Terrorism in Chicago: Applying the Knowledge

Pacific Emergency Management, Preparedness and Response Information Network and Training Services (Pacific EMPRINTS)

University of Hawaii

Developed by Seiji Yamada, MD, MPH

Welcome!

- This is a modified version of a Problem-Based Learning (PBL) Case. PBL is a process of self-directed learning through identification and research of issues relevant to particular disciplines.
- For learning purposes, please approach this case as if you were unaware of the nature of the event. This case is designed to help you visualize how an incidence of terrorism might present itself.

Instructions

1. Read a section of the case.
2. Identify relevant facts and/or problems.
3. Generate possible hypotheses.
4. Identify information you would like to know in order to respond appropriately to the incident.
5. Answer question given at the end of each section.
6. Move on to the next section and repeat.
7. At the completion of this PBL case, a post-test will be given to assess your knowledge of the materials presented in this PBL.

A View From the South Side
Section 1

Anne Szymaniak and Tyrone Phillips emerged through the double doors of the Lakeview Memorial Hospital emergency room out into the midday April-in-Chicago sun. They had just brought in a patient with chest pain to the hospital.

"Starting to get a little warmer these past few days," said Szymaniak.

"It's about time," said Phillips.

Phillips was turning the key to the ignition of their ambulance when a brilliant white light flooded in through the windows.

"Where did that come from?" Phillips' voice quavered.

A View From the South Side
Section 1

Silence. Then a deafening blast, as if the city itself had been torn from its foundations. It seemed to go on and on. Afterwards, a wind seemed to come from behind them, from the center of the city and the direction of the blast.

"If this is the end of the world, I quit," said Szymaniak.

"Well, let's take a look." Phillips opened his door a crack.

Looking back toward the center of town, he immediately wished that he hadn't. From their vantage point on the South Side, where the Sears Tower usually stood, a mushroom cloud rose into the sky. Glowing all the colors of the spectrum, it seemed to pulsate menacingly.

Facts and Problems
Section 1

Based on what you have just read, please think about what facts may be important in dealing with this event.

Possible Answers
Section 1

- Nuclear explosion
- EMS workers outside of blast zone

Battered religious figures stand watch on a hill above a tattered valley. Nagasaki, Japan. September 24, 1945, 6 weeks after the city was destroyed by the world's second atomic bomb attack. Photo by Cpl. Lynn P. Walker, Jr. (Marine Corps). Photo courtesy Wikimedia Commons.

Need-to-Know
Section 1

Please think about any additional information that may be helpful in responding effectively to this event.

Need-to-Know
Section 1

What is the responsibility of EMS personnel?

Protect Yourself

"Stay away from ground zero. Enter the surrounding area only to save lives. The radiation levels will be very high.

Ensure your own physical safety. Look for fires, exposed high voltage wires, sharp or falling objects, tripping hazards, or hazardous chemicals. Be alert for changing conditions."

http://emergency.cdc.gov/radiation/casualtiesdetonation.asp

Questions
Section 1

Q: What are the types of nuclear weapons?

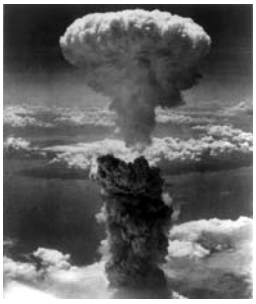
Q: How is the power of nuclear weapons measured?

Q: What sort of radiation risks are posed by a nuclear explosion?

Possible Answers
Section 1

- Types of nuclear weapons
  - Fission devices release energy through splitting large atoms such as uranium or plutonium.
  - Thermonuclear weapons release energy through fusion of small atoms such as hydrogen and helium. They must be triggered by fission devices.
  - Radiological dispersal devices, or "dirty bombs" are not nuclear weapons per se, but rather conventional explosives combined with radioactive material.

Possible Answers
Section 1



- Nuclear weapons are measured:
  - In kilotons
    - Equivalent to 1,000 tons of TNT
  - In megatons
    - Equivalent to 1,000,000 tons of TNT

The mushroom cloud resulting from the nuclear explosion over Nagasaki, Japan, on August 9, 1945, rising over 11 miles into the air. Photo courtesy Wikimedia Commons.

Possible Answers

Section 1

- Radiation risks posed by a nuclear explosion:
  - Alpha rays are nuclei of helium, two protons and two neutrons.
  - Beta rays are electrons.
  - Gamma rays are electromagnetic radiation of very high frequency and energy.
  - Fallout contains many radioisotopes.

Terrorism in Chicago:
Applying the Knowledge
Part 1
Pacific EMPRINTS

Course Transcript

Slide 1: "Terrorism in Chicago: Applying the Knowledge"
Welcome to the Terrorism Problem-Based Learning Case "Terrorism in Chicago: Applying the Knowledge" presented by the Pacific Emergency Management, Preparedness and Response Information Network and Training Services at the University of Hawaii Department of Anthropology.

