This is Part 1 of a new topic for us—Disaster Preparedness in Pharmacy. Along with next month’s lesson, they fulfill the 3.0 hour Georgia requirement. In this lesson we review emergency & disaster situations that pharmacy must be involved with. We also describe a number of examples that have occurred in the last several years. This lesson provides 1.5 hours (0.15 CEUs) of credit, and is intended for pharmacists in all practice settings. The program ID # for this lesson is 707-000-10-009-H04-P. Pharmacists completing this lesson by Aug 31, 2013 may receive full credit.

To obtain continuing education credit for this lesson, you must answer the questions on the quiz (70% correct required), and return the quiz. Should you score less than 70%, you will be asked to repeat the quiz. Computerized records are maintained for each participant.

If you have any comments, suggestions or questions, contact us at the above address, or call toll free 1-800-323-4305. (In Alaska and Hawaii phone 1-847-945-8050). Please write your ID Number (the number that is on the top of the mailing label) in the indicated space on the quiz page (for continuous participants only).

The objectives of this lesson are such that upon completion the participant will be able to:

1. Identify potential national & local disasters that can occur.
2. Define role of pharmacists in disasters & emergencies.
3. Describe the National Guidelines for Pharmacists.
4. Comment upon the National Disaster Medical System.
5. Describe the National Pharmacist Response Team.
6. Identify medications & supplies that may be needed during a disaster.
7. List activities that pharmacists can implement in the community.
8. Discuss planning & training recommendations.
9. Describe protocol development.

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INTRODUCTION

Pharmacists live and work in a unique position to assist during emergencies or disasters. Pharmacists interact with physicians, hospitals, patients, pharmaceutical suppliers, and insurance companies. They communicate with all of the healthcare community. They are often called in times of emergency to obtain medications and supplies ranging from life-saving medications to hand sanitizers. In past emergencies it has been noted that chronic medications are critical to communities when situations last for extended periods, as during the aftermath of Hurricane Katrina. In many cases, the initial response to a disaster must be from the local community. Depending on the type of disaster, it may take several hours or days for additional support to arrive. Pharmacists should be prepared to act during an emergency and this requires preparation. The goal of this lesson (and the next) is to review direction on how pharmacists may prepare for emergencies and provide assistance to the community.

Part 1

This lesson consists of a review of emergency and disaster situations that pharmacy must be involved with. We will, additionally, discuss some examples, such as:

- H1N1 Pandemic-2009
- Iowa Flood-2008
- Minnesota Bridge Collapse-2007
- Eastern U.S. & Canada Blackout-2004
- Hurricane Katrina-2005

In the next lesson, we will conclude the presentation of Disaster Preparedness by looking at:

- Preparing Your Pharmacy
- Mass Immunization Programs
- Planning & Protocol Development
- Preparing Against Biological Warfare

TYPES OF EMERGENCIES

In the last 15 years, there have been a number of situations that have required national, state and local agencies to mobilize emergency relief. These events have included terrorism attacks (as we saw on September 11, 2001); national disasters (such as Hurricane Katrina); and the H1N1 flu epidemic. Table 1 is a summary:
During this same time period, earthquakes, floods, hurricanes, tsunamis and volcanic eruptions (such as that seen recently in Haiti) have resulted in over 3 million deaths worldwide and cost billions of dollars in disaster relief. In the event of a crisis, it is important to provide emergency services to those affected. In 2002, the government established a program that rapidly deploys healthcare workers to areas affected by disasters, both natural and manmade.3

NATIONAL DISASTER MEDICAL SYSTEM (NDMS)

The NDMS is designed to provide disaster medical care to the nation. The NDMS provides temporary support by funding, organizing, training and deploying specialized teams to provide medical care during national disasters, major transportation accidents, technologic accidents or acts of terrorism. The NDMS supports state and local authorities in dealing with the medical and public health effects of these disasters through deployment of personnel and equipment. The NDMS also coordinates the movement of patients from the disaster site to an unaffected area.4

The NDMS is comprised of general and specialty Disaster Medical Assistance Teams (DMATs). These DMATs are comprised of 35 medical and technical support staff. There are 26 teams that are able to be deployed within 12 to 24 hours of notification and can be self-sufficient for 24 to 72 hours. Each DMAT has resources to provide 10-14 days of care.

