

## Haiti Earthquake and Disaster Response

2 contact hours - free

Expires: July 31, 2010

Author: Susan Walters Schmid, PhD

ATrain Education is an approved provider of continuing nursing education by the Arizona State Nurses Association, an accredited approver by the American Nurses Credentialing Center's Commission on Accreditation.

AzNA and ANCC Commission on Accreditation do not approve or endorse any commercial products displayed.

ATrain is an approved provider by the Florida Board of Nursing, CE Provider #50-10593.

### Instructions

1. Read the course material and then complete the following forms:
  - A. Answer Sheet
  - B. Evaluation Learning Activity
  - C. Registration Form
2. If you are not paying by credit card, prepare a check for the amount of the course made out to: *ATrain Education, Inc.*
3. Mail the completed forms and your payment to:  
ATrain Education, Inc  
5171 Ridgewood Rd  
Willits, CA 95490

Once we receive your forms and payment, we will mail (or email, at your request) your completion certificate. If you have any questions, please call or email [Info@ATrainCEU.com](mailto:Info@ATrainCEU.com).

## Course Objectives

When you finish this course, you will be able to:

- Summarize Haiti's historical development.
- Identify the major elements in disaster response.
- List the most critical public health concerns in Haiti after the earthquake.
- Describe the most likely earthquake-related injuries and their basic treatment.
- Explain crush injury syndrome and its treatment.
- Outline key precautions and concerns for individual disaster responders.
- Assess the psychological effects of disasters on survivors and responders.
- Discuss gender issues as they apply to humanitarian relief.

The tiny Caribbean nation of Haiti was wracked by a 7.0 earthquake on January 12, 2010. This impoverished country endured a late afternoon temblor that was centered only about ten miles from its capital city of Port-au-Prince. In the weeks following the earthquake, relief efforts poured in from around the world but frustrations rose as the limitations of a tiny airstrip and lack of adequate roads impeded well-meant actions.

Haiti, is about 700 miles south of Miami, Florida, occupies the western third of the island of Hispaniola, which lies between Cuba and Puerto Rico in the line of islands forming the northern edge of the Caribbean Sea. The nation of the Dominican Republic occupies the eastern two-thirds of the island. Haiti is about the size of the state of Maryland and is the third largest Caribbean nation, recording a population of 9.7 million people in 2007.



Source: Wikimedia

Haiti's climate is tropical, with some variations due to elevation. It experiences two rainy seasons—from April to June and October to November—and a hurricane season in August and September. The 2008 hurricane season was particularly devastating and it aggravated ongoing humanitarian crises of many years standing, including fundamental deficiencies in safe water, sufficient sanitation, and basic medical care.

In 2009 45% of the population did not have access to safe water and 83% did not have access to sufficient sanitation. Fifty-five percent of Haiti's population lived below the extreme poverty line of US \$1 per person per day (WHO, 2010). All of these factors affected the situation following the earthquake and will continue to affect recovery efforts.

## Historical Background

On his first voyage in 1492, Christopher Columbus "discovered" the Caribbean island of Hispaniola. Spanish explorers who followed Columbus exploited native labor to mine for precious metals, with the result that disease, brutality, and overwork decimated the indigenous population. While not all researchers agree on the numbers, there is no debate that the original population was virtually annihilated within fifty years of "discovery." Of approximately 1 million people, only about 500 remained in 1538.

Without a supply of labor, mining was uneconomical, and the Spanish turned to raising cattle and sugar cane, depending on the slave-based plantation system established by the Portuguese in their Atlantic colonies. This system required prodigious amounts of both money and slaves, and was thus dominated by a few very wealthy plantation owners.

In 1697 the island of Hispaniola was split between the French and Spanish, with the eastern third going to the French, who named it Saint Domingue. The French king's chief minister advocated overseas expansion and encouraged development of (the slave-based) sugar colonies in the West Indies, of which Saint Domingue was the largest. In the 1780s it produced almost 40% of British and French sugar imports and 60% of the world's coffee. Of the total 11 million slaves over the entire history of the slave trade, about 35% came to the English and French Caribbean plantations. In the 1780s there were upwards of 500,000 slaves on Saint Domingue, in a total population of about 520,000 people.

What had been a rigidly hierarchical society based on skin color, class, and wealth, began to come apart in the late eighteenth century. Contributing factors included runaway slave communities, some militant, threatening the plantations; free people of color pursuing full citizenship, property rights (including the ability to own slaves) and farm land; and revolutionary ideas coming out of the 1789 French revolution. In 1790, when the French National Assembly in Paris granted suffrage to landed and taxpaying free blacks, the white-dominated assembly in Saint Domingue refused to accept this, and the country erupted in violence.

Slave revolts and Spanish and British military intervention were part of what was essentially a struggle between French republican forces and Creole royalists backed by Spain and Britain. Both sides used indigenous armies of black slaves, free blacks, and those of mixed race. Over the next fourteen years, control of the country was in flux. In 1791 a talented and forceful black leader, Toussaint Louverture, came out of the ranks of the rebel army of black slaves. Allied first with the Spanish, Louverture then joined the French in 1794 when France abolished slavery. After rising to be leader of all the republican forces in Saint Domingue, Louverture rebelled against the French again and captured the Spanish port of Santo Domingo; thus in 1800 Louverture controlled all of Hispaniola.

In 1801 France again sent an army to challenge Louverture, who eventually had to surrender when his two top commanders joined the French. Louverture would eventually die in a French prison. His commanders, Jean-Jacques Dessalines and Henry Christophe, soon joined forces with

another general and determined to drive the French out. The French, after losing 52,000 men to combat and disease and needing to attend to renewed war in Europe, withdrew in late 1803. With this loss, France no longer had an interest in the Louisiana territory, which they sold to the United States in December 1803.

In 1804 Saint Domingue became only the second country in the Americas to gain its independence and the first one to be governed by people of color.

The economic situation in the new country was shaky; warfare had ruined the plantations and rural laborers were not interested in working for someone else. The French did not recognize the new country, but eventually an agreement negotiated in 1825 exchanged official recognition for a huge indemnity payment that Haiti did not finish paying until 1947.

The nineteenth century saw a succession of Haitian leaders who were more concerned with personal power than with the economic and social well-being of their country and its citizens. Through most of the century the country suffered under ethnic hostilities, coups and assassinations, constitutional interference, and the crushing weight of payments to France (LOC, 2006).

The twentieth century was just as politically and economically destructive. The United States occupied Haiti from 1915 to 1934, having gone there on the pretext of a need to manage civil unrest. New elections were held in 1930, but the presidents elected for the next twenty-seven years were ineffective at best. Nineteen fifty-seven ushered in the Duvalier era—characterized by violence, disruption, terror, and theft of government funds—that would not end until 1986 when “Papa Doc” Duvalier went into exile in France.

An interim government made no improvement, and in December 1990 a landmark free election elevated Jean-Bertrand Aristide to the presidency; however, violence and a good deal of internal conflict continued, and a military coup ousted Aristide after only seven months. Military rule prompted thousands of Haitians to flee to the United States.

The United States was determined to restore Aristide, which it did with American troops and the support of the UN Security Council. Aristide served out his term, and René Préval succeeded him. Préval’s term was characterized by partisan politics, allegations of election fraud, a constitutional crisis, and finally corruption and human rights violations.

Aristide was returned to office in 2000, but this second term brought continued problems, a recession, and more violence. Rioting during the 2004 election turned into full-scale rebellion, leading to Aristide’s resignation in February. The U.S. military airlifted him out of the country and he has lived since in Africa. Following constitutional requirements, the president of the Supreme Court became Haiti’s president, but a growing humanitarian crisis led to a request for UN assistance (LOC, 2006; MINUSTAH, 2010).

In April 2004 the UN Security Council’s Resolution 1542 created the UN Stability Mission in Haiti (MINUSTAH). The mission was authorized at 6,700 troops and 1,622 civilian police. The largest single contingent of troops came from Brazil. MINUSTAH worked with the interim Haitian government to establish law and order, restore incoming shipments of food and medical supplies, and prepare for national elections. René Préval, the former president, won the election held in early 2006 (LOC, 2006) MINUSTAH’s mandate has been extended ever since (MINUSTAH, 2010a).

