systems available to emergency responders and situations where they might be used.
9. Define critical incident stress its impact on responders.

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Are there any questions?

The next portion of the course is Unit 9, a web module, which will describe PPE more in depth. The link is provided in your course materials. Please complete the module before our next webinar.

Thank you.

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Questions ?

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Acknowledgements

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