They have the ability to assess and respond to 200 to 250 patients in a 24 hour period. All team members must be adequately trained and be able to care for themselves when being sent to a hazardous situation. The specialty DMATs provide unique care such as in the case of pediatric patients, burn victims or orthopedic patients.5

ROLE OF THE PHARMACIST IN EMERGENCY PREPAREDNESS

As our nation recovered from the terrorist attack on September 11, 2001 it became clear that pharmacists have a vital role in emergency preparedness.3,6

Following this event, pharmacy organizations and the federal government developed processes to incorporate pharmacists into the disaster response teams. Pharmacy organizations have developed position statements on the role of the pharmacist in emergency preparedness. The primary responsibilities of the pharmacist in emergency preparedness include:

- planning and execution of medication distribution and control, including proper labeling, storage, handling and dispensing.
- drug therapy management of victims.
- selecting medications and other supplies for national and regional stockpiles and local emergency supplies.
- counseling patients who receive medication from emergency supplies.

<table>
<thead>
<tr>
<th>State</th>
<th>Year</th>
<th>Emergency Event</th>
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<tbody>
<tr>
<td>Nationwide</td>
<td>2009</td>
<td>H1N1 Pandemic</td>
</tr>
<tr>
<td>Washington</td>
<td>2008</td>
<td>40 feet Snowfall</td>
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<tr>
<td>Iowa</td>
<td>2008</td>
<td>Flood</td>
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<tr>
<td>Minnesota</td>
<td>2007</td>
<td>Bridge Collapse</td>
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<tr>
<td>Mississippi</td>
<td>2005</td>
<td>Hurricane Rita</td>
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<tr>
<td>Louisiana</td>
<td>2005</td>
<td>Hurricane Katrina</td>
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<tr>
<td>Eastern US</td>
<td>2004</td>
<td>Electrical Blackout</td>
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<tr>
<td>Toronto Canada</td>
<td>2003</td>
<td>SARS</td>
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<tr>
<td>New Jersey</td>
<td>2001</td>
<td>Anthrax</td>
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<tr>
<td>New York</td>
<td>2001</td>
<td>Terrorist Attack</td>
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<tr>
<td>Oklahoma</td>
<td>1995</td>
<td>Federal Building Bombing</td>
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In December 2003 the Department of Homeland Security (DHS) and the Joint Commission of Pharmacy Practitioners (JCCP) announced a joint Memorandum of Agreement to recruit and train pharmacists for national emergency preparedness. The JCCP represents the American Pharmacists Association, American Society of Health-System Pharmacists, Academy of Managed Care Pharmacy, American Association of Colleges of Pharmacy, American College of Clinical Pharmacy and National Council of State Pharmacy Association Executives. These pharmacy organizations together with the DHS have established 10 National Pharmacy Response Teams (NPRTs) who can be deployed during a public health emergency.

NATIONAL PHARMACIST RESPONSE TEAMS (NPRTS)

In January 2010 oversight of the NPRTs returned to the Department of Health and Human Services. The NPRTs were restructured to provide more comprehensive pharmacy services. In 2009, these new teams were deployed to Hawaii, Guam, Puerto Rico, North Dakota and Texas to provide emergency pharmaceutical support. When the NPRTs are deployed, they can rapidly assemble a pharmacy with 300 to 350 different types of products for the DMATs to use in the care of victims. The pharmacist on the NPRT is the drug resource for the DMAT in the field and is often called upon to help develop therapeutic options for patients. Other duties that the NPRTs are involved in include oversight and management of all medications, security of controlled substances, administration of immunizations and patient counseling. The NPRT is an opportunity for pharmacists to practice collaboratively with others during an emergency.