Haiti's history is by no means simple, and this summary barely touches the surface of events and perspectives. There are long-standing social conflicts, and the damage done by two centuries of poor leadership, violence, economically devastating policies, and sometimes destructive outside interference, has brought Haiti to its current situation as the poorest nation in the Western Hemisphere.

Those with an interest in Haiti's people and history and in the long-term goals of humanitarian aid for Haiti can refer as a starting point to the various references and resources listed at the end of this course.

## Essential Elements of Disaster Response

The Centers for Disease Control and Prevention (CDC), based on its experience with prior disasters in Haiti and earthquakes elsewhere, made an early assessment of the most pressing public health concerns and public health priorities likely to occupy disaster responders in Haiti:

The most pressing concerns were expected to be:

- Adequate quantity and quality of water
- Food security
- Appropriate shelter and protection from the elements
- Prevention and treatment of gastrointestinal, respiratory, and vector-borne illnesses
- Prevention of violence and further unintentional injury
- Treatment of kidney failure due to crush injuries
- Prevention of deaths from infected wounds
- Prevention and treatment of inflamed lung tissue caused by concrete dust

Public health priorities were expected to be:

1. Reduce and prevent further deaths, injuries, and illnesses
2. Determine and meet critical needs for water and sanitation, healthcare, and food
3. Verify the status of healthcare facilities and assist in standing up healthcare services
4. Assess and address emergency maternal and infant health needs
5. Provide health education to help people protect their own health and safety
6. Conduct disease and injury surveillance in displaced and non-displaced populations (CDC, 2010a)

These two lists help bring attention to the related but changing needs of the immediate aftermath, short-term aftermath, and long-term aftermath of an earthquake or other natural disaster.

The pressing concerns highlight the immediate healthcare needs after a natural disaster and reflect the fact that some issues will be specific to the type of disaster and the location. Despite similarities, the second list reflects the need to begin to direct attention beyond emergency treatments to the near term (days and weeks ahead) and how to minimize further loss and stabilize humanitarian needs.

Most natural disasters also have long-term consequences and survivor needs. The physical, financial, and environmental needs of an area before the disaster play a role in what will be needed afterwards. In Haiti where there were longstanding problems and numerous humanitarian crises before the earthquake, the situation has been referred to as a “double disaster.”

In his January 25, 2010 article for the UNICEF website, reporter Tim Ledwith writes that “the earthquake that killed so many is, in fact, a double disaster: The serious development constraints that Haiti already faced have now worsened significantly.” He highlights comments from the heads of a number of UNICEF’s major units, who point to things like the decline in the sanitation coverage rate in recent years, the country’s already limited ability to meet the needs of its children, and poor immunization coverage and health service in general. As one of them says, “. . . the issue is not an earthquake. It’s the intersection, the interaction, between the earthquake and the situation in Haiti. . . .” (Ledwith, 2010).

About two weeks after the earthquake, an OCHA situation report highlighted six items in its “Key Priorities” box. The first two emphasized the ongoing need for 200,000 family-sized tents and tens of millions of ready-to-eat meals, but the third one read, “Haiti’s Ministry of Health is revising its emergency response strategy and will gradually shift focus from emergency surgical cases to primary health care. Thousands of amputees will require physical therapy,” while the fourth was “Some 500 Haitian patients are being treated in nine hospitals in the Dominican Republic. The influx of patients requiring emergency care in these hospitals is declining.” While there were still critical needs for food and shelter, some of the medical needs were beginning to ease and the government was turning its eyes toward a longer-term future (OCHA, 2010a, b).

### **Logistics and Infrastructure**

About a week after the earthquake a graphic based on material in a UN Office for the Coordination of Humanitarian Aid (OCHA) situation report highlighted the major challenges facing the government and response management at that time:

- Seaport at Port-au-Prince non-operational
- Airport at Port-au-Prince small, damaged, and congested
- Shortage of warehouse space at the airport
- Lack of helicopters, trucks, cars, and facilities for responders to use
- Major fuel shortages
- Security needed for supply deliveries
- Humanitarian corridor between Haiti and the Dominican Republic congested
- Affected populations scattered
- Roads and bridges damaged; some still at risk of landslides
- Logistical bottlenecks due to uncoordinated shipments
- Many pledges not yet cash (OCHA, 2010)

In order to meet the pressing needs and public health priorities described in the section above, authorities need to be able to receive relief supplies and relief workers and move them safely to areas where they are needed. If all the usual means of moving people and goods have been damaged or destroyed, responders need planning, coordination, and alternative means of accomplishing their goals.

Even early priorities clearly operate within a web of other issues related to the infrastructure and functioning of the municipality or country where a disaster has occurred. For medical personnel, ongoing care becomes the next level of concern, along with prevention of new medical issues not a direct result of the physical effects of the earthquake. For other responders, the next level will include plans for reconstruction and reestablishment of the regular functions of government.

## **Immediate Medical and Public Health Concerns**

The World Health Organization (WHO) identified five immediate public health risks soon after the Haiti earthquake: wounds and injuries, water/sanitation/hygiene-related and food-borne diseases, diseases associated with crowding, vaccine-preventable diseases, and vector-borne and zoonotic diseases. In addition to these five specific concerns, WHO also identified a long list of related public-health concerns and issues.

### **Wounds and Injuries**

Trauma is responsible for much earthquake-related mortality, and wounds and injuries are expected to be numerous, resulting from both initial impact and subsequent rescue and clean-up activities (WHO, 2010).

A majority of the people injured in the Haiti earthquake would be expected have minor cuts and bruises, followed by those with simple fractures, and then fewer (although not necessarily a small number) could have serious multiple fractures or internal injuries and crush syndrome. A significant number of burns were also reported. The severely injured could require surgery, blood transfusions, or other intensive treatment, and surgical capabilities are essential in the early days and weeks (WHO, 2010).

With limited resources, treatment delays could be expected. Wound infection, tetanus, and gangrene are all likely complications of such delays. Wound contamination can lead to gangrene, requiring immediate attention to prevent limb loss and death. Tetanus risk is significant because of the low vaccination rate among children and the fading of immunity in adults (WHO, 2010).

While individual healthcare workers will follow procedures specific to the location and as mandated by their employer, WHO's Core Principles and wound care Protocols (see boxes below) clearly define essential steps in the care of the most likely categories of wounds.

### Core Principles

**Never close infected wounds.\*** Systematically perform wound toilet and surgical debridement (described in Protocol 1 below). Continue the cycle of surgical debridement and saline irrigation until the wound is completely clean.

**Do not close contaminated wounds\*\* and clean wounds that are more than 6 hours old.** Manage these with surgical toilet, leave open, and then close 48 hours later. This is known as **delayed primary closure**.

#### To prevent wound infection:

- Restore breathing and blood circulation as soon as possible after injury.
- Warm the victim and at the earliest opportunity provide high-energy nutrition and pain relief.
- Do not use tourniquets.
- Perform wound toilet and debridement as soon as possible (within 8 hours if possible).
- Respect Universal Precautions to avoid transmission of infection.
- Give antibiotic prophylaxis to victims with deep wounds and other indications (described in Protocol 3).

**Antibiotics do not reach the source of the wound infection.** Antibiotics only reach the area around the wound; they are necessary but not sufficient and need to be combined with appropriate debridement and wound toilet as described above.

**Use of topical antibiotics and washing wounds with antibiotic solutions are not recommended.**

\*An **infected wound** is a wound with pus present.

\*\*A **contaminated wound** is a wound containing foreign or infected material.

Source: Who 2010.

## Protocol 1

### Wound Toilet and Surgical Debridement

Apply one of these two antiseptics to the wound:

- Polyvidone-iodine 10% solution—apply undiluted twice daily. The application to large open wounds may produce systemic adverse effects.
- Cetrimide 15% + chlorhexidine gluconate 1.5%. Note: The freshly prepared aqueous solution (0.05%) of chlorhexidine gluconate 5% is not recommended.