Slide 2: "Welcome!"
Aloha. This is a modified version of a Problem-Based Learning or PBL Case. PBL is a process of self-directed learning through identification and research of issues relevant to particular disciplines. For learning purposes, please approach this case as if you were unaware of the nature of the event. This case is designed to help you visualize how an incidence of terrorism might present itself.

Slide 3: "Instructions"
While this problem-based learning module was initially designed to be used as a discussion-generating exercise, it has been modified so that online users can utilize problem-based learning in a similar way. First, you will be presented with a section of the case. After you have familiarized yourself with this section, you will be asked to identify relevant facts and/or problems. After this, you will generate possible hypotheses. Next, you will identify any other information you feel you need to know before proceeding further with the case. Finally, you will be asked to answer the question provided at the end of each section. At the completion of this entire PBL course, a post-test will be given to assess your knowledge of the materials presented.

Slide 4: "A View From the South Side, Section 1"
Anne Szymaniak and Tyrone Phillips emerged through the double doors of the Lakeview Memorial Hospital emergency room out into the midday April-in-Chicago sun. They had just brought in a patient with chest pain to the hospital. "Starting to get a little warmer these past few days," said Szymaniak. "It's about time," said Phillips. Phillips was turning the key to the ignition of their ambulance when a brilliant white light flooded in through the windows. "Where did that come from?" Phillips' voice quavered.

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Slide 5: “A View From the South Side, Section 1”
Silence. Then a deafening blast, as if the city itself had been torn from its foundations. It seemed to go on and on. Afterwards, a wind seemed to come from behind them, from the center of the city and the direction of the blast. “If this is the end of the world, I quit,” said Szymaniak. “Well, let’s take a look.” Phillips opened his door a crack. Looking back toward the center of town, he immediately wished that he hadn’t. From their vantage point on the South Side, where the Sears Tower usually stood, a mushroom cloud rose into the sky. Glowing all the colors of the spectrum, it seemed to pulsate menacingly.

Slide 6 “Facts and Problems, Section 1”
Based on what you have just read, please think about what facts may be important in dealing with this event.

Slide 7: “Possible Answers, Section 1”
In this case it appears that there has been a nuclear explosion. The EMS workers are currently outside of the blast zone. In the picture displayed, an example of the devastation that a nuclear explosion can produce is provided by battered religious figures on a hill in Nagasaki, Japan. This picture was taken on September 24, 1945, 6 weeks after the city was destroyed by the world’s second atomic bomb attack.

Slide 8: “Need-to-Know, Section 1”
Please think about any additional information that may be helpful in responding effectively to this event.

Slide 9: “Need-to-Know, Section 1”
In this situation, it would be helpful to know what the responsibility of Emergency Medical Services personnel is. Primarily, it is to protect themselves. The Centers for Disease Control and Prevention advise EMS personnel to: “Stay away from ground zero. Enter the surrounding area only to save lives. The radiation levels will be very high.” It is also important to: “Ensure your own physical safety. Look for fires, exposed high voltage wires, sharp or falling objects, tripping hazards, or hazardous chemicals.” Finally,: “Be alert for changing conditions.”

Slide 10: “Questions, Section 1”
Please think about the following questions: What are the types of nuclear weapons? How is the power of nuclear weapons measured? What sort of radiation risks are posed by a nuclear explosion?

Slide 11: “Possible Answers, Section 1”
There are several types of nuclear weapons to be aware of. Fission devices release energy through splitting large atoms such as uranium or plutonium. Thermonuclear weapons release energy through fusion of small atoms such as hydrogen and helium. These thermonuclear weapons must be triggered by fission devices. Radiological dispersal devices, also referred to as “dirty bombs,”

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are not nuclear weapons per se, but rather conventional explosives combined with radioactive material.

Slide 12: “Possible Answers, Section 1”
Nuclear weapons are measured in kilotons and megatons. One kiloton is equivalent to one thousand tons of TNT, while one megaton is equivalent to one million tons of TNT. The picture shows the mushroom cloud resulting from the nuclear explosion over Nagasaki, Japan on August 9, 1945. The cloud has risen over 11 miles into the air.

Slide 13: “Possible Answers, Section 1”
There are various types of radiation risks posed by a nuclear explosion. Alpha rays are nuclei of helium, and are composed of two protons and two neutrons. Beta rays are electrons. Gamma rays are electromagnetic radiation of very high frequency and energy. Nuclear fallout contains many radioisotopes.

Sources:

1. Medical Response to Nuclear and Radiological Terrorism: http://www.phppo.cdc.gov/PHTN/webcast/radiation-04/Radiationscript.htm
2. Casualty Management After Detonation of a Nuclear Weapon In an Urban Area http://emergency.cdc.gov/radiation/casualtiesdetonation.asp
3. Acute Radiation Syndrome: A Fact Sheet for Physicians http://emergency.cdc.gov/radiation/arsphysicianfactsheet.asp
4. Emergency Medicine: A Comprehensive Study Guide - 6th Ed. (2004) TABLE 6-2. Triage Categories

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