STRATEGIC NATIONAL STOCKPILE (SNS)

The SNS is the federal stockpile of anti-infectives, antidotes, antitoxins, and medical/surgical supplies that would be needed in the event of an emergency. The SNS is not designed for first response, but rather to supplement and re-supply state and local public health agencies in the event of a national emergency anywhere within the U.S. or its territories. The SNS is designed for rapid deployment. The 12-hour Push Packs are caches of pharmaceuticals, antidotes, and medical supplies designed to provide rapid delivery of a broad spectrum of supplies when details of the situation may not yet be available. These Push Packs contain supplies for anthrax, smallpox, plague, tularemia, botulinum toxin and viral hemorrhagic fever exposure. There are twelve 50-ton Push Packs strategically located around the country in secure settings ready for immediate deployment once a decision is made to deploy. If the emergency requires additional medications or medical supplies, these are shipped to arrive within 24 to 36 hours through Vendor Managed Inventory.

During a national emergency, state, local, and private medications and supplies will be depleted quickly. Officials can use the SNS to replenish their supplies and provide additional resources depending on the situation. The 12-hour Push Packages can be delivered anywhere in the U.S. or its territories within 12 hours of a federal decision to deploy. These Push Packs can be immediately loaded onto trucks or aircraft for the most rapid delivery. The SNS staff will coordinate with state and local officials so that the SNS can be efficiently received and distributed upon arrival. It is important for pharmacists to understand each local community’s plan for implementing the SNS if a disaster occurs.

It is important for pharmacists in charge of the SNS to regularly review the components of the stockpile to ensure that supplies meet the current requirements. As medical practice evolves, changes may have to be made to the content of the SNS. In addition to updating the contents of the SNS, staff members also regularly check the inventory to ensure proper storage conditions and dating of contents.

Depending on the type of disaster, it may be necessary for pharmacists to assist victims who are unable to travel to the location of the emergency medications. In the event of floods or earthquakes, victims may be living in emergency shelters for extended periods and may require refills of chronic medications. It is common for DMATs to establish points of distribution (PODs) that may serve as emergency shelters where food and water is distributed. Pharmacists may need to provide basic non-prescription medications to these individuals and make arrangements to obtain refills of prescription medications from the SNS or nearby pharmacies that are still operating.

MEDICATION REQUIREMENTS FOR EMERGENCY OR DISASTER PREPAREDNESS

It is often difficult to determine which medications will be needed during an emergency or disaster. It was noted that after Hurricane Katrina, chronic medications were in high demand as patients were often unable to obtain refills for several weeks due to the damage. The most common medications dispensed following Hurricane Katrina included medications for: blood pressure control, diabetes, asthma, elevated cholesterol, acute infections and pain management.
Depending on the type of emergency, community pharmacy and hospital pharmacy drug supplies may be damaged or destroyed. Pharmacies should have a plan in place with vendors to provide inventory during emergencies. RxResponse is an organization made up of drug and biotechnology manufacturing and distribution companies, hospitals and community pharmacies. The RxResponse website contains useful information including: how to find pharmacies that are operating during emergencies, how to prepare for a disaster, and how pharmacies can report their status during an emergency. The RxResponse can be activated when state or local officials declare an emergency. For more information about RxResponse, go to [www.rxresponse.org](http://www.rxresponse.org).

**COMMUNITY PHARMACIST ACTIVITIES**

Community pharmacies are oftentimes a gathering point for information and aid during a time of crisis. There are a number of examples of how pharmacies have successfully implemented emergency services in the past, as well as examples of problems they identified.

### H1N1 PANDEMIC-2009

All 50 states now provide the authority for pharmacists and pharmacy students to administer vaccines. At this time, over 100,000 pharmacists have completed immunization training programs and over 14 million influenza vaccines were administered in 2009. The APhA Pharmacy-Based Immunization Delivery Training Program is a certificate program that was established in 1996. This program includes self-study and seminar components as well as hands-on evaluation of injection technique. The program is licensed to over 130 partners across the country. Many colleges of pharmacy, state organizations and pharmacy corporations utilize this program. For more information about this program and registration information, go to [www.pharmacist.com/Content/NavigationMenu3/ContinuingEducation/CertificateTrainingProgram/PharmacyBasedImmunizationDelivery/Pharmacy_Based_Immun.htm](http://www.pharmacist.com/Content/NavigationMenu3/ContinuingEducation/CertificateTrainingProgram/PharmacyBasedImmunizationDelivery/Pharmacy_Based_Immun.htm).