### In Emergency Situations (risk of flakes according to water quality)

1. **Wash the wound** with large quantities of soap and boiled water for 10 minutes, and then irrigate the wound with saline.
2. **Debridement:** mechanically remove dirt particles and other foreign matter from the wound and use surgical techniques to cut away damaged and dead tissue. Dead tissue does not bleed when cut. Irrigate the wound again. If a local anesthetic is needed, use 1% lidocaine without epinephrine.
3. **Leave the wound open.** Pack it lightly with damp saline disinfected or clean gauze and cover the packed wound with dry dressing. Change the packing and dressing at least daily.

Source: WHO, 2010.

## Protocol 2

### Management of Tetanus-Prone Wounds

1. Wounds are considered to be tetanus-prone if they are sustained either more than 6 hours before surgical treatment of the wound or at any interval after injury and show one or more of the following: a puncture-type wound, a significant degree of devitalized tissue, clinical evidence of sepsis, contamination with soil/manure likely to contain tetanus organisms, burns, frostbite, and high-velocity missile injuries.
2. For patients with tetanus-prone injuries, WHO recommends tetanus toxoid (TT) or tetanus and diphtheria vaccine (Td) and tetanus immune globulin (TIG).
3. When tetanus vaccine and tetanus immunoglobulin are administered at the same time, they should be administered using separate syringes and separate sites.

### Tetanus Vaccine

ADULTS and CHILDREN over 10 years:

Active immunization with tetanus toxoid (TT) or with tetanus and diphtheria vaccine (Td); 1 dose (0.5 ml) by intramuscular or deep subcutaneous injection. Followup: 6 weeks, 6 months.

CHILDREN under 10 years:

**Diphtheria and tetanus vaccine (DT)**; 0.5 ml by intramuscular or deep subcutaneous injection.

Follow up at least 4 weeks and 8 weeks.

**Tetanus immune globulin (TIG)**. In addition to wound toilet and absorbed tetanus vaccine. Also consider if antibacterial prophylaxis (Protocol 3 below) is indicated.

ADULT and CHILD:

**Tetanus immunoglobulin (human)** 500 units/vial; 250 units by intramuscular injection, increased to 500 units if any of the following conditions apply: wound older than 12 hours; presence, or risk of, heavy contamination; or if patient weights more than 90 kg.

Note: national recommendations may vary.

Source: WHO, 2010.

### Protocol 3

**Antibiotic prophylaxis** is indicated in situations or wounds at high risk to become infected, such as: contaminated wounds, penetrating wounds, abdominal trauma, compound fractures, lacerations greater than 5 cm, wounds with devitalized tissue, high-risk anatomic sites such as hand or foot. These indications apply for injuries which may or may not require surgical intervention. For injuries requiring surgical intervention, antibiotic prophylaxis is also indicated and should be administered prior to surgery, within the 2-hour period before the skin is cut.

Recommended prophylaxis consists of penicillin G and metronidazole given once (more than once if the surgical procedure is >6 hours).

- Penicillin G, ADULT: IV 8–12 million IU once. CHILD: IV 200,000 IU/kg once.
- Metronidazole, ADULT: IV 1,500 mg once (infused over 30 min). CHILD: IV 20 mg/kg once.

**If infection is present or likely**, administer antibiotics via intravenous and **not** intramuscular route.

Penicillin G and metronidazole for 5 to 7 days provide good coverage.

- Penicillin G, ADULT: IV 1 to 5 MIU every 6 hours. After 2 days it is possible to use oral penicillin: penicillin V, 2 tablets every 6 hours. CHILD: IV 100 mg/kg daily in divided doses (with higher doses in severe infections).
- In case of known allergy to penicillin use erythromycin. In case of sudden allergy reaction (seldom): IM adrenaline 0.5 to 1.0 mg to adults. 0.1 mg/10 kg body weight to children.
- Metronidazole, ADULT: IV 500 mg every 8 hours (infused over 20 min). CHILD: IV 7.5 mg/kg every 8 hours.

Source: WHO, 2010.

### Crush Injury and Crush Syndrome

Crush injury and crush syndrome may result from structural collapse during an earthquake. Crush injury is defined as compression of extremities or other parts of the body that causes muscle swelling and/or neurologic disturbances in the affected areas of the body, typically lower extremities, upper extremities, and trunk (CDC, 2010d).

Crush syndrome is localized crush injury with systemic manifestations. These systemic effects are caused by a traumatic rhabdomyolysis (muscle breakdown) and the release of potentially toxic muscle cell components and electrolytes into the circulatory system. Crush syndrome can cause local-tissue injury, organ dysfunction, and metabolic abnormalities (CDC, 2010d).

The incidence of crush syndrome in previous earthquakes with major structural damage has been 2% to 15%. Approximately half of those with crush syndrome develop renal failure and more than 50% need fasciotomy (a surgical procedure to cut away fascia to relieve tension or pressure). Of those experiencing renal failure, 50% will need dialysis (CDC, 2010d).

Sudden release of a crushed extremity may result in reperfusion syndrome—acute hypovolemia and metabolic abnormalities. This condition may cause lethal cardiac arrhythmias. Further, the

sudden release of toxins from necrotic muscle into the circulatory system leads to myoglobinuria, which causes renal failure if untreated (CDC, 2010d).

Ideally, intravenous (IV) fluids are administered before releasing the crushed body part. While this is especially important when the crush has lasted longer than 4 hours, crush syndrome can occur even with crush periods of less than 1 hour. If IV fluids are not available, short-term use of a tourniquet on the affected limb may be indicated until IV hydration can be started (CDC, 2010d).

In crush casualties, healthcare personnel need to watch for these symptoms:

- Hypotension (low blood pressure)
- Renal failure
- Metabolic abnormalities
- Secondary complications, especially compartment syndrome (swelling within a closed anatomic space) (CDC, 2010d)

Compartment syndrome can be a result of what is called third-spacing, or the sequestering of fluid in an area of the body not normally used for fluid storage. This effect requires considerable fluid replacement in the first 24 hours. A patient may third-space more than 12 liters of fluid in the crushed area over a 48-hour period (CDC, 2010d).

In the hospital, a crush casualty will be: treated with IV hydration to deal with hypotension and to help prevent renal failure; monitored for metabolic abnormalities requiring chemical intervention and for cardiac arrhythmias and cardiac arrest; and monitored for evidence of compartment syndrome and the possible need for fasciotomy. In addition, any open wounds must be treated appropriately, ice applied to injured areas, and the patient monitored for the 5 P's: pain, pallor, parasthesias, pain with passive movement, and pulselessness (CDC, 2010d).

All crush casualties should be observed, even those who appear to be well. Be alert for delayed evidence of renal failure, especially in those for whom hydration was delayed more than 12 hours. Patients with acute renal failure may require up to 60 days of dialysis treatment; unless sepsis is present, patients are likely to regain normal kidney function (CDC, 2010d).

### **Water/Sanitation/Hygiene—Related and Food-Borne Diseases**

Thousands of people in Haiti have been displaced from their homes, and displaced populations are at high risk for water/sanitation/hygiene—related diseases and food-borne diseases. Disrupted water and sewer services and unfamiliarity with an area may lead to consumption or use of unsafe water. *Salmonella typhi* (which causes typhoid fever) and hepatitis A and E are present and have epidemic potential in Haiti. Cholera is not endemic to Haiti but leptospirosis is. Diarrhea, a frequent symptom of water- and food-borne diseases is already a problem in Haiti, especially for children under age 5, where it accounts for 16% of deaths (WHO, 2010).

## Diseases Associated with Crowding

Displaced persons often find themselves resettled to facilities or locations that are overcrowded, where the risk of transmission of some communicable diseases is increased. Diseases spread by respiratory droplets such as measles, diphtheria, and pertussis, and acute respiratory infections (ARI) all fall into this category. Poor ventilation increases the risk. Meningitis, and both water-borne and vector-borne diseases, are also more likely in overcrowded conditions and may become problems in the coming weeks and months in Haiti (WHO, 2010).

Acute respiratory infection (ARI) includes infections of both the upper and lower respiratory tract. In children under 5, acute lower respiratory infections (ALRIs) such as pneumonia, bronchiolitis, and bronchitis are a particular concern. In 2000 WHO estimated that pneumonia accounted for 20% of deaths in this group and undernourishment and overcrowding can both increase the risk of pneumonia in these children.

Other diseases of concern in crowded conditions include H1N1 influenza, which is circulating in Haiti, meningococcal disease, and tuberculosis (TB). Haiti has the highest TB rate in the Western Hemisphere and it is one of Haiti's leading causes of death. A national TB treatment effort was underway at the time of the earthquake, and maintaining treatment and follow-up for patients with TB (and other chronic diseases) will be a particular challenge (WHO, 2010).

## Routine Immunization Coverage

Reports from 2007 show only 53% of 1-year-olds in Haiti have received the third dose of the **diphtheria-tetanus-pertussis (DTP)** vaccine. There have been three outbreaks of diphtheria since 2004.

*Clostridium tetani* spores are present in soil, so even small wounds are susceptible to infection; thus, healthcare workers have to be on the alert for early symptoms of **tetanus**—difficulty swallowing and tonic contractions of jaw muscles—in order to treat patients early and avoid disability or death. Wounds that are tetanus-prone call for prophylactic antibiotics and vaccination.

In populations with low vaccination coverage, overcrowding may increase the risk of outbreaks of measles, pertussis, and diphtheria. While measles has not been confirmed in Haiti since 2001, the vaccination rate among 1-year-olds is only 58%, increasing the risk of an outbreak (WHO, 2010).

## Vector-Borne and Zoonotic Diseases

In Haiti these diseases include dengue and dengue hemorrhagic fever (DHF), malaria, human rabies, leptospirosis, and lymphatic filariasis. **Dengue** is a mosquito-transmitted viral disease that is endemic in Haiti, with epidemics occurring every 3 to 5 years. Its symptoms resemble a severe influenza, and some people suffer a life-threatening complication known as dengue hemorrhagic fever (DHF).

**Malaria** exists all over Haiti year around. The risk in the Port-au-Prince area is considered to be low but with the potential to increase. Treatment is effective, so early diagnosis and treatment are critical. The risk from dengue and malaria are increased in the current situation because inadequate shelter and lack of protection from mosquitoes are common problems for displaced persons.

Human **rabies**, **leptospirosis**, and **lymphatic filariasis** are other animal- or mosquito-borne infections with a risk of post-earthquake increase. There was a mass rabies vaccination program underway for dogs before the earthquake that was a priority in Haiti (WHO, 2010). Everyone should use caution around stray animals and have any bite wound treated immediately. Relief workers are discouraged from trying to adopt or rescue stray animals.

## Overall Priorities

Before offering specific protocols for treatment and advice for preventive steps, WHO's assessment presented a structure of immediate priorities that clearly shows the interrelationship between immediate needs, prevention concerns, and long-term goals (see box).

### Immediate Priorities

#### Health Sector Priorities

- Access to surgical, medical, and emergency obstetric care and proper case management, particularly for trauma, wounds, and burns
- Priority immunizations, including mass vaccination campaign for measles/rubella, and tetanus immunization as part of wound care
- Communicable disease surveillance and response, including preparedness for epidemic-prone diseases
- Support for appropriate infant and young-child feeding and malnutrition management
- Continuity of care for chronic diseases (eg, HIV, TB, hypertension)
- Public health communication

#### Non-Health Sector Priorities Impacting Health

- Shelter and site planning
- Provision of sufficient and safe water, and sanitation

Source: WHO, 2010.

## What Can You Do to Help?

More often than not, the arrival of uncoordinated goods and volunteers is more disruptive than helpful in a disaster situation. Those most able to be effective—even those with medical training—are usually associated with a group or organization and are trained to deal with the specific type of disaster.

In recent years the UN has worked to address complaints stemming from recent disasters, such as the 2004 tsunami, by working to centralize and organize the many and complex elements of a large-scale disaster response.

## Donations

For most citizens, the most useful contribution to disaster relief will be cash or pledges that are immediately convertible to cash. Donors may not realize that it can be many weeks before some kinds of donations become usable. For example, texting a donation on your phone usually means the money will not become usable to anyone until you have paid your phone bill.

Donations in kind—things such as used clothing, household items, or prescription medicines, even blood and blood derivatives—are almost never appropriate, and can actually create more problems with the need to store, process, and safely dispose of unusable materials. The need for additional medical or paramedical personnel and large items such as field hospitals or construction supplies will depend very much on the specifics of the situation. If you are in a position to donate such things and believe they are needed, take the time to find out who is managing the efforts and let them know of your interest in making a donation, but let them make the decision whether to accept it.

Many legitimate organizations are accepting and disbursing monetary donations for Haitian disaster relief. But, as always, there will be criminals looking to take advantage of people's concern and generosity. If you have any question about a site or organization, don't give them money or personal information until you have fully verified their credentials.

The Center for International Disaster Information (<http://cidi.org/>) is a kind of clearinghouse for donation guidance. There you can find information about what to donate, what not to donate, and why. In addition to a great deal of information you will find links to other information sources for current and past disasters, along with specialized resources for individuals, corporations, NGOs, the media, and teachers. An especially important article is posted under the "Articles" tab and is entitled "Stop Propagating Disaster Myths" by Dr. Claude de Ville de Goyet, the former head of the Pan American Health Organization (PAHO). Although written in 1999, it is an important discussion and perspective that all disaster responders and those interested in disaster response should read.

Some large and well-known organizations that are spearheading donation efforts include UNICEF, WHO in conjunction with the Pan American Health and Education Foundation, the American Red Cross (and the International Federation of Red Cross and Red Crescent Societies, of which it is a member), and the Clinton Bush Haiti Fund, an effort by former presidents George W. Bush and Bill Clinton at the request of President Obama.

Every one of these organizations has a website that you will find listed in the Resources section at the end of the course. Each has a link on its home page to a donation page and to current information about fundraising efforts and relief efforts in Haiti.

### **Preparing to Travel to Haiti**

The CDC recommends the following vaccines for those going to Haiti to provide relief services:

- All routine vaccines should be up-to-date including MMR, DPT, polio, seasonal and H1N1 flu, varicella, and tetanus
- Hepatitis A or immune globulin
- Typhoid
- Hepatitis B (CDC, 2010b)

Knowledge of a number of diseases that occur in Haiti is essential to relief workers. Insect-borne diseases include malaria and dengue, for which there are no vaccines. Other infectious diseases include HIV, which has a high prevalence in Haiti, TB, and anthrax. Healthcare providers should consult CDC guidelines (and their organization's guidelines) regarding personal protective equipment (PPE) relative to each type of potential exposure (CDC, 2010b).

In addition, healthcare workers (like all relief workers) need to be prepared to be self-sufficient, which means your basic supplies must include:

- Food and water to last your entire stay
- Soap and alcohol-based hand cleaner
- Insect protection: repellent and bed net
- Medications: anti-malaria, anti-diarrhea, personal prescriptions and OTC items, and copies of all prescriptions
- Extra set of prescription eyeglasses or contacts
- Water purification supplies
- Alert bracelet for medical conditions/contact card
- Appropriate PPE
- Personal first aid kit containing: bandages, sterile gauze pads, disposable gloves, scissors, tweezers, cold compress, antiseptic wipes, antibiotic ointment, hydrocortisone ointment, commercial suture/syringe kits to be used by local healthcare provider (will require letter from prescribing physician and packing in checked baggage) (CDC, 2010b)

### Staying Safe and Healthy in Haiti

While you are in Haiti the CDC recommends washing hands often with soap and water or alcohol-based hand cleaner (minimum 60% alcohol), especially before preparing or eating food. To keep your food and water safe, observe the following:

- Eat only food that is either packaged or freshly cooked and hot
- Drink only water that is bottled, boiled, or chemically treated, or bottled or canned carbonated beverages (check that all seals are intact before consuming)
- Do not drink tap water, fountain drinks, or ice cubes
- Use only bottled, boiled, or chemically treated water to wash dishes, brush your teeth, wash and prepare food, or make ice (CDC, 2010b)

To protect yourself against insects and animals you should:

- Use approved insect repellents, on yourself and in rooms
- Wear protective clothing
- Stay indoors during peak biting hours or be extra vigilant with repellents
- Use a bed net when sleeping if not in air-conditioned or well-screened quarters
- Use caution around animals, clean bites and scratches, seek immediate medical care, and advise your doctor of any wound when you return home (CDC, 2010b)

In addition, be alert to the fact that, after an earthquake, the risk of injury is high. Possible risks include: electrocution from downed power lines, unstable buildings, damaged roads, leaking water or chemicals, and personal violence. Always wear proper clothing, including heavy boots and hard hats when appropriate (CDC, 2010b).