- Walgreens, CVS Caremark, Rite Aid, Kroger and many other community pharmacies provided H1N1 vaccines as soon as the vaccine was available. Vaccine administration was provided to high-risk individuals first.
- At Kroger Pharmacies over 95% of the pharmacies provide year round immunizations. Approximately 6,000 pharmacists and interns provide more than 25 different immunizations across 31 states.
- Vaccine supply was inconsistent at the beginning of the pandemic

### IOWA FLOOD-2008

- Mercy Medical Center Pharmacy in Cedar Rapids needed to relocate hospital pharmacy operations to higher ground due to hospital flooding. Pharmacy students from the University of Iowa assisted in building the temporary pharmacy. All intravenous drug compounding was suspended until the pharmacy could ensure that sterile conditions were available in the temporary pharmacy.
- Iowa City residents were evacuated, many without their prescription medications. Local pharmacies were flooded and could not dispense medications. Hartig Drug accepted transfers of prescriptions from Walgreens to provide medications. Hartig Drug pharmacists also were called upon to provide tetanus shots.
- The Iowa Board of Pharmacy worked with pharmacists to temporarily permit activities to ensure medications were available to patients.

### MINNESOTA BRIDGE COLLAPSE-2007

- In order to easily identify everyone during the emergency, each staff member in the emergency room at the University of Minnesota had their occupation taped on their back.
- Although the hospital pharmacy was prepared with stockpiles for a bioterrorism disaster, they quickly ran out of tetanus vaccine, cefazolin and Lactated Ringers.
BLACkOUT OF EASTERN UNITED STATES AND CANADA-2004

• Pharmacists were without computers to check for allergies, assess medication histories and screen for interactions.14

• Labels needed to be created with manual typewriters or hand-written. Many pharmacists had no experience with dispensing without a computer system.14

• Refrigerated and frozen medications needed to be transferred to coolers to prevent spoilage.14

• Pharmacists needed to use professional judgment regarding dispensing refills without authorization. Emergency rooms were overflowing and would be unable to handle routine prescription refill requests.14

• Pharmacies noted that their emergency plans were not as robust as necessary for this type of emergency.14

HURRICANE KATRINA- 2005 15,16

• Walgreens filled over 300,000 prescriptions in the 45 states they had stores in as a result of evacuees being relocated. In the months following Hurricane Katrina, Walgreens was filling 2 to 3 times their normal prescription volume.15,16

• CVS established two satellite pharmacies in the Houston Astrodome to meet the needs of the 7,000 evacuees that were relocated there. Over 20,000 prescriptions were filled at that operation with over 90% being filled in the first 72 hours. CVS also established mobile pharmacies in the Austin, Texas Convention Center and at Kelly Air Force Base in San Antonio.15

• Wal-Mart coordinated an effort at the Monroe, Louisiana Civic Center in conjunction with the Monroe College of Pharmacy. Students assessed individuals evacuated to the Civic Center and coordinated obtaining prescriptions from Wal-Mart.15

• Rite-Aid set up 3 temporary pharmacies in Alabama and Mississippi. Over 40 Rite-Aid pharmacists traveled to the region to organize pharmacies and work to have them operational for providing services.15

• The National Association of Boards of Pharmacy established a pharmacist license verification process to permit license transfer for pharmacists from out-of-state to practice in the region during the disaster. Other rules of practice were temporarily suspended to allow for critical medications to get to patients in need.15,16

The balance of our overall presentation on Disaster Preparedness will be in next month’s lesson.

CONCLUSION

Pharmacists live and work in the community and are in a unique position to assist during emergencies or disasters. They are often called in times of emergency to obtain medications and supplies ranging from life-saving drugs to hand sanitizers. It is critical for pharmacists to not only be trained in emergency preparedness, but also to routinely practice the plan so that everyone involved knows their role and can react during the incident with confidence. Our past experience, however, has shown that no matter how prepared you are, there will still be tough decisions that need to be made. Maintaining active involvement in the community emergency response plan can provide the pharmacist with the tools needed to act.