Disaster workers who may be exposed to human remains should be aware that, while dead bodies rarely spread disease, human remains may contain blood-borne viruses and diarrhea-causing bacteria. If you will be handling remains, take precautions to avoid exposure by using plastic face shields, gloves, and proper footwear. Wash hands immediately after removing gloves and promptly care for any injury received when working with remains, including obtaining a tetanus booster if indicated. More information can be obtained from CDC at <http://emergency.cdc.gov/disasters/handleremains.asp> (CDC, 2010b).

## Psychological or Emotional Stress

Disasters, by default, place great stress on those who have survived them. In order to help those people, first responders and relief workers need to remember that they too can encounter extremely stressful situations in which they will observe and can be affected by significant loss of life, serious injuries, missing and separated families, and widespread physical destruction (CDC, 2010b).

Normal reactions that are common for disaster responders include:

- Profound sadness, grief, and anger
- Not wanting to leave the scene until the work is finished
- Trying to override stress and fatigue with dedication and commitment
- Denying the need for rest and recovery time (CDC, 2010b)

In order to combat these effects and help manage stress, observe the following:

- Limit on-duty work time to no more than 12 hours per day.
- Rotate work assignments between high-stress and lower-stress functions.
- Drink plenty of water and eat healthy snacks and energy foods.
- Take frequent, brief breaks from the scene when you are able.
- Keep an object of comfort with you such as a family photo, favorite music, or religious material.
- Stay in touch with family and friends.
- Pair up with another responder so that you can monitor one another's stress. (CDC, 2010b)

Maintaining awareness of stress reactions in yourself and fellow workers and knowing how to alleviate them can help preserve your ability to respond to and care for those primarily affected by the disaster. Once you have returned home you may experience depression even if you felt your experience was positive and fulfilling. A mental health professional may be helpful in readjusting. Additional self-help materials and links to materials, including podcasts on stress management are available on the CDC website.

## Mental Health and Psychosocial Supports for Disaster Survivors

In order to improve humanitarian relief and address concerns raised about previous disaster relief efforts, including the 2004 tsunami, the UN has adopted a “cluster” system to provide better coordination of services. Supporting these clusters are a number of standing committees that address particular areas of need and provide comprehensive general resources as well as targeted guidance for specific disasters.

Based on research and previous experience with other emergencies, the Inter-Agency Standing Committee (IASC) on Mental Health and Psychosocial Supports (MHPSS) put together a guide document for those who expected to be working in Haiti and providing mental health services. At the heart of these services is the concept that the most successful programs evolve from local resources and are targeted for local cultural needs and norms.

Nearly everyone in Haiti has been affected by the earthquake, and most people will experience a normal response of intense emotional distress. In spite of this, “self-recovery and resilience in the face of disasters is the norm.” Healthcare providers need to be able to distinguish between normal and severe responses in order to recognize and assist those who are experiencing difficulties that may require intervention.

Normal reactions can include:

- Grief, sadness, hopelessness, and sense of being overwhelmed
- Emotional difficulties including anxiety, fear, anger, guilt
- Behavioral problems (lack of concentration; increased risk of use of violence, drugs, alcohol)
- Social problems (isolation; family tension or violence; increased collective fear, anger, and frustration regarding humanitarian aid)
- Increased social tension and violence due to unmet basic needs, lack of law and order, or difficulties ensuring fair and timely assistance

Severe reactions include:

- Disorientation (not knowing where you are)
- Not responding to conversation
- Putting oneself or others in danger
- Threatening to harm oneself or others
- Inability to manage tasks of daily life (walking, talking, grooming, eating) (MHPSS, 2010)

Even intense normal reactions will usually be alleviated by receiving basic services in a safe and dignified way, by the presence of psychological first aid, and by support from family and community; further, there is a need for constant communications about the relief response and for positive, useful personal information. When aid distributions are planned they should be conducted in a safe and dignified manner, pay close attention to marginalized groups, address gender norms and family roles, accommodate dietary practices whenever possible, and include community members. Assisting in the relief effort can help survivors regain a sense of control. It has been found that local support improves the chances for long-term sustainability of programs (MHPSS, 2010).

## Groups Requiring Special Attention

In Haiti a number of groups may be particularly vulnerable including:

- People with severe reactions
- Children
- Women and girls
- Isolated persons
- Institutionalized persons
- Adults and children with disabilities or special needs
- Adults and children with pre-existing mental/neuropsychiatric disorders (MHPSS, 2010)

As anywhere, persons who are experiencing severe reactions should be referred to general health and mental health services if available and, if necessary and possible, they should be removed from danger to a place where they are safe and cared for. Every effort should be made to ensure that those who require regular assistance, treatments, or medications continue to receive them, and that isolated or institutionalized persons are visited and receive food and care (MHPSS, 2010).

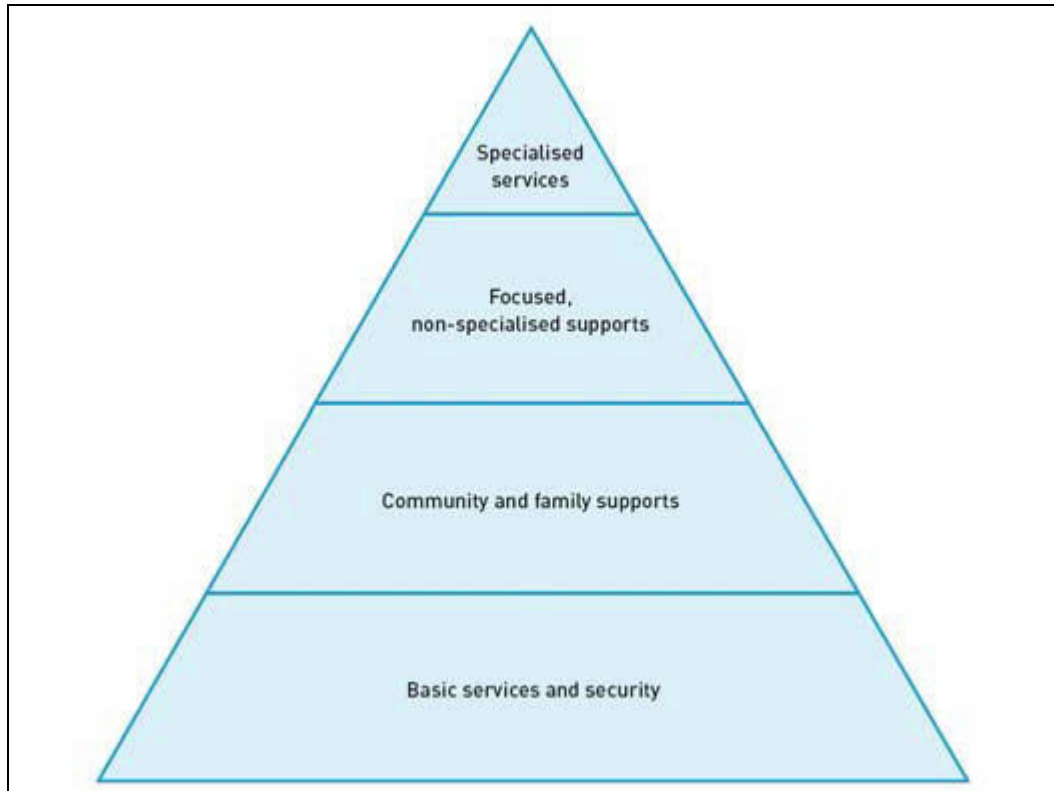
Children will generally recover from emotional distress once their basic needs are being met, they feel safe and secure, and normal activities can be re-established. In the meantime, normal responses may include nightmares; some social withdrawal; difficulty concentrating; and, sometimes, regressive developmental behaviors such as thumb sucking, bedwetting, or clinginess.

Children respond best when they can remain with family and their usual caregivers. Because children will often mirror their parents' behavior, a parent in distress should receive priority attention. If at all possible, children should not be separated from parents or caregivers, even for medical treatments. Particularly vulnerable caregivers—widows, elders, very young mothers—should be supported so they can remain with and care for the children (MHPSS, 2010).

Women and girls can be at particular risk in Haiti because they are already exposed to sexual and other forms of gender-based violence (GBV). Because of this, the MHPSS advocates immediate targeted responses to protect against additional post-earthquake violence in communities and camp situations. See the section on gender issues later in the course (MHPSS, 2010).

## Coordinated Assistance Plan

The IASC MHPSS recommends a coordinated plan encompassing the four essential levels of aid, which build upon each other as shown in the diagram below.



Source: IASC Reference Group on Mental Health and Psychosocial Support in Emergency Settings (MHPSS). (2010).

**Basic services and security** include food, shelter, livelihood, protection and health care, and education—the core needs of any human being. Provision of aid to meet these needs should be done in a way that supports psychosocial well-being, preserves dignity, and involves community members.

It is important to exercise care in the disposal of dead bodies. Customs and rituals need to be observed and the dumping of bodies into mass graves is to be avoided. People should be supported in their decisions regarding burial or cremation and in their need to grieve. It is more important to identify bodies and allow family members to follow their customs than it is to bury bodies quickly.

Knowledge helps reduce anxiety. People need to receive consistent and reliable information about past and current events and future expectations. Information should be uncomplicated and delivered in the local language.

Once basic needs are met, mental well-being for most people will be restored with a return to normal **community and family support** structures. For some people this will include religious or traditional cultural practices, especially those surrounding mourning. People need to have a role in

the running of their communities and spaces in them for groups to assemble. Re-establishing routines and being able to engage in meaningful activities helps people of all ages, although such activity can be especially critical for adolescents. Group activities help members build new social networks. Information should be made available on effective, positive coping methods. These should combine local habits with what has been learned from previous disasters, and messages should be consistent across all agencies.

The top two levels of the pyramid reflect the fact that some community members will need additional assistance to return to full mental well-being. While top-level situations will require skilled practitioners and facilities for treatment, those in need of non-specialized support will benefit from “psychological first aid,” which is “simple, easily taught, and involves a practical and compassionate approach” based on the following points:

- A = Assess (assess for safety, obvious urgent physical needs, people with serious reactions, and individuals’ needs and concerns)
- B = Be (be attentive, respectful, and aware)
- C = Comfort (comfort through your presence, through good communication, and by helping people to cope)
- D = Do (do address practical needs, do help problem-solve, do link people with loved ones and supports)
- E = End/exit strategy (end your own assistance by referring the individual to other supports as needed, end for yourself taking time for self-care) (MHPSS, 2010).

## Gender Equality in Humanitarian Assistance

Another of the UN IASC members is the Gender Standby Capacity Project (GenCap), which can provide targeted written and human resources to clusters in times of disaster relief need.

In their advisory on the Haiti emergency, GenCap argues that an effective humanitarian response must address the differing needs of women, girls, boys, and men. It finds from experience that gender issues generally go unrecognized or unaddressed. This leads to additional problems for vulnerable populations who may be unable to get their basic needs met because they lack the resources or political power to assert and protect themselves.

GenCap urges those working in Haiti to use an ABC approach:

- Assess needs.
- Be alert to risks of sexual violence, exploitation, and abuse.
- Collect and analyze data by sex and age.

Needs assessment should distinguish among women, girl, boys, and men, as their needs vary in emergency situations. Women and men should both be included on teams that are performing assessments and no group should be overlooked when data is collected.

Prior to the earthquake, Haiti had a documented high prevalence of gender-based violence (GBV) and exacerbation of this problem was expected after the earthquake. Every group responding in Haiti needs to be aware of this and how it might affect the program they are administering and the safety of survivors who need their services. Processes need to be designed to ensure that all groups have safe access. GenCap also urges regular communication to recipients about what they are entitled to receive to help avoid abuse by those delivering assistance. All reports of exploitation and abuse must be taken seriously.

Efforts should be made to collect data, by gender and age, about those affected by the earthquake and its aftermath, including deaths, injuries, displacements, and aid recipients. This information should be used to ensure that all groups are receiving assistance.

GenCap provides targeted advice for meeting gender-based needs in several relief areas including camp management, emergency shelters, individual protection, health, water and sanitation, and distribution of non-food items. Common to most of these are the need for:

- Inclusion of women and men on planning or assessment teams
- Vigilance about security (proper lighting, reporting mechanisms, policing)
- Awareness of differing gender needs for facilities such as latrines
- Protecting vulnerable groups such as single- or child-headed households
- Assuring privacy for all and safe areas for unaccompanied girls, boys, and young women separate from those for adolescent and adult males
- Inclusion of women in health planning and implementation, and attention to reproductive needs
- Ensuring equal access to supply distributions, including for non-food items (GenCap, 2010)

## Conclusion

What do we see in Haiti that is applicable to disasters closer to home? While a certain amount of the information included here is specific to the situation in Haiti, much of it is applicable to any natural disaster anywhere. Even much smaller-scale events benefit from organization, planning, understanding the elements of response, knowing emergency medical treatments, understanding how to deal with stress and psychological issues, and emphasizing coordination among all the affected responders—government, police, healthcare (including skilled mental health care), infrastructure managers, and volunteers.

Something that may get overlooked in all the practical activity is the importance and effect of cultural differences and communication in disaster relief efforts. In 1999 then-director of the PAHO, Claude de Ville de Goyet, wrote an essay entitled “Stop Propagating Disaster Myths.” Submitted to both *The New York Times* and the *Washington Post* as a letter to the editor, it was never published in either paper. It is, however, available online at the Center for International Disaster Information’s website (<http://cidi.org/articles/paho.htm>). This essay should be read by anyone who wants to better understand the myths and mistaken notions that have grown up in the wake of disaster relief efforts.

Even if you are working in your own country, it is important to remember that local customs and the needs of particular religious, ethnic, or social groups may be different from what you are accustomed to. And, when it comes to donations, what is important is not what donors want to give, but what survivors need.

## Resources

### Donations

Center for International Disaster Information  
<http://www.cidi.org/incident/haiti-10a/>

American Red Cross  
<http://www.redcross.org/>

Clinton Bush Haiti Fund  
<http://clintonbushhaitifund.org/>

International Federation of Red Cross and Red Crescent Societies  
<http://www.ifrc.org/>

UNICEF  
<http://www.unicef.org/>

USAID  
<http://www.usaid.gov/helphaiti/>

Whirlwind Wheelchair International  
After lifesaving medical and rescue efforts are completed, thousands of Haitians will need durable wheelchairs capable of navigating the rough debris-covered terrain. This kind of environment is exactly where Whirlwind chairs excel. Whirlwind is raising funds to send chairs from their Mexico factory.  
<http://www.whirlwindwheelchair.org/>

World Health Organization & Pan American Health and Education Foundation  
<http://www.who.int/hac/crises/hti/donations/en/index.html>  
<https://www.pahef.org/donate/donate.aspx?source=Her>

## Organizations

Centers for Disease Control and Prevention

<http://www.cdc.gov/> (Haiti Earthquake link from this page)

<http://emergency.cdc.gov/> (Emergency Preparedness and Response page)

Google Crisis Response

Find news and updates, imagery, disaster response maps, videos, and other ways to help.