ADDITIONAL RESOURCES

National Stockpile-Centers for Disease Control and Prevention  www.bt.cdc.gov/stockpile.
Basic Emergency Kit

- Water, one gallon of water per person per day for at least three days, for drinking and sanitation
- 3 day supply of non-perishable food
- Radio (battery-powered) and extra batteries
- Flashlight and extra batteries
- First aid kit (see below)
- Whistle to signal for help
- Dust mask, to help filter contaminated air and plastic sheeting and duct tape to shelter-in-place
- Moist towelettes, garbage bags and plastic ties for personal sanitation
- Wrench or pliers to turn off utilities
- Can opener for any canned food
- Local maps
- Cell phone with chargers

Additional Items

- Prescription medications and glasses
- Infant formula/diapers
- Pet food and water
- Important documents in a waterproof container
- Matches in a waterproof container
- Fire Extinguisher
- Sleeping bags or warm blankets
- Change of clothing including long pants and long sleeved shirt
- Sturdy shoes

First Aid Kit

- Two pairs of sterile gloves
- Sterile gauze dressings
- Antibacterial soap and antibacterial towelettes
- Antibiotic ointment
- Burn ointment
- Adhesive bandages in a variety of sizes
- Eye wash solution
- Thermometer
- Tweezers
- Aspirin or non-aspirin pain reliever
- Antacid
- Antidiarrheal medications

REFERENCES

4. US Department of Health and Human Services. National Disaster Medical Team. Available at:


FUTURE TOPICS

HIV/AIDS Update
Role of Pharmacist in Pharmacogenetics
Barriers to Medication Compliance
Fill in the information below, answer questions and return Quiz Only for certification of participation to:
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CHECK IF NEW ADDRESS ARE YOU LICENSED IN FLORIDA? IF YES FL LIC________________________________________
EMAIL Address (we need this)__________________________________________________________________________________

LESSON EVALUATION
Please fill out this section as a means of evaluating this lesson. The information will aid us in improving future efforts. Either circle the appropriate evaluation answer, or rate the item from 1 to 7 (1 is the lowest rating; 7 is the highest).

1. Does the program meet the learning objectives?
   Identify potential national & local disasters that may occur Yes No
   Define role of pharmacists in potential disasters Yes No
   Relate the National Guidelines for Pharmacists Yes No
   Comment upon the National Disaster Medical System Yes No
   Describe the National Pharmacist Response Team Yes No
   Identify medications & supplies that may be needed in emergencies Yes No
   Discuss planning & training recommendations Yes No
   Describe protocol development Yes No
   List activities that pharmacists can implement in the community Yes No

2. Was the program independent & non-commercial Yes No

3. Relevance of topic 1 2 3 4 5 6 7

4. What did you like most about this lesson?________________________________________________________________________

5. What did you like least about this lesson?________________________________________________________________________

Please Select the Most Correct Answer(s)

1. How many SNS push packs are around the U.S.? 6. Most jurisdictions permit the pharmacist to provide essential immunizations & vaccines.
   A. 50 A. True          B. False
   B. 25
   C. 12
   D. 5

2. POD is an abbreviation for:
   A. Pharmacist on duty A. 13
   B. Pharmacy of disaster-help B. 22
   C. Point of distribution C. 35
   D. None of these D. 42

3. Pharmacists may complete the following activities to improve their emergency response skills.
   A. Enhance public speaking skills A. Provide hospital beds, establish general & specialty DMATs across the U.S.
   B. Obtain immunization certification B. Establish specialty DMATs only
   C. Assemble a disaster response kit C. Only coordinate the provision of hospital beds during emergencies
   D. All of these D. None of these

4. Pharmacists possess valuable skills that qualify them for emergency preparedness that include:
   A. Managing individual patient’s medications A. Search & rescue
   B. Managing health system resources B. Triage & initial stabilization
   C. Providing essential immunizations C. Provision of definitive medical care
   D. All of these D. All of these

5. One surprise following Hurricane Katrina was the critical need for chronic medications for victims.
   A. True A. 125
   B. False B. 250
   C. 300-350
   D. 350-400

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