<http://www.google.com/relief/haitiearthquake/>

Library of Congress

Country Study: Haiti

<http://lcweb2.loc.gov/frd/cs/httoc.html#ht0013> (book length study)

Pan American Health Organization/World Health Organization (PAHO/WHO)

Area on Emergency Preparedness and Disaster Relief

<http://new.paho.org/disasters/index.php>

Provides a broad range of information and links to relevant publications, including manuals and technical guidelines. Especially useful are the Haiti Earthquake Health Q&As.

<http://www.who.int/hac/crises/hti/en/index.html>

United Nations

Office for the Coordination of Humanitarian Aid (OCHA)

<http://ochaonline.un.org/>

United States Department of State

Haiti page

<http://www.state.gov/p/wha/ci/ha/>

For more information on the cluster idea and gender response issues in humanitarian aid:

<http://www.humanitarianreform.org/humanitarianreform/Default.aspx?tabid=70>

<http://www.humanitarianreform.org/Default.aspx?tabid=452#>

## References

- Centers for Disease Control and Prevention (CDC). (2010a). Public health issues and priorities for the Haiti earthquake. Retrieved January 24, 2010 from [http://emergency.cdc.gov/disasters/earthquakes/healthconcerns\\_haiti.asp](http://emergency.cdc.gov/disasters/earthquakes/healthconcerns_haiti.asp).
- Centers for Disease Control and Prevention (CDC). (2010b). Announcement: Guidance for relief workers and others traveling to Haiti for earthquake response. Retrieved January 24, 2010 from <http://wwwnc.cdc.gov/travel/content/news-announcements/relief-workers-haiti.aspx>.
- Centers for Disease Control and Prevention (CDC). (2010c). Emergency wound management for healthcare professionals. Retrieved January 24, 2010 from <http://emergency.cdc.gov/disasters/emergwoundhcp.asp>.
- Centers for Disease Control and Prevention (CDC). (2010d). After an earthquake: Management of crush injuries and crush syndrome. Retrieved January 24, 2010 from <http://emergency.cdc.gov/disasters/earthquakes/crush.asp>.
- Central Intelligence Agency (CIA). (2010). World Fact Book: Haiti. Retrieved January 24, 2010 from <https://www.cia.gov/library/publications/the-world-factbook/geos/ha.html>.
- Coffin JG, Stacey RC. (2005). *Western Civilizations*, 15th ed. Vol I. New York: Norton.
- Hunt L, et al. (2005). *The Making of the West: Peoples and Cultures*, 2nd ed. New York: Bedford/St. Martin's.
- IASC Gender Standby Capacity Project (GenCap). (2010). Importance of gender issues in the Haiti emergency. Retrieved January 30, 2010 from <http://onerresponse.info/crosscutting/gender/Documents/Gender%20ABC%20Haiti%20emergenc%2020100121.pdf>.
- IASC Reference Group on Mental Health and Psychosocial Support in Emergency Settings (MHPSS). (2010). Guidance note for mental health and psychosocial support: Haiti earthquake emergency response – January 2010. Retrieved January 31, 2010 from [http://www.who.int/entity/hac/crises/hti/haiti\\_guidance\\_note\\_mhpss.pdf](http://www.who.int/entity/hac/crises/hti/haiti_guidance_note_mhpss.pdf).
- Kishlansky MA, et al. (2006). *Civilization in the West*. 6th ed. Vol B. New York: Pearson.
- Levack B, et al. (2007). *The West: Encounters and Transformations*, 2nd ed. New York: Pearson.
- Ledwith T. (2010, January 25). UNICEF. Haiti's double disaster. Retrieved January 25, 2010 from <http://www.unicefusa.org/news/news-from-the-field/haitis-double-disaster.html>.
- Library of Congress (LOC), Federal Research Division. (2006). Country Profile: Haiti. Retrieved February 1, 2010 from <http://lcweb2.loc.gov/frd/cs/httoc.html#ht0013>.
- Nicolas G, et al. (2009). "Weathering the storm like bamboo: The strengths of Haitians in coping with natural disasters. In A. Kalayjian, et al. (eds.), *International Handbook of Emotional Healing: Ritual and Practices for Resilience After Mass Trauma*. Greenwood. Retrieved February 1, 2010 from <http://education.miami.edu/News/pdfs/Haiti.pdf>.
- Pan American Health Organization/World Health Organization (PAHO). (2010). Emergency Operations Center Situation Report #17: Haiti Earthquake. Retrieved February 1, 2010 from [http://new.paho.org/disasters/index.php?option=com\\_docman&task=doc\\_download&gid=732&Itemid=](http://new.paho.org/disasters/index.php?option=com_docman&task=doc_download&gid=732&Itemid=).
- Pan American Health Organization/World Health Organization (PAHO). (2010a). Health Cluster in Haiti Bulletin #13. Retrieved February 1, 2010 from [http://new.paho.org/disasters/index.php?option=com\\_docman&task=doc\\_download&gid=736&Itemid=](http://new.paho.org/disasters/index.php?option=com_docman&task=doc_download&gid=736&Itemid=).
- Reliefweb/OCHA. (2010). Haiti Earthquake – Humanitarian Operational Challenges map. Based on material in the OCHA Situation Report 7 of January 17, 2010. Map accessed January 20, 2010 from [http://inside.unicefusa.org/site/R?i=3E17WdiA7\\_Siv1n7AFkja](http://inside.unicefusa.org/site/R?i=3E17WdiA7_Siv1n7AFkja).  
[also available at <http://www.reliefweb.int/rw/301save.gj>]

United Nations Office for the Coordination of Humanitarian Affairs (OCHA). (2010a). OCHA's Response – Fact Sheet, 25 January 2010. Retrieved January 27, 2010 from <http://ochaonline.un.org/OCHAHome/WhereWeWork/Haiti/HaitiOCHAsResponse/tabid/6422/language/en-US/Default.aspx>.

United Nations Office for the Coordination of Humanitarian Affairs (OCHA). (2010b). Haiti Earthquake Situation Report #13, 25 January 2010. Retrieved January 27, 2010 from [http://www.reliefweb.int/rw/rwb.nsf/retrieveattachments?openagent&shortid=MUMA-8237QG&file=Full\\_Report.pdf](http://www.reliefweb.int/rw/rwb.nsf/retrieveattachments?openagent&shortid=MUMA-8237QG&file=Full_Report.pdf).

United Nations Stabilization Mission in Haiti (MINUSTAH). (2010). MINUSTAH Background. Retrieved February 3, 2010 from <http://www.un.org/en/peacekeeping/missions/minustah/background.shtml>.

United Nations Stabilization Mission in Haiti (MINUSTAH). (2010a). MINUSTAH Facts and Figures. Retrieved February 3, 2010 <http://www.un.org/en/peacekeeping/missions/minustah/facts.shtml>.

United States Agency for International Development (USAID). (2010). AID fact sheet. Retrieved from <http://www.usaid.gov/help/haiti/documents/01.24.10-USAID-DCHAHaitiEarthquakeFactSheet12.pdf>.

United States Agency for International Development (USAID). (2010). Haiti state page. Retrieved January 25, 2010 from [http://www.usaid.gov/locations/latin\\_america\\_caribbean/country/haiti/Haiti\\_Country\\_Profile.pdf](http://www.usaid.gov/locations/latin_america_caribbean/country/haiti/Haiti_Country_Profile.pdf).

World Health Organization (WHO). (2010). Public health risk assessment and interventions, Earthquake: Haiti, January 2010. Retrieved January 24, 2010 from [http://www.who.int/diseasecontrol\\_emergencies/pulications/who\\_hse\\_gar\\_dce\\_2010\\_1/en/index.html](http://www.who.int/diseasecontrol_emergencies/pulications/who_hse_gar_dce_2010_1/en/index.html).

World Health Organization (WHO). (2010a). Earthquakes – Technical Hazard Sheet – Natural Disaster Profile. Retrieved January 31, 2010 from <http://www.who.int/hac/techguidance/ems/earthquakes/en/index.html>.

(Post Test begins on next page)

## Post Test

Use the Answer Sheet following the test to record your answers.

1. Nineteenth- and twentieth-century Haiti was characterized by:
  - a. Occasional bad leaders and modest economic growth.
  - b. Nothing but bad leaders yet some modest economic growth.
  - c. An even mix of good and bad leaders and notable economic growth.
  - d. Almost no competent leaders and economic devastation.
  
2. Public health priorities can be expected to include **all but one** of the following:
  - a. Provision of food and water.
  - b. Management of water safety.
  - c. Repairing roads and bridges.
  - d. Treatment of wounds and injuries.
  
3. Most injuries in an earthquake disaster are expected to be:
  - a. Simple fractures.
  - b. Severe and requiring surgery.
  - c. Minor cuts and bruises.
  - d. Kidney failure.
  
4. Crush syndrome can cause:
  - a. Systemic tissue injury, organ dysfunction, and metabolic abnormalities.
  - b. Local tissue injury, hyperventilation, and organ dysfunction.
  - c. Local tissue injury, organ dysfunction, and hallucinations.
  - d. Local tissue injury, organ dysfunction, and metabolic abnormalities.
  
5. Nearly everyone who is involved in an earthquake with major structural damage will experience crush injury.
  - a. True.
  - b. False.
  
6. Diarrhea, a frequent symptom of water- and food-borne diseases, is already a problem in Haiti, especially for:
  - a. Pregnant women.
  - b. Adolescents.
  - c. Children under age 5.
  - d. People over age 65.
  
7. Tuberculosis (TB) in Haiti:
  - a. Has been completely eradicated.
  - b. Is a leading cause of death.
  - c. Is only found in children.
  - d. Is not treatable.

8. The effects of overcrowding include:
  - a. Lower risk of transmission for most diseases.
  - b. Increased risk of water-borne diseases only.
  - c. Greater risk of transmission for a variety of diseases.
  - d. No observable change in transmission risk.
  
9. Tetanus risk is a widespread concern in Haiti for:
  - a. Anyone who receives a wound, even a small one.
  - b. Only relief workers.
  - c. Only children because they have low vaccination coverage.
  - d. Only adults because of their waning immunity.
  
10. Vaccination coverage for Haitian 1-year-olds averages at about:
  - a. 70%.
  - b. 50%.
  - c. 10%.
  - d. No one knows.
  
11. The most effective disaster response is given by:
  - a. A variety of trained groups requested to assist.
  - b. Only members of the UN.
  - c. All available able-bodied persons.
  - d. Only groups from the affected country.
  
12. The best donation to disaster relief is almost always cash.
  - a. True.
  - b. False.
  
13. There are a number of mosquito-borne diseases in Haiti and relief workers:
  - a. Can obtain vaccinations against all of them and need no other precautions.
  - b. Should bring insect repellants and bed nets with them.
  - c. Should wait to purchase insect repellants in Haiti to get the right kind.
  - d. Must have only air-conditioned or tightly screened sleeping accommodations.
  
14. Relief workers going to Haiti need to be self-sufficient and should bring:
  - a. Food and water sufficient for their entire stay.
  - b. Food and water for the first week.
  - c. Food only.
  - d. Water only.

15. Normal reactions that are common for disaster responders include:

- a. Profound sadness, grief, and anger.
- b. Wanting to take excessive rest time.
- c. Arguing with relief recipients.
- d. Violent outbursts.

16. Ways for a relief worker to alleviate stress include:

- a. Taking no personal items with them that could get lost.
- b. Working additional duty hours to get more done.
- c. Staying in touch with family and friends.
- d. Limiting contact with other relief workers.

17. An example of a normal stress response in a disaster survivor is:

- a. Threatening to hurt oneself.
- b. Not responding to conversation.
- c. Violence toward others.
- d. Anxiety and fear.

18. Dead bodies should be buried immediately even if only mass graves are available.

- a. True.
- b. False.

19. Psychological first aid is simple and does not involve:

- a. Assessing safety needs.
- b. Administering medications.
- c. Offering good communication.
- d. Addressing practical needs.

20. Gender-based violence (GBV) in Haiti:

- a. Is a rare occurrence.
- b. Should only be addressed by trained personnel.
- c. Can usually be ignored by outsiders.
- d. Is expected to increase post earthquake.

(Answer Sheet on next page)

## Answer Sheet

### Haiti Earthquake and Disaster Response

**Name** (Please print your name): \_\_\_\_\_

**Date:** \_\_\_\_\_

Passing score is 80%

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_
6. \_\_\_\_\_
7. \_\_\_\_\_
8. \_\_\_\_\_
9. \_\_\_\_\_
10. \_\_\_\_\_
11. \_\_\_\_\_
12. \_\_\_\_\_
13. \_\_\_\_\_
14. \_\_\_\_\_
15. \_\_\_\_\_
16. \_\_\_\_\_
17. \_\_\_\_\_
18. \_\_\_\_\_
19. \_\_\_\_\_
20. \_\_\_\_\_

## Course Evaluation

Please answer each of the following questions. Questions with asterisks (\*) are required.

\* 1. This course met the goals and learning objectives.

- Yes       No

\* 2. The author was well prepared to write about the content in a way that facilitated my learning.

- Yes       No

\* 3. This course was free from commercial bias.

- Yes       No

\* 4. The learning activity met my continuing education needs.

- Yes       No

\* 5. The learning activity took me 60 minutes per contact hour. (If you answer “No”, please enter the total time it took to finish the course, test, and evaluation.)

- Yes  
 No\*\*

\*\* If your answer was “No”, how long did it take to finish the course, test, and evaluation?

\_\_\_\_\_

6. My professional educational level is (check one):

### Nursing

- Nurse Aide     LVN/LPN     RN (diploma)     RN (AD)  
 BSN     MSN     Nurse Practitioner / Advanced Practice Nurse  
 PhD / DNSc

### Therapy

- OT Aide     COTA     OT     MOT     OTD  
 PT Aide     PTA     PT     MPT     MSPT     DPT     PhD

**Other** (please specify): \_\_\_\_\_

(continued on next page)

7. I heard about ATrain Education from:

- Search engine
- Advertisement
- Government or Board website
- Returning customer
- Friend
- Publication (Magazine, etc.)
- Other \_\_\_\_\_

8. I found the ATrainCEU.com website easy to use:

- Yes
- No

9. Comments or suggestions (optional): \_\_\_\_\_

---

---

---

---

(Registration information on next page)

## Registration Information

Please answer all of the following questions (\*required).

\* Name: \_\_\_\_\_

\* Address: \_\_\_\_\_

\* City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

\* Phone: \_\_\_\_\_

\* Professional Designation: \_\_\_\_\_

\* License Number and State: \_\_\_\_\_

Please e-mail my certificate:  Yes  No

Email (required if you want your certificate sent by email): \_\_\_\_\_

(Note: If you request an email certificate we will not send a copy of your certificate by US Mail.)

### Payment Options

This course is free of charge until July 1, 2010.

If you want to order a printed certificate, the charge is \$5.00.

### Credit card information:

Name \_\_\_\_\_

Address (if different from above): \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

Card type:  Visa  MC  American Express  Discover

Card number \_\_\_\_\_

Expiration date \_\_\_\_\_ CVS # \_\_\_\_\_

### Test Completion and Mailing Instructions

1. Complete all forms:

- Answer Sheet
- Evaluation Learning Activity
- Registration Form (this page)

2. If you order a printed certificate and are not paying by credit card, prepare a check for \$5.00 made out to ATrain Education, Inc. There is no charge for the class if you only want an electronic certificate.

3. Mail the completed forms and your payment to:

ATrain Education, Inc  
5171 Ridgewood Rd  
Willits, CA 95490

Once we receive your forms and payment, we will mail or email your certificate. Please call if you have questions or email [Sharon@ATrainCEU.com](mailto:Sharon@ATrainCEU.com). And thanks for taking the ATrain!